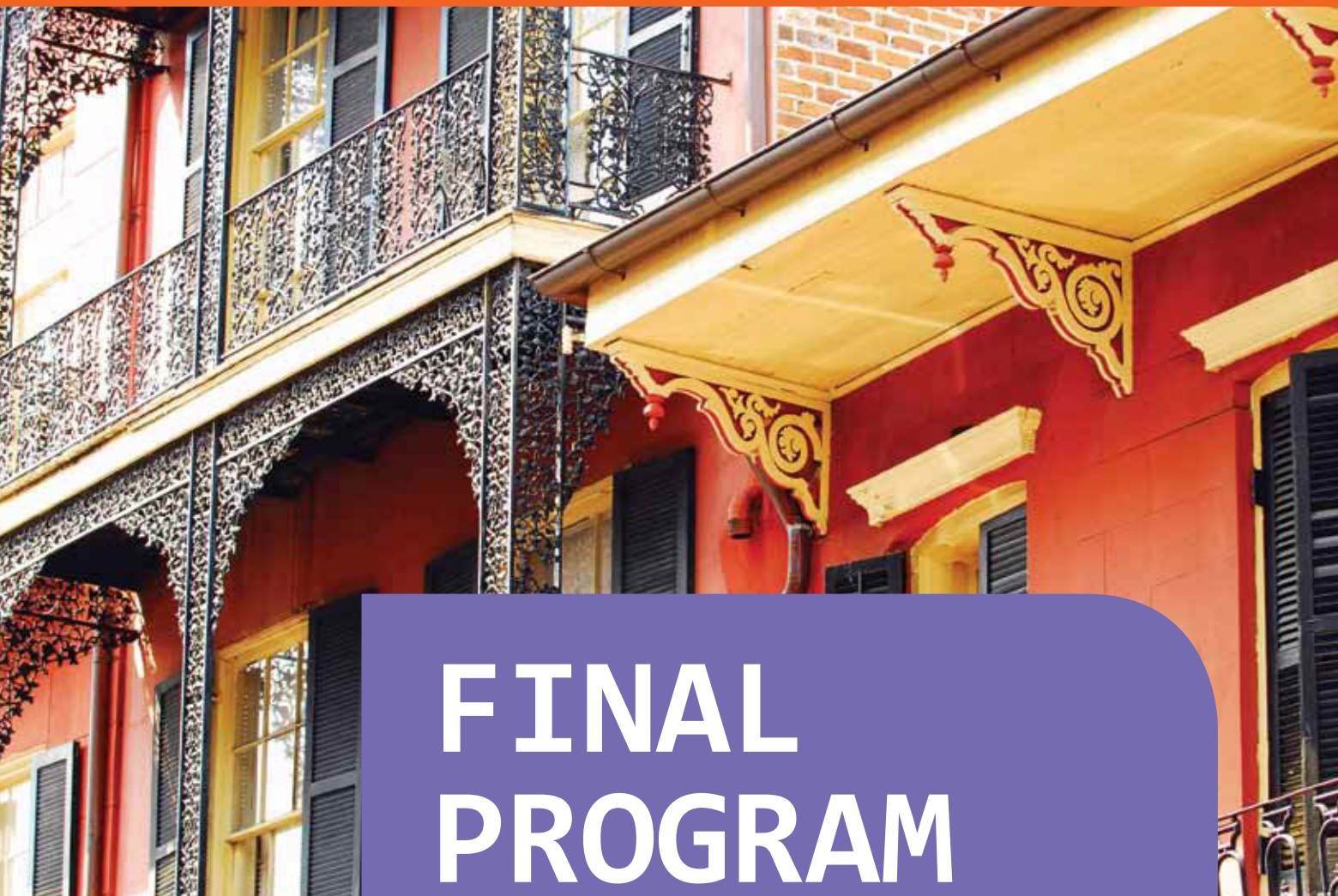


WHERE ALL OF OPHTHALMOLOGY MEETS

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FINAL PROGRAM

2013 ANNUAL MEETING November 16 – 19

SUBSPECIALTY DAY November 15 – 16

AAOE PROGRAM November 16 – 19

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SCIENCE IN THE BIG EASY

Take a stroll to Allergan booth #1344 to hear from leading experts in eye care

SATURDAY, NOVEMBER 16

9:30 AM

Detecting and Managing Glaucoma Progression

Lou Cantor, MD

10:30 AM

Treatment of Macular Edema Due to Retinal Vein Occlusion

Alan Wagner, MD

11:00 AM

Managing IOP in Clinical Practice

Anurag Shrivastava, MD

11:30 AM

Management of the Postoperative Cataract Surgery Patient

Karl Stonecipher, MD

12:00 PM

Strategies for Adjunctive Therapy in IOP Management

Gail Schwartz, MD

12:30 PM

Rescue Techniques to Save the Day!

Robert Osher, MD

1:00 PM

Managing IOP in Clinical Practice

Jonathan Myers, MD

1:30 PM

Strategies for PC Rupture and Descending Nucleus

David Chang, MD

2:00 PM

DSEK and DMEK: Surgical Pearls

Neda Shamie, MD

3:00 PM

Eyelash Treatment

Steven Yoelin, MD

3:30 PM

Manage Your Online Reputation:

Critical Strategies in Today's Marketplace

Joe Casper, *COE, OCS, Eye Care Business Advisor, Allergan, Inc.*

Eric Abrantes, *Marketing Director, Advanced Eye Centers*

Andrew Doan, MD, PhD

SUNDAY, NOVEMBER 17

9:30 AM

Eyelash Treatment

Steven Yoelin, MD

10:00 AM

Treatment of Macular Edema Due to Retinal Vein Occlusion

Joseph Coney, MD

10:30 AM

Strategies for Adjunctive Therapy in IOP Management

Oluwatosin Smith, MD

11:00 AM

Focus on Dry Eye Disease

Chris Starr, MD

11:30 AM

Allergic Conjunctivitis

Rajesh Rajpal, MD

12:00 PM

Detecting and Managing Glaucoma Progression

Randy Craven, MD

12:30 PM

Noninfectious Posterior Segment Uveitis: Exploring Treatment Options

Sunil Srivastava, MD

1:00 PM

Management of the Small Pupil in Cataract Surgery

Eric Donnenfeld, MD

1:30 PM

Focus on Dry Eye

Rob Sambursky, MD

2:00 PM

Detecting and Managing Glaucoma Progression

Ronald Gross, MD

2:30 PM

Treatment of Macular Edema Due to Retinal Vein Occlusion

Michael Singer, MD

3:00 PM

Allergic Conjunctivitis

Jodi Luchs, MD

3:30 PM

Innovative Approaches to Maximizing Effective Patient Flow

Rob Grim, *Eye Care Business Advisor, Allergan, Inc.*

Dan Chambers, *Executive Director, Key-Whitman Eye Centers*

Brett Chambers, *CEO and Senior Consultant, KoreNetics*

MONDAY, NOVEMBER 18

10:00 AM

Strategic Payer Contracting: How to Prepare for Accountable Care Organizations

Erik Hough, *COE, OCS, Eye Care Business Advisor, Allergan, Inc.*

Laurie Brown, *COMT, COE, OSA, OCS, CPSS, Administrator, Doctors Fine, Hoffman, and Simms*

11:30 AM

Innovative Operations: Improving Revenue Cycle and Patient Experience

Karen Fallon, *COE, CCOA, OCS, Eye Care Business Advisor, Allergan, Inc.*

Rod Roeser, *CEO, Thomas Eye Group*

1:00 PM

Key Considerations in Addressing the Medicare Fee Reductions

Bob Teale, *COE, OCS, Senior Eye Care Business Advisor, Allergan, Inc.*

Bruce Maller, *Founder and President, BSM Consulting*

2:30 PM

Strategic Planning Pearls: Developing and Implementing a New Service Line

Sherri Boston, *MBA, COE, OCS, Eye Care Business Advisor, Allergan, Inc.*

Tom Burke, *CEO, Ophthalmic Consultants of Long Island*

Nancy Fairbrother, *Director of Marketing, Ophthalmic Consultants of Long Island*

BOOTH #1344



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Presentation times and speakers are subject to change. These presentations are not affiliated with the official program of the Annual Meeting.





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ONE INJECTION, EARLY INTERVENTION.

TAKE ACTION WITH JETREA® (ocriplasmin) Intravitreal Injection, 2.5 mg/mL

The **FIRST** and **ONLY** pharmacologic treatment for symptomatic Vitreomacular Adhesion (VMA).¹

Indication

JETREA (ocriplasmin) Intravitreal Injection, 2.5 mg/mL, is a proteolytic enzyme indicated for the treatment of symptomatic vitreomacular adhesion.

Important Safety Information

Warnings and Precautions

- A decrease of ≥ 3 lines of best-corrected visual acuity (BCVA) was experienced by 5.6% of patients treated with JETREA and 3.2% of patients treated with vehicle in the controlled trials. The majority of these decreases in vision were due to progression of the condition with traction and many required surgical intervention. Patients should be monitored appropriately.
- Intravitreal injections are associated with intraocular inflammation/infection, intraocular hemorrhage and increased intraocular pressure (IOP). Patients should be monitored and instructed to report any symptoms without delay. In the controlled trials, intraocular inflammation occurred in 7.1% of patients injected with JETREA vs 3.7% of patients injected with vehicle. Most of the post-injection intraocular inflammation events were mild and transient. If the contralateral eye requires treatment with JETREA, it is not recommended within 7 days of the initial injection in order to monitor the post-injection course in the injected eye.

- Potential for lens subluxation.
- In the controlled trials, the incidence of retinal detachment was 0.9% in the JETREA group and 1.6% in the vehicle group, while the incidence of retinal tear (without detachment) was 1.1% in the JETREA group and 2.7% in the vehicle group. Most of these events occurred during or after vitrectomy in both groups.
- Dyschromatopsia (generally described as yellowish vision) was reported in 2% of all patients injected with JETREA. In approximately half of these dyschromatopsia cases there were also electroretinographic (ERG) changes reported (a- and b-wave amplitude decrease).

Adverse Reactions

- The most commonly reported reactions ($\geq 5\%$) in patients treated with JETREA were vitreous floaters, conjunctival hemorrhage, eye pain, photopsia, blurred vision, macular hole, reduced visual acuity, visual impairment, and retinal edema.

VISIT BOOTH #4553 AT
THE AAO ANNUAL MEETING

LEARN MORE AT JETREA.com

Please see Brief Summary of full Prescribing Information on adjacent page.

 **ThromboGenics®**



JETREA™
(ocriplasmin)
Intravitreal Injection, 2.5 mg/mL

Reference: 1. JETREA [package insert]. Iselin, NJ: ThromboGenics, Inc.; 2012.

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09/13 OCRVMA0072



BRIEF SUMMARY OF FULL PRESCRIBING INFORMATION

Please see the JETREA® package insert for full Prescribing Information.

1 INDICATIONS AND USAGE

JETREA is a proteolytic enzyme indicated for the treatment of symptomatic vitreomacular adhesion.

2 DOSAGE AND ADMINISTRATION

2.1 General Dosing Information

Must be diluted before use. For single-use ophthalmic intravitreal injection only. JETREA must only be administered by a qualified physician.

2.2 Dosing

The recommended dose is 0.125 mg (0.1 mL of the diluted solution) administered by intravitreal injection to the affected eye once as a single dose.

2.3 Preparation for Administration

Remove the vial (2.5 mg/mL corresponding to 0.5 mg ocriplasmin) from the freezer and allow to thaw at room temperature (within a few minutes). Once completely thawed, remove the protective polypropylene flip-off cap from the vial. The top of the vial should be disinfected with an alcohol wipe. Using aseptic technique, add 0.2 mL of 0.9% w/v Sodium Chloride Injection, USP (sterile, preservative-free) into the JETREA vial and gently swirl the vial until the solutions are mixed.

Visually inspect the vial for particulate matter. Only a clear, colorless solution without visible particles should be used. Using aseptic technique, withdraw all of the diluted solution using a sterile #19 gauge needle (slightly tilt the vial to ease withdrawal) and discard the needle after withdrawal of the vial contents. Do not use this needle for the intravitreal injection.

Replace the needle with a sterile #30 gauge needle, carefully expel the air bubbles and excess drug from the syringe and adjust the dose to the 0.1 mL mark on the syringe (corresponding to 0.125 mg ocriplasmin). THE SOLUTION SHOULD BE USED IMMEDIATELY AS IT CONTAINS NO PRESERVATIVES. Discard the vial and any unused portion of the diluted solution after single use.

2.4 Administration and Monitoring

The intravitreal injection procedure should be carried out under controlled aseptic conditions, which include the use of sterile gloves, a sterile drape and a sterile eyelid speculum (or equivalent). Adequate anesthesia and a broad spectrum microbicide should be administered according to standard medical practice.

The injection needle should be inserted 3.5 – 4.0 mm posterior to the limbus aiming towards the center of the vitreous cavity, avoiding the horizontal meridian. The injection volume of 0.1 mL is then delivered into the mid-vitreous.

Immediately following the intravitreal injection, patients should be monitored for elevation in intraocular pressure. Appropriate monitoring may consist of a check for perfusion of the optic nerve head or tonometry. If required, a sterile paracentesis needle should be available.

Following intravitreal injection, patients should be instructed to report any symptoms suggestive of endophthalmitis or retinal detachment (e.g., eye pain, redness of the eye, photophobia, blurred or decreased vision) without delay [see Patient Counseling Information].

Each vial should only be used to provide a single injection for the treatment of a single eye. If the contralateral eye requires treatment, a new vial should be used and the sterile field, syringe, gloves, drapes, eyelid speculum, and injection needles should be changed before JETREA is administered to the other eye, however, treatment with JETREA in the other eye is not recommended within 7 days of the initial injection in order to monitor the post-injection course including the potential for decreased vision in the injected eye.

Repeated administration of JETREA in the same eye is not recommended [see Nonclinical Toxicology].

After injection, any unused product must be discarded.

No special dosage modification is required for any of the populations that have been studied (e.g. gender, elderly).

3 DOSAGE FORMS AND STRENGTHS

Single-use glass vial containing JETREA 0.5 mg in 0.2 mL solution for intravitreal injection (2.5 mg/mL).

4 CONTRAINDICATIONS

None

5 WARNINGS AND PRECAUTIONS

5.1 Decreased Vision

A decrease of ≥ 3 line of best corrected visual acuity (BCVA) was experienced by 5.6% of patients treated with JETREA and 3.2% of patients treated with vehicle in the controlled trials [see Clinical Studies].

The majority of these decreases in vision were due to progression of the condition with traction and many required surgical intervention. Patients should be monitored appropriately [see Dosage and Administration].

5.2 Intravitreal Injection Procedure Associated Effects

Intravitreal injections are associated with intraocular inflammation / infection, intraocular hemorrhage and increased intraocular pressure (IOP). In the controlled trials, intraocular inflammation occurred in 7.1% of patients injected with JETREA vs. 3.7% of patients injected with vehicle. Most of the post-injection intraocular inflammation events were mild and transient. Intraocular hemorrhage occurred in 2.4% vs. 3.7% of patients injected with JETREA vs. vehicle, respectively. Increased intraocular pressure occurred in 4.1% vs. 5.3% of patients injected with JETREA vs. vehicle, respectively.

5.3 Potential for Lens Subluxation

One case of lens subluxation was reported in a patient who received an intravitreal injection of 0.175 mg (1.4 times higher than the recommended dose). Lens subluxation was observed in three animal species (monkey, rabbit, minipig) following a single intravitreal injection that achieved vitreous concentrations of ocriplasmin 1.4 times higher than achieved with the recommended treatment dose. Administration of a second intravitreal dose in monkeys, 28 days apart, produced lens subluxation in 100% of the treated eyes [see Nonclinical Toxicology].

5.4 Retinal Breaks

In the controlled trials, the incidence of retinal detachment was 0.9% in the JETREA group and 1.6% in the vehicle group, while the incidence of retinal tear (without detachment) was 1.1% in the JETREA group and 2.7% in the vehicle group. Most of these events occurred during or after vitrectomy in both groups. The incidence of retinal detachment that occurred pre-vitrectomy was 0.4% in the JETREA group and none in the vehicle group, while the incidence of retinal tear (without detachment) that occurred pre-vitrectomy was none in the JETREA group and 0.5% in the vehicle group.

5.5 Dyschromatopsia

Dyschromatopsia (generally described as yellowish vision) was reported in 2% of all patients injected with JETREA. In approximately half of these dyschromatopsia cases there were also electroretinographic (ERG) changes reported (a- and b-wave amplitude decrease).

6 ADVERSE REACTIONS

The following adverse reactions are described below and elsewhere in the labeling:

- Decreased Vision [see Warnings and Precautions]
- Intravitreal Injection Procedure Associated Effects [see Warnings and Precautions and Dosage and Administration]
- Potential for Lens Subluxation [see Warnings and Precautions]
- Retinal Breaks [see Warnings and Precautions and Dosage and Administration]

6.1 Clinical Trials Experience

Because clinical trials are conducted under widely varying conditions, adverse reaction rates in one clinical trial of a drug cannot be directly compared with rates in the clinical trials of the same or another drug and may not reflect the rates observed in practice.

Approximately 800 patients have been treated with an intravitreal injection of JETREA. Of these, 465 patients received an intravitreal injection of ocriplasmin 0.125 mg (187 patients received vehicle) in the 2 vehicle-controlled studies (Study 1 and Study 2).

The most common adverse reactions (incidence 5% – 20% listed in descending order of frequency) in the vehicle-controlled clinical studies were: vitreous floaters, conjunctival hemorrhage, eye pain, photopsia, blurred vision, macular hole, reduced visual acuity, visual impairment, and retinal edema.

Less common adverse reactions observed in the studies at a frequency of 2% – < 5% in patients treated with JETREA included macular edema, increased intraocular pressure,

anterior chamber cell, photophobia, vitreous detachment, ocular discomfort, iritis, cataract, dry eye, metamorphopsia, conjunctival hyperemia, and retinal degeneration.

Dyschromatopsia was reported in 2% of patients injected with JETREA, with the majority of cases reported from two uncontrolled clinical studies. In approximately half of these dyschromatopsia cases there were also electroretinographic (ERG) changes reported (a- and b-wave amplitude decrease).

6.2 Immunogenicity

As with all therapeutic proteins, there is potential for immunogenicity. Immunogenicity for this product has not been evaluated.

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy: Teratogenic Effects

Pregnancy Category C. Animal reproduction studies have not been conducted with ocriplasmin. There are no adequate and well-controlled studies of ocriplasmin in pregnant women. It is not known whether ocriplasmin can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. The systemic exposure to ocriplasmin is expected to be low after intravitreal injection of a single 0.125 mg dose. Assuming 100% systemic absorption (and a plasma volume of 2700 mL), the estimated plasma concentration is 46 ng/mL. JETREA should be given to a pregnant woman only if clearly needed.

8.3 Nursing Mothers

It is not known whether ocriplasmin is excreted in human milk. Because many drugs are excreted in human milk, and because the potential for absorption and harm to infant growth and development exists, caution should be exercised when JETREA is administered to a nursing woman.

8.4 Pediatric Use

Safety and effectiveness in pediatric patients have not been established.

8.5 Geriatric Use

In the clinical studies, 384 and 145 patients were ≥ 65 years and of these 192 and 73 patients were ≥ 75 years in the JETREA and vehicle groups respectively. No significant differences in efficacy or safety were seen with increasing age in these studies.

10 OVERDOSAGE

The clinical data on the effects of JETREA overdose are limited. One case of accidental overdose of 0.250 mg ocriplasmin (twice the recommended dose) was reported to be associated with inflammation and a decrease in visual acuity.

13 NONCLINICAL TOXICOLOGY

13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

No carcinogenicity, mutagenicity or reproductive and developmental toxicity studies were conducted with ocriplasmin.

13.2 Animal Toxicology and/or Pharmacology

The ocular toxicity of ocriplasmin after a single intravitreal dose has been evaluated in rabbits, monkeys and minipigs. Ocriplasmin induced an inflammatory response and transient ERG changes in rabbits and monkeys, which tended to resolve over time. Lens subluxation was observed in the 3 species at ocriplasmin concentrations in the vitreous at or above 41 mcg/mL, a concentration 1.4-fold above the intended clinical concentration in the vitreous of 29 mcg/mL. Intraocular hemorrhage was observed in rabbits and monkeys.

A second intravitreal administration of ocriplasmin (28 days apart) in monkeys at doses of 75 mcg/eye (41 mcg/mL vitreous) or 125 mcg/eye (68 mcg/mL vitreous) was associated with lens subluxation in all ocriplasmin treated eyes. Sustained increases in IOP occurred in two animals with lens subluxation. Microscopic findings in the eye included vitreous liquefaction, degeneration/disruption of the hyaloideocapsular ligament (with loss of ciliary zonular fibers), lens degeneration, mononuclear cell infiltration of the vitreous, and vacuolation of the retinal inner nuclear cell layer. These doses are 1.4-fold and 2.3-fold the intended clinical concentration in the vitreous of 29 mcg/mL, respectively.

14 CLINICAL STUDIES

The efficacy and safety of JETREA was demonstrated in two multicenter, randomized, double masked, vehicle-controlled, 6 month studies in patients with symptomatic vitreomacular adhesion (VMA). A total of 652 patients (JETREA 464, vehicle 188) were randomized in these 2 studies. Randomization was 2:1 (JETREA:vehicle) in Study 1 and 3:1 in Study 2.

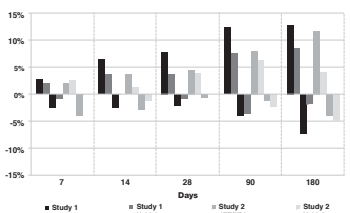
Patients were treated with a single injection of JETREA or vehicle. In both of the studies, the proportion of patients who achieved VMA resolution at Day 28 (i.e., achieved success on the primary endpoint) was significantly higher in the ocriplasmin group compared with the vehicle group through Month 6.

The number of patients with at least 3 lines increase in visual acuity was numerically higher in the ocriplasmin group compared to vehicle in both trials, however, the number of patients with at least a 3 lines decrease in visual acuity was also higher in the ocriplasmin group in one of the studies (Table 1 and Figure 1).

Table 1: Categorical Change from Baseline in BCVA at Month 6, Irrespective of Vitrectomy (Study 1 and Study 2)

Study 1			
	JETREA	Vehicle	Difference
	N=219	N=107	(95% CI)
≥ 3 line Improvement in BCVA			
Month 6	28 (12.8%)	9 (8.4%)	4.4 (-2.5, 11.2)
> 3 line Worsening in BCVA			
Month 6	16 (7.3%)	2 (1.9%)	5.4 (1.1, 9.7)
Study 2			
	JETREA	Vehicle	Difference
	N=245	N=81	(95% CI)
≥ 3 line Improvement in BCVA			
Month 6	29 (11.8%)	3 (3.8%)	8.1 (2.3, 13.9)
> 3 line Worsening in BCVA			
Month 6	10 (4.1%)	4 (5.0%)	-0.9 (-6.3, 4.5)

Figure 1: Percentage of Patients with Gain or Loss of ≥ 3 Lines of BCVA at Protocol-Specified Visits



16 HOW SUPPLIED/STORAGE AND HANDLING

Each vial of JETREA contains 0.5 mg ocriplasmin in 0.2 mL citric-buffered solution (2.5 mg/mL). JETREA is supplied in a 2 mL glass vial with a latex free rubber stopper. Vials are for single use only.

Storage

Store frozen at or below -4°F (-20°C). Protect the vials from light by storing in the original package until time of use.

17 PATIENT COUNSELING INFORMATION

In the days following JETREA administration, patients are at risk of developing intraocular inflammation/infection. Advise patients to seek immediate care from an ophthalmologist if the eye becomes red, sensitive to light, painful, or develops a change in vision [see Warnings and Precautions].

Patients may experience temporary visual impairment after receiving an intravitreal injection of JETREA [see Warnings and Precautions]. Advise patients to not drive or operate heavy machinery until this visual impairment has resolved. If visual impairment persists or decreases further, advise patients to seek care from an ophthalmologist.

Manufactured by:
ThromboGenics, Inc.
101 Wood Avenue South, 6th Floor
Iselin, NJ 08830

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Version 1.0
Initial U.S. Approval: 2012
ThromboGenics U.S. patents: 7,445,775; 7,547,435; 7,914,783 and other pending patents.

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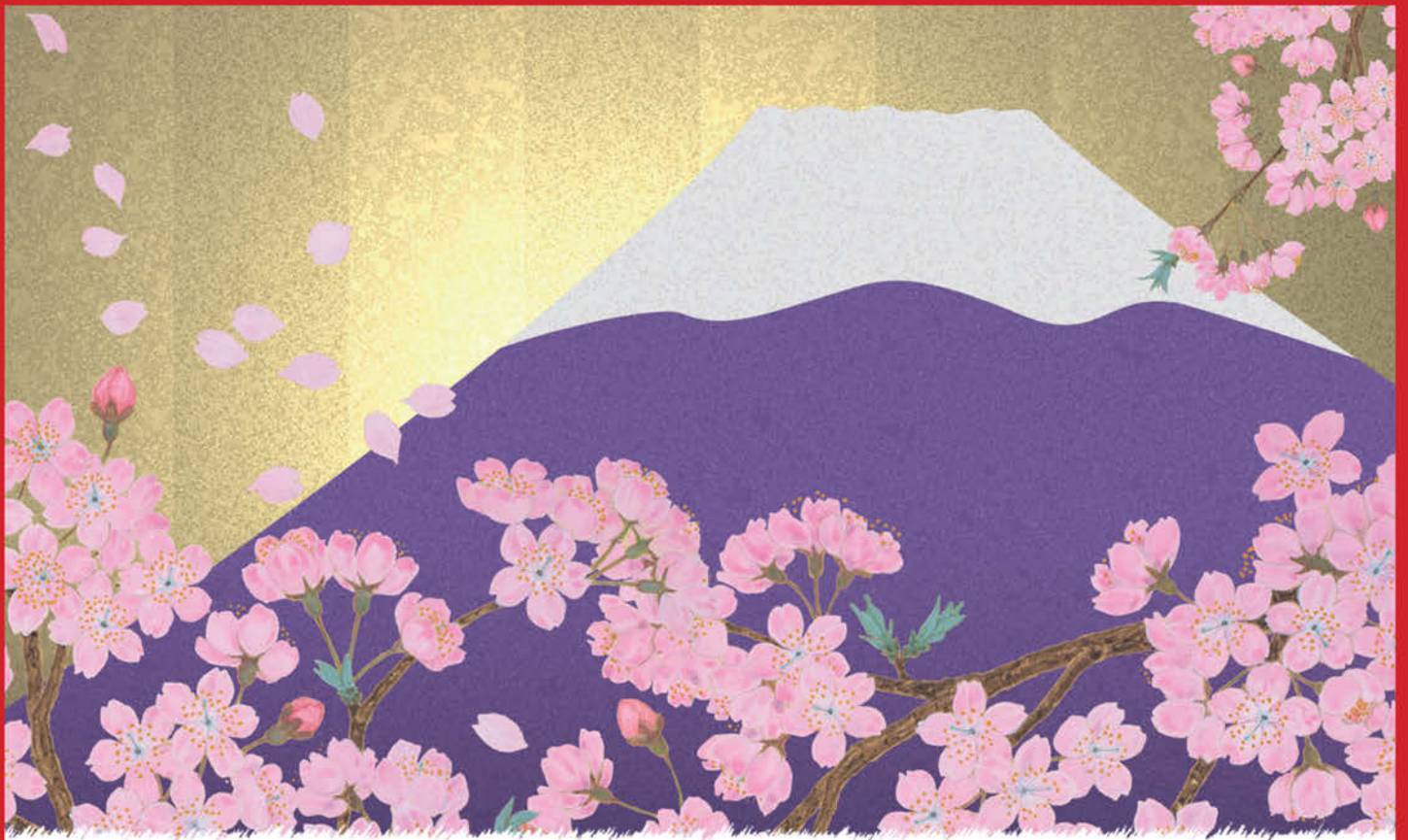
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HIGHLIGHTS



Opening Session

Sunday, Nov. 17, 8:30 – 10:00 AM
The Great Hall

Don't miss the presentation and panel discussion moderated by Michael X. Repka, MD, titled: *The IRIS™ Registry: Ophthalmology's Moon Shot?*. Celebrate those honored with awards, including the presentation of the 2013 Laureate Award to Daniel Albert, MD. Then hear the Jackson Memorial Lecture: *The History and Evolution of Lasers in Ophthalmology: A Review of the Interactions Between Physicians, Patients and Photons*, given by Mark S. Blumenkranz, MD.

Interactive Learning

There are hundreds of small group learning opportunities where you can contribute to the dialogue. Start your day with a Breakfast With the Experts roundtable, grab a cup of coffee and stay for the panel discussion at the Academy Café, continue the conversation on the hottest topics in the relaxed atmosphere of the Learning Lounge or attend poster tours moderated by colleagues.

Symposia

There are 47 Symposia available throughout the Annual Meeting that are free of charge and open to all attendees.

Big Data Drives Better Outcomes: The Power and Benefits of the IRIS™ Registry

SYM57, Sunday, Nov. 17, 12:45 - 1:45 PM
La Nouvelle Orleans C

Explore the vision of the IRIS Registry, how it can help ophthalmologists to comply with the changing regulatory landscape and enhance their ability to improve the outcomes of their patients.

The Affordable Care Act and Health Care Reform in 2013: Pearls and Potential Perils

SYM24, Monday, Nov. 18, 10:15 - 11:45 AM
New Orleans Theater C

A combined meeting with the National Medical Association (NMA), this session will discuss the law, impact on physician shortage and changing payment methods.

HIGHLIGHTS

In the Spotlight

This year the Academy is shining its spotlight on Cataracts (see below) and the following areas:

Spotlight on Ophthalmic Office Emergencies: Things You Don't Want to Miss

SPO3, Sunday, Nov. 17 10:30 AM – 12:00 PM

La Nouvelle Orleans AB

Learn how to recognize, triage and manage emergencies through case studies.

Spotlight on OCT

SPO1, Sunday, Nov. 17, 3:45 – 5:15 PM

The Great Hall

This session reviews the current state-of-the-art in clinical OCT imaging and looks ahead to the future.

Cataract Monday, Nov. 18

Join the Academy on Monday to focus on cataracts:

Spotlight on Cataract Complications: M&M Rounds – Learning from My Mistakes

SPO2, Monday, Nov. 18, 8:15 AM – 12:15 PM, The Great Hall

Hear from 18 different experts who will each courageously present a case where something went wrong and a complication occurred that taught them a valuable lesson. The symposium will conclude with the 9th Annual Kelman Lecture given by Samuel Masket, MD on “25 Years of the JCRS Consultation Section.”

The Management of Glaucoma in the Cataract Patient

SYM33, 2:00 - 4:00 PM, The Great Hall

Combined meeting with the American Society of Cataract and Refractive Surgery (ASCRS)

Cataract Monday is sponsored in part by Alcon and Bausch + Lomb.

Additional cataract sessions on Monday, include:

Phacoemulsification and Advanced Techniques Skills: The Core Curriculum

LAB120A, 8:00 – 9:30 AM, Room 356

Learning Phaco Chop: Pearls and Pitfalls

368, 2:00 – 4:15 PM, Room R06

Comprehensive Cataract Coding

404, 3:15 – 5:30 PM, Room 296

At the Movies: Femtolasers Cataract Surgery

9:00 – 10:00 AM, Learning Lounge, Booth 3647, Theater 1

Cataract Poster Tour

12:30 – 1:30 PM, “Meeting Point” near Scientific Posters Online/Videos on Demand in Hall C, Booth 100

AAOE Program: Celebrating 10 Years of Practice Management

The AAOE Program at the Annual Meeting provides over 100 courses to help you manage the business side of your ophthalmic practice, including intensive half-day coding sessions on Saturday, Nov. 16. Look for additional Saturday sessions, including billing operations, Excel and human resources/compliance workshops. Strengthen the working partnership between physician-owners and administrators through the new physician-administrator track.

New Named Lectures

Don't miss these inaugural lectures:

Michael F Marmor MD Lecture in Ophthalmology and the Arts

SYM54, Sunday, Nov. 17, 11:30 AM – 12:00 PM, Room 255

“Degas, New Orleans and Eyes Greatly in Need of Care,” presented by Richard Kendall, Curator-at-Large, Clark Art Institute. Mr. Kendall is an internationally known art historian and curator as well as being a leading Degas expert.

The Bruce E Spivey MD Lecture in Risk Management & Patient Safety and OMIC Forum

SPE17, Sunday, Nov. 17, at 2:00 – 4:00 PM, New Orleans Theater C

Susan Day, MD will lecture on risk management and patient safety risks as they relate to ophthalmology. The lecture will be followed by the OMIC Forum, which highlights the successful strategies OMIC has developed in collaboration with the Academy to decrease the frequency and severity of claims against ophthalmologists.

New! AAO Virtual Meeting

This year the Academy is offering an online component to the Annual Meeting. The AAO Virtual Meeting will live stream one hour of content a day and have additional recorded content available as well. It is FREE to all Annual Meeting attendees and Academy members. View elements you may have missed while onsite or share the event experience with someone else.

Register for the event at www.aao.org/virtual-meeting.



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Please refer to the important safety information on the adjacent page.

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Device

DisCoVisc[®] Ophthalmic Viscosurgical Device (Sodium Chondroitin Sulfate – Sodium Hyaluronate).

Caution: Federal (USA) law restricts this device to sale by or on the order of a physician.

Description: DisCoVisc[®] Ophthalmic Viscosurgical Device has an intermediate cohesive/dispersive index (CDI) and can best be described as the first viscous dispersive viscoelastic and is optimized for the entire surgical procedure.

Indications: DisCoVisc[®] Ophthalmic Viscosurgical Device is indicated for use during surgery in the anterior segment of the eye. It is designed to create and maintain space, to protect the corneal endothelium and other intraocular tissues and to manipulate tissues during surgery. It may also be used to coat intraocular lenses and instruments during cataract extraction and IOL insertion.

Warnings: Failure to follow assembly instructions or use of an alternate cannula may result in cannula detachment and potential patient injury.

Precautions: Precautions are limited to those normally associated with the surgical procedure being performed. Although sodium hyaluronate and sodium chondroitin sulfate are highly purified biological polymers, the physician should be aware of the potential allergic risks inherent in the use of any biological material.

Adverse Reactions: DisCoVisc[®] Ophthalmic Viscosurgical Device was very well tolerated in nonclinical and clinical studies. A transient rise in intraocular pressure in the early postoperative period may be expected due to the presence of sodium hyaluronate, which has been shown to effect such a rise. It is therefore recommended that DisCoVisc[®] OVD be removed from the anterior chamber by thorough irrigation and/or aspiration at the end of surgery to minimize postoperative IOP increases.

INFINITI[®] VISION SYSTEM

CAUTION: Federal law restricts this device to sale by, or on the order of, a physician. As part of a properly maintained surgical environment, it is recommended that a backup IOL Injector be made available in the event the AutoSert[®] IOL Injector Handpiece does not perform as expected.

INDICATION: The INFINITI[®] Vision System is indicated for emulsification, separation, and removal of cataracts, the removal of residual cortical material and lens epithelial cells, vitreous aspiration and cutting associated with anterior vitrectomy, bipolar coagulation, and intra-ocular lens injection. The INTREPID[®] AutoSert[®] IOL Injector Handpiece is intended to deliver qualified AcrySof[®] intraocular lenses into the eye following cataract removal.

The following system modalities additionally support the described indications:

- Ultrasound with UltraChopper[®] Tip achieves the functionality of cataract separation.
- AquaLase[®] Liquefracture Device achieves the functionality for removal of residual cortical material and lens epithelial cells.
- The INTREPID[®] AutoSert[®] IOL Injector Handpiece achieves the functionality of injection of intraocular lenses. The INTREPID[®] AutoSert[®] IOL Injector Handpiece is indicated for use with AcrySof[®] lenses SN60WF, SN6AD1, SN6AT3 through SN6AT9, as well as approved AcrySof[®] lenses that are specifically indicated for use with this inserter, as indicated in the approved labeling of those lenses.

WARNINGS: Appropriate use of INFINITI[®] Vision System parameters and accessories is important for successful procedures. Use of low vacuum limits, low flow rates, low bottle heights, high power settings, extended power usage, power usage during occlusion conditions (beeping tones), failure to sufficiently aspirate viscoelastic prior to using power, excessively tight incisions, and combinations of the above actions may result in significant temperature increases at incision site and inside the eye, and lead to severe thermal eye tissue damage.

Adjusting aspiration rates or vacuum limits above the preset values, or lowering the IV pole below the preset values, may cause chamber shallowing or collapse which may

Do not overfill anterior chamber.

ATTENTION: Reference the Physician Labeling/Directions for Use for a complete listing of indications, warnings and precautions.

U.S. Patent Nos. 5,273,056; 5,876,379 and 6,051,560.

DuoVisc[®]

Viscoelastic
System

DUOVISC[®] Viscoelastic System is designed to give two viscoelastic materials with different physico-chemical properties that can be used differently and/or sequentially to perform specific tasks during a cataract procedure. **DUOVISC[®] Viscoelastic System** consists of **VISCOAT[®] Ophthalmic Viscosurgical Device** and **PROVISC[®] Ophthalmic Viscosurgical Device**.

CAUTION: Federal law restricts this device to sale by or on the order of a physician.

VISCOAT[®] OVD (Sodium Chondroitin Sulfate – Sodium Hyaluronate) Ophthalmic Viscosurgical Device

INDICATIONS: VISCOAT[®] OVD is indicated for use as an ophthalmic surgical aid in anterior segment procedures including cataract extraction and intraocular lens (IOL) implantation. Viscoat maintains a deep anterior chamber during anterior segment surgeries, enhances visualization during the surgical procedure, and protects the corneal endothelium and other ocular tissues. The viscoelasticity of the solution maintains the normal position of the vitreous face and prevents formation of a flat chamber during surgery.

WARNINGS: Failure to follow assembly instructions or use of an alternate cannula may result in cannula detachment and potential patient injury.

PRECAUTIONS: Precautions are limited to those normally associated with the surgical procedure being performed. Although sodium hyaluronate and sodium chondroitin sulfate are highly purified biological polymers, the physician should be aware of the potential allergic risks inherent in the use of any biological material.

ADVERSE REACTIONS: VISCOAT[®] OVD has been extremely well tolerated in human and animal studies. A transient rise in intraocular pressure in the early postoperative period may be expected due to

the presence of sodium hyaluronate, which has been shown to effect such a rise. It is therefore recommended that Viscoat be removed from the anterior chamber by thorough irrigation and/or aspiration at the end of surgery to minimize postoperative IOP increases. Do not overfill anterior chamber.

ATTENTION: Reference the Physician Labeling/Directions for Use for a complete listing of indications, warnings and precautions.

PROVISC[®] OVD (Sodium Hyaluronate) Ophthalmic Viscosurgical Device

INDICATIONS: ProVisc[®] OVD is indicated for use as an ophthalmic surgical aid in the anterior segment during cataract extraction and intraocular lens (IOL) implantation. Ophthalmic viscoelastics serve to maintain a deep anterior chamber during anterior segment surgery allowing reduced trauma to the corneal endothelium and surrounding ocular tissues. They help push back the vitreous face and prevent formation of a flat chamber during surgery.

PRECAUTIONS: Postoperative increases in intraocular pressure have been reported with sodium hyaluronate products. The IOP should be carefully monitored and appropriate therapy instituted if significant increases should occur. It is recommended that **PROVISC[®] OVD** be removed by irrigation and/or aspiration at the close of surgery. Do not overfill anterior chamber. Although sodium hyaluronate is a highly purified biological polymer, the physician should be aware of the potential allergic risks inherent in the use of any biological material; care should be used in patients with hypersensitivity to any components in this material. Cannula assembly instructions should be followed to prevent patient injury.

ADVERSE REACTIONS: Postoperative inflammatory reactions such as hypopyon and iritis have been reported with the use of ophthalmic viscoelastics, as well as incidents of corneal edema, corneal decompensation, and a transient rise in intraocular pressure.

ATTENTION: Reference the Physician Labeling/Directions for Use for a complete listing of indications, warnings and precautions.

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result in patient injury. When filling handpiece test chamber, if stream of fluid is weak or absent, good fluidics response will be jeopardized. Good clinical practice dictates the testing for adequate irrigation and aspiration flow prior to entering the eye. Ensure that tubings are not occluded or pinched during any phase of operation. The consumables used in conjunction with ALCON[®] instrument products constitute a complete surgical system. Use of consumables and handpieces other than those manufactured by Alcon may affect system performance and create potential hazards.

AES/COMPLICATIONS: Use of the NeoSoniX[®], OZI[®] torsional, U/S, or AquaLase[®] handpieces in the absence of irrigation flow and/or in the presence of reduced or lost aspiration flow can cause excessive heating and potential thermal injury to adjacent eye tissues.

ATTENTION: Refer to the directions for use for a complete listing of indications, warnings and precautions.

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1. Johansson, C. Comparison of Motorized IOL Insertion to Traditional Manual IOL Delivery. ASCRS Presentation, 2011.
2. Allen, D. Experience with Electro-Assisted IOL Injection Device. ASCRS Presentation, 2011.

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1. AcrySof® IQ ReSTOR® IOL Directions for Use.

2. AcrySof® IQ ReSTOR® IOL Clinical trial data on file (models SNGAD1 and SNGAD3). Fort Worth, TX; Alcon Laboratories, Inc.

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INDICATIONS: The AcrySof® IQ ReSTOR® Posterior Chamber Intraocular Lens (IOL) is intended for primary implantation for the visual correction of aphakia secondary to removal of a cataractous lens in adult patients with and without presbyopia, who desire near, intermediate and distance vision with increased spectacle independence. The lens is intended to be placed in the capsular bag.

WARNING/PRECAUTION: Careful preoperative evaluation and sound clinical judgment should be used by the surgeon to decide the risk/benefit ratio before implanting a lens in a patient with any of the conditions described in the Directions for Use labeling. Physicians should target emmetropia, and ensure that IOL centration is achieved. Care should be taken to remove viscoelastic from the eye at the close of surgery.

Some patients may experience visual disturbances and/or discomfort due to multifocality, especially under dim light conditions. Clinical studies with the AcrySof® ReSTOR® lens indicated that posterior capsule opacification (PCO), when present, developed earlier into clinically significant PCO. Prior to surgery, physicians should provide prospective patients with a copy of the Patient Information Brochure available from Alcon for this product informing them of possible risks and

VERION™

IMAGE GUIDED SYSTEM

IMPORTANT SAFETY INFORMATION FOR THE VERION™ REFERENCE UNIT AND VERION™ DIGITAL MARKER

CAUTION: Federal (USA) law restricts this device to sale by, or on the order of, a physician.

INTENDED USES: The VERION™ Reference Unit is a preoperative measurement device that captures and utilizes a high-resolution reference image of a patient's eye in order to determine the radii and corneal curvature of steep and flat axes, limbal position and diameter, pupil position and diameter, and corneal reflex position. In addition, the VERION™ Reference Unit provides preoperative surgical planning functions that utilize the reference image and preoperative measurements to assist with planning cataract surgical procedures, including the number and location of incisions and the appropriate intraocular lens using existing formulas. The VERION™ Reference Unit also supports the export of the high-resolution reference image, preoperative measurement data, and surgical plans for use with the VERION™ Digital Marker and other compatible devices through the use of a USB memory stick.

The VERION™ Digital Marker links to compatible surgical microscopes to display concurrently the reference and microscope images, allowing the surgeon to account for lateral and rotational eye movements. In addition, the planned capsulorhexis position and radius, IOL positioning, and implantation axis from the VERION™ Reference Unit surgical plan can be overlaid on a computer screen or the physician's microscope view.

CONTRAINDICATIONS: The following conditions may affect the accuracy of surgical plans prepared with the VERION™ Reference Unit: a pseudophakic eye, eye fixation problems, a non-intact cornea, or an irregular cornea. In addition, patients should refrain from wearing contact lenses during the reference measurement as this may interfere with the accuracy of the measurements.

Only trained personnel familiar with the process of IOL power calculation and astigmatism correction planning should use the VERION™ Reference Unit. Poor quality or inadequate biometer measurements will affect the accuracy of surgical plans prepared with the VERION™ Reference Unit.

The following contraindications may affect the proper functioning of the VERION™ Digital Marker:

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Studies have shown that color vision discrimination is not adversely affected in individuals with the AcrySof® Natural IOL and normal color vision. The effect on vision of the AcrySof® Natural IOL in subjects with hereditary color vision defects and acquired color vision defects secondary to ocular disease (e.g., glaucoma, diabetic retinopathy, chronic uveitis, and other retinal or optic nerve diseases) has not been studied. Do not resterilize; do not store over 45° C; use only sterile irrigating solutions such as BSS® or BSS PLUS® Sterile Intraocular Irrigating Solutions.

ATTENTION: Reference the Directions for Use labeling for a complete listing of indications, warnings and precautions.

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changes in a patient's eye between preoperative measurement and surgery, an irregular elliptical limbus (e.g., due to eye fixation during surgery, and bleeding or bloated conjunctiva due to anesthesia). In addition, the use of eye drops that constrict sclera vessels before or during surgery should be avoided.

WARNINGS: Only properly trained personnel should operate the VERION™ Reference Unit and VERION™ Digital Marker.

Only use the provided medical power supplies and data communication cable. The power supplies for the VERION™ Reference Unit and the VERION™ Digital Marker must be uninterrupted. Do not use these devices in combination with an extension cord. Do not cover any of the component devices while turned on.

Only use a VERION™ USB stick to transfer data. The VERION™ USB stick should only be connected to the VERION™ Reference Unit, the VERION™ Digital Marker, and other compatible devices. Do not disconnect the VERION™ USB stick from the VERION™ Reference Unit during shutdown of the system.

The VERION™ Reference Unit uses infrared light. Unless necessary, medical personnel and patients should avoid direct eye exposure to the emitted or reflected beam.

PRECAUTIONS: To ensure the accuracy of VERION™ Reference Unit measurements, device calibration and the reference measurement should be conducted in dimmed ambient light conditions. Only use the VERION™ Digital Marker in conjunction with compatible surgical microscopes.

ATTENTION: Refer to the user manuals for the VERION™ Reference Unit and the VERION™ Digital Marker for a complete description of proper use and maintenance of these devices, as well as a complete list of contraindications, warnings and precautions.

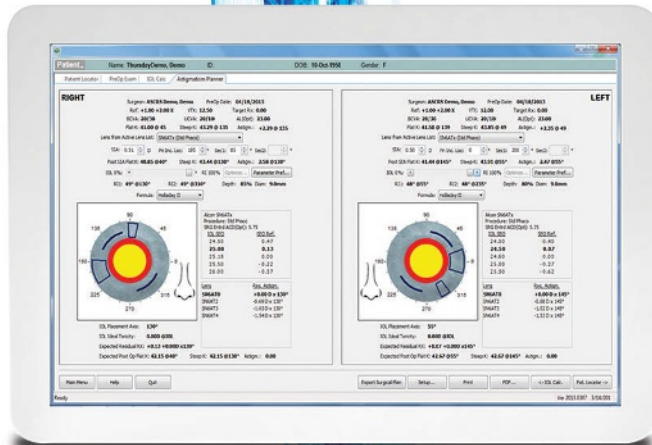
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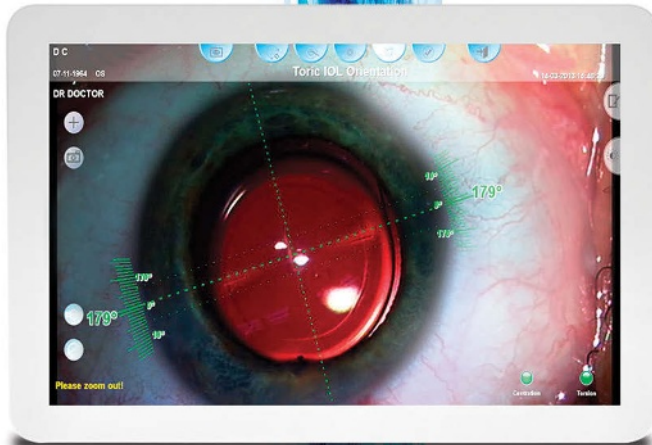
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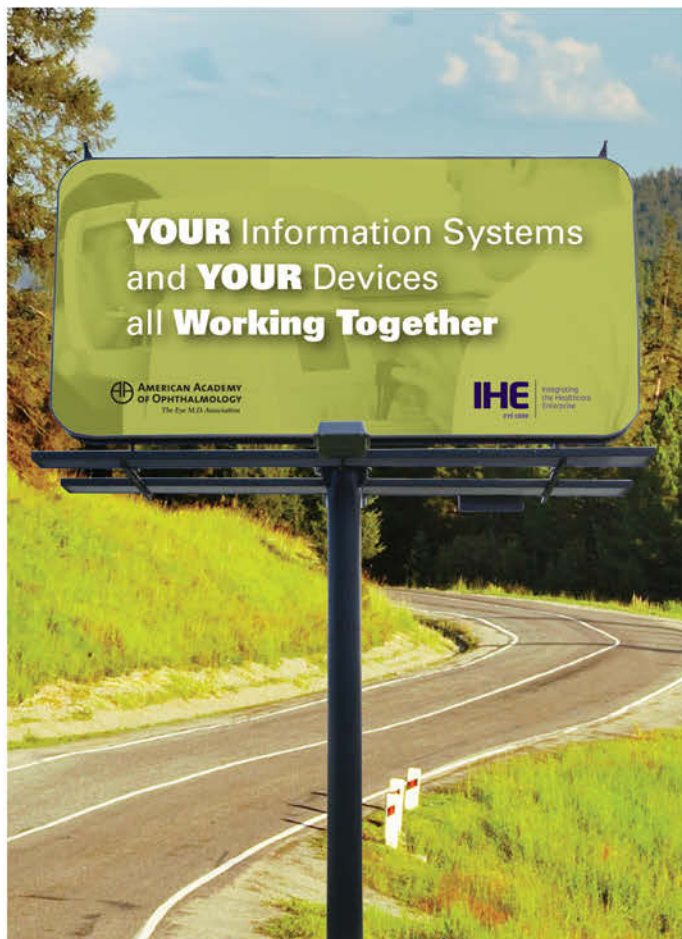
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Jonathan S Collins MD

Women in Ophthalmology
Laura J King MD

The Academy's Council is integral to Academy relations with state, subspecialty and specialized interest ophthalmic societies.

www.aao.org/council



Alcon in New Orleans



November 15-19, 2013 | New Orleans, Louisiana

Friday, November 15

A New Era: Introducing the Centurion® Vision System

New Orleans Marriott (555 Canal Street) - Marriott Carondelet Room

5:30 pm - 7:00 pm

Moderator: Dr. Kerry Solomon

Faculty: Dr. John Berdahl
Dr. Alan Crandall
Dr. Richard Mackool
Dr. Lawrence Woodard

Experience the new era in phacoemulsification. Surgeons will share observations, pearls and future possibilities using the new Centurion® Vision System. Discussion will cover Active Fluidics™ Technology, Balanced Energy™ Technology and Applied Integration™ Technology available with this new platform.

Saturday, November 16

Fixed Combination Therapy, Surgical Research Findings, and Reimbursement

New Orleans Downtown Marriott at the Convention Center (859 Convention Center Blvd.) - Blaine Kern Ballroom

6:30 am - 8:00 am

Moderator: Dr. Robert Fechtner

Faculty: Dr. Andrew Iwach
Dr. Jonathan Myers
Nancy Tuffin

An update on treatment options for elevated intraocular pressure inpatients with open-angle glaucoma or ocular hypertension.

Saturday, November 16

Live Surgery: Advancements in Techniques and Technologies TELECAST in High Definition!

New Orleans Marriott (555 Canal Street) - Marriott Grand Ballroom

6:00 pm - 8:00 pm

Surgeons: Dr. Stephen Brint - Host Surgeon
Dr. James Davison
Dr. Richard Mackool
Dr. Kerry Solomon

Moderator: Dr. Donald Serafino

Faculty: Dr. Stephen Lane
Dr. Michael Lawless
Dr. RJ Mackool
Dr. Arnaldo Espailat Matos

Register now to learn from world-acclaimed surgeons demonstrating their techniques using the latest Alcon® technologies in cataract surgery.

Sunday, November 17

Experience the New Cataract Refractive Suite by Alcon

The Roosevelt New Orleans (123 Baronne Street) - Roosevelt Crescent City Ballroom

5:30 pm - 7:00 pm

Moderator: Dr. Robert Cionni

Faculty: Dr. Jonathan Frantz
Dr. Warren Hill
Dr. Stephen Slade
Dr. Richard Tipperman

Discover the best in class, innovative technologies, designed to streamline and guide your plan through the entire cataract procedure, to reach new efficiencies in the OR during the pre-op, intra-op and post-op period.

Register Online Now!

<http://www.seeuthere.com/AlconAAO2013>



Alcon in New Orleans

Alcon[®]

November 15-19, 2013 | New Orleans, Louisiana

Please note that attendance at this meeting is limited to healthcare professionals.

As a part of Alcon's commitment to complying with relevant legal requirements, we regret that we cannot provide meals for the healthcare professionals licensed in Vermont. In addition, we may be unable to provide meals for healthcare professionals affiliated with state or federal institutions. If you are licensed in Vermont, affiliated with a state or federal institution, or are otherwise unable to accept a meal, other options may be available.

For important safety information about the Alcon products discussed in these programs, please visit the Alcon booth.

These programs are not affiliated with the Academy's official program of the Annual Meeting.

CENTURION[®] Vision System Important Safety Information

Caution: Federal (USA) law restricts this device to sale by, or on the order of, a physician. As part of a properly maintained surgical environment, it is recommended that a backup IOL Injector be made available in the event the AutoSert[®] IOL Injector Handpiece does not perform as expected.

Indication: The CENTURION[®] Vision system is indicated for emulsification, separation, irrigation, and aspiration of cataracts, residual cortical material and lens epithelial cells, vitreous aspiration and cutting associated with anterior vitrectomy, bipolar coagulation, and intraocular lens injection. The AutoSert[®] IOL Injector Handpiece is intended to deliver qualified AcrySof[®] intraocular lenses into the eye following cataract removal. The AutoSert[®] IOL Injector Handpiece achieves the functionality of injection of intraocular lenses. The AutoSert[®] IOL Injector Handpiece is indicated for use with the AcrySof[®] lenses SN6OWF, SN6AD1, SN6AT3 through SN6AT9, as well as approved AcrySof[®] lenses that are specifically indicated for use with this inserter, as indicated in the approved labeling of those lenses.

Warnings: Appropriate use of CENTURION[®] Vision System parameters and accessories is important for successful procedures. Use of low vacuum limits, low flow rates, low bottle heights, high power settings, extended power usage, power usage during occlusion conditions (beeping tones), failure to sufficiently aspirate viscoelastic prior to using power, excessively tight incisions, and combinations of the above actions may result in significant temperature increases at incision site and inside the eye, and lead to severe thermal eye tissue damage. Good clinical practice dictates the testing for adequate irrigation and aspiration flow prior to entering the eye. Ensure that tubings are not occluded or pinched during any phase of operation. The consumables used in conjunction with ALCON[®] instrument products constitute a complete surgical system. Use of consumables and handpieces other than those manufactured by Alcon may affect system performance and create potential hazards.

AEs/Complications: Inadvertent actuation of Prime or Tune while a handpiece is in the eye can create a hazardous condition that may result in patient injury. During any ultrasonic procedure, metal particles may result from inadvertent touching of the ultrasonic tip with a second instrument. Another potential source of metal particles resulting from any ultrasonic handpiece may be the result of ultrasonic energy causing micro abrasion of the ultrasonic tip.

ATTENTION: Refer to the Directions for Use and Operator's Manual for a complete listing of indications, warnings, cautions and notes.

2013 Annual Meeting Overview



Thursday, Nov. 14

Event	Time
Registration	Attendees 4:00 - 6:00 pm
	Exhibitors 7:30 am - 6:00 pm
Ticketed Events	4:00 - 6:00 pm

Friday, Nov. 15

Event	Time
Alumni & Related Group Functions	All Day
Registration	Attendees 7:00 am - 5:00 pm
	Exhibitors 7:30 am - 6:00 pm
Special Meetings & Events	7:30 am - 3:00 pm
Subspecialty Day Meetings	Refractive Surgery 8:00 am - 5:17 pm
	Refractive Surgery E-posters 7:00 am - 5:30 pm
	Retina 8:00 am - 5:12 pm
	Retina Exhibits 9:30 am - 3:30 pm

Saturday, Nov. 16

Event	Time
AAOE/Practice Management Conquering ICD-10-CM for Ophthalmology	8:00 - 11:00 am
AAOE/Practice Management Coding Camp	12:30 - 3:30 pm
AAOE/Practice Management Saturday Programs	8:30 am - 4:00 pm
Academy Café	1:00 - 3:45 pm
Alumni & Related Group Functions	<< 8:30 am & 5:30 pm >>
Exhibition	9:00 am - 5:00 pm
Learning Lounge	12:00 - 5:00 pm
Registration	Attendees 7:00 am - 5:00 pm
	Exhibitors 7:00 am - 5:00 pm
Scientific Posters	9:00 am - 5:00 pm
Scientific Posters Online/Videos on Demand	9:00 am - 5:00 pm
Special Meetings & Events	9:00 am - 4:00 pm
Subspecialty Day Meetings	Cornea 8:00 am - 5:30 pm
	Glaucoma 8:00 am - 5:00 pm
	Neuro-Ophthalmology 8:00 am - 5:05 pm
	Oculofacial Plastic Surgery 8:00 am - 5:05 pm
	Pediatric Ophthalmology 8:00 am - 5:20 pm
	Refractive Surgery 8:00 am - 5:30 pm
	Refractive Surgery E-posters 7:00 am - 5:30 pm
	Retina 8:00 am - 5:38 pm
Symposia	2:00 - 3:30 pm
Technology Pavilion	9:30 am - 5:00 pm
Ticketed Events	7:00 am - 5:00 pm

2013 Annual Meeting Overview

Sunday, Nov. 17

Event		Time
AAOE/Practice Management Courses		2:00 pm - 5:30 pm
AAOE/Practice Management General Session		10:00 am - 12:00 pm
Academy Business Meeting		10:00 - 10:30 am
Academy Café		10:30 am - 3:45 pm
Alumni & Related Group Functions		<< 8:00 am & 5:30 pm >>
Breakfast With the Experts		7:30 - 8:30 am
Exhibition		9:00 am - 5:00 pm
Fall Council Meeting		11:30 am - 5:30 pm
Instruction Courses		9:00 am - 5:30 pm
Learning Lounge		10:30 am - 5:00 pm
Opening Session		8:30 - 10:00 am
Orbital Gala		6:00 - 10:00 pm
Original Paper Sessions		10:15 am - 5:15pm
Registration	Attendees	8:00 am - 5:00 pm
	Exhibitors	7:30 am - 5:00 pm
Scientific Posters		7:30 am - 5:00 pm
Scientific Posters Online/Videos on Demand		7:30 am - 5:00 pm
Scientific Poster Tours		12:30 - 1:30 pm
Skills Transfer Courses		8:00 am - 5:30 pm
Special Meetings & Events		6:30 am - 4:00 pm
Symposia and Spotlight Sessions		8:00 am - 5:15 pm
Technology Pavilion		9:30 am - 5:00 pm
Ticketed Events		7:00 am - 5:00 pm
Young Ophthalmologist (YO) Program		10:00 am - 2:00 pm

Monday, Nov. 18

Event		Time
AAOE/Practice Management Courses		9:00 am - 5:30 pm
Academy Café		8:30 - 11:45 am
Alumni & Related Group Functions		<< 8:00 am & 5:30 pm >>
Breakfast With the Experts		7:30 - 8:30 am
Exhibition		9:00 am - 5:00 pm
Instruction Courses		9:00 am - 5:30 pm
Learning Lounge		9:00 am - 5:00 pm
Original Paper Sessions		8:30 am - 5:15 pm
Registration	Attendees	8:00 am - 5:00 pm
	Exhibitors	7:30 am - 5:00 pm
Scientific Posters		7:30 am - 5:00 pm
Scientific Posters Online/Videos on Demand		7:30 am - 5:00 pm

2013 Annual Meeting Overview



Monday, Nov. 18 (cont.)

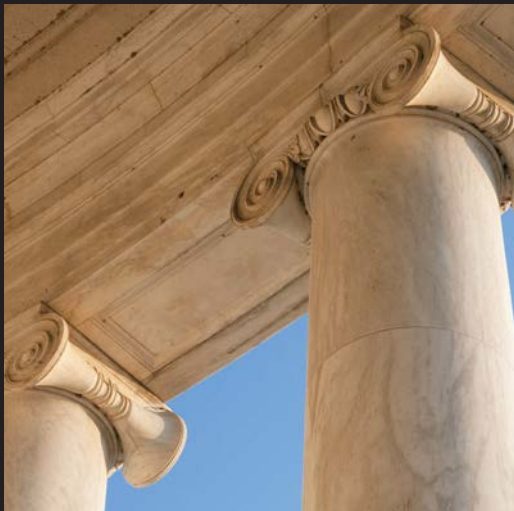
Event	Time
Scientific Poster Tours	12:30 - 1:30 pm
Senior Ophthalmologist (SO) Program	2:30 - 5:00 pm
Skills Transfer Courses	7:30 am - 5:30 pm
Special Meetings & Events	12:30 - 5:00 pm
Symposia and Spotlight Sessions	8:15 am - 5:15 pm
Technology Pavilion	9:30 am - 5:00 pm
Ticketed Events	7:00 am - 5:00 pm

Tuesday, Nov. 19

Event	Time	
AAOE/Practice Management Courses	9:00 am - 3:00 pm	
Academy Café	8:30 - 9:45 am	
Alumni & Related Group Functions	<< 8:00 am & 5:30 pm >>	
Breakfast With the Experts	7:30 - 8:30 am	
Exhibition	9:00 am - 1:00 pm	
Instruction Courses	9:00 am - 5:30 pm	
Learning Lounge	9:00 am - 12:00 pm	
Original Paper Sessions	8:30 am - 12:00 pm	
Registration	Attendees	8:00 am - 1:00 pm
	Exhibitors	7:30 am - 1:00 pm
Scientific Posters	7:30 am - 3:00 pm	
Scientific Posters Online/Videos on Demand	7:30 am - 5:30 pm	
Skills Transfer Courses	7:30 am - 5:00 pm	
Symposia	8:30 am - 12:00 pm	
Technology Pavilion	9:30 am - 12:30 pm	
Ticketed Events	7:00 am - 3:00 pm	

Wednesday, Nov. 20

Event	Time
27° Lo Mejor de la Academia en Español 2013 (The Best of the Academy in Spanish 2013)	7:00 am - 5:00 pm



SAVE THE DATE!

There's strength in numbers. Lobby on Capitol Hill for ophthalmology's top legislative issues including advocating for fair Medicare physician payment, reducing regulatory burdens and vision research. Meet face-to-face with your Members of Congress and show the might of our members at this important opportunity. It's the most effective way to protect the interests of our profession and our patients.

CONGRESSIONAL ADVOCACY DAY

APRIL 9 - 10, 2014

WASHINGTON, DC

"Congressional Advocacy Day is a vital part of your membership and a fantastic opportunity to get updated on critical issues related to ophthalmic advocacy. Each year hundreds of Academy members advocate for our profession and patients. Join me and your colleagues in Washington, D.C. in 2014"

Paul Sternberg, Jr., MD
Academy President



REGISTRATION OPENS IN JANUARY 2014.

Congressional Advocacy Day is open to all Academy members and registration is free.

www.aao.org/myf

 **AMERICAN ACADEMY
OF OPHTHALMOLOGY**
The Eye M.D. Association

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More Experts. More Insights. More Solutions.

Join us at the Abbott Medical Optics Speakers Forum
at the 2013 AAO Annual Meeting

Saturday, November 16th

- ▶ 10:15 am–10:45 am
New Phaco Techniques for Laser Cataract Surgery
Tal Raviv MD – Moderator
William Culbertson MD, Robert Rivera MD
- ▶ 11:00 am–11:45 am
IOL Customization and Premium Lens Design for High-Quality Visual Outcomes
Roger Steinert MD – Moderator
Daniel Chang MD, Jessica Ciralsky MD
- ▶ 12:00 pm–12:45 pm
Innovation in Laser Cataract Surgery With the Catalys® Precision Laser System
William Wiley MD – Moderator
Burkhard Dick MD, PhD; Shachar Tauber MD
- ▶ 1:00 pm–1:45 pm
Optimizing Premium IOL Outcomes With Laser Cataract Surgery
Mark Blecher MD – Moderator
Shamik Bafna MD, Jason Jones MD
- ▶ 2:00 pm–3:00 pm
Surgical Surprises: Pearls for Managing Complicated Cases
David Chang MD – Moderator
Steven Dewey MD, Sam Garg MD, David Yan MD

Sunday, November 17th

- ▶ 10:30 am–11:15 am
Successful Management of Astigmatic Correction With a New Toric IOL
Doug Koch MD – Moderator
Ike Ahmed MD, Elizabeth Yeu MD
- ▶ 11:30 am–12:15 pm
The Business Case and Workflow Integration for Laser Cataract Surgery
Subba Gollamudi MD – Moderator
James Khodabakhsh MD, Mike Mann MD
- ▶ 1:00 pm–1:45 pm
Evaluating the Cornea and Ocular Surface: Keys to Successful Surgical Outcomes
Kenneth Greenberg MD – Moderator
Sandy Feldman MD, James Loden MD
- ▶ 2:00 pm–2:45 pm
Expanding Your Refractive Cataract Practice With Premium IOLs
Kerry Assil MD – Moderator
Elizabeth Davis MD, Keith Walter MD
- ▶ 3:00 pm–3:45 pm
The Advantages of Using the Liquid Optics Interface in Laser Cataract Surgery
Jonathan Talamo MD – Moderator
Lisa Arbisser MD, Barry Seibel MD

Important Safety Information

INDICATION: The OptiMedica® Catalys™ Precision Laser System is indicated for use in patients undergoing cataract surgery for removal of the crystalline lens. Intended uses in cataract surgery include anterior capsulotomy, phacofragmentation, and the creation of single plane and multi-plane arc cuts/incisions in the cornea, each of which may be performed either individually or consecutively during the same procedure. **ADVERSE EFFECTS:** Complications associated with the Catalys® System include mild Petechiae and subconjunctival hemorrhage due to vacuum pressure of the Liquid Optics™ Interface suction ring. Potential complications and adverse events include those generally associated with the performance of capsulotomy and lens fragmentation, or creation of a partial-thickness or full-thickness cut or incision of the cornea. **CAUTION:** Federal law (USA) restricts this device to sale by or on the order of a physician. The system should be used only by qualified physicians who have extensive knowledge of the use of this device and have been trained and certified by OptiMedica.

Visit www.AbbottMedicalOptics.com/forums
to register early and organize your conference calendar*

*Speakers subject to change. Booth presentations are not affiliated with the official program of the meeting.
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All locations are in the Ernest N. Morial Convention Center, New Orleans, unless otherwise indicated.

AAO Meetings On Demand (Subspecialty Day and Annual Meeting Content)	Lobby G; Hall G, Booth 3643; The Great Hall Lobby (Fri. - Mon.)
AAOE Coding Sessions (Saturday)	Room 293
AAOE Practice Management and Coding Center, ICD-10-CM, Conversations With the Experts	Academy Resource Center, Hall G, Booth 3239
AAOE Member Lounge	Room 298
AAOE Program	Rooms 283 - 297
Academy Café	Room 271
Academy Resource Center	Hall G, Booth 3239
Bags and Programs	Hall C
Bistro AAO Café	Hall I1, Booth 5223
Breakfast With the Experts	Hall C
Business Center/UPS Store	Lobby E
Chicago 2014	Lobby E
CME Reporting/Proof-of-Attendance	Lobby B2; Lobby G; Academy Resource Center, Hall G, Booth 3239
Coat and Bag Check	Lobby E; also Lobby B and Lobby H (Mon. & Tues. only)
Evaluation Help Desk	Ticketed Events, Hall C
Executive Offices	Room 261
Exhibition	Halls D – I1
Exhibitor Locator Booth	Hall G, Booth 3105
Exhibitor Lounge (Wi-Fi available)	Hall E, Booth 2571
Exhibitor Registration	Hall C
Exhibitor Service Center/Exhibitions Office	Hall E, Booth 1071
First Aid	Lobby F and Lobby H
Foundation of the American Academy of Ophthalmology (FAAO)	Academy Resource Center, Hall G, Booth 3239
Global Alliance Office	Room 264
Hotel Assistance	Lobby E
Informational Posters	Hall I1, Booth 5113
International Center	Hall I1, Booth 5313
International Society of Refractive Surgery	Academy Resource Center, Hall G, Booth 3239
Internet Access and Email	Lobby G; Rest Stops Hall D & Hall I1
Learning Lounge	Hall G, Booth 3647
Lost and Found	Meetings Office, Room 265
Meditation/Prayer Room	Room J121
Meeting Information	Lobby B & Lobby G
Meetings Office	Room 265
Mobile Device Charging Stations	Rest Stops Hall D & Hall I1
Mobile Meeting Guide Assistance	Tech Bar - Rest Stop Hall I1
Mobile Meeting Guide Download	www.aao.org/mobile
Museum of Vision®	Hall G, Booth 3147
Newsroom	Room 276
Ophthalmic Mutual Insurance Company (OMIC)	Hall G, Booth 3139
Ophthalmology Job Center	Room 280
OPHTHPAC/Surgical Scope	Lobby B
Proof-of-Attendance/CME Reporting	Lobby G; Lobby B2; Academy Resource Center, Hall G, Booth 3239
Publishers' Row	Hall H
Registration	Hall C
Rest Stop Hall D	Booth 153
Rest Stop Hall I1	Booth 5444

Meeting Directory

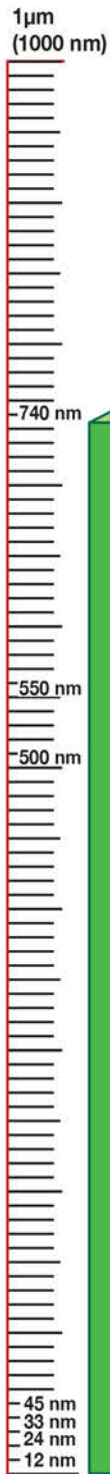
Restaurant Reservations	Lobby E
Ribbons	Bags & Programs, Hall C
Scientific Posters	Hall C
Scientific Poster Tours	Meeting Point, Hall C
Scientific Posters Online/Videos on Demand	Hall C, Booth 100
Seated Massage Stations	Rest Stop Hall I1
Senior Ophthalmologist (SO) Lounge	Room 242
Shuttle Bus Pick-up and Drop-off	Routes 1-4: Hall A/B; Routes 5-7: Hall D/E; Routes 8-10: Hall I
Speaker Ready Room #1	Rivergate Ballroom
Speaker Ready Room #2	Room 267
Subspecialty Day	
Cornea	La Nouvelle Orleans C
Glaucoma	New Orleans Theatre AB
Neuro Ophthalmology	New Orleans Theatre C
Oculofacial Plastic Surgery	Room 243
Pediatric Ophthalmology	Hall B Session Room
Refractive Surgery	La Nouvelle Orleans AB
Refractive Surgery E-Posters	La Nouvelle Orleans Lobby
Refractive Surgery Free Papers (Friday only)	La Nouvelle Orleans C
Retina	The Great Hall
Retina Exhibits (Friday only)	Hall B
Tech Bar	Rest Stop Hall I1
Technology Pavilion	Hall I1, Booth 5145
The Electronic Office (IHE)	Hall G, Booth 3851
Ticketed Events	Hall C
Tour Program Departures	Lobby D/E
Videos on Demand/ Scientific Posters Online	Hall C, Booth 100
Wi-Fi Access	Rest Stops Hall D & Hall I1
Young Ophthalmologist (YO) Lounge	Room 278



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A NEW INNOVATION IN NANO LIPID TECHNOLOGY
FOR DRY EYE RELIEF

SCALE COMPARISON OF NANOLIPID PARTICLE SIZE
BASED ON AVERAGE FROM THE GAUSSIAN DISTRIBUTION OF PARTICLES IN OPHTHALMIC PRODUCTS



THE NanoTears[®] ADVANTAGES

- A Clear Emollient Artificial Solution Engineered to Contain Polar Natural Oil.
- The Size of the Lipid Particles Ranges From 5 nm to 50 nm.
- Comfortable Upon Instillation, with Minimum Blur/Haze.
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- Increase Tear Break-up Time.
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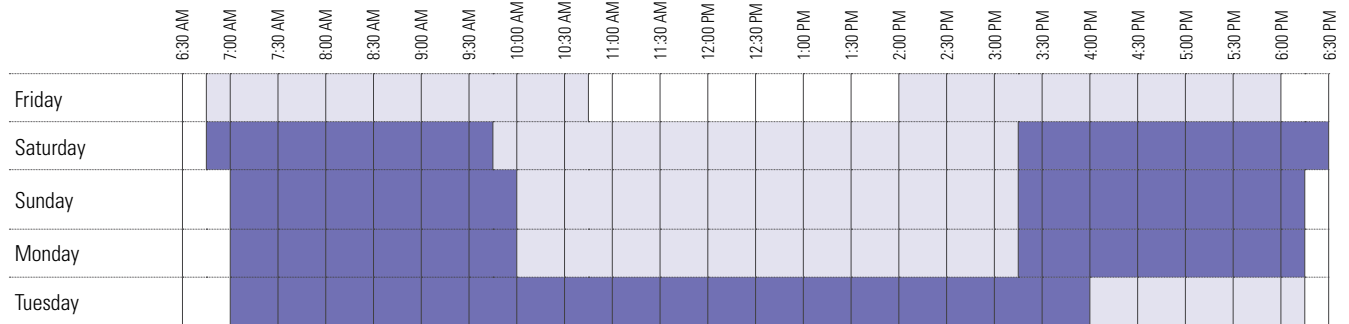
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Shuttle Bus Schedule

Continuous shuttle bus service will operate between most of the official Academy hotels and Ernest N. Morial Convention Center from Friday, Nov. 15 through Tuesday, Nov. 19. Times of operation and boarding locations are subject to change. Check the route list to determine which route serves your hotel. Shuttles will drop off and pickup curbside at: Routes 1-4, Hall A/B; Routes 5-7, Hall D/E; and Routes 8-10, Hall I. Additional shuttle information and updates will be available at your hotel and the Morial Convention Center. Please note: Hotel rates include \$8 to partially defray shuttle costs.



- During peak hours shuttles will run every 12 to 15 minutes.
- During non-peak hours shuttles will run every 20 to 25 minutes.

Hotel	Address in New Orleans	Phone	Route #	Boarding Location
Ambassador Hotel	535 Tchoupitoulas Street	(504) 527-5271	4	Loews New Orleans Hotel
Astor Crowne Plaza Hotel	739 Canal Street	(504) 962-0500	7	Curbside on Canal St
Best Western PLUS St. Christopher Hotel	114 Magazine Street	(504) 648-0444	8	Country Inn & Suites New Orleans
Bienville House Hotel	320 Decatur Street	(504) 529-2345	1	Corner of Bienville & Chartres Streets
Blake Hotel New Orleans	500 St. Charles Avenue	(504) 522-9000	9	Whitney Wyndham Hotel
Bourbon Orleans Hotel	717 Orleans Street	(504) 523-2222	2	Corner of Toulouse & Bourbon Streets
Country Inn & Suites New Orleans	315 Magazine Street	(504) 324-5400	8	Across Street from Hotel on Magazine St
Courtyard New Orleans Convention Center	300 Julia Street	(504) 598-9898	walk	N/A
Courtyard New Orleans Dwtwn/French Quarter	124 St. Charles Avenue	(504) 581-9005	6	JW Marriott New Orleans
Courtyard New Orleans Iberville	910 Iberville Street	(504) 523-2400	7	Ritz-Carlton New Orleans
Dauphine Orleans Hotel	415 Dauphine Street	(504) 586-1800	1	Corner of Bienville & Dauphine Streets
Doubletree Hotel New Orleans	300 Canal Street	(504) 581-1300	5	On Tchoupitoulas, Across Street from Hotel
Drury Inn & Suites New Orleans	820 Poydras Street	(504) 529-7800	9	Curbside on Poydras St
Embassy Suites New Orleans Conv Center	315 Julia Street	(504) 525-1993	walk	N/A
Four Points by Sheraton French Quarter	541 Bourbon Street	(504) 524-7611	2	Corner of Toulouse & Bourbon Streets
Hampton Inn & Suites New Orleans Conv Center	1201 Convention Center Blvd.	(504) 566-9990	walk	N/A
Hampton Inn New Orleans Downtown	226 Carondelet Street	(504) 529-9990	8	Curbside on Carondelet St
Harrah's New Orleans	228 Poydras Street	(504) 533-6000	4	Loews New Orleans Hotel
Hilton Garden Inn New Orleans Convention Center	1001 S Peters Street	(504) 525-0044	walk	N/A
Hilton Garden Inn French Quarter/CBD	821 Gravier Street	(504) 324-6000	8	Hampton Inn New Orleans Downtown
Hilton New Orleans Riverside	2 Poydras Street	(504) 561-0500	walk	N/A
Hilton New Orleans St. Charles Ave.	333 St. Charles Avenue	(504) 524-8890	8	Curbside on Poydras St at St. Charles Ave.
Holiday Inn New Orleans Downtown Superdome	330 Loyola Avenue	(504) 581-1600	10	Curbside in Front of Hotel
Hotel Le Marais	717 Conti Street	(504) 525-2300	1	Corner of Bienville & Royal Streets
Hotel Mazarin	730 Bienville Street	(504) 581-7300	1	Corner of Bienville & Royal Streets
Hotel Monteleone	214 Royal Street	(504) 523-3341	3	New Orleans Marriott
Hotel Provincial	1024 Chartres Street	(504) 581-4995	2	Corner of Toulouse & Chartres Streets
Hyatt French Quarter	800 Iberville Street	(504) 586-0800	7	Ritz-Carlton New Orleans
Hyatt Place New Orleans Conv Center	881 Convention Center Blvd.	(504) 524-1881	walk	N/A
Hyatt Regency New Orleans	601 Loyola Avenue	(504) 561-1234	9	Tunnel/Breezeway to Front Desk Lobby Area
InterContinental New Orleans	444 St. Charles Avenue	(504) 525-5566	8	Curbside on Poydras St at St. Charles Ave.
International House	221 Camp Street	(504) 553-9550	4	Corner of Camp & Gravier Streets

Shuttle Bus Schedule

Shuttle Bus Schedule

Hotel	Address in New Orleans	Phone	Route #	Boarding Location
JW Marriott New Orleans	614 Canal Street	(504) 525-6500	6	Curbside on Canal St
La Quinta Inn & Suites New Orleans Downtown	301 Camp Street	(504) 598-9977	4	Corner on Camp & Gravier Streets
Le Pavillon Hotel	833 Poydras Street	(504) 581-3111	10	Across Street on Baronne St
Loews New Orleans Hotel	300 Poydras Street	(504) 595-3300	4	Curbside on Poydras St
Maison Dupuy Hotel	1001 Toulouse Street	(504) 586-8000	2	Corner of Toulouse & Burgundy Streets
New Orleans Marriott	555 Canal Street	(504) 581-1000	3	Curbside on Canal St
New Orleans Marriott at the Conv Center	859 Convention Center Blvd.	(504) 613-2888	walk	N/A
Omni Royal Crescent Hotel	535 Gravier Street	(504) 527-0006	4	Corner of Camp & Gravier Streets
Omni Royal Orleans Hotel	621 St. Louis Street	(504) 529-5333	2	Corner of Toulouse & Chartres Streets
Renaissance New Orleans Arts Hotel	700 Tchoupitoulas Street	(504) 613-2330	walk	N/A
Renaissance New Orleans Pere Marquette Hotel	817 Common Street	(504) 525-1111	8	Hampton Inn New Orleans Downtown
Residence Inn New Orleans Conv Center	345 St. Joseph Street	(504) 522-1300	walk	N/A
Ritz-Carlton New Orleans	921 Canal Street	(504) 524-1331	7	Curbside on Canal St
Roosevelt New Orleans, A Waldorf Astoria Hotel	123 Baronne Street	(504) 648-1200	10	Curbside on Baronne St
Royal Sonesta Hotel	300 Bourbon Street	(504) 586-0300	1	Corner of Bienville & Bourbon Streets
Royal St. Charles Hotel	135 St. Charles Avenue	(504) 599-2119	6	JW Marriott New Orleans
Saint Hotel New Orleans	931 Canal Street	(504) 522-5400	7	Ritz-Carlton New Orleans
Saint James Hotel	330 Magazine Street	(504) 304-4000	8	Country Inn & Suites New Orleans
Sheraton New Orleans Hotel	500 Canal Street	(504) 525-2500	6	Curbside on Canal St
SpringHill Suites New Orleans Conv Center	301 St. Joseph Street	(504) 522-3100	walk	N/A
Staybridge Suites New Orleans	501 Tchoupitoulas Street	(504) 571-1818	4	Loews New Orleans Hotel
W New Orleans French Quarter	316 Chartres Street	(504) 581-1200	1	Corner of Bienville & Chartres Streets
W New Orleans Hotel	333 Poydras Street	(504) 525-9444	5	Corner of Tchoupitoulas & Poydras Streets
Westin New Orleans Canal Place	100 Rue Iberville	(504) 566-7006	5	Front Entrance on Iberville St
Whitney Wyndham Hotel	610 Poydras Street	(504) 581-4222	9	Curbside on Poydras Street
Windsor Court Hotel	300 Gravier Street	(504) 523-6000	5	Doubletree Hotel New Orleans
Wyndham Garden Baronne Plaza New Orleans	201 Baronne Street	(504) 522-0083	10	Curbside on Baronne St
Wyndham New Orleans French Quarter	124 Royal Street	(504) 529-7211	7	Ritz-Carlton New Orleans
Wyndham Riverfront New Orleans	701 Convention Center Blvd.	(504) 524-8200	walk	N/A

CATARACT ASTIGMATISM



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for your astigmatic cataract patients.

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ACRYSOF[®] IQ
TORIC
ASTIGMATISM IOL

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CAUTION: Federal (USA) law restricts this device to the sale by or on the order of a physician.

INDICATIONS: The AcrySof[®] IQ Toric posterior chamber intraocular lenses are intended for primary implantation in the capsular bag of the eye for visual correction of aphakia and pre-existing corneal astigmatism secondary to removal of a cataractous lens in adult patients with or without presbyopia, who desire improved uncorrected distance vision, reduction of residual refractive cylinder and increased spectacle independence for distance vision.

WARNING/PRECAUTION: Careful preoperative evaluation and sound clinical judgment should be used by the surgeon to decide the risk/benefit ratio before implanting a lens in a patient with any of the conditions described in the Directions for Use labeling. Toric IOLs should not be implanted if the posterior capsule is ruptured, if the zonules are damaged, or if a primary posterior capsulotomy is planned. Rotation can reduce astigmatic correction; if necessary lens repositioning should occur as early as possible prior to lens encapsulation. All viscoelastics should be removed from both the anterior and posterior sides of the lens; residual viscoelastics may allow the lens to rotate.

Optical theory suggests that high astigmatic patients (i.e. > 2.5 D) may experience spatial distortions. Possible toric IOL related factors may include residual cylindrical error or axis misalignments. Prior to surgery,

physicians should provide prospective patients with a copy of the Patient Information Brochure available from Alcon for this product informing them of possible risks and benefits associated with the AcrySof[®] IQ Toric Cylinder Power IOLs.

Studies have shown that color vision discrimination is not adversely affected in individuals with the AcrySof[®] Natural IOL and normal color vision. The effect on vision of the AcrySof[®] Natural IOL in subjects with hereditary color vision defects and acquired color vision defects secondary to ocular disease (e.g., glaucoma, diabetic retinopathy, chronic uveitis, and other retinal or optic nerve diseases) has not been studied. Do not resterilize; do not store over 45° C; use only sterile irrigating solutions such as BSS[®] or BSS PLUS[®] Sterile Intraocular Irrigating Solutions.

ATTENTION: Reference the Directions for Use labeling for a complete listing of indications, warnings and precautions.

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Laureate Recognition Award

In September 2002, the Board of Trustees approved an award program to induct individuals as Academy Laureates—outstanding ophthalmologists whose significant scientific contribution to the field has shaped the way modern ophthalmology is practiced. The Laureate award program recognizes individuals from around the world who have made exceptional scientific contributions to the betterment of eye care, leading to the prevention of blindness and the restoration of sight worldwide.

The Laureate Recognition Award may be given to individuals who have:

- Developed new techniques now accepted worldwide
- Designed a seminal invention or an adaptation of previous technology
- Developed a new treatment modality
- Discovered the etiology of a disease state
- Reassessed previous findings resulting in a significant shift in treatment
- Established new standards of quality care in ophthalmology
- Made a breakthrough in genetic understanding
- Led primary research in new pharmacological products
- Focused on eye care for people worldwide

On behalf of the Board of Trustees, we are pleased to announce the 2013 Academy Laureate.



LAUREATE OF THE
AMERICAN ACADEMY
OF OPHTHALMOLOGY



2013 Laureate Award

Daniel M Albert MD

Daniel M. Albert is a native of Newark, New Jersey. He graduated cum laude with a bachelor of science degree from Franklin and Marshall College in Lancaster, Pennsylvania and went on to receive his medical schooling at the University of Pennsylvania School of Medicine. An ophthalmology residency followed at the same institution under the legendary Dr. Harold Scheie.

Fellowship training was next for Dr. Albert. He undertook two of them: the first as a clinical associate at the National Institute of Neurological Diseases and Blindness, the forerunner of the National Eye Institute; the second as an NIH Special Fellow in Ophthalmic Pathology at the Armed Forces Institute of Pathology under the tutelage of the late Academy Laureate Lorenz E. Zimmerman, putatively the father of ophthalmic pathology. During this fellowship, Dr. Albert formulated what has turned out to be the research foundation of his entire laboratory career as he described the ultrastructure of retinoblastoma and melanoma and established animal models of these tumors.

Dr. Albert's academic career began at Yale University and continued at Harvard University and the Massachusetts Eye and Ear Infirmary. In Boston, Dr. Albert was a protégée and long-time close friend of the late and renowned Dr. David Cogan, Director of the Howe Laboratory at Harvard Medical School. Particularly meaningful for Dr. Albert was his being appointed in 1983 to the Cogan Chair in Ophthalmology at Harvard.

Since 1992, when Dr. Albert moved to Madison to become department chair, he has been on the faculty of the University of Wisconsin Medical School where he is now Chair Emeritus of Ophthalmology and Visual Sciences, the Frederick Allison Davis Chair, the Lorenz Zimmerman Professor and Founding Director of the McPherson Eye Research Institute. There, he continues to study tumor growth and inhibition, the subject of his interest throughout his career. Having delved in depth into the antitumor properties of vitamin D compounds and finding that they can cause apoptosis and block tumor angiogenesis to inhibit growth of retinoblastoma cells in vitro, Dr. Albert is hopeful that an effective treatment molecule will evolve to treat this tumor. More recently, Dr. Albert has studied resveratrol which he has found to inhibit and sometimes block tumor growth in animal models of cancer, one of which is uveal melanoma. He is hopeful that compatible formulations of resveratrol and effective ways to deliver the drug will serve as an efficacious treatment for melanoma and for prevention or treatment of metastatic disease. At present, Dr. Albert's research extends his tumor inhibition studies to employ antiangiogenesis compounds to treat wet age-related macular degeneration. He is a co-investigator on a new federal grant with responsibility for the pathology studies on animal models in pre-clinical testing.

A prolific contributor to the medical literature, Dr. Albert has well over 800 publications to his credit including peer-reviewed papers, editorials, textbooks and book chapters. A widely used general ophthalmology text, *Principles and Practice of Ophthalmology*, is now in its third edition with Dr. Albert continuing as its senior editor. Notably, the book's original edition received the Association of American Publishers Best Medical Book award in 1993. Beyond his outsized record of laboratory and clinical publications, Dr. Albert is a renowned ophthalmic historian, having published widely in the field including texts that encompass the breadth of ophthalmic history. What is more, Dr. Albert has served the profession as an editorial board member of nine scientific journals, most notable of which was his recently-completed 20-year stint as editor-in-chief of *Archives of Ophthalmology*—newly re-named as *JAMA Ophthalmology*. Also serving the profession through organizational activities, notable involvement includes Dr. Albert's role as a director of the American Board of Ophthalmology from 1997-2005 and his selection as President of the American Ophthalmological Society from 2005-2006.

As one might imagine, Dr. Albert's enormous achievements have been recognized time and again with important awards and recognition. Notable examples include the Friedenwald Award from the Association for Research in Vision and Ophthalmology, the Zimmerman Medal of the American Association of Ocular Pathologists, the Humboldt Research Award of the Alexander Humboldt Foundation, the Pisart Vision Award, the Albert C. Muse Prize for excellence in ophthalmology, the Research to Prevent Blindness Special Research Scholar Award and the Lucien Howe Medal from the American Ophthalmological Society. In addition, Dr. Albert was among the youngest individuals ever elected to membership in *Academia Ophthalmologica Internationalis*. To recognize Dr. Albert's achievements, in 2008 the University of Wisconsin-Madison School of Medicine and Public Health established the Daniel M. Albert Chair in Visual Sciences.

The Academy is pleased to present its 2013 Laureate Award to Daniel M. Albert, M.D., in recognition of his seminal contributions to Ophthalmology including those in patient care, education, research, ophthalmic history, medical ethics, journal editing and administration.

Laureate Recognition Awardees

2012



Stephen J Ryan MD

Recognized for his valuable and innumerable contributions to the field of vitreoretinal disease and ocular trauma. Dr. Ryan's key leadership in major national and international organizations has reshaped not only ophthalmology but the entire field of medicine.

2011



Alfred Sommer MD MHS

Recognized for his remarkable career and lasting contributions to ophthalmology, epidemiology and public health worldwide through his discovery of the link between vitamin A deficiency and childhood blindness and mortality.

2010



Bradley R Straatsma MD JD

Recognized for his unique contributions to the science of ophthalmology through innovative research in posterior segment pathology and his leadership in enhancing ophthalmic education institutions and organizations worldwide.

2009



Bernard Becker MD

Recognized as a pioneer in ophthalmic research, clinical care, education and leadership. He is widely accepted as a world expert on the treatment of intraocular pressure regulation and neuroprotection of the optic nerve.

2008



Professor Alan C Bird MD

Recognized as a pioneer in ophthalmic research, teaching and clinical medicine. He is one of the world's experts on the treatment of retinal vascular disease and genetic and degenerative retinal disorder.

2007



Claes H Dohlman MD

Recognized as the founder of modern corneal science and for his years of teaching and educating young ophthalmologists in the field of cornea.

2006



Lorenz E Zimmerman MD

Widely recognized for his many contributions to our understanding of a broad spectrum of diseases of the eye and for his ability to clearly communicate his cogent observations to ophthalmologists in clinical practice through a series of seminal publications and lucid lectures.

2005



Arnall Patz MD

A gifted teacher and clinician who saved the sight of an untold number of newborns when he suspected oxygen had a role in the alarming number of retrolental fibroplasia cases among premature infants.

2004



Danièle S Aron Rosa MD PhD

Honorary Professor and Chair of Ophthalmology, Park University and Chair of Ophthalmology at Hospital Robert Debrè and Foundation Rothschild in Paris and inventor of the YAG Laser for the treatment of posterior capsule opacity (secondary cataract).



J Donald M Gass MD

Professor at both the University of Miami School of Medicine and Vanderbilt University in Nashville, well known for his research on diseases of the retina, macula and uvea, much of which was done in Miami.



Marshall M Parks MD

Almost single-handedly created the subspecialty field of pediatric ophthalmology and world-renowned for his contributions to understanding and treating amblyopia and strabismus.

2003



Charles D Kelman MD

New York Medical College clinical professor of ophthalmology and attending surgeon at the New York Eye and Ear Infirmary and the Manhattan Eye, Ear and Throat Hospital, pioneered phacoemulsification and invented the cryoprobe.



Robert Machemer MD

Former chairman of the Department of Ophthalmology, Duke University, Durham, N.C., invented the vitreous infusion suction cutter, which allowed surgeons to more safely remove vitreous from the eye.



Charles L Schepens MD

Harvard Medical School clinical professor emeritus, and president of the Eye Research Institute of the Retina Foundation, is the father of modern retinal surgery.

Special Awards



Recipients of the following awards attend the Annual Meeting as guests of the president. The Academy formally presents them with an award during the opening ceremonies. Descriptions of each award bestowed by the Academy are below; however, not all awards are presented each year.

Guests of Honor

Each president has the privilege of selecting individuals as Guests of Honor at the Annual Meeting. Individuals are selected in recognition of their significant contribution to ophthalmology and to the Academy.

Distinguished Service Award

The Distinguished Service Award honors an individual or organization for ongoing notable service to ophthalmology and to the Academy. The president has the honor of selecting the recipient of this award, with approval of the Board of Trustees.

Special Recognition Award

First awarded in 1991, the Special Recognition Award is presented to an individual or organization for outstanding service in a specific effort or cause that improves the quality of eye care. The recipient need not be an ophthalmologist. The president has the honor of selecting the recipient of this award, with approval of the Board of Trustees.

Outstanding Humanitarian Service Award

First awarded in 1992, the Outstanding Humanitarian Service Award recognizes the contributions of Academy Fellows and Members in selflessly providing medical eye care. Each year this award is presented to individuals for their participation in charitable activities, indigent care, community service, or other humanitarian activities. The Academy's Awards Committee reviews nominations and selects awardees, with final approval by the Board of Trustees.

Straatsma Award for Excellence in Resident Education

Established through the Academy, the Association of University Professors of Ophthalmology (AUPO), and private funds, the Straatsma Award for Excellence in Resident Education is given to a program director dedicated to the principles and significance of residency education.

International Blindness Prevention Award

Established in 1992, the International Blindness Prevention Award honors individuals who have made significant contributions to the prevention of blindness or the restoration of sight around the world.

Outstanding Advocate Award

The Outstanding Advocate award, established in 2008, recognizes Academy members' participation in advocacy-related efforts at either the state and/or federal levels. The Academy's Awards Committee reviews nominations and selects awardees, with final approval by the Board of Trustees.

Guest of Honor



Thomas M Aaberg Sr MD

It is with great respect that the American Academy of Ophthalmology recognizes Thomas M Aaberg Sr., MD as a Guest of Honor at the 2013 Annual Meeting. He is recognized for his outstanding contributions to the profession of ophthalmology and to the many careers he has inspired through his leadership and example.

A graduate of Dartmouth College, Dr. Aaberg received his medical degree from Harvard Medical School and completed his residency in Ophthalmology at the Massachusetts Eye and Ear Infirmary. He then worked in the U.S. Public Health Service for two years and graduated from the University of Oklahoma with a master of science in public health before starting an 18-month fellowship in retinal disease and surgery at Bascom Palmer Eye Institute. While in Miami, he collaborated with Robert Machemer in developing a primate model to study retinal detachment and giant retinal tears. They also worked together in developing early instrumentation and techniques for vitreous surgery. Upon completing his fellowship, Dr. Aaberg became assistant professor of ophthalmology and director of the Retina Service at the Medical College of Wisconsin, remaining on the faculty for nearly 18 years. Under his direction, the MCW vitreoretinal fellowship training program became one of the top-rated programs in the country with graduates of the program currently directing vitreoretinal divisions and ophthalmology departments nationwide.

In 1988, Dr. Aaberg was appointed chair of ophthalmology at Emory University School of Medicine, Phinizy Calhoun Sr. Professor of Ophthalmology, and director of the Emory Eye Center. He built on the work of his predecessors to develop the Emory Department of Ophthalmology into a nationally respected and highly ranked program in clinical, education, and discovery. Through his career, he has personally been involved in the training of hundreds of residents and vitreoretinal fellows who are in academic or private practice throughout the United States and Canada. Dr. Aaberg's trainees revere him for his kindness, clinical acumen, skill as a surgical instructor, and unwavering concern for his patients.

Dr. Aaberg was senior associate editor of the American Journal of Ophthalmology from 1982 to 2002 and is past president of the Macula Society and of the Association of University Professors of Ophthalmology (AUPO). He has given 38 named lectureships, including the Academy's Edward Jackson Memorial Lecture and the Hermann Wacker Lecture, Club Jules Gonin.

The focus of Dr. Aaberg's surgical and research activities has been the management of complicated retinal detachment and diabetic retinopathy, but he also has a strong interest in medical retinal disorders. His main career interest, however, has been teaching. He has been honored with Clinical Teaching Awards from residents at the Medical College of Wisconsin and at Emory University School of Medicine, where in 2006 the annual Clinical Teaching Award was named the Thomas Aaberg Sr MD Clinical Teaching Award.

For all that he has contributed to our profession and to all the students and colleagues he has inspired and challenged, it is with great pleasure that the Academy honors Dr. Aaberg Sr. as a Guest of Honor.

Guest of Honor



William B Snyder MD

It is with great pride that the American Academy of Ophthalmology recognizes William B. Snyder, MD, as a Guest of Honor at the 2013 Annual Meeting. He is recognized for his impressive contributions to ophthalmology and of his unwavering support for colleagues and his profession.

Born in Cleveland, OH, Dr. Snyder was raised in Kentucky, received his medical degree at Vanderbilt University in 1957 and his Master of Science degree at the University of Iowa in 1961. He finished his internship at the University of Iowa in 1958 and went on to a residency in ophthalmology there in 1961. Following residency, he completed a retina fellowship in at the University of Iowa and became certified by the American Board of Ophthalmology. Upon completion of his fellowship, he practiced for a short time in Kentucky before returning to join the faculty at University of Iowa. In 1966, he was recruited to the faculty of the University of Texas Southwestern Medical School as an Associate Professor. In 1968, he cofounded Texas Retina Associates, a private practice in Dallas, Texas. Over the ensuing decades, TRA grew to become one of the largest retina practices in the United States, pioneering the concept of satellite offices in order to provide "top-notch" care from specialists to patients who otherwise would not have had access due to their remote location. In addition, TRA was one of the first private practices to actively participate in numerous critical multicenter retina clinical trials. Dr. Snyder retired from practice in 2012.

Dr. Snyder complimented his active clinical practice with a keen interest in vision science and research. He helped found the Retina Foundation of the Southwest, an institution dedicated to prevent and restore vision loss through innovative research and treatment. He also has been a loyal and committed alumnus of Vanderbilt School of Medicine, establishing the Phyllis G. and William B. Snyder Chair in Ophthalmology and serving as the inaugural chairman of the Vanderbilt Eye Institute Advisory Board.

He is an active member of many organizations including American Medical Association, American Academy of Ophthalmology, Dallas Academy of Ophthalmology, Dallas County Medical Society (life member), Texas Medical Association, The Retina Society and the American Society of Retinal Specialists. He has served as a clinical professor of ophthalmology at the University of Texas Southwestern Medical School for many years.

Dr. Snyder is the cofounder of Texas Retina Associates and Retina Foundation of the Southwest. His generous gifts and amazing gestures have been an inspiration to the entire vitreoretinal community. It is the American Academy of Ophthalmology's great pleasure to acknowledge Dr. Snyder as a Guest of Honor for 2013.

Guest of Honor



Andrew P Schachat MD

It is with great pride that the American Academy of Ophthalmology recognizes Andrew P. Schachat, MD as a Guest of Honor during the 2013 Annual Meeting in New Orleans. His exceptional contributions to the Academy and the profession of ophthalmology and his continued thoughtfulness and support of his colleagues over the years are unparalleled.

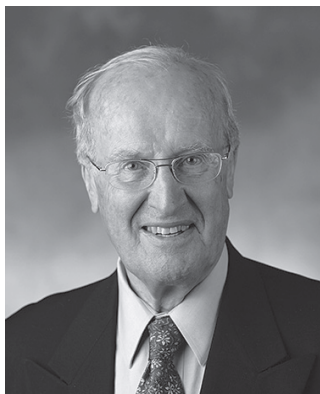
Andrew P. Schachat, MD, served as editor-in-chief of *Ophthalmology* from 2003 - 2012. Under his direction, the journal achieved the highest impact factor among ophthalmology and vision research publications and was recognized for the high quality of its manuscripts and the efficient and timely turnaround on submissions. He is a past member of the Academy's Board of Trustees and also served as the secretary for quality of care from 1996 to 2001. In his quality of care role, he led a major initiative in rolling out numerous clinical care pathways or Preferred Practice Practice Patterns (PPPs). He also served on numerous Academy committees over the years including: the EyeNet editorial advisory board, Bylaws and Rules committee, Outcomes Program committee, and Basic and Clinical Science Course committee.

He was born in New York City and attended Princeton University graduating in 1975. Dr. Schachat received his medical degree in 1979 at Johns Hopkins University and completed his ophthalmology residency training at the Wilmer Institute at Johns Hopkins, followed by a retina and oncology fellowship at the Wills Eye hospital in Philadelphia.

In 1984 he served as assistant chief of service (chief resident) at Wilmer, and eventually became the Karl Hagen professor of ophthalmology at Johns Hopkins University, where he was also a professor of oncology. He is recognized as a superb clinician, balancing a busy clinical practice with his multiple administrative responsibilities and academic activities. He was president of the Maryland Society of Eye Physicians and Surgeons in 2001. He is a former associate editor of the Archives of Ophthalmology. As well, he has served as an editor of the landmark multivolume text "Ryan's Retina," which is now in its fifth edition (2013). Currently, Dr. Schachat is the vice chairman of clinical affairs at the Cole Eye Institute, Cleveland Clinic, and director of clinical research.

Dr. Schachat's integrity and discipline, as well as his commitment to the highest standards of clinical and academic excellence, sets the highest standard for current and aspiring ophthalmologists. It is the American Academy of Ophthalmology's great pleasure to acknowledge Dr. Schachat as a Guest of Honor for 2013.

Distinguished Service Award



Humphrey J F Taylor



Paul B Ginsburg PhD

Public Trustees of the American Academy of Ophthalmology Board of Trustees

The Academy is privileged to recognize the Public Trustees of the American Academy of Ophthalmology Board of Trustees as the recipients of the 2013 Distinguished Service Award. We honor them for their continued contribution to the Academy and to the profession of ophthalmology by providing valuable and unique perspectives to board discussions and decision-making deliberations. Public trustees are vital members of the Academy's leadership team. Since the Academy appointed its first public trustee in 1994, the board has enjoyed the input and perspective of a diverse group, including experts in the fields of health policy, public service and business. While public trustees are not ophthalmologists and do not vote on matters of Academy governance or policy, they lend a public perspective to this organization whose members serve the public. Currently, there are two public trustees serving on the board, Mr. Humphrey Taylor and Dr. Paul Ginsburg.

Appointed in 1994, Humphrey Taylor is the Academy's first and longest serving public trustee. Mr. Taylor is the chairman of the Harris Poll, a service of Harris Interactive. He directs surveys of health care consumers, physicians and other providers, employers and legislators on a broad range of health care issues. Harris Interactive's clients include over 80 health care companies, government agencies and foundations. Mr. Taylor has spoken in the White House, written extensively on healthcare matters, and has provided testimony to congressional committees and subcommittees on a variety of topics related to health care. He is also a noted author on the subject of survey research and public policy. Having had the overall responsibility for more than 8,000 surveys in 80 countries, Mr. Taylor's experience has been an invaluable asset to the Academy.

Paul B. Ginsburg, PhD was appointed to the board in 2004 and for the past decade, the Academy has been well served by Dr. Ginsburg's expertise in the areas of health care systems and future outlook. Dr. Ginsburg is the founding president of the Center for Studying Health System Change (HSC), which conducts research to inform policymakers and other audiences about changes in organization, financing and delivery of care and their effects on individuals and communities. Dr. Ginsburg is a noted speaker and consultant on the changes taking place in health care and has provided presentations on numerous topics including: health care reform, cost trends and drivers, provider payment and competition in health care. He has been named by Modern Healthcare as one of the 100 most powerful persons in health care six separate times.

Prior Public Trustees:

James H.S. Cooper: (1996-1998) – member of the U.S. House of Representatives from 1993 – 1995 and from 2003 through the present.

Edward A. Brennan: (1999-2001)- CEO of Sears, Roebuck and Company from 1984 – 1995, Chairman of the Board of American Airlines (2003-2004) and an active participant on a number of boards, including McDonald's Corporation and Rush University Medical Center.

Thomas J. Campbell: (2001-2003) – member of the U.S. House of Representatives from 1989-1993 and 1995-2001. Mr. Campbell was also a member of the California State Senate from 1993 – 1995 and a professor of law at Stanford University and then became Dean of the Haas Business School at the University of California, Berkeley in 2002.

Special Recognition Award

Leadership Development Program (LDP)

Recognizing the critically important task of developing future leaders of the profession, key Academy physician leaders and staff developed a year-long program to provide future leaders identified by state, subspecialty and specialized interest societies with the training and experience to help them reach their leadership potential. The Academy's first Leadership Development Program enrollees graduated in 1999. To date, 269 Eye M.D.s have graduated from the program. Fourteen graduates have acceded to service on the Academy's Board of Trustees or Committee of Secretaries. A significant number currently populate the leadership of other ophthalmic societies. Based on the success of the Academy's Leadership Development Program (LDP), major supranational and national societies have developed similar programs with the active input of Academy's LDP leaders. In addition, several state medical associations and other national medical specialty societies have emulated the Academy's LDP. Current and Immediate Past LDP Directors Aaron P. Weingeist, MD and David W. Johnson, MD, both also alumni of the program, will accept this award on behalf of the Academy LDP graduates. Others critical to the development of the LDP include co-founders Paul Sternberg Jr., MD and Michael W. Brennan, MD along with previous LDP Directors Daniel J. Briceland, MD and William R. Penland, MD.

It is with great appreciation and respect that we honor the following AAO LDP graduates and their sponsors as 2013 Special Recognition Award recipients:

Thomas M Aaberg Jr MD, LDP IX, Retina Society	Michael J Borne MD, LDP XV, Mississippi Academy of Eye Physicians and Surgeons	James Chodosh MD MPH, LDP VII, Ocular Microbiology and Immunology Group
Ari Daniel Abel MD, LDP IX, Delaware Academy of Ophthalmology	Manal Bouhaimed MBChB PhD, LDP X, Middle East Africa Council of Ophthalmology	G Gregory Clark MD, LDP II, Indiana Academy of Ophthalmology
Nisha Acharya MD, LDP XV, American Uveitis Society	Ronald A Braswell MD, LDP XIV, Alabama Academy of Ophthalmology	William S Clifford MD, LDP I, Kansas Society of Eye Physicians and Surgeons
Wesley H Adams MD, LDP XV, Montana Academy of Ophthalmology	Daniel J Briceland MD, LDP II, Arizona Ophthalmological Society	Kimberly Cockerham MD FACS, LDP IX, California Academy of Eye Physicians & Surgeons
Natalie A Afshari MD, LDP XIV, Ocular Microbiology and Immunology Group	William Z Bridges Jr MD, LDP IV, North Carolina Society of Eye Physicians and Surgeons	John W Collins MD, LDP I, Kentucky Academy of Eye Physicians and Surgeons
Lama A Al-Aswad MD, LDP XV, Women in Ophthalmology	James S Brown III MD, LDP XIII, Mississippi Academy of Eye Physicians and Surgeons	Joseph M Coney MD, LDP X, National Medical Association, Ophthalmology Section
Chris Albanis MD, LDP XI, Illinois Association of Ophthalmology	Beth K Bruening MD, LDP VI, Iowa Academy of Ophthalmology	Robert A Copeland, Jr. MD, LDP VIII, Washington DC Metropolitan Ophthalmological Society
Arezo Amirikia MD, LDP IX, Michigan Society of Eye Physicians and Surgeons	Paul J Bryar MD, LDP IX, American Association of Ophthalmic Oncologists and Pathologists	Zelia M Correa MD, LDP V, Council of Brazilian Ophthalmology / Pan-American Association of Ophthalmology
Anthony C Arnold MD, LDP IV, North American Neuro-Ophthalmology Society	Dawn C Buckingham MD, FACS, LDP IX, Texas Ophthalmological Association	James W Culclasure MD, LDP XIII, South Carolina Society of Ophthalmology
Everton L Arrindell MD, LDP IV, National Medical Association, Ophthalmology Section	Susan K Burden MD, LDP XIV, North Carolina Society of Eye Physicians and Surgeons	Philip L Custer MD, LDP X, American Society of Ophthalmic Plastic & Reconstructive Surgery
Steven Awner MD, LDP VI, New York State Ophthalmological Society	Brandon G Busbee MD, LDP IX, Tennessee Academy of Ophthalmology	Charles Barry Dabbs MD FACS, LDP III, Alabama Academy of Ophthalmology
Mayssa Aziz-Toppino MD FACS, LDP V, Florida Society of Ophthalmology	Andrew F Calman MD PhD, LDP III, California Academy of Eye Physicians & Surgeons	Roger A Dailey MD, LDP VII, American Society of Ophthalmic Plastic & Reconstructive Surgery
Arlene Bagga MD, LDP XII, New Mexico Academy of Ophthalmology	Jeffrey A Carlisle MD, LDP V, Georgia Society of Ophthalmology	Robert W Daly MD, LDP VIII, Maine Society of Eye Physicians and Surgeons
Robert Bentley MD, LDP III, Oregon Academy of Ophthalmology	Marcia D Carney MD, LDP IV, Retina Society / Virginia Society of Eye Physicians and Surgeons	Anita Dash-Modi MD, LDP VII, Ohio Ophthalmological Society
Abdhis R Bhavsar MD, LDP III, Minnesota Academy of Ophthalmology	Britton B Carter MD, LDP XI, Alabama Academy of Ophthalmology	Garvin H Davis MD, LDP XIII, National Medical Association, Ophthalmology Section
Evan H Black MD, LDP XIII, Michigan Society of Eye Physicians and Surgeons	Keith D Carter MD FACS, LDP V, Association of University Professors of Ophthalmology	Romona Davis MD, LDP XIII, Arkansas Ophthalmological Society
Barbara Ann Blodi MD, LDP VI, Macula Society	Kristin Carter MD, LDP XI, Arizona Ophthalmological Society	Mary P DeFrank MD, LDP X, Oregon Academy of Ophthalmology
Charles P Bogie MD, LDP VIII, Oklahoma Academy of Ophthalmology	Denise R Chamblee MD, LDP XV, Ophthalmic Mutual Insurance Co.	Manuel F Del Toro MD, LDP III, Puerto Rican Society of Ophthalmology
Craig A Bolton MD, LDP I, Texas Ophthalmological Association		

Special Recognition Award

Anna Luisa Di Lorenzo MD, LDP VI, Michigan Society of Eye Physicians and Surgeons

Andrew P Doan MD PhD, LDP XIII, California Academy of Eye Physicians & Surgeons

Mark W Doubrava MD, LDP IV, Nevada Academy of Ophthalmology

Steven Dunn MD, LDP VII, Texas Ophthalmological Association

Geoffrey G Emerson MD PhD, LDP XIV, American Society of Retina Specialists

K David Epley MD, LDP VII, Washington Academy of Eye Physicians and Surgeons

Arash Eshghabadi MD, LDP XIII, Middle East Africa Council of Ophthalmology

David W Faber MD, LDP VI, Utah Ophthalmology Society

Philip Mark Fiore MD, LDP I, New Jersey Academy of Ophthalmology

Terry L Forrest MD, LDP I, North Carolina Society of Eye Physicians and Surgeons

Tamara R Fountain MD, LDP I, Illinois Association of Ophthalmology

Bradley Dean Fouraker MD, LDP X, Florida Society of Ophthalmology / Ocular Microbiology & Immunology Group

Shahar Frenkel MD, LDP XII, Israel Ophthalmological Society

Steve M Friedlander MD FACS, LDP X, Nevada Academy of Ophthalmology

David J Gajda MD, LDP III, Wyoming Ophthalmological Society

Edgar C Gamponia MD, LDP VII, West Virginia Academy of Eye Physicians and Surgeons

Dasa Gangadhar MD, LDP III, Kansas Society of Eye Physicians and Surgeons

JoAnn A Giaconi MD, LDP XI, California Academy of Eye Physicians & Surgeons

Sidney K Gicheru MD, LDP XIV, Texas Ophthalmological Association

James W Gigantelli MD, LDP IX, American College of Surgeons, Advisory Council for Ophthalmic Surgery

Carl G Glittenberg MD, LDP XI, European Society of Ophthalmology

Ravi D Goel MD, LDP VI, New Jersey Academy of Ophthalmology

Sanjay D Goel MD, LDP V, Maryland Society of Eye Physicians and Surgeons

David A Goldman MD, LDP XV, American Society of Cataract & Refractive Surgery

Michael H Goldstein MD, LDP XIII, Massachusetts Society of Eye Physicians and Surgeons

Lynn K Gordon MD PhD, LDP X, North American Neuro-Ophthalmology Society

Peter A Gordon MD, LDP I, Georgia Society of Ophthalmology

Thomas A Graul MD, LDP VI, Nebraska Academy of Eye Physicians and Surgeons

Paul B Griggs MD, LDP II, Washington Academy of Eye Physicians and Surgeons

Erich Bryan Groos MD, LDP VI, Tennessee Academy of Ophthalmology

Neeru Gupta MD PhD, LDP XIV, Association for Research in Vision and Ophthalmology

Dean P Hainsworth MD, LDP XIII, Missouri Society of Eye Physicians and Surgeons

Bryan J Hammer MD, LDP VI, South Dakota Academy of Ophthalmology

Diana Hampton MD, LDP XII, Oklahoma Academy of Ophthalmology

S Akbar Hasan MD, LDP VIII, Florida Society of Ophthalmology

Christopher L Hauptert MD, LDP XII, Iowa Academy of Ophthalmology

Marko Hawlina MD, LDP VII, European Society of Ophthalmology

Isaac J Hearne MD, LDP XIII, Nevada Academy of Ophthalmology

James M Heltzer MD, LDP X, Washington DC Metropolitan Ophthalmological Society

Bryan P Hemard MD, LDP IV, Louisiana Ophthalmology Association

Paul M Henry MD, LDP VI, Arkansas Ophthalmological Society

Leon W Herndon MD, LDP VII, American Glaucoma Society

Gary S Hirshfield MD, LDP XIII, New York State Ophthalmological Society

Michael R Hodges MD, LDP XIII, Indiana Academy of Ophthalmology

Nancy M Holekamp MD, LDP VII, Missouri Society of Eye Physicians and Surgeons

Aaron C Holtebeck MD, LDP XII, Wisconsin Academy of Ophthalmology

Odette Houghton MD, LDP XII, North Carolina Society of Eye Physicians and Surgeons

Todd M Hovis MD, LDP IV, Texas Ophthalmological Association

Ana G Huaman MD, LDP III, New Mexico Academy of Ophthalmology

David D Ingvoldstad MD, LDP XII, Nebraska Academy of Eye Physicians and Surgeons

Michael S Ip MD, LDP XII, Macula Society

Mohamad S Jaafar MD FACS, LDP II, Washington DC Metropolitan Ophthalmological Society

Martine J Jager MD, LDP IX, Association for Research in Vision and Ophthalmology

Johanna Jensen MD, LDP VII, Idaho Society of Ophthalmology

David W Johnson MD, LDP V, Colorado Society of Eye Physicians and Surgeons

David E Jones MD, LDP IV, Kentucky Academy of Eye Physicians and Surgeons

Leslie S Jones MD, LDP V, Washington DC Metropolitan Ophthalmological Society

Paul C Kang MD, LDP XIII, Washington DC Metropolitan Ophthalmological Society

Anne Keating MD, LDP XV, North Dakota Society of Eye Physicians and Surgeons

Don O Kikkawa MD, LDP XIV, American Society of Ophthalmic Plastic & Reconstructive Surgery

Judy E Kim MD, LDP XV, Macula Society

Terry Kim MD, LDP IX, American Society of Cataract & Refractive Surgery

Wonsuck Kim DO, LDP V, Alabama Academy of Ophthalmology

Alan E Kimura MD, LDP XIV, Colorado Society of Eye Physicians and Surgeons

Laura J King MD, LDP III, Women in Ophthalmology

John W Kitchens MD, LDP XI, Kentucky Academy of Eye Physicians and Surgeons

Kenneth J Knudtson MD, LDP VIII, South Dakota Academy of Ophthalmology

David E Korber MD, LDP I, Oklahoma Academy of Ophthalmology

Vera O Kowal MD, LDP II, South Dakota Academy of Ophthalmology

Diane Jean Kraus MD, LDP III, New York State Ophthalmological Society

Lance J Kugler MD, LDP X, Nebraska Academy of Eye Physicians & Surgeons

Joseph M Lally Jr MD, LDP III, South Carolina Society of Ophthalmology

Special Recognition Award

Kathleen A Lamping MD, LDP III, Ohio Ophthalmological Society

Michael J Landolfi DO, LDP X, New Jersey Academy of Ophthalmology

Paul D Langer MD, LDP VIII, Association of University Professors of Ophthalmology

David P Lawlor MD, LDP V, Vermont Ophthalmological Society

Mary Gilbert Lawrence MD MPH, LDP V, Association of Veterans Affairs Ophthalmologists

Katherine A Lee MD PhD, LDP XII, American Association for Pediatric Ophthalmology and Strabismus

William Barry Lee MD, LDP XII, Eye Bank Association of America

Leah Levi MD, LDP VIII, North American Neuro-Ophthalmology Society

Helen Ka-Fun Li MD, LDP VII, Women in Ophthalmology

Steven J Lichtenstein MD FACS, LDP V, American Academy of Pediatrics, Section on Ophthalmology

Edward S Lim MD, LDP XII, Connecticut Society of Eye Physicians

Scott A Limstrom MD, LDP VI, Alaska Society of Eye Physicians and Surgeons

Gregg T Lueder MD, LDP X, American Academy of Pediatrics, Section on Ophthalmology

Robert A Lytle MD, LDP V, Massachusetts Society of Eye Physicians and Surgeons

Mathew W MacCumber MD PhD, LDP VII, American Society of Retina Specialists

Susan M MacDonald MD, LDP XIII, Women in Ophthalmology

John C Maher MD, LDP II, Pennsylvania Academy of Ophthalmology

Jeff S Maltzman MD, LDP IX, Arizona Ophthalmological Society

Linn M Mangano MD, LDP VII, Indiana Academy of Ophthalmology

Steven L Mansberger MD MPH, LDP IX, American Glaucoma Society

Mark Christophe Maria MD, LDP IV, Pennsylvania Academy of Ophthalmology

Daniel F Martin MD, LDP IV, Macula Society

James W Matthews MD, LDP VIII, Kentucky Academy of Eye Physicians and Surgeons

Connie S McCaa MD, LDP V, Mississippi Acad-

emy of Eye Physicians and Surgeons

Gregory J McCormick MD, LDP X, Vermont Ophthalmological Society

David H McCullough MD, LDP XV, Connecticut Society of Eye Physicians

Timothy Francis McDevitt MD, LDP I, Hawaii Ophthalmological Society

M Lisa McHam MD, LDP VIII, Massachusetts Society of Eye Physicians and Surgeons

Timothy J McInnis MD, LDP III, Montana Academy of Ophthalmology

Rickey Dene Medlock MD, LDP II, Arkansas Ophthalmological Society

Robert F Melendez, MD MBA, LDP X, New Mexico Academy of Ophthalmology

Mark R Melson MD, LDP XIV, Tennessee Academy of Ophthalmology

Jennifer H Merritt MD, LDP X, South Carolina Society of Ophthalmology

Shahzad I Mian, MD, LDP X, Cornea Society

Mark Michels MD FACS, LDP I, Florida Society of Ophthalmology

Aaron M Miller MD, LDP XI, Texas Ophthalmological Association

Eydie G Miller-Ellis MD, LDP V, American Glaucoma Society

Michael L Miller MD, LDP II, Colorado Society of Eye Physicians and Surgeons

Tatyana Milman, MD, LDP XIV, American Association of Ophthalmic Oncologists and Pathologists

Jeffrey B Minkovitz MD, LDP IV, Delaware Academy of Ophthalmology

Christie L Morse MD, LDP V, New Hampshire Society of Eye Physicians and Surgeons

Susan K Mosier MD, LDP IX, Kansas Society of Eye Physicians and Surgeons

Michael L Murphy, MD FACS, LDP II, Wisconsin Academy of Ophthalmology

Anne M Nachazel MD, LDP III, Michigan Society of Eye Physicians and Surgeons

Srilata S Naidu MD, LDP VIII, Contact Lens Association of Ophthalmologists

George Nardin MD, LDP VI, Hawaii Ophthalmological Society

Sundaram Natarajan MD, LDP VIII, All India Ophthalmological Society

Daniel E Neely MD, LDP XIV, American Association for Pediatric Ophthalmology and Strabismus

Robert E Neger MD, LDP I, California Academy of Eye Physicians & Surgeons

John H Niffenegger MD FACS, LDP V, Ohio Ophthalmological Society

Thomas A Oetting MD, LDP II, Iowa Academy of Ophthalmology

Mary A O'Hara MD, LDP V, Society of Military Ophthalmologists

Mildred M G Olivier MD, LDP IX, Women in Ophthalmology

Pecos T A Olurin MBBS, LDP XII, Delaware Academy of Ophthalmology

Mark Packer MD, LDP VI, American Society of Cataract & Refractive Surgery

Brenda Pagan-Duran MD, LDP XIII, New Jersey Academy of Ophthalmology

Millicent Palmer MD, LDP XIV, Nebraska Academy of Eye Physicians and Surgeons

David S Pao MD, LDP VII, Pennsylvania Academy of Ophthalmology

Ron W Pelton MD PhD, LDP XI, Colorado Society of Eye Physicians and Surgeons

David B Petersen MD, LDP XII, Utah Ophthalmology Society

Jeff H Pettey MD, LDP XIV, Utah Ophthalmology Society

Lawrence Piazza MD, LDP XI, Maine Society of Eye Physicians and Surgeons

David A Plager MD, LDP X, American Association for Pediatric Ophthalmology and Strabismus

Michael J Price MD, LDP XI, Massachusetts Society of Eye Physicians and Surgeons

Andrew M Prince MD, LDP I, New York State Ophthalmological Society

Brian Privett MD, LDP XV, Iowa Academy of Ophthalmology

Nathan M Radcliffe MD, LDP XIV, American Glaucoma Society

Jean E Ramsey MD MPH, LDP II, Massachusetts Society of Eye Physicians and Surgeons

J. Bradley Randleman MD, LDP XI, American Society of Cataract & Refractive Surgery

Ann Ranelle DO, LDP XII, American Osteopathic College of Ophthalmology

P Kumar Rao, MD, LDP XV, Missouri Society of Eye Physicians & Surgeons

Special Recognition Award

Nathan Ravi MD, LDP VIII, Association of Veterans Affairs Ophthalmologists

Kristin E Reidy DO, LDP VIII, New Mexico Academy of Ophthalmology

Rachel C J Reinhardt MD, LDP XIII, Washington Academy of Eye Physicians and Surgeons

Adam C Reynolds MD, LDP XV, Idaho Society of Ophthalmology

William W Richardson II MD, LDP XIV, Kentucky Academy of Eye Physicians and Surgeons

David R Rivera MD, LDP IX, Rhode Island Society of Eye Physicians and Surgeons

Philip R Rizzuto, MD FACS, LDP IV, Rhode Island Society of Eye Physicians and Surgeons

John Denis Roarty MD, LDP II, Michigan Society of Eye Physicians and Surgeons

Joy Dixon Robinson MD, LDP VI, Virginia Society of Eye Physicians and Surgeons

Prin Rojanapongpun, MD, LDP XIV, Asia Pacific Academy of Ophthalmology / Royal College of Ophthalmologists of Thailand

James F Ronk MD, LDP VI, Oklahoma Academy of Ophthalmology

James B Ruben MD, LDP VII, American Academy of Pediatrics, Section on Ophthalmology

Arvind Saini MD, LDP XV, Wisconsin Academy of Ophthalmology

Sarwat Salim MD, LDP XII, American College of Surgeons, Advisory Council for Ophthalmic Surgery

Jonathan Salvin MD, LDP XV, Delaware Academy of Ophthalmology

Scott T Schaefer MD, LDP XI, Minnesota Academy of Ophthalmology

William R Schlichtemeier MD, LDP II, Nebraska Academy of Eye Physicians and Surgeons

Elwin G Schwartz MD, LDP I, Connecticut Society of Eye Physicians

Gail F Schwartz MD, LDP I, Maryland Society of Eye Physicians and Surgeons

Gary S Schwartz MD, LDP I, Minnesota Academy of Ophthalmology

Stephen G Schwartz, MD MBA, LDP XII, Florida Society of Ophthalmology

Kevin R Scott MD, LDP II, Virginia Society of Eye Physicians and Surgeons

Cynthia A Self MD, LDP XIII, Maine Society of Eye Physicians and Surgeons

Susan H Senft MD, LDP IV, Hawaii Ophthalmological Society

Stefan Seregard MD, LDP VI, European Society of Ophthalmology

Gaurav K Shah MD, LDP XII, American Society of Retina Specialists

John W Shore MD, LDP III, American Society of Ophthalmic Plastic & Reconstructive Surgery

Sirtaz S Sibia DO, LDP XV, American Osteopathic College of Ophthalmology

Sidney K Simonian DO, LDP VIII, American Osteopathic College of Ophthalmology

Chasidy D Singleton MD, LDP XV, National Medical Association, Ophthalmology Section

Brian D Sippy MD PhD, LDP VIII, Montana Academy of Ophthalmology

Arthur J Sit MD, LDP XI, American Glaucoma Society

Jennifer H Smith MD, LDP VI, Illinois Association of Ophthalmology

Justine R Smith MD, LDP IX, American Uveitis Society

Lee A Snyder MD, LDP XV, Maryland Society of Eye Physicians and Surgeons

Samuel Solish MD, LDP IV, Maine Society of Eye Physicians and Surgeons

Sharon D Solomon MD, LDP X, American Society of Retina Specialists

Derek T Sprunger MD, LDP V, Indiana Academy of Ophthalmology

Scott M Steidl MD, LDP VIII, Maryland Society of Eye Physicians and Surgeons

Prem S Subramanian MD PhD, LDP XIII, North American Neuro-Ophthalmology Society

Eric Suhler MD, LDP XI, American Uveitis Society

Michael E Sulewski MD, LDP XII, Association of Veterans Affairs Ophthalmologists

Steven H Swedberg MD, LDP IX, Washington Academy of Eye Physicians and Surgeons

Christopher N Ta MD, LDP X, Association of University Professors of Ophthalmology

Gareth A Tabor MD PhD, LDP I, Oregon Academy of Ophthalmology

Andrew W Tharp MD, LDP X, Indiana Academy of Ophthalmology

Steven B Thom MD, LDP III, North Dakota Society of Eye Physicians and Surgeons

Eric R Thomas MD, LDP XIV, South Dakota Acad-

emy of Ophthalmology

Steven C Thornquist MD, LDP VI, Connecticut Society of Eye Physicians

Mark F Torres MD, LDP XIII, Society of Military Ophthalmologists

Melissa G Toyos, MD, LDP IX, Missouri Society of Eye Physicians and Surgeons

James C Tsai, MD MBA, LDP III, Tennessee Academy of Ophthalmology

Linda M Tsai MD, LDP XI, Missouri Society of Eye Physicians and Surgeons

Scott A Uttley MD, LDP VII, Minnesota Academy of Ophthalmology

Russell N Van Gelder MD PhD, LDP VI, American Uveitis Society

Michael P Varley MD FACS, LDP IV, West Virginia Academy of Eye Physicians and Surgeons

Gurunadh Atma Vemulakonda MD, LDP XV, Washington Academy of Eye Physicians and Surgeons

Anthony J Viti MD, LDP XIV, Virginia Society of Eye Physicians and Surgeons

Tamara R Vrabec MD, LDP XI, Retina Society

Alan L Wagner MD FACS, LDP XI, Virginia Society of Eye Physicians and Surgeons

David K Wallace MD MPH, LDP VIII, North Carolina Society of Eye Physicians and Surgeons

Thomas Peter Ward MD, LDP VII, Society of Military Ophthalmologists

Ann A Warn MD MBA, LDP III, Oklahoma Academy of Ophthalmology

Aaron P Weingeist MD, LDP IV, Washington Academy of Eye Physicians and Surgeons

John A Wells III MD, LDP VII, South Carolina Society of Ophthalmology

Constance E West, MD, LDP IV, American Association for Pediatric Ophthalmology and Strabismus

Thomas J Whittaker MD, LDP II, Missouri Society of Eye Physicians and Surgeons

Craig L Wilkerson MD, LDP X, Montana Academy of Ophthalmology

Daniel V Will MD, LDP XI, Pennsylvania Academy of Ophthalmology

Jun-Shyan Wong MBBS, LDP IX, Asia-Pacific Academy of Ophthalmology

Joseph M Zobian MD, LDP XII, Hawaii Ophthalmological Society

Outstanding Humanitarian Service Award



Mario R Angi MD

Mario R. Angi, MD was nominated by the Società Oftalmologica Italiana to receive this year's Outstanding Humanitarian Service Award.

As President of the Christian Blind Mission Italy (CBM Italia), Dr. Angi worked to ensure that countless people, young and old, were able to see the world through their own eyes. Dr. Angi's leadership has been two-fold. He frequently traveled to clinics in developing countries to serve patients as a frontline care provider and he worked tirelessly to develop resources needed to sustain and support CBM Italia's projects around the globe.

Dr. Angi started his voluntary work as an ophthalmologist at age 29 after specializing in ophthalmology at University Padua in Italy. He served as a volunteer ophthalmologist with Rotary International in Mali in 1982 and 1987. He then took his family to Ibarra, Ecuador in support of a young ophthalmologist who had also studied at the University Padua. Dr. Angi equipped the eye department of Ibarra's public hospital with an ophthalmic microscope, as well as surgical and optical instruments, enabling the hospital to perform cataract surgeries.

Additionally, Dr. Angi promoted two agreements of cooperation between the University of Padua and the University of Quito. He organized three scientific conferences in Ecuador. He sent five senior ophthalmologists to Ibarra as tutors and he invited 12 Ecuadorian residents in ophthalmology to the University of Padua for three-month rotations. Dr. Angi also organized visual screening for 6,000 indigent children in Quito and Ibarra and provided free glasses to children with high ametropia.

In 1996 a missionary friend of the Angi family requested his assistance with ophthalmic work in Africa. In 1997 Dr. Angi equipped an ophthalmic clinic in Nazareth, Ethiopia. He ran the clinic for two years and recruited volunteer Italian ophthalmologists to work with him.

Dr. Angi is a founding member of the Rotary Club in Abano Terme Montegrotto Terme. With humanitarian contributions from the Rotary Foundation and in cooperation with CBM Italia, he created the Cooper Eye Hospital in Monrovia, Liberia; the Eye Department of Eva Peron hospital in Santiago del Estero, Argentina; and the Eye Department of St. Luke Hospital in Wolisso, Ethiopia.

Under Dr. Angi's leadership from 2002 to 2012 CBM Italia supported a total of 231 projects and programs in conjunction with various international healthcare groups, non-governmental organizations, and local partners. During Dr. Angi's tenure, CBM Italia supported projects around the world, including Mali, Uganda, Ethiopia, Zambia, Afghanistan, Vietnam, Brazil and many others.

At present Dr. Angi continues his work in Africa. In Ethiopia, he is participating in an agreement of cooperation between the University of Padua and the University of Addis Ababa. In cooperation with CBM in the Democratic Republic of Congo he has opened an Eye Hospital in Isiro and with support from Rotary he equipped the Eye Clinic of Butembo. At the clinic in Isiro he started a program for the control of sight related problems and provided glasses for school children in the area.

A colleague quoted Mother Theresa that "unless a life is lived for others, it is not worthwhile". Dr. Angi's leadership of CBM Italia and his dedication to preventing blindness are testament to the fact that Dr. Angi leads a worthwhile life as a man for others.

The Academy is privileged to honor Dr. Angi with this year's Outstanding Humanitarian Service Award.

Outstanding Humanitarian Service Award



Gullapalli N Rao MD

Gullapalli N. Rao, MD was nominated by The Cornea Society to receive this year's Outstanding Humanitarian Service Award.

Dr. Rao completed his ophthalmology residency at the prestigious All India Institute of Medical Sciences, followed by a cornea fellowship at Tufts University. He then moved to Rochester, New York for another fellowship with Dr. James Aquavella and continued there on the clinical faculty of University of Rochester. In 1986 he decided to leave his thriving academic career to establish a comprehensive, high quality, sustainable eye care system in his home state of Andhra Pradesh, India.

Through Dr. Rao's entrepreneurial spirit he created the L.V. Prasad Eye Institute, a system that encompasses all levels of eye care from the most basic screening to the most complex care and extends from the most rural areas of the state to the finest tertiary care hospitals in the cities. The L.V. Prasad Eye Institute is one of the largest eye care systems in the world. It was established and remains a not-for-profit, non-government institution. It was founded with the Vision of "Excellence and Equity" and provides equal care for all patients, whether they can afford to pay or not (over 50% cannot).

This model of care is based on a pyramid, the base of which is in the communities. The apex is the tertiary eye centers and the center of excellence. There are currently almost a hundred primary care centers, ten secondary care centers, three tertiary care centers and the main campus center of excellence in Hyderabad. The concept has been so successful that it has been replicated in other states in India and other countries around the world. The scalability of this vision center model, combined with Dr. Rao's dedication to propagating the model to other states in India and to other developing countries, has made quality eye care available to millions of individuals who previously did not have access to even rudimentary ophthalmic care.

In addition to the impressive prevention programs and clinical care, L.V. Prasad is well known for its educational programs for all cadres of eye care personnel, all areas of eye research, eye banking and a very robust rehabilitation program for those with irreversible blindness and low vision.

As the Secretary General and later on Chairman/CEO of the International Agency for the Prevention of Blindness an organization was established in 1975 as an umbrella group to lead and coordinate international efforts to prevent blindness, Dr. Rao played an important role in the initiation and execution of its current initiative, VISION2020: The Right to Sight, whose goal is to reduce burden of avoidable blindness by 2020.

Dr. Rao's endless devotion and dedication has improved the quality of life for millions, not only in India but internationally. As a board member of The Cornea Society, Dr. Rao provides an international perspective, constantly thinking about ways to improve international eye health and educate his international colleagues. He is a tireless advocate for advancing availability of care to underserved areas, encouraging the Cornea Society to support the training of ophthalmologists in those areas. He is constantly thinking about ways to improve international eye health, the education of international colleagues and cooperation between various eye care organizations. The Academy is proud to honor Dr. Gullapalli Rao with this year's Outstanding Humanitarian Service Award.

Outstanding Advocate Award



Michael W Brennan MD

Michael W. Brennan, MD was nominated by the North Carolina Society of Eye Physicians and Surgeons to receive this year's Outstanding Advocate Award.

Over his many years of service at the state, national and international level, Dr. Brennan's name has become synonymous with advocacy leadership. Dr. Brennan has led the way to educate leaders of supra-national/national ophthalmic organizations about professionalism issues. Dr. Brennan has dedicated countless hours in convening meetings of society leaders at global events to discuss quality patient eye care and has offered his personal assistance as well as Academy resources to those in need of such support. At the 2011 AAO World Ophthalmic Leaders Forum in Education, which takes place each year in conjunction with the Academy Annual Meeting, Dr. Brennan was the headline presenter on the topic, Global Optometry: Changing and Challenging, Non-Physician Providers - Lessons Learned Around the World. One of his many recent global visits was with leaders of the Ophthalmic Society of the West Indies (OSWI) where he joined Secretary for State Affairs, Daniel J. Briceland, MD to meet the Minister of Health of the Republic of Trinidad and Tobago. Over the last several years he has visited the Ministers of Health in Syria, Iraq, Yemen and Libya to formulate physician leadership initiatives.

Dr. Brennan served as the Academy's secretary for state affairs from 1997 to 2013. During his tenure, Dr. Brennan was instrumental in implementing the American Academy of Ophthalmology's Leadership Development Program which has since developed into a global effort with complementary programs within PAAO, SOE, AIOS, APAO, MEACO and RANZCO. The Academy Surgical Scope Fund evolved as a critical tool in the Surgery by Surgeons campaign under Dr. Brennan's leadership. Dr. Brennan championed state ophthalmology society executive directors and physician leaders in their legislative battles to pro-actively represent the profession of ophthalmology for patients and continues to provide wisdom and support to Academy secretariat for state affairs efforts.

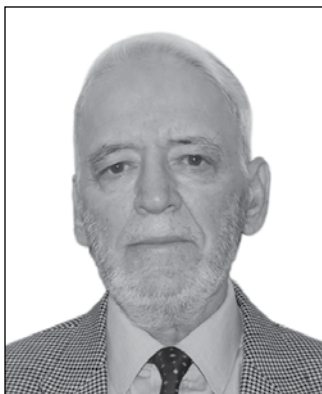
Dr. Brennan is a past president of both the North Carolina Society of Eye Physicians and Surgeons and the American Academy of Ophthalmology. He promoted adoption of a Leadership College within the North Carolina Medical Society modeled after the Academy's Leadership Development Program and saw its potential to fill a leadership gap in organized medicine. This model has been disseminated and adapted by many other national and state medical societies across the country.

Lastly, Dr. Brennan, as a retired Army officer, has been effective as a champion of our military, active duty and veterans, and our military and VA ophthalmology colleagues who deliver their eye care in often challenging environments.

A recollection from a colleague and former AAO Councilor from North Carolina notes that, "Dr. Brennan essentially singlehandedly, organized the response in North Carolina to the latest optometric attempt at incursion into the practice of medicine. He is and has always been a source of wisdom for dealing with the most controversial issues".

Dr. Brennan has generously given his time and energy to countless efforts and his years of service at all levels are a legacy that would be difficult to match. The Academy is privileged to honor Dr. Brennan with this year's Outstanding Advocate Award.

International Blindness Prevention Award



Prof. Mohammad Daud Khan

Prof. Mohammad Daud Khan was trained as a doctor in Peshawar, Pakistan and as an ophthalmologist in the United Kingdom. After 32 years of services in Peshawar, he retired from the government service in April 2009. However he continues to serve as the Chairman of Comprehensive Health and Education Forum International (CHEF International), a nongovernmental organization (NGO) with a commitment to making a difference in general health, education and cross disability in Pakistan and other developing countries.

Prof. Khan served as a teacher in Khyber Medical College and Postgraduate Medical Institute Peshawar since 1977 and has made major contributions to teaching and training and evaluation in ophthalmology throughout Pakistan and other developing countries. He has also served on the Editorial Board of eight national and international ophthalmic journals.

During the last two years of his service, Prof. Khan served as the Founder Vice Chancellor of Khyber Medical University.

He has played a key role in humanitarian work in Pakistan and other developing countries.

He is on the Board of Trustees of Layton Rahmatulla Benevolent Trust, one other largest and finest NGO in Pakistan since 1984. He is also on the Board of Governors of the Khyber Eye Foundation.

He served as a National Coordinator and Chairman National Committee for Prevention of Blindness in Pakistan for 14 years, and was responsible for organizing and supervising Pakistan's 2nd National Survey on blindness and visual impairment in 2001-2003, which was conducted with the help of the World Health Organization (WHO), International Centre for Eye Health (ICEH) and a number of international NGOs.

Prof. Khan serves as an advisor to WHO since 1994. Prof. Khan also served as a Councilor and President of Asia Pacific Academy of Ophthalmology (APAO), Councilor Afro-Asian Academy of Ophthalmology, President SAARC Academy of Ophthalmology, President of Ophthalmological Society of Pakistan (OSP), Vice President of International Agency for the Prevention of Blindness, Eastern Mediterranean Region and Vice President of College of Physicians and Surgeons Pakistan. Prof. Khan also served as a member of the International Council of Ophthalmology (ICO) for six years.

Prof. Khan has been a recipient of many national and international awards including, President of Pakistan Pride of Performance Award, President of Pakistan OSP Ramzan Ali Syed Gold Medal, APAO Jose Rizal Gold Medal, ICO Duke Elder International Award, SAARC Academy of Ophthalmology Lifetime Achievement Award and APAO, Saudi Arabia and Taiwan Prevention of Blindness Awards.

Straatsma Award for Excellence in Resident Education



Andreas K Lauer MD

Dr. Andreas Lauer completed medical school and internship at University of Oklahoma College of Medicine and completed residency and retina fellowship training at Casey Eye Institute (CEI) – Oregon Health & Sciences University (OHSU). He was appointed as faculty to the CEI Retina Service and served as Retina Fellowship Program Director between 2006 and 2010. He has been Retina Division Chief since 2007 and Residency Program Director since 2001. Recently, Dr. Lauer was appointed Vice-Chair for Education.

Throughout Dr. Lauer's career, residency education has been a continual focus of his efforts. Dr. Lauer instituted a structured review and assessment process that encouraged and increased resident effort in teaching, learning, research and public service. Under his tenure, the Ophthalmic Knowledge Assessment Program (OKAP) performance of residents at CEI rose from average performance to performance consistently at the 1st standard deviation above the national mean for the last 6 years. In cooperation with the leadership of the Oregon Academy of Ophthalmology (OAO), he developed the OAO Resident Mentor program that promotes interaction between residents and non-university based ophthalmologists through quarterly mentorship meetings, clinical experiences and resident representation on the OAO board. Dr. Lauer garnered philanthropic support for educational activities, organized for awards to recognize residents who have excelled in the areas of research, teaching, and medical knowledge acquisition and created awards to recognize faculty members in their teaching efforts. He has received the Robert C. Watzke department teaching award, OHSU's Graduate Medical Education Service Award and three times received the Casey Eye Distinguished Service award.

On a national level, he was elected to the Association of University Professors in Ophthalmology (AUPO) Program Director's Council (PDC) and served as its president in 2012. Through this organization, he directed national symposia and served as liaison to the San Francisco Ophthalmology Matching Program to improve resident candidate application management and match notification process. He has served as liaison to the AAO in improving the electronic administration of the OKAP exam and has worked with the Accreditation Council for Graduate Medical Education Ophthalmology Review Committee to assemble national program director input on resident surgical experience. In 2012, Dr. Lauer received the AAO Secretariat Award for promoting AAO initiatives in teaching and education. For the American Board of Ophthalmology, he has served as Oral Examiner, Item Writer for Maintenance of Certification and member of the Retina Content Outline Rating and Exam Development Committees. In addition to serving as lecturer at national conferences, Dr. Lauer has been invited as teaching faculty internationally in Brazil, China, Hong Kong, and Japan. In 2014, he will co-chair the World Education Colloquium to address global accreditation of residency programs at the quadrennial World Ophthalmology Congress in Tokyo, Japan.

In addition to residency education, Dr. Lauer has mentored over 20 vitreoretinal fellows and served on the American Society of Retina Specialists (ASRS) Board of Directors to foster the education and inclusion of early-career retina specialists. He received the ASRS Honor Award in 2005. Presently, he serves on the Board of Managers of the AUPO-Fellowship Compliance Committee.

For research, Dr. Lauer has been OHSU's principal investigator (PI) for protocols sponsored by Diabetic Retinopathy Clinical Research network and has participated in their executive and manuscript-writing committees. He serves as PI and surgeon in a novel phase 1 clinical trial in humans studying the subretinal viral vector delivery to treat neovascular age-related macular degeneration and is co-investigator and surgeon in phase 1 clinical trials studying viral vector delivery in humans with Stargardt disease and Usher Syndrome. Dr. Lauer has served as local PI and writing committee member for the NIH-sponsored studies in retinal vein occlusion and has served as examining and treating ophthalmologist for the landmark Early Treatment for Retinopathy of Prematurity (ROP) Study that has vastly improved the visual outcomes of children who developed severe ROP as infants.

In postgraduate education, accountability, motivation and engagement are integral to both learners and teachers in the objective of training competent physicians and surgeons. Dr. Lauer is interested in strategies that promote motivation and engagement in the educational process of transforming students into professionals and lifelong learners.

Secretariat Award



The Secretariat Award recognizes ophthalmologists and non-ophthalmologists for special contributions to the Academy and the field of ophthalmology. Senior secretaries and secretaries in their respective areas select award recipients with approval from the Board of Trustees.

This annual award was developed to increase opportunities for individuals to be recognized for contributions that are outside the scope of the current Achievement Award program.

Ann Louise Coleman MD PhD, Secretary for Quality Care; Jeffrey A Nerad MD, Secretary for Knowledge Base Development; Christopher J Rapuano, Secretary for Ophthalmic Knowledge; Jeffrey S Heier MD, Secretary for Online Education/eLearning; Robert F Melendez MD, Editor-in-Chief, the ONE Network; Louis B Cantor MD, Senior Secretary for Clinical Education honor:

Lisa B Arbisser MD	Bettendorf, IA
Jason Bacharach MD	Petaluma, CA
Christopher L Blanton MD	Ontario, CA
Donald C Fletcher MD	San Francisco, CA
Rod Foroozan MD	Houston, TX
Jeffrey D Henderer MD	Philadelphia, PA
Stephen McLeod MD	San Francisco, CA
David C Musch Phd	Ann Arbor, MI
Sara S O'Connell MD	Overland Park, KS
Timothy W Olsen MD	Atlanta, GA
Chirag P Shah MD MPH	Boston, MA
Steven C Schallhorn MD	San Diego, CA
Edwin M Stone MD PhD	Iowa City, IA
C Gail Summers MD	Minneapolis, MN
Roger E Turbin MD	Livingston, NJ
Russell N Van Gelder MD	Seattle, WA
Evan L Waxman MD	Pittsburgh, PA
Robert E Wiggins MD	Asheville, NC

David A Durfee MD, Senior Secretary for Ophthalmic Practice honors:

Elise Levine MA CRC OCS	Mission Hills, CA
Derek Peece MBA	Incline Village, NV
Robert Wiggins Jr MD MHA	Asheville, NC

Daniel J Briceland, MD, Secretary for State Affairs; Gregory P Kwasny MD, Secretary for Federal Affairs; Michael X Repka MD, AAO Medical Director for Governmental Affairs; William L Rich III MD, AAO Medical Director of Health Policy; Cynthia Ann Bradford MD, Senior Secretary for Advocacy honor:

Michael V Boland MD	Baltimore, MD
Amy Chomsky MD	Nashville, TN
Mary Louise Z Collins MD	Baltimore, MD
Geoffrey G Emerson MD	Minneapolis, MN
Donald A Gagliano MD	National Harbor, MD
Elena M Jimenez MD	San Juan, Puerto Rico
David W Johnson MD	Denver, CO
James Luetkemeyer MD	Jefferson City, MO
Robert E Tibolt MD	Salem, OR

Phillip R Rizzuto MD, Secretary for Communications honors:

Gary S Hirshfield MD	Fresh Meadows, NY
Elena M Jimenez MD	San Juan, Puerto Rico
Monica Monica MD	Meterie, LA
Ivan R Schwab MD	Sacramento, CA
Jeffrey Whitman MD	Dallas, TX

Jonathan B Rubenstein MD, Secretary for Annual Meeting honors:

Gary S Schwartz MD	St. Paul, MN
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George B Bartley MD, Ophthalmology Editor honors:

Boel Bengtsson Phd	Malmo, Sweden
William R Freeman MD	La Jolla, CA
Ian Morgan MD	Camberra, Australia
Michael X Repka MD	Baltimore, MD
Peter AD Rubin MD	Palm Beach Gardens, FL

Tamara R Fountain MD, Secretary for Member Services honors:

Laurie Gray Barber MD	Litle Rock, AR
R V Paul Chan MD	New York, NY
Allan D Jensen MD	Baltimore, MD
Ronald E Smith MD	Los Angeles, CA
Geoffrey O Wilkes MD	San Francisco, CA

Richard P Mills MD MPH, Chief Medical Editor, EyeNet honors:

Santanu Mitra MBBS	Howrah, India
Sonal S Tuli MD	Gainesville, FL

Richard L Abbott MD, Secretary for Global Alliance honors:

Joseph Colin MD (in memoriam)	Bordeaux, France
Zelia Correa MD	Cincinnati, OH
Baxter F McLendon, MD	Brunson, SC
Fernando Pena MD	Bogota, Colombia
Victoria Sheffield	Kensington, MD

Achievement Award Program



The Achievement Award program recognizes individuals for their contributions to the Academy, its scientific and educational programs and to ophthalmology.

Categories of contribution for participation in the Annual Meeting include:

- Instruction Course, Skills or Breakfast With the Experts
- Scientific E-Poster presentation
- Film or Video Production
- Scientific Exhibitor
- Scientific Paper Presentation
- Symposia
- Scientific Poster Presentation
- Subspecialty Day

Informational Posters and Exhibits are not awarded points toward the Achievement Award program.

Other categories of contribution for Academy service include:

- Committee Members
- Trustees
- State Society Presidents
- Participants in the Academy's Leadership Development Program
- Representatives
- Authors, Co-Authors and Reviewers of Academy Educational Material
- Councilors
- Support of Advocacy Efforts

The program is based on a cumulative point system; **one point is awarded per category of contribution**. An individual can earn a maximum of three points per year. For example, an individual serving on a committee and presenting two scientific papers, one instruction course and one scientific poster during the Annual Meeting receives one point for committee participation, one point for the instruction course and one point for the paper. The individual would not receive a fourth point for the poster or the additional paper.

Individuals who earn 10 points receive the Achievement Award. Individuals who earn 30 points receive the Senior Achievement Award. Individuals who earn 60 points are eligible to receive the Life Achievement Honor Award. The Awards Committee reviews all nominees and submits their recommendations to the Board of Trustees for final approval.

On behalf of the Board of Trustees, we are pleased to announce the recipients of the 2013 Achievement Award, Senior Achievement Award and Life Achievement Honor Award.

The 2013 Awards Committee of the American Academy of Ophthalmology:

Jane C Edmond MD - Chair
Cynthia Ann Bradford MD
Daniel J Briceland MD
Louis B Cantor MD

John J Dagianis MD
Bradley Dean Fouraker MD
Amalia Miranda MD
Jonathan B Rubenstein MD

Life Achievement Honor Awards



A Jan Berlin MD FACS
Portland, ME



Massimo Busin MD
Forli, Italy



Emily Y Chew MD
Bethesda, MD



Alan S Crandall MD,
Salt Lake City, UT



Eric D Donnenfeld MD
Rockville Centre, NY



Richard K Dortzbach MD
Madison, WI



Daniel S Durrie MD
Overland Park, KS



Frederick T Fraunfelder MD
Portland, OR



Melvin I Freeman MD FACS
Bellevue, WA



William R Freeman MD
La Jolla, CA



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Louisville, KY



John L Keltner MD
Sacramento, CA



Burton J Kushner MD
Madison, WI



Jeffrey M Liebmann MD
New York, NY



Scott M MacRae MD
Rochester, NY



Harry A Quigley MD
Baltimore, MD

Life Achievement Honor Awards

Life Achievement
Honor Awards



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Pittsburgh, PA



Gregory L Skuta MD
Oklahoma City, OK



Ira J Udell MD
Great Neck, NY



Woodford S Van Meter MD
Lexington, KY

Senior Achievement Awards



Iqbal K Ahmed MD
Mississauga, Canada



Alay S Banker MD
Ahmedabad, India



Rosa Braga-Mele MD
North York, Canada



Robert A Braunstein MD
Morristown, NJ



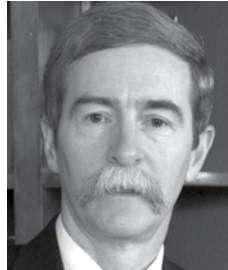
Kurt A Buzard MD
Henderson, NV



Chi-Chao Chan MD
Bethesda, MD



Donald J Cinotti MD
Jersey City, NJ



William S Clifford MD
Garden City, KS



Emmett T Cunningham Jr MD PhD
Hillsborough, CA



James A Davison MD
Marshalltown, IA



Deepinder K Dhaliwal MD
Pittsburgh, PA



Jane C Edmond MD
Houston, TX



Prashant Garg MD
Hyderabad, India



Alain Gaudric MD
Paris, France



Tarek S Hassan MD
Royal Oak, MI



Leon W Herndon MD
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Matthew Dean Kay MD
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Shigeru Kinoshita MD
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Winter Haven, FL

Senior Achievement Awards

Senior Achievement Awards



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Masahito Ohji MD
Otsu, Japan



David W Parke MD
North Branford, CT



Evelyn A Paysse MD
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Franco M Recchia MD
Nashville, TN



Douglas J Rhee MD
Boston, MA



Kenneth J Rosenthal MD FACS
Great Neck, NY



Roy Scott Rubinfeld MD
Chevy Chase, MD



James A Savage MD
Memphis, TN



Namrata Sharma MD MBBS-
Noida, India



John D Sheppard MD
Norfolk, VA



Michael E Snyder MD
Cincinnati, OH



Masoud Soheilian MD
Tehran, Iran



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Renée Solomon MD
New York, NY



Julian D Stevens DO
London, United Kingdom



Gustavo E Tamayo MD
Bogota, Colombia



William B Trattler MD
Miami, FL



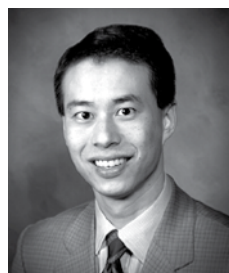
Rasik B Vajpayee MD
New Delhi, India



Kevin Lee Waltz MD
Indianapolis, IN



Lihteh Wu MD
San Jose, Costa Rica



Michael T Yen MD
Houston, TX



Terri L Young MD MBA
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Meerut, India



Ibrahim A Aljadaan MD
Riyadh, Saudi Arabia



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Noel A Alpines MD FACS
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Rahul Bhola MD
Louisville, KY



Preston H Blomquist MD
Dallas, TX



Manal Bouhaimed MBChB PhD
Safat, Kuwait



Bert Bowden MD
Huntsville, AL



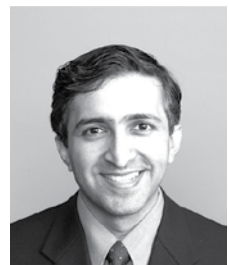
Angela N Buffenn MD MPH
Los Angeles, CA



David G Charteris MD MBChB
London, United Kingdom



Kelvin Kam Lung Chong MD
Hong Kong (SAR), Hong Kong



Vikas Chopra MD
Santa Monica, CA



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Jason S Ehrlich MD
Austin, TX



Tracy L Emond MS COE
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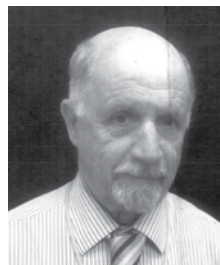
Marjan Farid MD
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Zaragoza, Spain



Rajesh Fogla MD FRCS
Hyderabad, India



Joseph L Fontenot MD
Daphne, AL



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Samer Hamada MD FRCPHth
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 Midlevels, Hong Kong



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Istanbul, Turkey



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San Pedro, Mexico



Andrew J Velazquez MD
Birmingham, AL



George O Waring IV MD
Charleston, SC



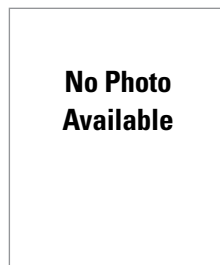
Duane A Wiggins MD
Farmington, NM



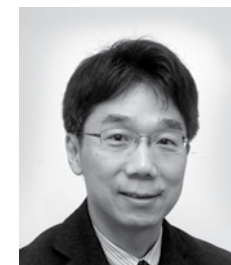
Edward J Wladis MD
Glenmont, NY



S Chien Wong MBBS FRCS
London, United Kingdom



May-Yung Yen MD
Taipei, Taiwan



Norihiko - MD PhD
Kyoto, Japan

Achievement Awards



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Seoul, Korea



Nagahisa Yoshimura MD PhD
Kyoto, Japan



Renzo A Zaldivar MD
Durham, NC



Kang Zhang MD PhD
LA Jolla, CA

International Ophthalmologist Education Award Recipients

The International Ophthalmologist Education Award was developed to recognize international Academy members who pursue lifelong education in ophthalmology. To qualify, international members need to earn 90 Continuing Medical Education (CME) credits over a period of three years. Half of these credits (45) must be from Academy-sponsored CME activities. After applying for the award, members are responsible for recording their Academy and non-Academy credits on their online CME transcript.

<i>Khalil M Al-Salem MBBS (Jordan)</i>	<i>Annabelle A Okada MD (Japan)</i>
<i>Khaled G Ammar MBBS (Egypt)</i>	<i>Alina Oprina MD (France)</i>
<i>Khaled Bairi MD (France)</i>	<i>Heitor Panetta MD (Brazil)</i>
<i>Antonio Barloggio MD (Switzerland)</i>	<i>Mohammad M Parvaresh Rizi MD (Iran, Islamic Republic Of)</i>
<i>Lovre Bojic MD (Croatia, Hrvatska)</i>	<i>Ana Cristina Perez MD (Ecuador)</i>
<i>Joaquim Campos Lopes MD (Portugal)</i>	<i>Alicia M Ponce MD (Honduras)</i>
<i>Wanessa Furtado Carneiro MD (Brazil)</i>	<i>Luis Danilo D Ponce MD (Honduras)</i>
<i>Emilio Dorronzoro, MD (Spain)</i>	<i>Muhammad S Raja MBBS (United Kingdom)</i>
<i>F Javier Farina MD (Spain)</i>	<i>Arturo J Ramirez-Miranda MD (Mexico)</i>
<i>Valentina Franco Cardenas, MD (Mexico)</i>	<i>Frederic Scholtes MD (France)</i>
<i>Howard V Gimbel MD MPH FRCSC (Canada)</i>	<i>Nobuyuki Shoji MD (Japan)</i>
<i>Stefanos F Glaros MD (Greece)</i>	<i>Hisham H Soliman MBBCh (United Arab Emirates)</i>
<i>Marta Hovan MD (England)</i>	<i>Jeannine Srourian MD (Syrian Arab Republic)</i>
<i>Soosan Jacob FRCS (India)</i>	<i>Gustavo E Tamayo MD (Colombia)</i>
<i>Ramesh Kekunnaya MBBS, MD (India)</i>	<i>Masoud Teimory MBChB (England)</i>
<i>Mounir A Khalifa MD (Egypt)</i>	<i>Colin G Thompson MBBS (Australia)</i>
<i>Thomas Kohnen MD (Germany)</i>	<i>Constantino Trapatsas MD (Panama)</i>
<i>Igor J Lundqvist MD (Netherlands)</i>	<i>Paulo Jorge Vale MD (Portugal)</i>
<i>Ahmad B Maqsood MBBS (Pakistan)</i>	<i>Paolo Vinciguerra MD (Italy)</i>
<i>Andrzej Mierzejewski MD (Poland)</i>	<i>Enzo M Vingolo MD PhD (Italy)</i>
<i>Lizette L Mowatt, MBBS (Jamaica)</i>	<i>Leandro C Zacharias MD (Brazil)</i>
<i>Leo J Noordzij MD (Netherlands)</i>	
<i>Bizimana Nzabamwita MD (Rwanda)</i>	

International Scholar Award Recipients

The International Scholar Award honors international Academy members who have demonstrated their dedication to lifelong education in ophthalmology.

To qualify, international members must have already received the International Ophthalmologist Education Award. They need to earn 60 Continuing Medical Education (CME) credits within two years of applying and half of the credits (30) must be from AAO sponsored CME activities. They must also successfully complete a timed, online self-assessment test.

<i>Iordanis P Besmertis, MD (Greece)</i>	<i>Ramesh Murthy MBBS (India)</i>
<i>Mario A Chica MD (El Salvador)</i>	<i>Erkan Mutlukan MD PhD (United Kingdom)</i>
<i>Luis H De La O MD (Mexico)</i>	<i>Georgios P Paleokastritis MD (Greece)</i>
<i>Matthias Christian Grieshaber MD (Switzerland)</i>	<i>Prasan M Rao, MBBS, MS (United Arab Emirates)</i>
<i>Tsukasa Hanemoto MD (Japan)</i>	<i>Carlos A Restrepo Pelaez MD (Colombia)</i>
<i>Sergio Hernandez-Da Mota MD (Mexico)</i>	<i>Jan E Siegersma MD (Norway)</i>
<i>Choun-ki Joo MD (Korea, Republic of)</i>	<i>Lihteh Wu MD (Costa Rica)</i>
<i>Dieudonne Kaimbo Wa Kaimbo MD (Congo)</i>	
<i>Antonios Kotzampasis MD (Greece)</i>	

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The Visionary Society

The Academy greatly appreciates the generous support provided by the following individuals, corporations, and organizations. The Visionary Society recognizes donors who have contributed \$1 million or more to the Academy Foundation.

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The Academy would like to thank the following companies for their generous support of the 2013 Annual Meeting and Subspecialty Day.

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\$100,000 to \$249,999

Abbott Medical Optics, Inc.	\$112,500
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Ophthalmic Mutual Insurance Company (OMIC)	\$57,500
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At
Booth #1344

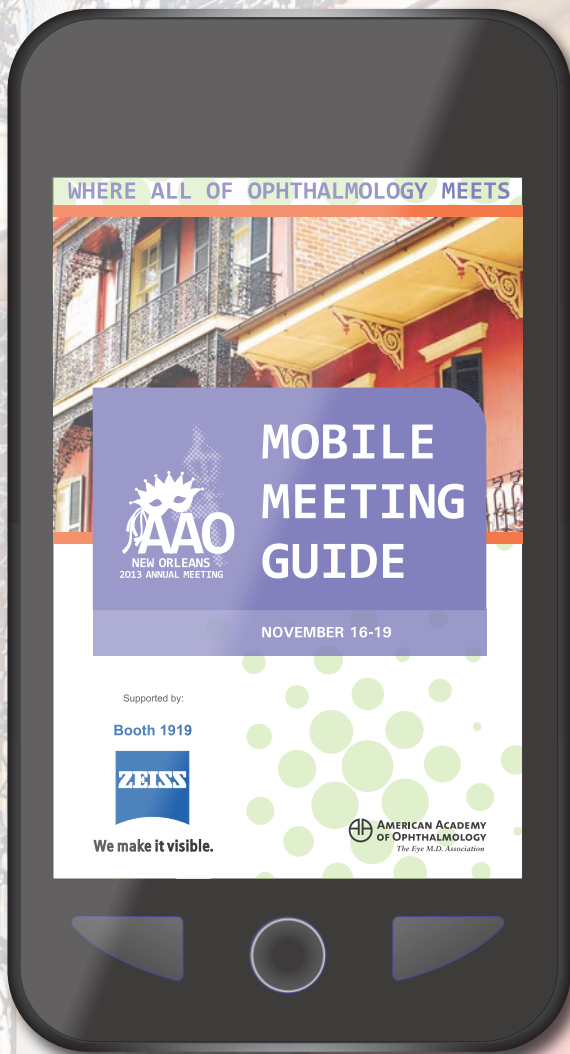


Alphagan[®] P 0.1%
(brimonidine tartrate ophthalmic solution) 0.1%

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- Meeting directory and information
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- Exhibitor information
- Convention center floor plans
- New Orleans restaurant information

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Each subcommittee has five reviewers who grade the instruction courses and paper/poster abstracts, and three subcommittee members who review the grades and select the courses and abstracts for presentation. The chair of the subcommittee represents the group on the Annual Meeting Program Committee. This peer-review selection process ensures the quality and integrity of Academy educational programs and allows broader input from Academy Members.

The Annual Meeting Program Committee monitors the scientific program by reviewing evaluation data, the post-Annual Meeting survey and reports from independent course/symposium monitors.

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The Skills Transfer Advisory Committee is responsible for selecting the Skills Transfer courses and labs.

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The AAOE Program Committee, with the AAOE Board of Directors, are responsible for selecting the AAOE Program and Practice Management Breakfast With the Experts roundtables.

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Topic Key

CAT - Cataract
 COM - Computers, Information Technology
 COR - Cornea, External Disease
 EHR - Electronic Health Records
 ETH - Ethics
 GEN - General Medical Care
 GLA - Glaucoma
 GO - Global Ophthalmology
 HIST - Ophthalmic History
 INTRA - Intraocular Inflammation, Uveitis

MEDED - Medical Education
 NEURO - Neuro-Ophthalmology
 NON - General Non-Medical
 OPTIC - Optics, Refraction, Contact Lenses
 PATH - Ocular Tumors, Pathology
 PEDS - Pediatric Ophthalmology, Strabismus
 PLAST - Orbit, Lacrimal, Plastic Surgery
 REF - Refractive Surgery
 RET - Retina, Vitreous
 VIS - Vision Rehabilitation

PRACTICE MANAGEMENT/AAOE

PM-ASC - Ambulatory Surgery Centers
 PM-BUS - Business Operations & Finance
 PM-EHR - Electronic Health Records
 PM-HMR - Human Resources
 PM-IMT - Information Technology
 PM-MKT - Marketing & Business Development
 PM-OPT - Optical Dispensing
 PM-PROF - Professional Growth
 PM-REMB - Coding & Reimbursement
 PM-RISK - Compliance & Risk Management

Friday, Nov. 15

Time	Type	No.	\$	Title	Topic	Room	Page
7:30 AM - 3:00 PM	SPE	SPE01		DICOM Working Group 9 - Eye Care		Marriot New Orleans, Tchoupitoulas	243
8:00 AM - 5:00 PM	SUB		\$	Retina 2013: Let the Good Times Roll	RET	The Great Hall	
8:00 AM - 5:11 PM	SUB		\$	Refractive Surgery 2013: Perfecting Vision	REF	La Nouvelle Orleans AB	

Saturday, Nov. 16

Time	Type	No.	\$	Title	Topic	Room	Page
8:00 AM - 5:00 PM	SUB		\$	The Future Is Now! #Glaucoma2013	GLA	New Orleans Theater AB	
	SUB		\$	Neuro-Ophthalmology 2013: What to Make of This? Recognizing the Distinctive Neuro-Ophthalmic Symptom, Sign, or Test	NEURO	New Orleans Theater C	
	SUB		\$	Oculofacial Plastic Surgery 2013: Blues, Blephs, and Blowouts	PLAST	243	
8:00 AM - 5:20 PM	SUB		\$	Pediatric Ophthalmology 2013: Preparing for the Next Generation	PEDS	Hall B, Session Room	
8:00 AM - 5:30 PM	SUB		\$	Cornea 2013: Through the Looking Glass – Where We Are, Where We’re Headed	COR	La Nouvelle Orleans C	
	SUB		\$	Refractive Surgery 2013: Perfecting Vision	REF	La Nouvelle Orleans AB	
8:00 AM - 5:40 PM	SUB		\$	Retina 2013: Let the Good Times Roll	RET	The Great Hall	
8:00 - 11:00 AM	ICD		\$	Conquering ICD-10-CM for Ophthalmology	PM-REMB	293	258
8:00 AM - 12:00 PM	AAOESP	SPE06	\$	The Profitable Practice: Managing Your Billing Operations	PM-BUS	286	272
8:30 AM - 12:30 PM	AAOESP	SPE03	\$	Whiz Through Excel — Your Data Management Wizard	PM-BUS	290	272
9:00 AM - 12:00 PM	SPE	SPE05	\$	Selling and Purchasing on eBay, Craigslist, and other Mediums: How to Clean Your Office with Profit	COM	350	243
9:00 AM - 4:00 PM	AAOESP	SPE04	\$	Keeping Your Practice Out of Legal Hot Water: An HR and Compliance Workshop	PM-BUS	283	272
9:30 AM - 5:00 PM	TP			Technology Pavilion		Hall I1, Booth 5145	252
12:00 - 4:00 PM	AAOESP	SPE07		Bending the ASC Performance Curve	PM-ASC	288	272
12:00 - 5:00 PM	LL			Learning Lounge		Hall G, Booth 3647	246
12:30 - 3:30 PM	CAMP		\$	Coding Camp	PM-REMB	293	258
1:00 - 2:15 PM	ACADCAFE	SYM45		Academy Cafe: Maintenance of Certification Update	NON	271	241
1:00 - 4:00 PM	SPE	SPE08	\$	Use Blogging & Social Networking to Super Charge Your Website & Internet Marketing	COM	350	243
2:00 - 3:00 PM	SPE	SPE26		Q&A with FDA	NON	224	243
2:00 - 3:30 PM	SYM	SYM01		What are the Opportunities and Resources for Working in Developing Countries?	GO	255	119
2:30 - 3:45 PM	ACADCAFE	SYM44		Academy Cafe: Cataract	CAT	271	241

Programs-by-Day

Sunday, Nov. 17

Time	Type	No.	\$	Title	Topic	Room	Page
6:30 AM - 7:30 PM	SPE	SPE25	\$	28th Annual Run for Vision	NON		243
7:30 - 8:30 AM	BWE		\$	Breakfast With the Experts Roundtables		HALL C	50
8:00 - 10:30 AM	SKILLS	LAB100	\$	Basic Oculoplastic Surgery	PLAST	349	107
8:00 - 11:00 AM	SYM	SYM02		Introduction to Cornea and Lens-Based Refractive Surgery for Residents	REF	228	119
8:30 - 10:00 AM	OPSESS	SYM53		Opening Session	NON	The Great Hall	117
9:00 - 11:00 AM	SKILLS	LAB101	\$	Is It Time to Replace Gonioscopy by Anterior Segment Imaging in the Diagnosis and Management of Angle-Closure Glaucoma?	GLA	343	104
9:00 - 11:15 AM	SKILLS	LEC102/102	+	Advanced Refractive Cataract Surgery and Anterior Segment Reconstruction	CAT	211	99
	SKILLS	LEC103/103	+	Computerized Scanning Imaging of the Optic Nerve and Retinal Nerve Fiber Layer	GLA	225	104
	SKILLS	LEC104/104	+	Surgery for Severe Corneal and Ocular Surface Disease	COR	214	102
	SKILLS	LEC105/105	+	Glaucoma Laser Therapy: Innovations and Advice From the Experts	GLA	R03	104
	SKILLS	LEC106/106	+	Management of Vitreous for the Anterior Segment Surgeon	CAT	R04	99
9:30 AM - 12:00 PM	SKILLS	LAB107	\$	Soft Contact Lens Fitting for the Practicing Ophthalmologist	OPTIC	350	107
9:30 AM - 5:00 PM	TP			Technology Pavillion		Hall 11, Booth 5145	252
10:00 - 10:30 AM	SPE	SPE11		Annual Business Meeting	NON	The Great Hall	243
10:00 AM - 12:00 PM	AAOESP	SPE09		AAOE General Session: Creating the Ultimate Patient Experience and Patients for Life!	PM-BUS	291	272
10:00 AM - 2:00 PM	SPE	SPE10	+	2013 Young Ophthalmologist Program — It's YO World: Jumpstart Your Career	NON	252	243
10:15 - 11:15 AM	IC	161	+	Visual Electrophysiology Testing: Principles and Clinical Applications	RET	340	91
	OP	OP02		Intraocular Inflammation, Uveitis Original Paper Session	INTRA	255	146
10:15 AM - 12:30 PM	SKILLS	LEC108/108	+	The Surgical Correction of Astigmatism	REF	355	111
	SKILLS	LEC109/109	+	Phakic IOLs	REF	R02	112
	SKILLS	LEC110/110	+	Macular OCT: Mastering the Basics	RET	R08	113
	SKILLS	LEC111/111	+	Cosmetic Botulinum Toxin and Facial Fillers: An Introductory Course	PLAST	338	107
	SKILLS	LEC112/112	+	Fundamental Facelifting Techniques	PLAST	215	108
	IC	150	+	Periocular Tumors and Techniques of Eyelid Reconstruction	PLAST	335	82
	IC	151	+	The Boston Keratoprosthesis: Case-Based Presentations Highlighting the Essentials for Beginning and Experienced Surgeons	COR	209	64
	IC	152	+	Code Red: Mastering Phaco Nightmares and Worst-Case Scenarios — A Video-Based Course	CAT	218	57
	IC	153	+	Facial Fracture Repair: Better Outcomes and Improved Technique	PLAST	223	84
	IC	154	+	Conquering Capsule Complications: A Video Primer	CAT	R06	65
	IC	155	+	Endothelial Keratoplasty (DSEK/DSAEK/DMEK/DMAEK): Current Strategies to Improve Results and Avoid Complications	COR	R05	64
	IC	156	+	Management of Pediatric Cataracts	PEDS	222	86
	IC	157	+	Review of Clinical Optics	OPTIC	217	81
	IC	158	+	Managing Angle-Closure Glaucoma With Crystalline Lens Removal and Adjunctive Procedures	GLA	224	72
	IC	159	+	Retinaws: A Comprehensive Video-Oriented Course on Challenging Retinal Cases in the Operating Room	RET	221	90
	IC	160	+	Mystery Retina 2013: Interactive Discussion of Challenging Cases	RET	346	90
	IC	162	+	Fundamentals of Anterior Segment Reconstruction	CAT	210	57
	IC	163	+	Extreme Corneal Ectasia: Battle of the Bulge	COR	R01	65
	IC	164	+	Stereo Anatomy of the Orbit, Eyelid, and Lacrimal System: A Surgeon's Perspective	PLAST	333	82
	IC	165	+	Basic Browlift: Principles and Techniques	PLAST	220	82
	IC	166	+	ROP Screening and Treatment: What You Wanted to Know but Were Afraid to Ask (Intermediate/Advanced)	PEDS	208	86

Sunday, Nov. 17 (cont.)

Time	Type	No.	\$	Title	Topic	Room	Page
10:30 - 11:45 AM	ACADCAFE	SYM46		Academy Cafe: Oculoplastics	PLAST	271	241
10:30 AM - 12:00 PM	SYM	SYM03		Innovation in Ophthalmology: From Theory to Therapy	MEDED	New Orleans Theater C	120
	SYM	SYM04		Detection of Glaucomatous Progression	GLA	La Nouvelle Orleans C	120
	SYM	SYM05		Evidence Base for Vision Rehabilitation	VIS	342	120
	SPOTLIT	SPO3		Spotlight on Ophthalmic Office Emergencies: Things You Don't Want to Miss	GEN	La Nouvelle Orleans AB	119
10:30 AM - 12:15 PM	OP	OP01		Cataract Original Paper Session	CAT	243	138
10:30 AM - 5:00 PM	LL			Learning Lounge		Hall G, Booth 3647	246
10:45 AM - 12:00 PM	SYM	SYM06		The Great Debate: Retina	RET	The Great Hall	120
11:30 AM - 12:00 PM	SYM	SYM54		Michael F Marmor MD Lecture in Ophthalmology and the Arts	NON	255	120
11:30 AM - 12:30 PM	IC	167	+	Breakthrough to Social Media	COM	340	64
	IC	168	+	Tips for Cosmetic Eyelid Surgery in Asian Patients	PLAST	211	82
	IC	169	+	Cell Biology, Genetics, and Outflow Biochemistry of Glaucoma in 2013 and Beyond	GLA	214	73
	IC	170	+	Normal-Tension Glaucoma: Evaluation and Treatment	GLA	225	73
	IC	171	+	Femto Laser: Diagnosis and Management of Intraoperative and Postoperative Complications With the Use of a Femtosecond Laser for LASIK Surgery	REF	R03	88
11:30 AM - 1:00 PM	SKILLS	LAB106A	\$	Management of Vitreous for the Anterior Segment Surgeon <i>Prerequisite: LEC106</i>	CAT	356	99
11:30 AM - 2:00 PM	SKILLS	LAB113	\$	Enucleation and Evisceration: Theory and Practice	PLAST	349	108
11:30 AM - 5:00 PM	SPE	SPE24		Fall Council Meeting	GEN	Sheraton, Grand Ballroom C	243
12:00 - 2:00 PM	SKILLS	LAB103A	\$	Computerized Scanning Imaging of the Optic Nerve and Retinal Nerve Fiber Layer <i>Prerequisite: LEC103</i>	GLA	343	104
12:15 - 1:45 PM	SYM	SYM07		Extreme Vision: Science Fiction or Truth	HIST	255	121
	SYM	SYM08		Cataract Surgery: The Cutting Edge	CAT	The Great Hall	121
	SPE	SPE12		2014 Medicare Update	GEN	New Orleans Theater C	244
12:30 - 1:30 PM	PT			Scientific Poster Tours		Meeting Pt., Hall C	156
12:30 - 2:30 PM	SKILLS	LAB105A	\$	Glaucoma Laser Therapy: Innovations and Advice From the Experts <i>Prerequisite: LEC105</i>	GLA	354	104
12:45 - 1:45 PM	SYM	SYM57		Big Data Drives Better Outcomes: The Power and Benefits of the IRIS™ Registry	EHR	La Nouvelle Orleans C	122
	SPE	SPE13		Ergonomics/Musculoskeletal Disorders in Ophthalmologists	GEN	342	244
	SPE	SPE14		The Resident Hub User Group Session	GEN	223	244
	SPE	SPE15		American Board of Ophthalmology: Panel Presentation and Q&A with Board of Directors	NON	222	244
	SYM	SYM25		Seeing Patients Is What I Want to Do: Adjusting to the Challenge of Extending My Career in Ophthalmology	NON	243	122
1:00 - 2:15 PM	ACADCAFE	SYM47		Academy Cafe: Cornea, External Disease	COR	271	241
1:00 - 2:30 PM	SKILLS	LAB108A	\$	The Surgical Correction of Astigmatism <i>Prerequisite: LEC108</i>	REF	345	112
1:30 - 1:45 PM	SPE	SPE16		OMIC Annual Members Meeting	NON	224	244
1:30 - 3:00 PM	SKILLS	LAB109A	\$	Phakic IOLs <i>Prerequisite: LEC109</i>	REF	356	112
	SKILLS	LAB111A	\$	Cosmetic Botulinum Toxin and Facial Fillers: An Introductory Course <i>Prerequisite: LEC111</i>	PLAST	352	107
1:30 - 3:30 PM	SKILLS	LAB114	\$	The iPhone for Ophthalmologists (Basic)	COM	350	101
2:00 - 3:00 PM	SKILLS	LEC115/115	+	Fat Grafting and Volume Restoration	PLAST	335	108

Programs-by-Day

Sunday, Nov. 17 (cont.)

Time	Type	No.	\$	Title	Topic	Room	Page
	SKILLS	LEC117/117	+	New Techniques for Strabismus Surgery	PEDS	217	111
	IC	172	+	Glaucoma Filtration Device Mini-shunt: Friend or Foe?	GLA	346	73
	AAOEIC	173	+	Top 10 Topics Ophthalmology Practices Ask Us About	PM-BUS	286	259
	IC	177	+	Continuous 24-Hour IOP Monitoring for Glaucoma	GLA	355	73
	IC	179	+	Cell-Based Therapy for Ocular Surface Reconstruction	COR	340	65
	IC	181	+	Evolution's Witness: How Eyes Evolved	HIST	208	81
	AAOEIC	182	+	Compounding Pharmacies: Legal and Regulatory Issues	PM-RISK	291	265
	IC	183	+	IOL Power Calculation: Problems With LASIK Eyes	CAT	211	57
	AAOEIC	188	+	Website 101: Three Steps to Creating Your First Website	PM-MKT	295	268
	AAOEIC	193	+	Ophthalmic ASC Administration, Operations and Procedures	PM-OPT	290	259
	AAOEIC	194	+	Internal Financial Controls for the Small Practice	PM-BUS	296	259
	IC	197	+	An Approach to Selecting and Implementing Electronic Health Records in Your Practice	EHR	215	71
	IC	199	+	Retinal OCT Interpretation 101	RET	R08	91
	AAOEIC	200	+	Quit Writing Policies: Create a Culture Using Core Values	PM-HRM	294	267
	IC	201	+	The Management of Neovascular Glaucoma in 2013	GLA	214	73
	AAOEIC	204	+	Ophthalmology for Non-Clinical Personnel	PM-PROF	293	270
	SYM	SYM56		Best of NANOS 2013: Featuring Best Papers from the North American Neuro-Ophthalmology Society	NEURO	255	122
2:00 - 3:15 PM	SYM	SYM09		The Great Debate: Glaucoma	GLA	The Great Hall	122
2:00 - 3:30 PM	SYM	SYM10		Innovations in Pediatric Eye Surgery	PEDS	La Nouvelle Orleans AB	123
	SYM	SYM11		Scientific Advancements in Ophthalmic Plastics: Implications for the Practicing Ophthalmologist	PLAST	La Nouvelle Orleans C	123
	SYM	SYM12		Keratoconus: Past, Present, and Future	OPTIC	243	124
2:00 - 4:00 PM	SPE	SPE17		The Bruce E Spivey MD Lecture in Risk Management & Patient Safety and OMIC Forum	NON	New Orleans Theater C	244
2:00 - 4:15 PM	SKILLS	LEC116/116	+	Blepharoplasty	PLAST	225	108
	IC	174	+	Current Topics in Cornea/External Disease: Highlights of the Basic and Clinical Science Course 8	COR	223	65
	IC	175	+	Diagnosis and Treatment of Polypoidal Choroidal Vasculopathy	RET	R03	91
	IC	176	+	Low Vision Rehabilitation for Ophthalmologists	VIS	R01	96
	IC	178	+	A Step-by-Step Primer to Starting LASIK in 2013	REF	209	88
	IC	184	+	Glaucoma Postop Care in the Office: A Video Compendium of Techniques—When and How to Intervene	GLA	R02	73
	IC	185	+	Cataract Surgery in the Setting of Ocular Comorbidities and High-Risk Features for Intraoperative and Postoperative Complications	CAT	218	57
	IC	186	+	Update on Treatments for Diabetic Retinopathy: Clinically Relevant Results from the Diabetic Retinopathy Clinical Research Network	RET	R05	91
	IC	187	+	Danger Zone: Refractive Surgery Nightmares and Worst-Case Scenarios: A Video-Based Course	REF	222	89
	IC	189	+	Medical and Surgical Therapy and Diagnosis of Uveitis	INTRA	220	78
	IC	190	+	Understanding Nystagmus: A Practical Approach for the Clinician	NEURO	R04	79
	IC	191	+	Diagnostic and Therapeutic Dilemmas in Neuro-Ophthalmology	NEURO	333	79
	IC	192	+	Spectral Domain OCT Interpretation for the General Ophthalmologist	RET	228	91
	AAOEIC	195	+	Doctors and Administrators: Working Together to Make Sound Financial Decisions	PM-BUS	288	259
	IC	196	+	Retinal and Choroidal Manifestations of Selected Systemic Diseases 2013	RET	R06	91
	IC	198	+	Ocular Surface Disease Management: Moving From Adequate to Expert	COR	338	65
	AAOEIC	202	+	A Practical Guide to Understanding and Negotiating Your First Employment Agreement	PM-PROF	297	270
2:00 - 4:15 PM	IC	203	+	Help! A Corneal Ulcer Just Walked In! What Do I Do Next?	COR	210	65

Sunday, Nov. 17 (cont.)

Time	Type	No.	\$	Title	Topic	Room	Page	
	AAOEIC	307	+	When to Use E/M and When to Use Eye Codes	PM-REMB	283	263	
2:30 - 3:45 PM	ACADCAFE	SYM48		Academy Cafe: Retina	RET	271	241	
3:00 - 4:30 PM	SYM	SYM55		2013 Modern Technologies and Techniques for Young Ophthalmologists to Know	GEN	252	124	
3:00 - 5:00 PM	SKILLS	LAB110A	\$	Macular OCT: Mastering the Basics <i>Prerequisite: LEC110</i>	RET	343	113	
3:00 - 5:30 PM	SKILLS	LAB118	\$	Oculoplastic Surgery: Anatomic Foundations, Surgical Techniques, and Enhanced Results	PLAST	349	109	
3:15 - 4:15 PM	AAOEIC	205	+	A Physician's Guide to Avoiding Embezzlement	PM-RISK	295	265	
	IC	207	+	Allergic Eye Disease: An Enigma for Physicians	COR	215	66	
	IC	208	+	Simplifying Treatment of Diabetic Retinopathy for the Comprehensive Ophthalmologist: What You Really Need to Know in 2013	RET	217	92	
	AAOEIC	209	+	Forecasting Staffing Needs: A Volume-Based Model	PM-HRM	296	267	
	AAOEIC	210	+	Meaningful Use Stage 2 and How to Survive a Meaningful Use Audit	PM-EHR	291	266	
	AAOEIC	211	+	How to Monitor and Maintain an Efficient Practice	PM-BUS	294	259	
	AAOEIC	212	+	Strategic Planning by Fact	PM-BUS	293	259	
	AAOEIC	213	+	How to Become a Better Leader	PM-PROF	290	270	
	3:15 - 5:30 PM	SKILLS	LEC119/119	+	Trabeculectomy by Internal Approach Surgery for Adult Open-Angle Glaucoma	GLA	340	105
SKILLS		LEC120/120	+	Phacoemulsification and Advanced Techniques: The Core Curriculum	CAT	211	99	
SKILLS		LEC121/121	+	Endothelial Keratoplasty Techniques	COR	342	102	
SKILLS		LEC122/122	+	Endothelial Keratoplasty Surgery: Comprehensive Overview and Surgical Pearls	COR	208	103	
SKILLS		LEC123/123	+	Manual Extracapsular Cataract Extraction Surgery: Indications and Techniques	CAT	346	100	
SKILLS		LEC124/124	+	Glaucoma Filtration Surgery	GLA	335	105	
SKILLS		LEC125/125	+	Schlemm Canal Surgery	GLA	214	105	
IC		206	+	Tackling Weak Zonules and Using Capsular Tension Devices	CAT	R08	58	
3:30 - 5:10 PM		OP	OP03		Cataract Original Paper Session	CAT	255	139
3:30 - 5:30 PM		SKILLS	LAB102A	\$	Advanced Refractive Cataract Surgery and Anterior Segment Reconstruction <i>Prerequisite: LEC102</i>	CAT	356	99
	SKILLS	LAB104A	\$	Surgery for Severe Corneal and Ocular Surface Disease <i>Prerequisite: LEC104</i>	COR	345	102	
	SKILLS	LAB117A	\$	New Techniques for Strabismus Surgery <i>Prerequisite: LEC117</i>	PEDS	354	111	
3:45 - 5:00 PM	SYM	SYM14		Best of the Anterior Segment Specialty Meetings 2013	GEN	La Nouvelle Orleans C	125	
3:45 - 5:15 PM	SPOTLIT	SP01		Spotlight on OCT	GLA	The Great Hall	125	
	SYM	SYM15		A Sticky Problem: Evaluation and Management of Chronic Socket Discharge	PLAST	243	125	
	SYM	SYM16		Mythbusters: Examining the Orthoptic and Surgical Management of the Most Puzzling Childhood Syndromes	PEDS	La Nouvelle Orleans AB	126	
4:00 - 5:30 PM	SKILLS	LAB126	\$	Workshop in Techniques of Lacrimal Intubation	PLAST	352	109	
4:15 - 5:15 PM	SYM	SYM13		International Opportunities for Young Ophthalmologists	GO	New Orleans Theater C	126	
4:30 - 5:30 PM	IC	214	+	Anterior Segment Imaging: A Practical Guide for Ophthalmologists	COR	333	66	
	AAOEIC	215	+	Top 10 Success Tips for Your EHR Implementation	PM-EHR	288	266	
	IC	216	+	Approach to Genetic Eye Diseases for the Comprehensive Ophthalmologist	PEDS	R03	86	
	IC	217	+	Pearls for Evaluating Corneal Topography in Patients Scheduled for Cataract Surgery	CAT	218	58	
	IC	218	+	How to Successfully Accomplish Endothelial Keratoplasty in the Presence of Significant Ocular Comorbidities	COR	221	66	
4:30 - 5:30 PM	IC	219	+	Canal, Trab, or Tube: What Should I Do?	GLA	R04	74	

Programs-by-Day

Sunday, Nov. 17 (cont.)

Time	Type	No.	\$	Title	Topic	Room	Page
	IC	220	+	The Institutional Review Board Submission Process: Why Should I Care, and What If I Don't?	ETH	217	71
	IC	221	+	Canal-Based Glaucoma Surgery: Canaloplasty vs. Microstent Implantation: Everything You Want to Know	GLA	223	74
	IC	222	+	Diagnosis, Optic Neuropathy: Now What?	NEURO	224	79
	IC	223	+	Electronic Health Record and Image Data Management Implementation: Rapid-Fire Presentations and Panel Discussion	EHR	222	71
	IC	224	+	Visual Fields in Neuro-Ophthalmology	NEURO	R02	79
	AAOEIC	225	+	Financial Analysis and Reporting	PM-BUS	283	260
	IC	226	+	Diagnosis And Management of Corneal Perforation	COR	R05	66
	IC	227	+	Contact Lens in Ophthalmology Practice	OPTIC	209	81
	AAOEIC	228	+	Impact of Electronic Health Records on Malpractice Claims Against Ophthalmologists	PM-EHR	295	266
	IC	229	+	Artificial Iris Implantation	CAT	210	58
	AAOEIC	230	+	Financial Benchmarking for the Retina Practice	PM-BUS	296	260
	AAOEIC	231	+	Transition From Training to Practice	PM-PROF	293	270
	AAOEIC	232	+	Optical Dispensing: Is It Financially Feasible for Your Practice?	PM-OPT	290	269
	AAOEIC	233	+	The First Few Years of Practice: Some Key Concepts for Young Ophthalmologists	PM-PROF	297	270
	IC	234	+	Where Neuro-Ophthalmology and Oculoplastics Collide: Challenging Cases and Topics	PLAST	338	83
	IC	235	+	Toric IOL Implantation: How to Improve Results and Manage Complications	CAT	225	59
	AAOEIC	236	+	Ophthalmology Practice Buy-In and Pay-Out Arrangements	PM-BUS	294	260
	IC	237	+	Diplopia After Cataract and Refractive Surgery	PEDS	215	86
	AAOEIC	238	+	ICD-10-CM: Simplifying the Complex	PM-REMB	291	263
	IC	239	+	How to Get the Most Out of Your Pathologist	PATH	R01	80
	IC	240	+	Anterior Segment Surgery in 3-D	CAT	R06	59
	IC	241	+	Intraoperative Floppy Iris Syndrome: Pearls for Management and Prevention	CAT	228	59

Monday, Nov. 18

Time	Type	No.	\$	Title	Topic	Room	Page
7:30 - 8:30 AM	BWE		\$	Breakfast With the Experts Rountables		Hall C	50
	SKILLS	LAB119A	\$	Trabeculectomy by Internal Approach Surgery for Adult Open-Angle Glaucoma <i>Prerequisite: LEC119</i>	GLA	354	105
8:00 - 9:30 AM	SKILLS	LAB120A	\$	Phacoemulsification and Advanced Techniques: The Core Curriculum <i>Prerequisite: LEC120</i>	CAT	356	100
8:00 - 10:00 AM	SKILLS	LAB115A	\$	Fat Grafting and Volume Restoration <i>Prerequisite: LEC115</i>	PLAST	352	108
	SKILLS	LAB121A	\$	Endothelial Keratoplasty Techniques <i>Prerequisite: LEC121</i>	COR	345	103
	SKILLS	LAB127	\$	Neuroimaging in Ophthalmology	NEURO	343	107
8:00 - 11:00 AM	SKILLS	LAB128	\$	Orbitofacial Fracture Repair: Plating Workshop	PLAST	349	109
8:15 - 10:15 AM	SYM	SYM20		Advances in Keratoplasty: Where We Are in 2013	COR	La Nouvelle Orleans C	126
8:15 AM - 12:15 PM	SPOTLIT	SPO2		Spotlight on Cataract Complications: M&M Rounds—Learning From My Mistakes	CAT	The Great Hall	120
8:30 - 9:45 AM	ACADCAFE	SYM49		Academy Cafe: Glaucoma	GLA	271	241
8:30 - 10:00 AM	SYM	SYM17		Quality Measures in Ophthalmology: The Future Landscape	GEN	New Orleans Theater C	127
	SYM	SYM18		Changing Paradigms in the Management of Venous Occlusive Disease	RET	La Nouvelle Orleans AB	128
	SYM	SYM19		Fitness for Duty: What's Age Have to Do With It?	GEN	243	128
	OP	OP04		Oculoplastics Original Paper Session	PLAST	255	147

Monday, Nov. 18 (cont.)

Time	Type	No.	\$	Title	Topic	Room	Page
8:30 - 11:00 AM	SYM	SYM21		2013 Global Forum: A Kaleidoscope of Volunteering in Developing Countries — Global Ophthalmology, Making a Difference	GO	252	128
9:00 - 10:00 AM	SKILLS	LAB119B	\$	Trabeculotomy by Internal Approach Surgery for Adult Open-Angle Glaucoma <i>Prerequisite: LEC119</i>	GLA	354	105
	AAOEIC	303	+	Creating a Clinical Trial Unit	PM-BUS	297	260
	IC	305	+	Phacoemulsification in Eyes With Complex Corneal Situations	CAT	355	59
	IC	309	+	Implanting the Add-On Mirror Telescopic Intraocular Implant in AMD Eyes: Patient Selection, Surgical Technique and Clinical Results	CAT	225	59
	IC	310	+	Evaluation and Treatment of Lower Lid Ectropion, Entropion, and Retraction	PLAST	210	83
	IC	313	+	Evaluation and Management of Orbital Cellulitis	PLAST	340	83
	AAOEIC	315	+	Managing Up!	PM-PROF	293	270
	AAOEIC	317	+	Advanced Ophthalmology Billing	PM-BUS	296	260
	IC	320	+	Pediatric Corneal Infections: A Systematic Approach to Diagnosis and Management	COR	221	67
	AAOEIC	324	+	Securing Access in the Age of ACOs	PM-BUS	286	260
	IC	325	+	Should My Visually Impaired Patient Be Driving?	VIS	209	96
	AAOEIC	327	+	Key Performance Indicators: Numbers Can Lie	PM-BUS	283	260
	AAOEIC	328	+	How to Create an Effective Dispensary Website Tab That Gets Results	PM-OPT	290	269
	AAOEIC	329	+	Budgeting for the Ophthalmology Practice	PM-BUS	294	261
	IC	330	+	From Cadaver Eyes to Virtual Reality: Surgical Simulators 101	CAT	335	60
	AAOEIC	331	+	Independent Contractors vs. Employees: The Risks of Misclassification	PM-RISK	295	265
9:00 - 11:00 AM	SKILLS	LAB129	\$	The iPhone for Ophthalmologists (Advanced)	COM	350	102
9:00 - 11:15 AM	AAOEIC	180	+	Audits: It's Not a Matter of If, but When	PM-REMB	288	263
	IC	300	+	Difficult Strabismus Problems: Diagnosis and Management 2013	PEDS	223	87
	IC	301	+	Advanced IOL Power Calculations for the Cataract and Refractive Surgeon	CAT	R06	59
	IC	302	+	Electronic Health Records: Compliance and Medicolegal Issues	EHR	333	71
	IC	304	+	Thyroid Eye Disease	PLAST	211	59
	IC	306	+	How to Interpret Fundus Fluorescein Angiography and Autofluorescence	RET	228	92
	IC	308	+	Challenging Cases in Neovascular AMD	RET	R04	92
	IC	311	+	Management of High-Risk ROP in the 21st Century: Thermal-Destructive vs. Pharmacologic Treatment	RET	217	92
	IC	312	+	Femtosecond Laser for Cornea Surgery: The Actual Options	REF	R02	89
	IC	314	+	Recent Developments in the Diagnosis and Management of Conjunctival Tumors	COR	215	66
	IC	316	+	Vitreoretinal Surgery: Video Presentation and Discussion	RET	R03	92
	IC	318	+	How to Evaluate a Patient With Uveitis	INTRA	R08	78
	IC	319	+	Improving Success in Filtration Surgery: Intraoperative Surgical Techniques and Postoperative Management of the Failing Filter	GLA	338	74
	IC	321	+	The Developmental Glaucomas: Diagnosis and Management in 2013	PEDS	R05	87
IC	322	+	Pterygium: The Outcome Measure Is Now Cosmesis, Not Recurrence	COR	214	67	
IC	323	+	Understanding Ophthalmic Viscosurgical Devices to Optimize Their Use in Cataract Surgery and Complications	CAT	224	59	
IC	326	+	How to Successfully Accomplish Endothelial Keratoplasty in the Presence of Significant Ocular Comorbidities	COR	346	67	
9:00 AM - 5:00 PM	LL			Learning Lounge		Hall G, Booth 3647	246
9:30 AM - 5:00 PM	TP			Technology Pavilion		Hall 11, Booth 5145	252
10:15 - 11:15 AM	AAOEIC	334	+	Success Traits of Market Leaders	PM-MKT	290	269
	AAOEIC	340	+	Social Media and Social Networking in the Physician Office	PM-RISK	293	265
	AAOEIC	341	+	Managing Difficult Employees and Reducing Conflict in the Practice	PM-HRM	295	267
	AAOEIC	342	+	Strategic Planning for Ophthalmology Practices	PM-BUS	294	261

Programs-by-Day

Monday, Nov. 18 (cont.)

Time	Type	No.	\$	Title	Topic	Room	Page
10:15 - 11:15 AM	AAOEIC	343	+	Step 1 to Running on Time: Scheduling	PM-BUS	291	261
	IC	344	+	Your First 20 Dates With the Internal Limiting Membrane: Tips on Macular Surgery Techniques for Beginners	RET	210	93
	AAOEIC	345	+	Going Lean: Tools for Efficiency and Effectiveness in the Ophthalmology Practice	PM-BUS	283	261
10:15 - 11:30 AM	SYM	SYM22		Best of the Posterior Segment Specialty Meetings 2013	RET	La Nouvelle Orleans AB	129
10:15 - 11:45 AM	SYM	SYM23		Teaching and Learning in Ophthalmology—"Give Me Something to Make Me a Better Teacher!" Faculty Development Modules	MEDED	243	129
	SYM	SYM24		The Affordable Care Act and Health Care Reform in 2013: Pearls and Potential Perils	GEN	New Orleans Theater C	130
10:15 AM - 12:00 PM	OP	OP05		Refractive Surgery Original Paper Session	REF	255	150
10:15 AM - 12:30 PM	SKILLS	LEC130/130	+	Astigmatism in the Cataract Patient	CAT	355	101
	SKILLS	LEC131/131	+	Anterior Lamellar Keratoplasty: Principles and Practice	COR	342	103
	SKILLS	LEC132/132	+	Computerized Perimetry Lecture: Visual Field Testing and Interpretation, Emphasizing Glaucoma	GLA	335	106
	AAOEIC	332	+	Website Design and Marketing Fundamentals	PM-MKT	297	268
	IC	333	+	Nightmares in Pediatric Cataract Surgery	PEDS	221	87
	IC	335	+	Extreme Cornea: Diagnostic and Management Dilemmas in Your Practice	COR	218	67
	IC	336	+	Update Your Anterior Chamber Angle Skills: How to Best Examine, Grade, and Treat	GLA	220	75
	AAOEIC	337	+	Payer Contracting and Payer Relations: What You Need to Know to Improve Your Rates and Contract Language	PM-HRM	286	267
	AAOEIC	338	+	Income Division for Group Practices: Structuring Appropriate Physician Compensation Arrangements	PM-BUS	296	261
	IC	339	+	Diabetic Macular Edema: 2013 Update on Management	RET	225	92
10:30 - 11:45 AM	ACADCAFE	SYM50		Academy Cafe: Uveitis		271	241
10:30 AM - 12:00 PM	SKILLS	LAB123A	\$	Manual Extracapsular Cataract Extraction Surgery: Indications and Techniques <i>Prerequisite: LEC123</i>	CAT	356	100
10:45 - 11:45 AM	SYM	SYM52		Blast Eye Injuries: Lessons Learned from Boston, West, Texas, Iraq, and Afghanistan	GEN	La Nouvelle Orleans C	130
11:00 AM - 12:30 PM	SKILLS	LAB124A	\$	Glaucoma Filtration Surgery <i>Prerequisite: LEC124</i>	GLA	354	105
11:00 AM - 1:00 PM	SKILLS	LAB103B	\$	Computerized Scanning Imaging of the Optic Nerve and Retinal Nerve Fiber Layer <i>Prerequisite: LEC103</i>	GLA	343	104
	SKILLS	LAB112A	\$	Fundamental Facelifting Techniques <i>Prerequisite: LEC112</i>	PLAST	352	108
	SKILLS	LAB122A	\$	Endothelial Keratoplasty Surgery: Comprehensive Overview and Surgical Pearls <i>Prerequisite: LEC122</i>	COR	345	103
11:30 AM - 12:30 PM	AAOEIC	346	+	Tracking Your Dollars: Financial Policies to Avoid Fraud and Embezzlement	PM-BUS	293	261
	AAOEIC	347	+	Electronic Health Records Implementation: Overcoming Resistance to Change	PM-EHR	291	259
	IC	348	+	What's Your Next Step? Case Studies in Glaucoma Management	GLA	338	75
	IC	349	+	Advanced Corneal Topographic Analysis	REF	228	89
	IC	350	+	Top 10 Pitfalls, Problem Solving, and Interpretive Strategy for Automated Threshold Perimetry	GLA	222	75
	IC	351	+	Inflammatory Orbital Disorders and Their Differential Diagnoses	PLAST	215	79
	AAOEIC	352	+	Hanging a Shingle in the 21st Century: Is a Start-up Solo Practice Possible in 2013?	PM-PROF	294	271
	IC	353	+	The Art and Science of Glaucoma Drainage Devices: How to Optimize Your Surgical Results	GLA	R01	75
	AAOEIC	354	+	How To Diagnose a Sick Dispensary	PM-OPT	290	269
	IC	355	+	Argon Laser Peripheral Iridoplasty: All You Need to Know	GLA	214	75
	IC	356	+	Keys to Successful Publications CANCELED ophthalmology Journal	MEDED	R02	79
	IC	357	+	Diabetic Vitrectomy	RET	R08	93

Monday, Nov. 18 (cont.)

Time	Type	No.	\$	Title	Topic	Room	Page
11:30 AM - 12:30 PM	IC	358	+	Controversies and Advances in Pediatric Oculoplastic Surgery	PLAST	333	84
	IC	359	+	Case-Based Approach to Isolated Eye Pain	NEURO	R04	80
	IC	360	+	Cataract Surgery and Uveitis: Controlling Inflammation, Difficult Pupils, and Distorted Anatomy	CAT	R06	60
	AAOEIC	361	+	Making the Most With Modifiers	PM-REMB	288	264
	IC	362	+	Medical Therapy for Open-Angle Glaucoma: A Complete Review of the Pharmacodynamics, Pharmacokinetics, and Toxicity of All Potentially Useful Drugs	GLA	346	75
	AAOEIC	363	+	Smile ... Even If It Kills You: Training for Excellent Customer Service	PM-HRM	295	267
	AAOEIC	364	+	American Academy of Ophthalmic Executives Book Club: Professional Growth and Development	PM-PROF	283	271
	IC	365	+	The Vertical Diplopia Dilemma, Made Simple	NEURO	211	80
	IC	366	+	Complications Following Glaucoma Filtering Surgery: Face Them Boldly, Manage Them Efficiently	GLA	R05	75
	12:15 - 1:45 PM	SYM	SYM26		Ergonomics: Preventing Work-Related Injury in the Ophthalmologist	NON	255
12:30 - 1:30 PM	PT			Scientific Poster Tours		Meeting Pt., Hall C	156
12:30 - 1:45 PM	SPE	SPE19		Welcome to the Real World: Reality 101 for Residents and Fellows	GEN	252	244
12:45 - 1:45 PM	SPE	SPE21		VA and DOD: Leading the Way in Simulation in Eye Care	GEN	217	244
	SYM	SYM27		Stage 2 of Meaningful Use: What You Need to Do to Qualify for Payment	EHR	New Orleans Theater C	131
	SYM	SYM28		Management of Corneal Edema, Opacification, and Ectasia in the 21st Century: Diagnostic and Treatment Strategies From the New Preferred Practice Pattern® Guideline	COR	215	131
	SYM	SYM29		Why Take the Risk? How to Create an Effective Risk Management Strategy With Patient Education and Informed Consent Documents	NON	224	131
1:00 - 2:30 PM	SKILLS	LAB106B	\$	Management of Vitreous for the Anterior Segment Surgeon <i>Prerequisite: LEC106</i>	CAT	356	99
	SKILLS	LAB133	\$	Enhancing Your Presentation Using Keynote by Apple, Inc. for the Intermediate User	COM	350	102
1:00 - 3:00 PM	SKILLS	LAB134	\$	Workshop in Flap Techniques in Oculoplastic Surgery	PLAST	349	109
1:30 - 3:00 PM	SKILLS	LAB130A	\$	Astigmatism in the Cataract Patient <i>Prerequisite: LEC130</i>	CAT	345	101
1:30 - 3:30 PM	SKILLS	LAB125A	\$	Schlemm Canal Surgery <i>Prerequisite: LEC125</i>	GLA	354	106
2:00 - 3:00 PM	SKILLS	LEC135/135	+	Endoscopic Transnasal Lacrimal Surgery: Principles and Practice	PLAST	340	109
	SPE	SPE20		Ethics and Risk Management in Facing Ophthalmology, Featuring Robin Cook	GEN	New Orleans Theater C	244
	IC	367	+	Failed Graft: Never Say Die!	COR	225	67
	AAOEIC	370	+	Coding for Ophthalmic Testing Services	PM-REMB	294	264
	IC	371	+	Cataract Surgery in Patients With Retinal Disease	CAT	210	60
	IC	375	+	Advancing Technology and Technique With Femtosecond Lasers in Refractive Cataract Surgery: A Video Review	CAT	209	60
	IC	376	+	Anterior Segment OCT	REF	338	89
	IC	377	+	Strabismus Surgery: A Comprehensive Approach	PEDS	222	87
	AAOEIC	378	+	Incorporating the Four Agreements Into Your Practice	PM-PROF	283	271
	IC	379	+	Achieving Proper Centration and Alignment for Vision Correction in Keratorefractive and Intraocular Surgery	CAT	220	60
	AAOEIC	380	+	Managing Generation Y Employees	PM-HRM	286	267
	IC	381	+	State-of-the-Art Use of the Femtosecond Laser for Keratoplasty, Cataract Surgery, and Astigmatic Incisions	REF	R08	89
	AAOEIC	383	+	Yes, It Can Be Done ... Creating a Workable Master Schedule	PM-BUS	296	261
	AAOEIC	384	+	The Art of Benchmarking	PM-BUS	295	261
	AAOEIC	385	+	How to Run a Lean, Mean Refractive Practice in Today's Tough Economic Times	PM-BUS	297	262
	IC	388	+	Cliffhanger: Vitrectomy by the Anterior Segment Surgeon for the Broken Posterior Capsule, the Sinking Nucleus, and the Dangling IOL	CAT	R03	61

Programs-by-Day

Monday, Nov. 18 (cont.)

Time	Type	No.	\$	Title	Topic	Room	Page
2:00 - 3:00 PM	AAOEIC	391	+	Capital Budgeting Basics: Can I Afford This New Piece of Equipment?	PM-BUS	293	262
2:00 - 3:30 PM	SYM	SYM30		Advances in Glaucoma: Medical and Surgical Therapy	GLA	La Nouvelle Orleans C	131
	SYM	SYM31		New Drug or New Delivery System? The Way Forward in Combating Infectious and Inflammatory Diseases	INTRA	243	132
	SYM	SYM32		Advanced Retinal Imaging and Its Impact on Therapeutic Strategies	RET	La Nouvelle Orleans AB	132
	OP	OP07		Pediatric Ophthalmology, Strabismus Original Paper Session	PEDS	255	149
2:00 - 4:00 PM	SKILLS	LAB116A	\$	Blepharoplasty <i>Prerequisite: LEC116</i>	PLAST	352	109
	SKILLS	LAB132A	\$	Computerized Perimetry Lecture: Visual Field Testing and Interpretation, Emphasizing Glaucoma <i>Prerequisite: LEC132</i>	GLA	343	106
	SYM	SYM33		The Management of Glaucoma in the Cataract Patient	CAT	The Great Hall	132
2:00 - 4:15 PM	SKILLS	LEC137/137	+	Implantation of Glaucoma Drainage Devices	GLA	342	106
	IC	368	+	Learning Phaco Chop: Pearls and Pitfalls	CAT	R06	60
	IC	369	+	Emergency Neuro-Ophthalmology: Diagnosis and Management	NEURO	228	80
	IC	372	+	Diagnostic Ophthalmic Ultrasonography	RET	R04	93
	AAOEIC	373	+	Getting Ready for 2014: Compliance! Compliance! Compliance!	PM-RISK	288	265
	IC	374	+	Next-Generation Technologies for the Diagnosis and Treatment of Dry Eye and Meibomian Gland Dysfunction	COR	R05	68
	AAOEIC	382	+	Surgery Billing Made Easy for All Specialties	PM-REMB	291	264
	IC	386	+	Herpes Simplex Keratitis: When Herpes Isn't a Dendrite, and Vice Versa	COR	218	68
	AAOEIC	387	+	Enhancing Your Practice With Mobile Technology and Social Media	PM-IMT	290	268
	IC	389	+	Defending the Ophthalmologist in a Medical Malpractice Lawsuit	GEN	R02	72
	IC	390	+	Tubes, Ties, and Videotape: Surgical Video of Baerveldt Glaucoma Implants and Managing Complications	GLA	211	76
2:00 - 4:45 PM	OP	OP06		Cornea, External Disease Original Paper Session	COR	271	141
2:30 - 5:00 PM	SPE	SPE22		Senior Ophthalmologist Special Program and Reception	NON	252	245
3:15 - 4:15 PM	AAOEIC	394	+	Questions About EHR Implementation? Ask Us!	PM-EHR	294	266
	AAOEIC	398	+	Training the Front Office Staff		286	268
	AAOEIC	400	+	Getting Clean Data: Practice Management Software Setup	PM-BUS	295	262
	IC	401	+	Peripheral Ulcerative Keratitis: Diagnosis and Management	COR	210	68
	AAOEIC	405	+	Employee Discipline for the Smaller Practice: The New Manager, the Seasoned Manager, and the Doctor	PM-HRM	283	268
	IC	406	+	Managing Uveitic Glaucoma	GLA	338	76
	IC	407	+	Diplopia Made Ridiculously Simple: Management of Diplopia for the Comprehensive Ophthalmologist	PEDS	R03	87
	AAOEIC	409	+	Opening an Ophthalmology Optical Dispensary	PM-OPT	297	269
3:15 - 5:30 PM	SKILLS	LEC138/138	+	Introduction to Aesthetic Facial Surgery by Fractional Lasers, Intense Pulsed Light, Radiofrequency, and Ultrasound Devices	PLAST	335	110
	SKILLS	LEC139/139	+	Diabetes 2013: Course on Diabetic Retinopathy	RET	333	113
	SKILLS	LEC140/140	+	Endoscopic Forehead and Eyebrow Elevation	PLAST	340	110
	SKILLS	LEC141/141	+	ISRS Laser Refractive Surgery Course	REF	346	112
	IC	392	+	Advanced Vitreoretinal Surgical Techniques and Instrumentation	RET	221	93
	IC	393	+	Evidence-Based Guidelines in the Management of Glaucoma	GLA	214	76
	IC	395	+	Innovative Uses of Adhesives in Anterior Segment Surgery	COR	220	68
	IC	396	+	Techniques and Devices for Surgical Reconstruction of Traumatic and Developmental Iris Defects	CAT	209	61
	AAOEIC	397	+	Large Practice Executive CANCELED	PM-BUS	293	262
	IC	399	+	Keratoconus 360°	COR	215	68
	IC	402	+	Retinal Pharmacotherapy	RET	225	93
	IC	403	+	Corneal Topographic Analysis and Anterior Segment Imaging: Pearls for Your Clinical Practice	REF	217	89
	AAOEIC	404	+	Comprehensive Cataract Coding	PM-REMB	296	264

Monday, Nov. 18 (cont.)

Time	Type	No.	\$	Title	Topic	Room	Page
3:15 - 5:30 PM	IC	408	+	A Video Bouquet of Phaco Complications That Should Never Have Occurred, With Tips on Damage Control and Prevention to Optimize Postoperative Outcome	CAT	R08	61
	IC	410	+	Clinical Decisions in the Management of Complications of Cataract and IOL Surgery	CAT	355	61
3:30 - 5:30 PM	SKILLS	LAB102B	\$	Advanced Refractive Cataract Surgery and Anterior Segment Reconstruction <i>Prerequisite: LEC102</i>	CAT	356	99
	SKILLS	LAB131A	\$	Anterior Lamellar Keratoplasty: Principles and Practice <i>Prerequisite: LEC131</i>	COR	345	103
3:45 - 4:45 PM	SYM	SYM34		Reading With Low Vision: Rehabilitation and Neuroplasticity	VIS	243	133
	SYM	SYM35		How Do We Maintain Quality, Improve Efficiency, and Sustain the Physician-Patient Relationship?	NON	New Orleans Theater C	133
3:45 - 5:15 PM	SYM	SYM36		The Optical Biopsy: Ocular Imaging Modalities and Correlation With Histopathology	PATH	La Nouvelle Orleans C	134
	SYM	SYM37		Advanced Applications of Femtosecond Lasers for Refractive Surgery	REF	La Nouvelle Orleans AB	134
	OP	OP08		Retina, Vitreous Original Paper Session	RET	255	152
4:00 - 5:00 PM	SKILLS	LAB142	\$	An Innovative Approach to Iris Fixation of an IOL Without Capsular Support: Hands-on and Practical	CAT	349	101
4:00 - 5:30 PM	SKILLS	LAB124B	\$	Glaucoma Surgical Lab for Ophthalmology Residents <i>Prerequisite: LEC124</i>	GLA	354	105
4:30 - 5:30 PM	IC	411	+	Meibomian Gland Dysfunction and Chronic Blepharitis	COR	R05	68
	AAOEIC	412	+	Questions About "Meaningful Use" EHR Incentives? Ask Us!	PM-EHR	288	266
	IC	413	+	Lifestyle Intervention for the Treatment/Prevention of Age-related Eye Disorders: Practical Application	GLA	R04	76
	IC	414	+	Management of Ocular Chemical Injuries	COR	210	68
	AAOEIC	415	+	Medicare Postoperative Cataract Eyewear: Coding, Billing, and Supplier Compliance	PM-REMB	295	264
	AAOEIC	416	+	How to Be Seen: A How to Guide to Medical Marketing	PM-MKT	290	269
	IC	417	+	Follow the Cornea: Do You Know Where Your Corneal Transplant Tissue Comes From?	COR	R01	69
	IC	418	+	Strategy and Statistics in Clinical Research: A Nonstatistician's Guide to Thinking, Designing, and Executing	MEDED	R02	79
	AAOEIC	419	+	Step 1 to Running on Time: Scheduling	PM-BUS	286	262
	IC	420	+	Temporal, Manual, Small- Incision Cataract Surgery: A Technique for the Developing and Developed World	CAT	R03	61
	IC	421	+	3-D Optic Disc Viewing: Top 10 Pitfalls in Identifying Glaucoma Damage and Progression	GLA	222	76
	AAOEIC	422	+	Seeking Shelter Under the Hospital Umbrella: From Employment Agreements to Professional Services Agreements	PM-PROF	294	271
	AAOEIC	423	+	HIPAA Privacy and Security: Trends, Developments, and Issues	PM-RISK	291	265
	IC	424	+	Vitreoretinal Surgical Rounds, Unleashed!	RET	338	94
	IC	425	+	Management of Strabismus in Thyroid Eye Disease	PEDS	224	87
AAOEIC	426	+	Toward the Electronic Practice	PM-IMT	297	268	
IC	427	+	Avoiding and Managing Blepharoplasty Complications	PLAST	211	84	

Tuesday, Nov. 19

Time	Type	No.	\$	Title	Topic	Room	Page
7:30 - 8:30 AM	BWE		\$	Breakfast With the Experts Roundtables		Hall C	50
7:30 - 10:00 AM	SKILLS	LAB140A	\$	Endoscopic Forehead and Eyebrow Elevation <i>Prerequisite: LEC140</i>	PLAST	352	110
8:00 - 9:30 AM	SKILLS	LAB120B	\$	Phacoemulsification and Advanced Techniques: The Core Curriculum <i>Prerequisite: LEC120</i>	CAT	356	100
8:00 - 10:00 AM	SKILLS	LAB137A	\$	Implantation of Glaucoma Drainage Devices <i>Prerequisite: LEC137</i>	GLA	354	106
	SKILLS	LAB141A	\$	ISRS Laser Refractive Surgery Course <i>Prerequisite: LEC141</i>	REF	345	112

Programs-by-Day

Tuesday, Nov.19 (cont.)

Time	Type	No.	\$	Title	Topic	Room	Page	
8:00 - 10:30 AM	SKILLS	LAB139A	\$	Diabetes 2013: Course on Diabetic Retinopathy <i>Prerequisite: LEC139</i>	RET	343	113	
	SKILLS	LAB143	\$	Surgical Anatomy of the Eyelids: Cadaver Demonstration	PLAST	349	110	
8:30 - 9:45 AM	ACADCAFE	SYM51		Academy Cafe: Cataract	CAT	271	241	
8:30 - 10:00 AM	SYM	SYM38		Management of Vitreoretinal Interface Diseases	RET	La Nouvelle Orleans C	135	
	SYM	SYM39		So You Want to Be a Leader in Ophthalmology?	NON	243	135	
8:30 - 10:30 AM	SYM	SYM40		A Multidisciplinary Approach to Emerging Therapies in Neuro-Ophthalmology	NEURO	La Nouvelle Orleans AB	135	
8:30 - 11:30 AM	OP	OP09		Glaucoma Original Paper Session	GLA	255	143	
9:00 - 10:00 AM	AAOEIC	500	+	Employment Law Basics for the Small Ophthalmology Practice	PM-HRM	286	268	
	AAOEIC	503	+	CodeFest	PM-REMB	291	264	
	AAOEIC	504	+	Analyzing Medical Legal Tools: The Key to Lawsuit Prevention and Tax Reduction	PM-RISK	294	265	
	IC	509	+	Evaluation of Early-Onset Hereditary Retinal Degeneration in Infants and Children	RET	342	94	
	IC	510	+	Digital Devices & Patient Care: Confidentiality, Encryption, HIPAA and Ethical Considerations	ETH	220	72	
	AAOEIC	511	+	Content Marketing: Getting Your Web Page Ranked	PM-MKT	288	269	
	IC	512	+	Pediatric Uveitis: What You Need to Know	PEDS	209	87	
	AAOEIC	516	+	Negotiating Your Buy-In	PM-PROF	297	271	
	AAOEIC	519	+	How to Develop a Successful Ophthalmic Ambulatory Surgery Center	PM-ASC	290	259	
	IC	521	+	Atypical Keratitis	COR	340	69	
	IC	522	+	Intraocular Foreign Body Injuries: An Update	RET	R01	94	
	AAOEIC	526	+	Optical Shops: Sales Strategies for Today's Economy	PM-OPT	293	269	
	AAOEIC	528	+	Tools and Tips to Build a Budget for a Dynamic Practice	PM-BUS	283	262	
	AAOEIC	529	+	Billing for Beginners	PM-BUS	296	262	
	IC	530	+	Pediatric Ocular Tumors	PATH	217	81	
	9:00 - 11:15 AM	IC	501	+	Engineering and Physics Principles: A Primer for the Vitreoretinal Surgeon	RET	214	94
		AAOEIC	502	+	Big Practice Problems: What the Experts Recommend	PM-BUS	295	262
IC		505	+	Practical Ocular Oncology for the Comprehensive Ophthalmologist: What You Should Know	PATH	R03	81	
IC		506	+	Decoding the Uveitis Workup: Why, When, and What to Order	INTRA	223	78	
IC		507	+	Anterior Segment Reconstruction Following Trauma	COR	208	69	
IC		508	+	Management of Orbital Tumors: Case Presentation and Discussion	PLAST	R08	84	
IC		513	+	A Video Symposium of Challenging Cases and the Management of Intraoperative Complications During Cataract Surgery	CAT	R06	61	
IC		514	+	Surgical Strategies for Recurrent Pterygium With or Without Motility Restriction	COR	346	69	
IC		515	+	Big Bubble Technique of Deep Anterior Lamellar Keratoplasty: A Simplified Approach to Successful Surgery	COR	211	69	
IC		517	+	Advanced Techniques With Laser Cataract Surgery	CAT	228	61	
IC		518	+	Phaco Pearls for the Beginner	CAT	333	62	
IC		520	+	Management of Malpositioned IOLs	CAT	R04	62	
IC		523	+	What You Need to Know About Headache: A Pain for the Patient and a Pain for the Doctor	NEURO	338	80	
IC		524	+	Optimizing Outcomes and Minimizing Complications in Oculofacial Plastic Procedures: A Case-Based Approach	PLAST	221	85	
IC		525	+	Descemet Membrane Endothelial Keratoplasty (DMEK and Thin Cut DSAEK) and Related Advanced Endothelial Keratoplasty Techniques	COR	R05	69	
IC	527	+	Multifocal and Accommodative IOLs: Face the Challenge	CAT	218	62		
IC	531	+	Angle Closure and Angle-Closure Glaucoma	GLA	215	77		

Tuesday, Nov.19 (cont.)

Time	Type	No.	\$	Title	Topic	Room	Page
9:00 AM - 12:00 PM	LL			Learning Lounge		Hall G, Booth 3647	246
9:30 AM - 12:30 PM	TP			Technology Pavilion		Hall I1, Booth 5145	252
10:00 AM - 12:00 PM	OP	OP10		Retina, Vitreous Original Paper Session	RET	271	153
10:15 - 11:15 AM	AAOEIC	532	+	Compounding Pharmacies: Legal and Regulatory Issues	PM-RISK	288	271
	AAOEIC	535	+	Optimizing Patient and Staff Efficiency and Satisfaction Through Facility Design	PM-BUS	286	263
	IC	537	+	Maximizing Your Electronic Health Records System's Productivity and Financial Benefits	EHR	355	71
	AAOEIC	541	+	Ophthalmic Coding Specialist Prep Course	PM-REMB	296	264
	AAOEIC	542	+	Associate Employment Contracts: How to Avoid Signing a Bad Contract	PM-PROF	294	271
	AAOEIC	544	+	Electronic Health Records: "Great Expectations"	PM-EHR	291	267
	AAOEIC	546	+	ASC Benchmarking	PM-ASC	290	259
10:15 - 11:45 AM	SYM	SYM41		Anterior Segment Reconstruction	CAT	243	136
	SYM	SYM42		Late Breakers Symposium	GEN	La Nouvelle Orleans C	136
10:15 AM - 12:30 PM	SKILLS	LEC144/144	+	Microsurgical Suturing Techniques	CAT	340	101
	SKILLS	LEC145/145	+	Advanced Techniques in Orbital Decompression and Expansion	PLAST	342	111
	IC	533	+	Refractive and Cataract Surgery Nightmares: Management and Prevention of Most Common Complications	CAT	252	62
	IC	534	+	Lotions, Potions, Botulinum Toxin, and Fillers: Nonlaser Rejuvenation for the Ophthalmologist	PLAST	209	85
	AAOEIC	536	+	Do I Look Like Your Mother?! Or, How to Manage the Difficult Employee	PM-HRM	283	268
	AAOEIC	538	+	Detecting and Preventing Fraud and Abuse in the Optical Dispensary and Medical Practice	PM-OPT	293	270
	IC	539	+	Complete Guide to the Evaluation and Management of Ptosis	PLAST	210	85
	IC	540	+	Combined Cataract Surgery With Glaucoma Surgery: Guidelines, Indications, Methods, Techniques, and Postoperative Management	GLA	225	77
	IC	543	+	Better Surgery Through Chemicals	CAT	220	62
	AAOEIC	545	+	Let's Make a (Practice) Deal: A Step-by-Step Approach	PM-BUS	297	263
10:30 AM - 12:00 PM	SKILLS	LAB123B	\$	Manual Extracapsular Cataract Extraction Surgery: Indications and Techniques <i>Prerequisite: LEC123</i>	CAT	356	100
10:30 AM - 12:30 PM	SKILLS	LAB141B	\$	Laser Refractive Surgery for Ophthalmology Residents <i>Prerequisite: LEC141</i>	REF	345	112
10:45 AM - 12:00 PM	SYM	SYM43		Grand Rounds: Cases and Experts From Across the Nation	GEN	La Nouvelle Orleans AB	136
11:00 AM - 1:00 PM	SKILLS	LAB138A	\$	Introduction to Aesthetic Facial Surgery by Fractional Lasers, Intense Pulsed Light, Radiofrequency, and Ultrasound Devices <i>Prerequisite: LEC138</i>	PLAST	354	110
11:00 AM - 1:30 PM	SKILLS	LAB135A	\$	Endoscopic Transnasal Lacrimal Surgery: Principles and Practice <i>Prerequisite: LEC135</i>	PLAST	352	110
11:30 AM - 12:30 PM	IC	547	+	Facial Nerve Palsy: Anatomy, Etiology, Evaluation, and Management	PLAST	346	85
	AAOEIC	548	+	Hiring an Ophthalmologist for Your Practice: Avoiding the Pitfalls	PM-PROF	294	271
	IC	549	+	Needling for Failed Blebs: All You Need to Know	GLA	228	77
	IC	550	+	Surgical Management of Astigmatism in Cataract and Refractive Surgery	CAT	208	63
	IC	551	+	The Art of Achieving Success With Presbyopia-Correcting Intraocular Implants: The Consultation, the IOLs, and Correcting Residual Refractive Errors	CAT	R08	63
	IC	552	+	Global Initiatives for Cataract Surgery Efficiency and Sustainability	GO	355	78
	IC	553	+	Practical Considerations for Telemedicine Diabetic Retinopathy Screening	RET	R05	94
	IC	555	+	What's New in Normal-Tension Glaucoma?	GLA	333	77
	IC	556	+	Endothelial Keratoplasty in Challenging Cases	COR	217	69

Programs-by-Day

Tuesday, Nov.19 (cont.)

Time	Type	No.	\$	Title	Topic	Room	Page
11:30 AM - 12:30 PM	IC	557	+	Surgical Education: Improving Upon and Going Beyond the Apprentice Model	MEDED	R01	79
	AAOEIC	558	+	Valuing, Buying, Selling, and Transitioning Your Practice	PM-BUS	286	263
	IC	559	+	Swollen Disks, Headache, and Vision Loss: A Case-Based Approach to Pseudotumor Cerebri	NEURO	223	80
	IC	560	+	Ophthalmoscopic Evaluation of the Optic Disc and Retinal Nerve Fiber Layer	GLA	338	77
	IC	561	+	Ocular Surface Diseases in Cancer Patients: Update on Clinical Spectrum and Treatment	COR	R04	70
	IC	562	+	Complications in Collagen Crosslinking : Diagnosis, Management, and Prevention	COR	221	70
	IC	563	+	Enucleation, Evisceration, and Care of the Anophthalmic Socket	PLAST	218	85
	IC	564	+	Epiretinal Membranes: Etiologies, Perioperative Management, Surgical Techniques, and Case Discussions	RET	214	94
	IC	565	+	Uveal Melanoma Therapies: Protons, Plaques, and Eyewall Resection	PATH	R02	81
	IC	566	+	Top 10 Essentials of Gonioscopy: 3-D Viewing and Interpretation	GLA	222	77
	AAOEIC	567	+	Financial Decision Making in the Eye Care Practice	PM-BUS	290	263
12:00 - 2:00 PM	SKILLS	LAB146	\$	Surgical Anatomy of the Orbit and Lacrimal System: Cadaver Demonstration	PLAST	349	111
12:45 - 1:45 PM	IC	573	+	Controversies in the Management of Open-Globe Injuries Involving the Posterior Segment	RET	R02	95
	IC	574	+	Refractive Lensectomy: Indications, Lenses, Formulas, Outcomes	REF	342	90
	IC	576	+	Understanding and Utilizing Glaucoma Imaging	GLA	209	78
	IC	578	+	Oculoplastic Office Procedures: Video Clips	PLAST	R05	85
	IC	582	+	Vision and the Artist	HIST	215	81
	IC	585	+	Secrets of Highly Successful Refractive Cataract Surgery Practices	REF	218	90
	IC	586	+	Oculoplastic Procedures for the General Ophthalmologist	PLAST	223	86
	IC	590	+	Drug-Related Adverse Effects of Clinical Importance to the Ophthalmologist	GEN	355	72
	IC	592	+	Abandoned Phaco: Convert to No-Stitch Manual Small-Incision Cataract Surgery	CAT	335	64
	IC	594	+	Diagnosis and Management of Essential Blepharospasm and Hemifacial Spasm	PLAST	222	86
12:45 - 3:00 PM	AAOEIC	554	+	Buying or Selling a Practice: Creating Win-Win Transactions	PM-BUS	288	263
	IC	568	+	OCT: Interpretation and Clinical Applications	RET	228	94
	IC	569	+	What's New and Important in Pediatric Ophthalmology and Strabismus for 2013	PEDS	221	88
	IC	570	+	Curbside Consultation in Neuro-Ophthalmology	NEURO	R08	80
	IC	571	+	Scleral Fixation of IOL With Fibrin Glue	CAT	208	63
	IC	572	+	Best of the Best : An Update in Cataract Surgery	CAT	R06	63
	IC	575	+	International (Dis)Agreement on Infectious Uveitis	INTRA	R01	78
	IC	577	+	Imaging Studies in Strabismus	PEDS	346	88
	IC	94	+	Retinoblastoma 2013: They Live and See!	RET	210	95
	IC	580	+	Mastering Transepithelial and Epithelial-Off Corneal Collagen Crosslinking for Keratoconus and Post-LASIK Ectasia	COR	211	70
	IC	581	+	Descemet-Stripping Automated Endothelial Keratoplasty Cliffhangers	COR	R04	70
	IC	583	+	Cataract Surgery Crisis Management 101	CAT	338	63
	AAOEIC	584	+	Steps for Successful Retina Coding	PM-REMB	295	264
	IC	587	+	Comprehensive Strategy for Unplanned Vitrectomy Technique for the Anterior Segment Surgeon	CAT	220	63
	IC	588	+	Endoscopic-Assisted Ophthalmic Surgery: Anterior and Posterior Segment Techniques	RET	R03	95
	IC	589	+	Ocular Ultrasound	RET	214	95
IC	591	+	State-of-the-Art Techniques and Technologies for Microincision Vitrectomy Surgery to Treat Complex Vitreoretinal Diseases	RET	225	95	

Tuesday, Nov. 19 (cont.)

Time	Type	No.	\$	Title	Topic	Room	Page
12:45 - 3:00 PM	IC	593	+	Surgery of Retinal Detachment	RET	333	95
	IC	595	+	Principles of Pediatric Vitreoretinal Surgery in Retinopathy of Prematurity	RET	340	96
	IC	596	+	Peering to the Periphery: Applications of Wide-Angle Retinal Imaging	RET	217	96
	IC	597	+	Descemet Membrane Endothelial Keratoplasty	COR	224	70
1:00 - 3:00 PM	SKILLS	LAB120C	\$	Phacoemulsification and Advanced Techniques Lab for Ophthalmology Residents <i>Prerequisite: LEC120</i>	CAT	356	100
1:30 - 3:30 PM	SKILLS	LAB144A	\$	Microsurgical Suturing Techniques <i>Prerequisite: LEC144</i>	CAT	345	101
2:00 - 4:15 PM	IC	598	+	Secure Posterior Chamber IOL Placement Without Adequate Capsular or Zonular Support	CAT	215	64
	IC	599	+	Advances in Treatment of Severe Ocular Surface Disease: Views From Experts on the Front Lines	COR	209	70
2:30 - 5:00 PM	SKILLS	LAB145A	\$	Advanced Techniques in Orbital Decompression and Expansion <i>Prerequisite: LEC145</i>	PLAST	352	111
3:15 - 5:30 PM	IC	600	+	Solving the High Myopia Problem With Phakic IOLs	REF	335	90
	IC	601	+	Top 10 Hot Corneal Surgical Tips for 2013	COR	210	71
	IC	602	+	Systemic Therapeutic Agents and Retinal Toxicity	RET	338	96

Wednesday, Nov. 20

Time	Type	No.	\$	Title	Topic	Room	Page
7:00 AM - 5:00 PM	SPE	SPE23	\$	Lo Mejor de la Academia en Español		Sheraton, Armstrong Ballroom	245



Breakfast With the Experts

Sunday – Tuesday, Nov. 17 - 19

7:30 - 8:30 AM

Hall C

Roundtable discussions are moderated by leading experts in the field. Attendees are encouraged to bring their individual questions and cases for discussion.

Registration fee is \$40 onsite and includes a buffet breakfast. Breakfast With the Experts are ticketed events; they are not included in the Academy Plus course pass. Members in Training automatically receive a 50% discount on all roundtables.

After breakfast, feel free to use the roundtables area to meet-up with colleagues and network.

Selection Committee

Practice Management roundtables were selected by the AAOE Program Committee.

The Annual Meeting Program Committee selected all other roundtables.

See page 33 for committee details.

Sunday, Nov. 17

Cataract

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Cataract and Refractive Surgery (ASCRS)

Roundtable B100

Complex Axial Length Measurement and Unusual IOL Power Calculations

Moderator: Mitchell P Weikert MD*

Roundtable B101

Management of the Broken Posterior Capsule and Advanced Vitrectomy Technique for the Cataract Surgeon

Moderator: Louis D Skip Nichamin MD*

Roundtable B102

Phacoemulsification Pearls

Moderator: Bonnie A Henderson MD*

Roundtable B103

Surgical Management of Cataract and Glaucoma

Moderator: Douglas J Rhee MD*

Roundtable B104

Managing the Broken Capsule: Pearls for Vitrectomy

Moderator: Rosa Braga-Mele MD*

Cornea, External Disease

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Cornea Society

Roundtable B105

Endothelial Keratoplasty

Moderator: Natalie A Afshari MD

Roundtable B106

Deep Anterior Lamellar Keratoplasty: Patient Selection, Technique, and Outcomes

Moderator: Donald Tan MD FRCS FRCOphth*

Ethics

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Ethics Committee

Roundtable B107

Ethical Research: A 'Need to Know Basis' for You and Your Patients

Moderator: Carla J Siegfried MD*

Glaucoma

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Glaucoma Society (AGS)

Roundtable B108

Minimally Invasive Glaucoma Surgery: Ready for Primetime

Moderator: Arthur J Sit MD*

Roundtable B109

Optic Nerve Imaging: Is This Patient Processing?

Moderator: Felipe A Medeiros MD*

Roundtable B110

Fine Tuning Glaucoma Surgery for Optimal Results

Moderator: Jody R Piltz-Seymour MD*

Global Ophthalmology

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Global Education and Outreach Committee

Roundtable B111

How to Develop a Partnership with an Institution in a Developing Country

Moderator: David S Friedman MD MPH PhD*

Intraocular Inflammation, Uveitis

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Uveitis Society (AUS)

Roundtable B112

Biologic Warfare: Targeted Systemic Treatments for Uveitis

Moderator: Eric B Suhler MD*

Roundtable B113

How OCT, Fluorescein and ICG Angiography, and Ultrasonography Can Help You Manage Uveitis

Moderator: Sunir J Garg MD*

Neuro-Ophthalmology

Jointly sponsored by the Academy's Annual Meeting Program Committee and the North American Neuro-Ophthalmology Society (NANOS)

Roundtable B114

I Think My Patient has AION: What Do I Do Next?

Moderator: Neil R Miller MD*

Roundtable B115

Visual Loss With A Normal Eye Exam

Moderator: Michael S Vaphiades DO

Roundtable B116

Diplopia

Moderator: Stacy L Pineles MD

Orbit, Lacrimal, Plastic Surgery

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Ophthalmic Plastic and Reconstructive Surgery (ASOPRS)

Roundtable B117

Management of the Tearing Patient

Moderator: Parag D Gandhi MD

Roundtable B118

Ptosis Repair: How to Achieve the Best Results

Moderator: Cameron Nabavi MD

Pediatric Ophthalmology, Strabismus

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Association for Pediatric Ophthalmology and Strabismus (AAPOS)

Roundtable B119

Refractive Surgery in Children

Moderator: Amy K Hutchinson MD

Roundtable B120

Optic Nerve Hypoplasia

Moderator: Mark S Borchert MD

Breakfast With the Experts

Sunday, Nov. 17 (cont.)

Practice Management/AAOE

Sponsored by the American Academy of Ophthalmic Executives (AAOE)

Business Operations & Finance

Roundtable B121

Management Reporting

Moderator: Ron Rosenberg PA MPH*

Roundtable B122

Not Full Time: Contracting Profitability with Part-Timers, Contractors, and Senior Physicians

Moderator: Daniel M Bernick JD*

Roundtable B195

Personal Financial Management For The Eye Care Professional

Moderator: Richard M Palmer MD

Electronic Health Records

Roundtable B123

Big Data - Leveraging Analytics to Improve Your Bottom Line

Moderator: Jeffery Daigrepoint

Professional Growth

Roundtable B124

Productive Partner Meetings - The Art of Making Decisions Stick

Moderator: Maureen Waddle MBA*

Roundtable B125

Open Your Eyes to New Opportunities: A Guide to the Student Loan System

Moderator: Donna W Howell JD

Roundtable B126

Performance Indicators

Moderator: Jeff Grant*

Roundtable B127

Let's Make A Practice Deal

Moderator: Michael J Parshall*

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Senior Ophthalmologist Committee (SO)

Roundtable B128

Stopping Surgery - When, Why, and What It Means To Your Practice

Moderator: Michael W Brennan MD

Refractive Surgery

Jointly sponsored by the Academy's Annual Meeting Program Committee and the International Society of Refractive Surgery (ISRS) Executive Committee

Roundtable B129

Pearls of Correction of Astigmatism During Cataract Surgery

Moderator: Noel A Alpini MD FACS*

Retina, Vitreous

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Retina Specialists (ASRS)

Roundtable B131

Which Angiogenesis Agent to Use for Choroidal Neovascularization

Moderator: Jeffrey S Heier MD*

Roundtable B132

Spectral Domain OCT Imaging

Moderator: Srinivas R Satta MD*

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Macula Society

Roundtable B133

Integrating Spectral Domain OCT Into a Busy Clinical Practice: Pearls and Pitfalls

Moderator: Srinivas R Satta MD*

Roundtable B134

Wide Angle Retina Imaging

Moderator: Jennifer K Sun MD*

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Retina Society

Roundtable B135

Pharmacologic Treatment of Vitreomacular Traction Syndromes

Moderator: Baruch D Kuppermann MD PhD*

Roundtable B136

Treatment of Complicated Retinal Detachment and the Role of Intravitreal Steroids in the Management of Recalcitrant Macular Edema

Moderator: Dennis P Han MD*

Vision Rehabilitation

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Vision Rehabilitation Committee

Roundtable B137

Microperimetry and Clinical Practice

Moderator: Samuel N Markowitz MD

Monday, Nov. 18

Cataract

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Cataract and Refractive Surgery (ASCRS)

Roundtable B140

Surgical Management of Cataract and Glaucoma

Moderator: Reay Brown MD*

Roundtable B141

Limbal Relaxing Incisions/Presbyopia IOLs

Moderator: Jonathan B Rubenstein MD*

Roundtable B142

Femtosecond Laser Cataract Surgery

Moderator: Samuel Masket MD*

Roundtable B143

Strategies for Efficient Cataract Surgery

Moderator: Gary J Foster MD*

Roundtable B144

Clinical Pearls for Improving Outcomes with Presbyopia-Correcting IOLs

Moderator: Kevin M Miller MD*

Monday, Nov. 18 (cont.)

Cornea, External Disease

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Cornea Society

Roundtable B145

Pterygium Treatments

Moderator: Stephen C Kaufman MD PhD

Roundtable B146

Acanthamoeba Keratitis

Moderator: Kristin Hammersmith MD

Ethics

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Ethics Committee

Roundtable B147

Ethical Dilemmas in Emergency Ophthalmic Care

Moderator: Gregory J McCormick MD

Glaucoma

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Glaucoma Society (AGS)

Roundtable B148

Optic Nerve and RNFL Imaging: Is This Patient Progressing?

Moderator: Kouros Nouri-Mahdavi MD*

Roundtable B149

Fine Tuning Glaucoma Surgery for Optimal Results

Moderator: Steven Gedde MD*

Global Ophthalmology

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Global Education and Outreach Committee

Roundtable B150

Global Ophthalmology: How To Start Volunteering Now!

Moderator: Grace Sun MD*

Intraocular Inflammation, Uveitis

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Uveitis Society (AUS)

Roundtable B151

Is the Uveitis Infectious? Bugs and Drugs

Moderator: Ramana S Moorthy MD

Neuro-Ophthalmology

Jointly sponsored by the Academy's Annual Meeting Program Committee and the North American Neuro-Ophthalmology Society (NANOS)

Roundtable B152

What Should I Do With the Patient with Elevated ONH?

Moderator: Rosa A Tang MD*

Roundtable B153

Neuro-Ophthalmic Emergencies

Moderator: Howard R Krauss MD*

Roundtable B154

Optic Neuritis

Moderator: Valerie A Purvin MD*

Orbit, Lacrimal, Plastic Surgery

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Ophthalmic Plastic and Reconstructive Surgery (ASOPRS)

Roundtable B155

Fillers and Neurotoxins for Facial Rejuvenation

Moderator: Wendy W Lee MD*

Roundtable B156

Blepharoplasty How to Create an Aesthetically Pleasing Eyelid

Moderator: Rona Z Silkiss MD FACS

Pediatric Ophthalmology, Strabismus

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Association for Pediatric Ophthalmology and Strabismus (AAPOS)

Roundtable B157

ROP

Moderator: Graham E Quinn MD*

Roundtable B158

Pediatric Cataracts

Moderator: M Edward Wilson Jr MD*

Practice Management /AAOE

Sponsored by the American Academy of Ophthalmic Executives (AAOE)

Business Operations & Finance

Roundtable B159

Analyzing Medical Legal Tools: The Key to Lawsuit Prevention and Tax Reduction

Moderator: Carol Foster*

Roundtable B160

Bringing in a New Associate: Friend or Foe?

Moderator: Debra L Phairas

Roundtable B161

Buy-Ins and Pay-Outs

Moderator: Mark E Kropiewnicki JD LL.M.*

Roundtable B162

Partial Retirement in a Group Practice

Moderator: Robert J Landau JD

Electronic Health Records

Roundtable B163

Big Data - Leveraging Analytics to Improve Your Bottom Line

Moderator: Jeffery Daigrepoint

Information Technology

Roundtable B164

Practice Management Computer Systems

Moderator: Ron Rosenberg PA MPH*

Professional Growth

Roundtable B165

Seeking Shelter Under the Hospital Umbrella: From Employment Agreements to Professional Services Agreements

Moderator: Lawrence Geller MBA*

Breakfast With the Experts

Monday, Nov. 18 (cont.)

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Senior Ophthalmologist Committee (SO)

Roundtable B166

Transitions in Practice Slowing Down and Its Implications

Moderator: Paul N Orloff MD

Refractive Surgery

Jointly sponsored by the Academy's Annual Meeting Program Committee and the International Society of Refractive Surgery (ISRS) Executive Committee

Roundtable B130

Modern Presbyopia Correcting Options: Corneal and Lenticular

Moderator: Ronald R Krueger MD*

Roundtable B167

Femtosecond Technology in Corneal and Lenticular Refractive Surgery - The Versatile Tool

Moderator: Erik L Mertens MD FRACOPHTH*

Roundtable B168

Collagen Cross Linking and Combination Therapies in Keratoconus

Moderator: Arthur B Cummings MD*

Retina, Vitreous

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Retina Specialists (ASRS)

Roundtable B169

AREDS 2 and the Role of Supplements for Macular Degeneration

Moderator: Emily Y Chew MD

Roundtable B170

Pharmacologic Treatment of Vitreomacular Traction Syndrome

Moderator: Pravin U Dugel MD*

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Macula Society

Roundtable B171

Wide Angle Retina Imaging

Moderator: Jennifer Irene Lim MD*

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Retina Society

Roundtable B173

Which Anti-Angiogenic Agent to Use for Choroidal Neovascularization

Moderator: Andrew A Moshfeghi MD*

Roundtable B174

Treatment of Venous Occlusive Disease

Moderator: David Brown MD FACS*

Vision Rehabilitation

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Vision Rehabilitation Committee

Roundtable B175

Incorporating Low Vision Rehabilitation Into Your General Ophthalmology or Retina Practice

Moderator: Paul Homer MD

Tuesday, Nov. 19

Cataract

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Cataract and Refractive Surgery (ASCRS)

Roundtable B176

Limbal Relaxing Incisions/Presbyopia IOLs

Moderator: R Bruce Wallace MD*

Roundtable B177

Financial Considerations in Purchasing a Femtosecond Laser for Refractive Cataract Surgery

Moderator: Steven D Vold MD*

Roundtable B178

Femtosecond Laser Cataract Surgery

Moderator: Bradley C Black MD*

Roundtable B179

Incorporation of High-Tech IOLs

Moderator: Sumit Garg MD*

Roundtable B180

Fuchs Endothelial Dystrophy: Preoperative Considerations for Cataract Surgery

Moderator: Clara C Chan MD*

Cornea, External Disease

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Cornea Society

Roundtable B181

Herpes Simplex Keratitis

Moderator: Erich Bryan Groos MD*

Roundtable B182

Boston Keratoprosthesis: Technique and Outcomes

Moderator: Peter Zloty MD

Ethics

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Ethics Committee

Roundtable B183

Ethical Aspects of Practicing Internationally

Moderator: R V Paul Chan MD

Glaucoma

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Glaucoma Society (AGS)

Roundtable B184

Slit-Lamp Procedures 2 - Transconjunctival Suturing of the Over-Filtering Bleb

Moderator: Steven R Sarkisian MD*

Roundtable B185

Pearls and Pitfalls of Glaucoma Drainage Devices

Moderator: Robert Feldman MD*

Intraocular Inflammation, Uveitis

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Uveitis Society (AUS)

Roundtable B186

Work-up for the Patient with Uveitis: What To Order and What Not to Order!

Moderator: Debra A Goldstein MD*

Tuesday, Nov. 19 (cont.)

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Retina Society

Roundtable B187

Use of Biologics in the Treatment of Non-infectious Uveitis

Moderator: Janet Louise Davis MD*

Neuro-Ophthalmology

Jointly sponsored by the Academy's Annual Meeting Program Committee and the North American Neuro-Ophthalmology Society (NANOS)

Roundtable B188

Orbital Disease "Top Ten" Pearls (and Pitfalls)

Moderator: Marc H Levy MD

Roundtable B189

Eye Pain Pearls

Moderator: Paul W Brazis MD

Ocular Tumors and Pathology

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Ophthalmic Plastic and Reconstructive Surgery (ASOPRS)

Roundtable B190

Intraocular and Periocular Tumors: What We Know

Moderator: Hakan Demirci MD

Orbit, Lacrimal, Plastic Surgery

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Ophthalmic Plastic and Reconstructive Surgery (ASOPRS)

Roundtable B191

Brow Ptosis: How to Diagnose Brow Ptosis and Browplasty Technique to Correct

Moderator: John Joseph Martin MD*

Pediatric Ophthalmology, Strabismus

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Association for Pediatric Ophthalmology and Strabismus (AAPOS)

Roundtable B192

Tips for Examining Children's Eyes

Moderator: Daniel J Karr MD

Roundtable B193

Prescribing Glasses in Preverbal Children

Moderator: Daniel E Neely MD

Practice Management/AAOE

Sponsored by the American Academy of Ophthalmic Executives (AAOE)

Business Operations & Finance

Roundtable B194

Practice Valuations: What a Practice Worth Today?

Moderator: Mark D Abruzzo JD

Roundtable B196

Three Areas of Succession Planning for Senior Physicians

Moderator: Michael D Brown*

Professional Growth

Roundtable B197

Exit Strategies for the Solo Ophthalmologist

Moderator: Lawrence Geller MBA*

Roundtable B198

Mid-Career Planning - It's Not Too Early to Plan for the Next 50 Years

Moderator: Frank J Weinstock MD

Refractive Surgery

Jointly sponsored by the Academy's Annual Meeting Program Committee and the International Society of Refractive Surgery (ISRS) Executive Committee

Roundtable B199

Laser Vision Correction After Refractive IOL Surgery

Moderator: Elizabeth Yeu MD*

Retina, Vitreous

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Retina Specialists (ASRS)

Roundtable B200

Compounding Pharmacy Regulations and the Effect on Compounded Medication Supply

Moderator: Suber S Huang MD*

Jointly sponsored by the Academy's Annual Meeting Program Committee and the Macula Society

Roundtable B201

Treatment of Diabetic Macular Edema

Moderator: Judy E Kim MD

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Retina Specialists (ASRS)

Roundtable B204

Ultra Widefield Fluorescein Angiography

Moderator: Szilard Kiss MD*



Instruction Course Program

Sunday – Tuesday, Nov. 17 - 19

- ★ Based on the 2012 Joint Meeting attendee evaluation data, a star indicates that the instruction course received an overall course grade within the top 10% of its subject area
- NEW** New course
- EHR** Electronic Health Records
- GO** Global Ophthalmology
- P** Eligible for Pain Management credit
- SO** Endorsed by Senior Ophthalmologist Committee
- YO** Endorsed by Young Ophthalmologist Committee

Academy Plus Course Pass

All courses in the Instruction Course Program are part of the Academy Plus course pass. Academy Plus offers maximum convenience, with unlimited access to all Academy and AAOE instruction courses. Individual tickets for Academy and AAOE instruction courses will no longer be sold.

Note: Due to Fire Marshal regulations, seating capacities are limited. Seating is available on a first-come basis, so please plan accordingly.

Selection Committee

The Annual Meeting Program Committee selected all instruction courses in this section. See page 33 for committee details.

Cataract

Advanced Refractive Cataract Surgery and Anterior Segment Reconstruction

Course: 102 Sunday
Room: 211 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course is designed for surgeons who (1) want to achieve a higher level of emmetropic results by addressing toricity through the use of limbal relaxing incisions, toric IOLs, and bioptics, and (2) want to expand their armamentarium for dealing with difficult cataract cases, dislocated IOLs, and traumatized eyes.

Objective: This course will cover iris and scleral suture fixation techniques for IOLs, chopping techniques, capsular tension rings, artificial iris vs. primary closure for iris defects, pars plana vitrectomy, introduction to femtosecond cataract surgery, and strategies for dealing with challenging cases. These techniques will be presented in the didactic course and will be practiced in the Skills Transfer lab.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Brock K Bakewell MD*

Instructor(s): Louis D Skip Nichamin MD*, William J Fishkind MD FACS*, Samuel Masket MD*, Warren E Hill MD*, Steven H Dewey MD*, Lisa B Arbisser MD*, Garry P Condon MD*, Alan S Crandall MD*, Richard S Hoffman MD*, Robert P Liss MD, Mark K Walsh MD

Management of Vitreous for the Anterior Segment Surgeon

Course: 106 Sunday
Room: R04 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will review the anatomy, physiology, and pathophysiology of the vitreous and will present vitrectomy techniques for challenging anterior segment surgery scenarios. Topics will include management of vitreous loss from the anterior and posterior approach, utilizing the vitrector for decompression in challenging cataract cases, and visualizing the vitreous with triamcinolone acetonide (Kenalog).

Objective: This course is designed to enhance the anterior segment surgeon's familiarity with anterior and posterior vitrectomy techniques for challenging anterior segment cases.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Natalie A Afshari MD

Instructor(s): Iqbal K Ahmed MD*, Rosa Braga-Mele MD*, Ron Afshari Adelman MD MPH, Keith A Warren MD*, Baseer U Khan MD*, Thomas A Oetting MD

★ Code Red: Mastering Phaco Nightmares and Worst-Case Scenarios — A Video-Based Course

Course: 152 Sunday
Room: 218 10:15 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: "Code red" signifies danger, and it's best to be prepared for such cases. Endocapsular rings for subluxated cataracts, prosthetic irides, and pupil expanders are secrets for mastering phaco surgery's worst-case scenarios. Intraoperative floppy iris syndrome, IOL implantation in eyes with deficient capsules, and glued IOLs will all be explained. Vitreous loss, torn rrhexis management, and other complication management will also be covered. Management of dropped lenses, hard cataracts, posterior capsular ruptures, and the like will all be explained with excellent videos. From basic complications to nightmare situations, all will be covered in this course. Questions from the audience will be discussed so that attendees will be able to go back to their practices and manage any situation.

Objective: At the conclusion of this course, the attendee will be able to master difficult phaco cases and manage various complications without developing a heart attack.

Senior Instructor(s): Amar Agarwal MD*

Instructor(s): David F Chang MD*, Robert H Osher MD*, Athiya Agarwal MD*, Iqbal K Ahmed MD*, Brian C Little MD*

★ YO Conquering Capsule Complications: A Video Primer

Course: 154 Sunday
Room: R06 10:15 AM - 12:30 PM
Education Level: INT Target Audience: COMP

Synopsis: Video cases will illustrate a spectrum of techniques for anterior and posterior capsule complications: trypan blue dye, vitreous tap for crowded anterior chamber, torn continuous curvilinear capsulorhexis (CCC) options, secondary CCC enlargement, flap tear-out rescue technique, posterior CCC, rrhexis capture of the optic, early recognition of posterior chamber rupture, conversion from top/clear corneal incision to extracapsular cataract extraction, posterior polar cataracts, IOL fixation with torn anterior or posterior capsule, capsular tension ring and capsule hooks for weak zonules, small pupil / floppy iris strategies (hooks, Malyugin and other expansion rings, epinephrine, Healon 5), pars plana bimanual anterior vitrectomy (± triamcinolone), and Viscoat posterior-assisted levitation (PAL) + trap for descending nuclei.

Objective: To use video cases to systematically review techniques of preventing, recognizing, and handling complications with either the capsulorhexis or posterior capsule.

Senior Instructor(s): David F Chang MD*

Instructor(s): Robert H Osher MD*

NEW Fundamentals of Anterior Segment Reconstruction

Course: 162 Sunday
Room: 210 10:15 AM - 12:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will consist of didactic lecture, surgical video, and panel discussion highlighting various current topics in anterior segment surgery. Topics will include iris repair, IOL exchange, sutured IOLs, anterior vitrectomy, use of iris and capsule support devices, and complex cataract surgery. Instructive surgical video intertwined with didactic slides will be used as the building blocks for this instructional course. Each case will focus on a common anterior segment situation and a technique or techniques for proper management and/or repair of that scenario.

Objective: Attendees will learn several surgical techniques for the repair of the anterior segment and how to apply these techniques in their own clinical practice, thereby improving patient care.

Senior Instructor(s): Brandon Ayres MD*

Instructor(s): William Barry Lee MD*, George O Waring IV MD*, Elizabeth Yeu MD*, John P Berdahl MD*, Jai G Parekh MD MBA**

IOL Power Calculation: Problems With LASIK Eyes

Course: 183 Sunday
Room: 211 2:00 - 3:00 PM
Education Level: ADV Target Audience: COMPSUB

Synopsis: This course will present the latest in IOL power calculation, from biometric measurements for axial length, corneal power, and anterior chamber depth, including the IOLMaster, LenStar, Galilei G6, Aladdin, Nidek, and Tomey, to formula usage and clinical decision making. The new Hoffer H5 formula will be explained. Special attention will be paid to improving the accuracy of these parameters in clinical practice. Means for dealing with special cases, such as staphyloma, piggyback lenses, pediatric eyes, LASIK eyes, and silicone oil eyes, will be covered based on the presenter's 38 years of experience in the field. How to handle power errors will also be presented.

Objective: By the end of this course, attendees should have obtained all the latest information to improve the accuracy of IOL power prediction for all patients receiving IOLs, either aphakic or phakic. They also should be able to handle especially difficult situations and to choose effective means to correct postoperative problems that occur.

Senior Instructor(s): Kenneth J Hoffer MD FACS*

★ Cataract Surgery in the Setting of Ocular Comorbidities and High-Risk Features for Intraoperative and Postoperative Complications

Course: 185 Sunday
Room: 218 2:00 - 4:15 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: Ocular comorbidities and high-risk characteristics for intraoperative and postoperative complications occur with surprising regularity in cataract surgery patients. Ocular comorbidities often reduce visual potential. Systemic comorbidities and other characteristics of the eye or patient are often associated with a high risk of intraopera-

Instruction Courses

tive and postoperative complications. In this course, a faculty of internationally recognized experts in cataract surgery will discuss a variety of common comorbidities and high-risk characteristics, the unique problems they present, and strategies for achieving successful visual and surgical outcomes.

Objective: At the conclusion of this course, the attendee will be able to identify a variety of ocular comorbidities and high-risk eye and patient characteristics for surgical complications at the time of cataract surgery. The attendee will also be able to describe strategies for obtaining optimal outcomes under these conditions.

*Senior Instructor(s): Kevin M Miller MD**

Instructor(s): Iqbal K Ahmed MD, David S Boyer MD*, Arup Chakrabarti MBBS, Michael Colvard MD*, Alan S Crandall MD*, James Philip Dunn Jr MD, Bonnie A Henderson MD*, Terry Kim MD*, Douglas D Koch MD*, Nick Mamalis MD*, Samuel Masket MD*, Thomas A Oetting MD, Randall J Olson MD, Robert H Osher MD*, Mark Packer MD*, Walter J Stark MD*, Abhay Raghukant Vasavada MBBS FRCS**

Phacoemulsification and Advanced Techniques: The Core Curriculum

Course: 120 Sunday
Room: 211 3:15 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: In this course, a faculty of experienced surgeons will present the latest phaco techniques and technologies that are applicable to ophthalmologists at every level of experience. This comprehensive course will cover the steps of phacoemulsification, including incisions, capsulorhexis, hydrodissection, and phaco techniques with an emphasis chop. Safe cortex removal and IOL implantation will be demonstrated. Capsular tension rings, pupil expanders, hooks, capsular staining, and related techniques will also be presented. This course will teach the most up-to-date phacoemulsification techniques to both individuals with little or no experience with the method and those wishing to refine or update their technique or transitioning from other cataract surgery methods.

Objective: This course is designed to teach participants the principals and skills necessary to understand and perform state-of-the-art phacoemulsification safely and efficiently.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

*Senior Instructor(s): Steven H Dewey MD**

Instructor(s): Anita Newyas-Wallace MD, Ricardo G Glikin MD, Nick Mamalis MD*, Helen K Wu MD*, Mark H Blecher MD, Thomas A Oetting MD*

Manual Extracapsular Cataract Extraction Surgery: Indications and Techniques

Course: 123 Sunday
Room: 346 3:15 - 5:30 PM
Education Level: BAS Target Audience: COMP

Synopsis: Although extracapsular cataract extractions by large incision (ECCE) and small incision (SICS) are still performed routinely throughout the world, phacoemulsification surgery has become the standard of care in many countries, and therefore ECCE/SICS is no longer being taught. However, understanding how to perform this surgery competently is still crucial when faced with complications during phacoemulsification surgery, or when an ECCE approach may be a better choice for the patient.

Objective: By the conclusion of this course, the attendee will (1) have learned and be able to practice primary ECCE and SICS surgery, (2) have learned and be able to practice how to convert from a clear corneal phacoemulsification to either a ECCE or a SICS approach, and (3) better understand how to deal with complications of ECCE surgery.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

*Senior Instructor(s): Bonnie A Henderson MD**

*Instructor(s): Geoffrey C Tabin MD, Maria Mendicino Aaron MD, Jeff H Pettet MD**

Tackling Weak Zonules and Using Capsular Tension Devices

Course: 206 Sunday
Room: R08 3:15 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will cover techniques, indications, and pitfalls for the use of capsular tension devices (rings and segments), capsular retractors, and other surgical techniques in patients with capsular-zonular complex pathology. A strategy for preoperative evaluation and intraoperative clues to unstable or potentially unstable zonules will be presented, and surgical approach and selection of capsular device(s) and techniques for implantation will be discussed. Strategies for avoidance and management of complications will also be presented.

Objective: Participants will gain an understanding of the premise of and indications for capsular tension devices, the use of adjunctive devices, specific techniques in implantation, and potential complications.

*Senior Instructor(s): Iqbal K Ahmed MD**

Instructor(s): Robert J Cionni MD, Alan S Crandall MD*, Samuel Masket MD*, Robert H Osher MD*, Kenneth J Rosenthal MD FACS***

NEW Pearls for Evaluating Corneal Topography in Patients Scheduled for Cataract Surgery

Course: 217 Sunday
Room: 218 4:30 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Patients scheduled for cataract surgery can have surprisingly abnormal corneal topography. This course will be led by a team of topography experts who will help attendees identify and interpret corneal topographies in patients scheduled for cataract surgery, and help optimize a treatment plan. Both virgin corneas, as well as corneas with previous PRK, LASIK, and radial keratotomy, will be discussed and analyzed by the faculty.

Objective: At the conclusion of the course, attendees will be able to analyze and identify normal vs. abnormal corneal topographies in patients scheduled for cataract surgery and to determine whether patients are eligible for toric or presbyopic IOLs, or for limbal relaxing incisions. Attendees will also be able to determine whether their patients would be eligible for PRK or LASIK following cataract surgery, or would potentially benefit from crosslinking.

*Senior Instructor(s): William B Trattler MD**

Instructor(s): George O Waring IV MD, Karolinne M Rocha MD, Renato Ambrosio Jr MD*, Jodi Luchs MD**

NEW Artificial Iris Implantation

Course: 229 Sunday
Room: 210 4:30 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will provide an overview of artificial iris devices available from Morcher, Ophtec, and HumanOptics. Indications, device availability in different markets, preoperative planning, implantation tips, and outcomes will be discussed. The effect of ocular comorbidities on the decision-making process will be reviewed. The didactic discussion will be supplemented by surgical video. Devices to be discussed include modified capsule tension rings, iris reconstruction lenses, and foldable silicone wafers.

Objective: At the conclusion of the course, attendees will be able to describe the artificial irises available commercially and understand their directions for use. They will know which devices are suitable for capsular bag implantation and which devices are suitable for the sulcus. They will be able to discuss how ocular comorbidities affect the choice of implant to be used. They will also be able to describe common intraoperative problems and their solutions.

*Senior Instructor(s): Kevin M Miller MD**

NEW Toric IOL Implantation: How to Improve Results and Manage Complications

Course: 235 Sunday
Room: 225 4:30 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Toric IOLs have rapidly changed the management of corneal astigmatism in cataract patients. For excellent results either with monofocal or multifocal IOLs, this course will present a structured approach to patient selection, evaluation and limbal imaging, IOL choice, proper centration, new alignment devices, and management of intraoperative complications, such as ballooning and bleeding. Understanding of misalignment through vector analysis and new techniques as well as correction of residual errors will be discussed.

Objective: At the end of the course, participants will be able to exploit toric IOLs advantages, reduce alignment errors, and manage possible unwanted results.

Senior Instructor(s): *Fabrizio I Camesasca MD**

Instructor(s): *Paolo Vinciguerra MD*, Jack T Holladay MD MSEE FACS*, Michael C Kozar MD**

NEW Anterior Segment Surgery in 3-D

Course: 240 Sunday
Room: R06 4:30 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will be video based, showing surgical video of new and innovative anterior segment procedures in high-definition 3-D. After each video there will be a panel discussion and time for audience questions and answers. Techniques to be covered will include Descemet-stripping endothelial keratoplasty, Descemet membrane endothelial keratoplasty, cataract removal, femtosecond laser cataract surgery, trabeculectomy, tube shunt placement, canaloplasty, and others. By observing the surgical procedures in 3-D, participants in the course will gain a better understanding of how to perform these procedures. Viewing the procedures in 3-D will also highlight how 3-D viewing systems can enhance surgeon education, both in the operating room and in remote locations.

Objective: Attendees will experience and learn by watching through the surgeon's eyes a variety of advanced anterior segment surgical procedures. Visualizing the procedures will enhance the attendees' experience and add to their comfort level in performing these surgical procedure on their own patients.

Senior Instructor(s): *Brandon Ayres MD**

Instructor(s): *Scott J Fudenberg MD*, Anand V Mantravadi MD*, Michael J Pro MD*, Irving M Raber MD*, Sadeer B Hannush MD, Robert S Bailey MD*

Intraoperative Floppy Iris Syndrome: Pearls for Management and Prevention

Course: 241 Sunday
Room: 228 4:30 - 5:30 PM
Education Level: INT Target Audience: COMP

Synopsis: Intraoperative floppy iris syndrome (IFIS) continues to challenge cataract surgeons. Multiple different surgical methods will be discussed in detail, with the goal of arming surgeons with a range of complimentary strategies. These include intracameral alpha agonists, ophthalmic viscosurgical device strategies, phaco techniques, iris retractors, and pupil expansion devices, including the Malyugin ring. This course will also review what is known about the pharmacologic basis and mechanism of IFIS.

Objective: To update anterior segment surgeons on the latest clinical information about benign hyperstatic hypertrophy pharmacology, and the preoperative and intraoperative management of IFIS.

Senior Instructor(s): *David F Chang MD**

Instructor(s): *Steve A Arshinoff MD*, Allan J Flach MD*

Advanced IOL Power Calculations for the Cataract and Refractive Surgeon

Course: 301 Monday
Room: R06 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: The indications for an IOL implantation following cataract or clear lensectomy have significantly increased. Techniques for determining the proper IOL and power will be presented.

Objective: This course will provide clear methods and techniques for determining the proper IOL and power for complicated cases and will familiarize the clinician with indications and limitations of specialty lenses, such as multifocal and toric IOLs.

Senior Instructor(s): *Jack T Holladay MD MSEE FACS**

NEW Phacoemulsification in Eyes With Complex Corneal Situations

Course: 305 Monday
Room: 355 9:00 - 10:00 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: Phacoemulsification in cases with corneal problems poses difficulty in surgery and suboptimal visual outcome. This course will include specific surgical steps and planning to improve the outcome in cases with these complex corneal problems. Appropriate evaluation and surgical technique to achieve optimal outcome will be demonstrated in eyes with endothelial corneal dystrophy / compromised endothelial function, as well as in cases with corneal opacity and haze due to corneal dystrophies / healed keratitis or traumatic scars. The course will also include phacoemulsification surgery in cases following refractive surgery and keratoplasty.

Objective: At the end of the course, the attendee will be well versed in the exact method of successfully completing phacoemulsification surgery in cases with complex corneal problems and achieving good postoperative outcome.

Senior Instructor(s): *Jeewan S Titiyal MD*

Instructor(s): *Rajesh Sinha, Abhay Raghukant Vasavada MBBS FRCS*, Arup Chakrabarti MBBS, Sana Ilyas MD*

NEW Implanting the Add-On Mirror Telescopic Intraocular Implant in AMD Eyes: Patient Selection, Surgical Technique and Clinical Results

Course: 309 Monday
Room: 225 9:00 - 10:00 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: The mirror telescopic implant is adapted to be used in phakic and pseudo-phakic AMD eyes at any stages of the disease in combination with any IOL. The central field is magnified x2.5 while enabling some normal peripheral vision. A unique patient selection program will be discussed, along with surgical technique, clinical results, and possible complications.

Objective: At the conclusion of this course, the attendee will be able to select patients suitable for implantation, learn how to use the special program for patient selection, understand the design and optical performance of the device, be able to demonstrate to patients the expected postop results, be familiar with the surgical technique, evaluate the clinical results that will be presented by 3 leading surgeons, and learn how to avoid possible complications.

Senior Instructor(s): *Isaac Lipshitz MD**

Instructor(s): *Amar Agarwal MD*, Juan-Carlos Abad MD, Nada Jiraskova MD***

Understanding Ophthalmic Viscosurgical Devices to Optimize Their Use in Cataract Surgery and Complications

Course: 323 Monday
Room: 224 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will consist of a slide and video presentation of rheologic properties, classification, and varied utilization techniques for different ophthalmic viscosurgical device (OVD) types. New OVDs, recent discoveries, and principles and techniques to prevent and manage complications and postoperative IOP will be covered. Ample opportunity for discussion will be available.

Objective: At the conclusion of this course, attendees will have gained (1) insight into the rheologic properties and surgical behavior of different OVDs and (2) understanding about choice and optimal use of OVDs. This will enhance attendees' skills in surgery and complication management.

Senior Instructor(s): *Steve A Arshinoff MD**

NEW YO From Cadaver Eyes to Virtual Reality: Surgical Simulators 101

Course: 330 Monday
 Room: 335 9:00 - 10:00 AM
 Education Level: BAS Target Audience: COMPSUB

Synopsis: Many tools are available to simulate cataract surgery, from traditional wet lab experience to virtual reality computer simulation. Effective surgery simulation is essential for training; however, the time and cost of establishing a surgical simulation program is significant. This course will discuss the spectrum of phacoemulsification simulation tools and their respective strengths and weaknesses. Three distinct examples of surgical training through integration of surgical simulation will be presented from the Flaum, Wilmer, and Moran Eye Institutes. Simulation systems discussed will include the Kitaro wet and dry lab system, the EYESi VR Magic simulator, and the ImmersiveTouch Microvis simulator.

Objective: At the conclusion of this course, the attendee will (1) know the spectrum of surgical simulation tools available, (2) understand the respective strengths and weaknesses of available tools, and (3) know how to implement a systematic, structured, surgical simulation curriculum for training.

*Senior Instructor(s): Jeff H Pettey MD**

Instructor(s): Yousuf M Khalifa MD, Shameema Sikder MD**

YO Astigmatism in the Cataract Patient

Course: 130 Monday
 Room: 355 10:15 AM - 12:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will cover management techniques for pre-existing astigmatism, specifically at the time of implant surgery, with focus upon intralibral relaxing incisions, toric IOLs, and laser (femto / excimer) treatment modalities.

Objective: At the conclusion of this course, participants will be able to plan and perform the techniques necessary to control postcataract astigmatism.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

*Senior Instructor(s): Louis D Skip Nichamin MD**

*Instructor(s): Jonathan B Rubenstein MD**

Cataract Surgery and Uveitis: Controlling Inflammation, Difficult Pupils, and Distorted Anatomy

Course: 360 Monday
 Room: R06 11:30 AM - 12:30 PM
 Education Level: INT Target Audience: COMP

Synopsis: This course will teach the management of difficult and potentially complicated cataract surgery in uveitis using surgical videos (including 3-D videos) highlighting unique uveitic anatomy. The focus will be on preoperative immunosuppression and patient selection, intraoperative management of distorted uveitic anatomy, and postoperative considerations. Both surgical and medical guidelines for the ophthalmologist will be given, with an emphasis on immunosuppression.

Objective: At the conclusion of this course, attendees will understand preoperative planning and immunosuppression for cataract surgery in uveitis patients. They will learn intraoperative management of uveitic anatomy via surgical videos and the management of postoperative inflammation.

*Senior Instructor(s): Michael Saidel MD**

*Instructor(s): David M Hinkle MD, Donald Stone MD, Debra A Goldstein MD**

★ Learning Phaco Chop: Pearls and Pitfalls

Course: 368 Monday
 Room: R06 2:00 - 4:15 PM
 Education Level: INT Target Audience: COMP

Synopsis: Phaco chop minimizes ultrasound time and zonular stress. Pearls and strategies for learning this technique will be presented, based upon the instructors' experience in teaching residents. Using a special projection system, the audience will don stereo glasses to view 3-D high-definition videos that uniquely illustrate the angle and depth of the instrument tips for both horizontal (Nagahara) and vertical (quick chop) methods of chopping. A stepwise game plan for converting to phaco chop will be presented, along with phacodynamics principles for selecting machine parameters and instrumentation.

Objective: This course will present both variations of the phaco chop technique, their advantages in complicated cases, the instrumentation, machine parameters, and transition steps involved, and common mistakes.

*Senior Instructor(s): David F Chang MD**

Instructor(s): Randall J Olson MD, Louis D Skip Nichamin MD, Barry S Seibel MD**

NEW Cataract Surgery in Patients With Retinal Disease

Course: 371 Monday
 Room: 210 2:00 - 3:00 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Recent advances including the advent of anti-VEGF therapy have changed our perspective on the management of common retinal disorders as well as coexisting cataract in these patients. This course will include lectures, images, and interactive discussions about many issues that arise when cataract surgery is being considered in patients with retinal disorders such as exudative AMD and diabetic macular edema.

Objective: At the conclusion of this course, attendees will be able to recognize diagnostic and management issues involved when considering cataract surgery for patients with retinal diseases such as AMD and diabetic macular edema.

*Senior Instructor(s): Homayoun Tabandeh MD MS FRCP FRCOphth**

Instructor(s): David S Boyer MD, Kourous Rezaei MD*, Pouya N Dayani MD**, John D Hofbauer MD**

NEW Advancing Technology and Technique With Femtosecond Lasers in Refractive Cataract Surgery: A Video Review

Course: 375 Monday
 Room: 209 2:00 - 3:00 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Participants will learn how to create and manage a laser-created capsulotomy to avoid complications, and how to optimize reduced cumulated dissipated energy as well as its clinical significance. The course will also define and illustrate the latest integrated software guidance systems designed for surgical planning, especially as related to the correction of pre-existing astigmatism. The utilization of multipurpose femtosecond laser platforms will also be presented, as will discussions regarding the incorporation and practicality of such systems in the cataract and refractive surgery practice.

Objective: At the conclusion of the course, participants should be able to avoid or manage surgical complications associated with femtosecond lasers in refractive cataract surgery and to evaluate the effectiveness of incorporation into a surgical practice.

*Senior Instructor(s): Zoltan Nagy MD**

Instructor(s): Michael C Knorz MD, Kerry D Solomon MD*, Stephen G Slade MD FACS*, Vance Michael Thompson MD**

NEW Achieving Proper Centration and Alignment for Vision Correction in Keratorefractive and Intraocular Surgery

Course: 379 Monday
 Room: 220 2:00 - 3:00 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This lecture and video-based course will demonstrate how to center and align keratorefractive and intraocular devices and procedures for vision correction. Pearls on interpreting diagnostic testing, including corneal topography and pupil imaging, will be presented. Techniques for achieving good alignment and centration of diffractive multifocal and toric IOLs, limbal relaxing incisions, and corneal inlays—including the importance angle kappa—will be demonstrated and discussed.

Objective: At the conclusion of this course, attendees will be able to apply practical techniques, including the use of common imaging studies, to achieve good centration and alignment in keratorefractive and intraocular surgery.

*Senior Instructor(s): Daniel H Chang MD**

Instructor(s): George O Waring IV MD, John J DeStefano MD*

Cliffhanger: Vitrectomy by the Anterior Segment Surgeon for the Broken Posterior Capsule, the Sinking Nucleus, and the Dangling IOL

Course: 388 Monday
 Room: R03 2:00 - 3:00 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Every anterior segment surgeon faces the problem of a broken posterior capsule at some time or another and should know how to perform vitrectomy. One should also know how to manage a dropped nucleus or sinking fragments. Various techniques like the posterior-assisted levitation technique (PAL) and others will be taught, including how to perform bimanual vitrectomy. The dangling IOL and fixation of a posterior chamber IOL in eyes without capsule using the glued IOL technique will also be taught. The management of various challenges will be explained through videos.

Objective: At the end of the course, the attendee will be able to fix an IOL in eyes without capsule, retrieve sinking lens fragments, and also do a thorough vitrectomy when required.

*Senior Instructor(s): Amar Agarwal MD**

Instructor(s): David F Chang MD, William F Mieler MD**

Techniques and Devices for Surgical Reconstruction of Traumatic and Developmental Iris Defects

Course: 396 Monday
 Room: 209 3:15 - 5:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Iris reconstruction is required in cases of partial defects or total aniridia. This course will review all the currently available artificial iris implants in Europe and North America, including techniques and tips on implantation. Topics include (1) preoperative assessment and surgical planning, (2) systematic approach to iris reconstruction, (3) review of currently available artificial iris devices, (4) indications, (5) detailed surgical techniques of each type (demonstrated with videos), and (6) complications and management. Surgical videos will be used extensively to demonstrate the techniques of each modality and the management of complications.

Objective: After the course, the attendee will have gained a greater insight into the assessment, indications, and surgical strategies available for reconstructing the iris, together with management of complications in iris reconstruction.

*Senior Instructor(s): Sathish Srinivasan MBBS**

*Instructor(s): Michael E Snyder MD**

A Video Bouquet of Phaco Complications That Should Never Have Occurred, With Tips on Damage Control and Prevention to Optimize Postoperative Outcome

Course: 408 Monday
 Room: R08 3:15 - 5:30 PM
 Education Level: BAS Target Audience: COMPSUB

Synopsis: This video course deals with the genesis, management, and prevention of unexpected surgeon- or technique-related complications in phacoemulsification in uncomplicated cataracts. The course will demonstrate complications that may be encountered during all steps of phaco (both uncomplicated and difficult cataracts) and will offer a stepwise strategy to prevent and manage them. Complications and remedial measures demonstrated include wound burns, wound length anomalies, capsulorrhexis extension and retrieval, two-stage rrhexis, use of microrrhesis forceps / scissors in tricky cases, incomplete / difficult hydrodissection, hurdles in phaco chop, misplaced capsular tension ring, inappropriately used iris hook, how to convert to a safer nonphaco technique in problem situations, and more.

Objective: At the end of the course, the attendee will have learned how to avoid and successfully manage certain intraoperative phaco complications that can not only mar the postoperative outcome but can also lead to sight-threatening sequelae.

Senior Instructor(s): Arup Chakrabarti MBBS

Instructor(s): Thomas A Oetting MD, Amar Agarwal MD, Kevin M Miller MD*, Abhay Raghukant Vasavada MBBS FRCS*, Samuel Masket MD*, Khiun F Tjia MD*, Meena Chakrabarti MBBS*

Clinical Decisions in the Management of Complications of Cataract and IOL Surgery

Course: 410 Monday
 Room: 355 3:15 - 5:30 PM
 Education Level: ADV Target Audience: COMPSUB

Synopsis: This program brings together 12 experts in cataract and IOL surgery to discuss common and rare problems. First, the most unusual complication of the year will be presented by expert ophthalmologists, who will describe it up to the point of the clinical decision. Then the panel and/or audience will discuss the problem, and finally the presenter will reveal the chosen management and resolution of the problem.

*Senior Instructor(s): Manus C Kraff MD**

Instructor(s): Lisa B Arbisser MD, Alan S Crandall MD*, Kenneth J Hoffer MD FACS*, Sheri Rowen MD*, Geoffrey C Tabin MD, James P Gills MD*, Marc A Michelson MD*, Louis D Skip Nichamin MD*, Luther Fry MD FACS*, James A Davison MD*, Kenneth J Rosenthal MD FACS***

NEW Temporal, Manual, Small- Incision Cataract Surgery: A Technique for the Developing and Developed World

Course: 420 Monday
 Room: R03 4:30 - 5:30 PM
 Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will teach participants an effective temporal, manual, small-incision cataract surgery (SICS) for cost-effective, high-volume surgeries in the developing world and how to adapt it to difficult phacoemulsification cases/4an important technique for those who are proficient in phacoemulsification. The course will be taught by surgeons with many years of experience with SICS, and early recognition of potential problems and how to avoid and manage them will be discussed.

Objective: At the end of the course, the attendees will be able to understand and perform the steps of temporal, manual SICS and how to adapt it to their difficult phacoemulsification cases to achieve high-quality visual outcomes.

Senior Instructor(s): Vadrevu K Raju MD FRCS FACS

*Instructor(s): Madhavi Ghanta MD DNB**, Leela V Raju MD*

A Video Symposium of Challenging Cases and the Management of Intraoperative Complications During Cataract Surgery

Course: 513 Tuesday
 Room: R06 9:00 - 11:15 AM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will cover a spectrum of difficult cataract cases as well as a potpourri of intraoperative complications. The video content, which is updated yearly, will be discussed by the panel.

Objective: This course will expose the surgeon to principles and techniques useful in operating difficult cases and in managing serious intraoperative complications.

*Senior Instructor(s): Robert H Osher MD**

NEW Advanced Techniques With Laser Cataract Surgery

Course: 517 Tuesday
 Room: 228 9:00 - 11:15 AM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Basic certification in the use of a particular femtosecond laser confers only a degree of facility with the technology. This course will provide a wide range of real-world, experience-driven pearls and tips to enhance efficiency, safety, and efficacy when using the femtosecond laser.

Objective: At the conclusion of the course, the surgeon will have a better understanding of optimal patient selection, preoperative preparation, surgical planning, surgical execution, and unexpected event management than prior to this educational event.

Senior Instructor(s): Mark H Blecher MD

Instructor(s): William W Culbertson MD, Jonathan H Talamo MD*, Burkhard Dick MD*, Lisa B Arbisser MD**

Instruction Courses

YO Phaco Pearls for the Beginner

Course: 518 Tuesday
Room: 333 9:00 - 11:15 AM
Education Level: BAS Target Audience: COMPSUB

Synopsis: This video course will teach surgical pearls and recommend guidelines to fine-tune all steps in routine phaco for uncomplicated cataracts in a comprehensive manner. The course will highlight proper techniques and demonstrate specific strategies and maneuvers to optimize outcomes and to avoid iatrogenic complications. Adjunctive devices to stabilize the capsular bag and ensure pupillary dilatation will also be discussed. The technique of converting to a safer nonphaco small-incision cataract surgery (SICS) in problematic situations like posterior chamber tear and impending nucleus drop will also be demonstrated.

Objective: Attendees will be able to fine tune their surgical strategy and optimize outcomes of all steps of phacoemulsification in uncomplicated scenarios on a consistent basis, and will learn how to prevent common complications and successfully manage them should they still occur.

Senior Instructor(s): Arup Chakrabarti MBBS

Instructor(s): Thomas A Oetting MD, Kevin M Miller MD, Abhay Raghukant Vasavada MBBS FRCS*, Warren E Hill MD*, Richard B Packard MD*, Samar K Basak MD DNB MBBS*, Jeewan S Titiyal MD*

NEW Management of Malpositioned IOLs

Course: 520 Tuesday
Room: R04 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: Early and late decentration / dislocation of IOLs represent significant complications of current cataract surgery. This instruction course will consider the etiology, possible prevention, and, primarily, the surgical management of malpositioned IOLs.

Objective: To (2) recognize the causes of IOL dislocation / decentration, (2) consider prevention of malpositioned IOLs, (3) through use of video presentations, demonstrate various surgical techniques for correction of IOL decentration / dislocation.

*Senior Instructor(s): Samuel Masket MD**

Instructor(s): Amar Agarwal MD, Nicole R Fram MD*, Sadeer B Hannush MD, Thomas A Oetting MD*

★ YO Multifocal and Accommodative IOLs: Face the Challenge

Course: 527 Tuesday
Room: 218 9:00 - 11:15 AM
Education Level: ADV Target Audience: COMPSUB

Synopsis: We will review the state-of-the-art knowledge on presently available multifocal and accommodative IOLs (MAI). Their features, indications and contraindications, matching possibilities, and clinical results, pursuing highly satisfactory uncorrected distance, intermediate, and near vision, will be examined. New multifocal IOLs (ie, torics) will be discussed.

Objective: Attendees will receive information on how to use MAI. A structured approach on patient and IOL selection based on accurate matching of IOL features with patient needs will be provided. Discussion will include IOL performance in terms of contrast sensitivity, light distribution and loss, and management of complications and visual complaints, with available solutions. The importance of achieving plano results will be well supported. At the end of this course, the attendee will be able to improve surgical center organization, choose the best IOLs for each specific patient, and manage possible postop complications.

*Senior Instructor(s): Matteo Piovella MD**

Instructor(s): David F Chang MD, Richard L Lindstrom MD*, Jack T Holladay MD MSEE FACS*, Jay Stuart Pepose MD PhD*, Richard Tipperman MD*, Claudio Carbonara MD*, Barbara Kusa MD*

Microsurgical Suturing Techniques

Course: 144 Tuesday
Room: 340 10:15 AM - 12:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will cover basic microsurgical suturing techniques. In addition, principles, theories, and practical instruction in corneal-scleral laceration and corneal wound repair, management of cataract wound problems, including wound burns, and extension of clear corneal incisions will be offered.

Objective: This course offers basic microsurgical suturing training that is applicable in the management of penetrating keratoplasty suturing, corneal lacerations, and cataract wound problems.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

*Senior Instructor(s): Marian Sue Macsai-Kaplan MD**

Instructor(s): Woodford S Van Meter MD FACS

NEW Refractive and Cataract Surgery Nightmares: Management and Prevention of Most Common Complications

Course: 533 Tuesday
Room: 252 10:15 AM - 12:30 PM
Education Level: ADV Target Audience: COMPSUB

Synopsis: This course will present intraoperative and postoperative complications of refractive and cataract IOLs surgery, showing possible and different strategies for managing sudden complicated and dangerous events in standard and difficult cases. The faculty will discuss pathogenesis, technical caveats, planned approach, prevention, diagnostic workup, management, and long-term follow-up of complicated cases. Special sections will be dedicated to post-refractive surgery ectasia, crosslinking, premium IOLs, and glare and halos management.

Objective: To provide state-of-the-art knowledge about prevention, management, and follow-up of the possible complications of refractive and cataract surgery, with a series of nightmare cases.

*Senior Instructor(s): Donald N Serafino MD**

Instructor(s): Matteo Piovella MD, David F Chang MD*, Daniel Epstein MD PhD, Roberto Zaldivar MD*, Richard L Lindstrom MD*, Marguerite B McDonald MD*, Robert H Osher MD*, Mounir A Khalifa MD*, Mohamed Shafik Shaheen MD PhD*

NEW Better Surgery Through Chemicals

Course: 543 Tuesday
Room: 220 10:15 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will review the relevant pharmacology and physiology of intracamerally and intravitreally applied agents that include mydriatics, anesthetics, stains, ophthalmic viscosurgical devices, antioxidants, gas, steroids, antibiotics, and anti-VEGF agents. Potential risks of these agents and compounding as well as regulatory issues will be discussed. A panel discussion and questions from the audience will conclude the presentation.

Objective: Attendees will learn current options for intraocular administration of intraocular medications and other agents for prophylaxis of intraoperative floppy iris syndrome and endophthalmitis and management of intraocular complications in intraocular surgery.

*Senior Instructor(s): William G Myers MD**

Instructor(s): Minas T Coroneo MD MS, Samuel Masket MD*, David B Glasser MD, Steve A Arshinoff MD*, William F Mieler MD*, Harry W Flynn MD*, James P Gills MD*, Ramon Lorente MD, Charles Leiter**

Surgical Management of Astigmatism in Cataract and Refractive Surgery

Jointly Sponsored by the Academy's Annual Meeting Program Committee and the International Society of Refractive Surgery (ISRS)

Course: 550 Tuesday
Room: 208 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will teach strategies for minimizing surgically induced astigmatism, discuss surgical options for treating astigmatism during cataract and refractive surgery (including wound construction approaches, limbal relaxing incisions, toric IOLs, and corneal refractive surgical techniques), and demonstrate methods to treat postoperative astigmatism occurring after cataract and refractive surgery.

Objective: By the conclusion of this course, the participants will be able to (1) identify regular and irregular astigmatism, (2) understand surgical strategies to minimize surgically induced astigmatism and determine treatment strategies for astigmatism, including complex refractive errors and eyes not amenable to surgical treatment, and (3) employ practical strategies for determining patient goals and desires for astigmatism correction.

Senior Instructor(s): J Bradley Randleman MD

Instructor(s): David T Vroman MD*

The Art of Achieving Success With Presbyopia-Correcting Intraocular Implants: The Consultation, the IOLs, and Correcting Residual Refractive Errors

Course: 551 Tuesday
Room: R08 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMP

Synopsis: This course will explore the three critical factors for producing happy patients with presbyopia-correcting IOLs (PC-IOLs): (1) strategies for conducting the preoperative consultation, (2) understanding the uniqueness of each PC-IOL, and (3) numerous strategies for correcting residual refractive errors. Both laser and incisional techniques for treating residual refractive errors will be discussed in detail.

Objective: Upon completion of this course, attendees will gain a better understanding of key issues for maximizing patient outcomes and patient satisfaction when correcting presbyopia with IOLs.

Senior Instructor(s): Frank A Bucci MD*

NEW Scleral Fixation of IOL With Fibrin Glue

Course: 571 Tuesday
Room: 208 12:45 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: IOL implantation is difficult in patients with absent or deficient capsular support. Sutured scleral-fixated IOLs and iris-fixated lenses suffer from inherent disadvantages and are not suitable for all cases. This course will introduce a technique of posterior chamber IOL fixation in patients with absent / deficient capsular support by tucking the haptics in scleral tunnels and using fibrin glue to reinforce the flap, ensuring IOL stability and centration with reduced surgical time and minimal complications. IOL fixation with fibrin glue is suitable for all patients, including those with multifocal IOLs. Various surgeons will share their experience with glued IOLs and discuss the merits and demerits of this exciting new technique of IOL fixation.

Objective: At the conclusion of this course, the attendee will be familiar with the technique of glued IOL and should be able to perform it.

Senior Instructor(s): George Beiko MD*

Instructor(s): Gabor Bernd Scharioth MD*, Amar Agarwal MD*, Kenneth J Rosenthal MD FACS**, Avindra Gupta SR, David T Vroman MD*

Best of the Best : An Update in Cataract Surgery

Course: 572 Tuesday
Room: R06 12:45 - 3:00 PM
Education Level: ADV Target Audience: COMPSUB

Synopsis: This course will discuss how advances in technology, IOLs, phaco machines, femtolasers, hydrogel bandages and indications are making cataract surgery extremely similar to refractive surgery. The cataract surgeon must not only provide restoration of vision but also optimal vision quality; the ideal, and increasingly demanded, result of cataract surgery is plano correction. This requires accurate customization of IOL choice, obsessively accurate biometry, adoption of new technologies (microincision and premium IOLs: multifocal, toric, multifocal + toric, aspheric).

Objective: This course is designed to provide attendees with key information in applying a refractive surgery approach to exploiting recent technological, surgical, organizational, and patient management advances.

Senior Instructor(s): Matteo Piovella MD*

Instructor(s): Fabrizio I Camesasca MD*, David F Chang MD*, Steven J Dell MD*, Stephen S Lane MD*, Richard L Lindstrom MD*, Steven C Schallhorn MD*, Roger F Steinert MD*

NEW YO Cataract Surgery Crisis Management 101

Course: 583 Tuesday
Room: 338 12:45 - 3:00 PM
Education Level: ADV Target Audience: COMPSUB

Synopsis: Present-day cataract management requires a surgeon not only to incorporate newer technologies but also to update skills in managing complications. This course aims to identify complicated situations that every surgeon may encounter during or after cataract surgery and provides pearls to effectively manage such crises. It will illustrate critical management of issues such as posterior capsule rupture, phacoemulsification in challenging ocular environments, and dissatisfied premium IOL patients.

Objective: To provide trouble-shooting pearls for successful management of different intraoperative and postoperative complications during cataract surgery. The attendees shall learn from the instructors' video case demonstrations and interactive discussion.

Senior Instructor(s): Abhay Raghukant Vasavada MBBS FRCS*

Instructor(s): Robert H Osher MD*, Alan S Crandall MD*, Nick Mamalis MD*, Kevin M Miller MD*, Samuel Masket MD*

Comprehensive Strategy for Unplanned Vitrectomy Technique for the Anterior Segment Surgeon

Course: 587 Tuesday
Room: 220 12:45 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will propose a strategy for prevention, early recognition, damage control, and specific plans for action to achieve an optimal outcome in cataract surgery complicated by vitreous presentation. Anterior and pars plana approaches will be detailed with ample video. The panel includes a retina-vitreous subspecialist.

Objective: By the conclusion of this course, cataract surgeons of all levels of expertise will be able to describe a strategy for choosing the method and the timing for removal of residual lens material and for undertaking appropriate vitreous management, incision, and choice of IOL to achieve optimal outcomes in cataract surgery involving vitreous presentation.

Senior Instructor(s): Lisa B Arbisser MD*

Instructor(s): Michael J Howcroft MD*

Abandoned Phaco: Convert to No-Stitch Manual Small-Incision Cataract Surgery

Course: 592 Tuesday
 Room: 335 12:45 - 1:45 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Complications do occur in phacoemulsification surgery, for many reasons. Sometimes, the surgeons convert phaco to extracapsular cataract extraction (ECCE) for the patient's safety. The closed chamber situation is then compromised, and problems of suturing are also there. But if the surgeon converts it to no-stitch manual small-incision cataract surgery (SICS), the wound integrity will remain and rehabilitation will be much faster. This course will teach the basics of an effective no-stitch manual SICS, which is crucial when complications are faced during phacoemulsification surgery.

Objective: At the conclusion of this video-based course, the cataract surgeon will be able to understand (1) the indications of primary no-stitch manual SICS technique in the most difficult situations, (2) how to perform no-stitch manual SICS, step by step, (3) conversion of abandoned phaco to no-stitch manual SICS, and (4) how to deal with complications of no-stitch manual SICS if they occur.

*Senior Instructor(s): Samar K Basak MD DNB MBBS**

Instructor(s): Santanu Mitra MBBS, Arup Chakrabarti MBBS

Secure Posterior Chamber IOL Placement Without Adequate Capsular or Zonular Support

Course: 598 Tuesday
 Room: 215 2:00 - 4:15 PM
 Education Level: ADV Target Audience: COMPSUB

Synopsis: Loss of capsular support is often managed by placing an anterior chamber or iris-supported IOL. This is not always the best option, especially in eyes with compromised endothelium or angle damage. Video demonstration will be used to show a spectrum of techniques to securely place posterior chamber lenses when there is inadequate capsular support or decentered bag due to zonular inadequacy. Use in a "hot" setting, when unanticipated capsule loss occurs, and in a "cold" setting, when capsule or zonular deficiency are known preoperatively, will be covered. Techniques such as optic capture, scleral sutured rings and segments, scleral sutured IOLs, haptics glued under scleral flaps, and haptics placed in scleral tunnels will be shown in a step-by-step manner.

Objective: At the end of the course, the attendee will have become familiar with a range of available techniques to allow secure posterior chamber IOL placement, even when there is inadequate capsular support or extensive zonular deficiency.

*Senior Instructor(s): Kenneth J Rosenthal MD FACS***

Instructor(s): Amar Agarwal MD, Michael E Snyder MD*, Suven Bhattacharjee MBBS MS*

Computers, Information Technology

NEW | SO Breakthrough to Social Media

Course: 167 Sunday
 Room: 340 11:30 AM - 12:30 PM
 Education Level: BAS Target Audience: COMPSUB

Synopsis: Social media is the preferred form of communication for hundreds of millions of consumers, which makes social media an important tool to build physician-patient rapport, expand patient knowledge of eye conditions and diseases, and react appropriately to consumer media reports about eye health and vision. Yet many practices are not engaged in social media, or underutilize this important tool. What is holding ophthalmology back?

Objective: To provide the attendee with a clear understanding of how social media can and should be used, and its connection with mobile technology. To remove the barriers to social media adoption, including time management concerns. The attendee will leave the course with an effective plan to implement social media in ophthalmology practice.

*Senior Instructor(s): Vinay A Shah MD**

Instructor(s): Judith Lee, Rohit Krishna MD*, Ron K Lord MD**

Cornea, External Disease

Surgery for Severe Corneal and Ocular Surface Disease

Course: 104 Sunday
 Room: 214 9:00 - 11:15 AM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course is intended for ophthalmologists who plan to expand their surgical skills in the management of severe corneal and ocular surface disease. The topics will include amniotic membrane transplantation, limbal stem cell transplantations, and keratoprosthesis.

Objective: At the conclusion of this course, the attendee will be able to (1) describe the indications and apply the surgical techniques for amniotic membrane transplantation, (2) recognize limbal stem cell deficiency and effectively apply the various surgical techniques for limbal stem cell transplantation, (3) recognize and successfully prevent / treat limbal allograft rejection using systemic immunosuppression, and (4) describe the patient selection, surgical techniques, and postoperative management of patients with keratoprosthesis.

Note: This is the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Ali R Djalilian MD

Instructor(s): Gunther Grabner MD, Edward J Holland MD*, Scheffer C G Tseng MD PhD*, James Chodosh MD MPH*, Ahmad Kheirkhah MD, Maria S Cortina MD, Victor L Perez MD**

The Boston Keratoprosthesis: Case-Based Presentations Highlighting the Essentials for Beginning and Experienced Surgeons

Course: 151 Sunday
 Room: 209 10:15 AM - 12:30 PM
 Education Level: INT Target Audience: SUB

Synopsis: While traditionally considered a procedure of last resort, keratoprosthesis (KPro) implantation is being performed with increasing frequency for an expanding variety of indications, including repeat corneal graft failure and corneal opacification combined with limbal stem cell failure. The design, indications and contraindications, surgical technique, and postoperative management of the Boston KPro will be presented.

Objective: Attendees will learn to recognize patients in their practices who are good candidates for KPro implantation. Presentation of surgical videos and a detailed discussion of the postoperative management will familiarize attendees with KPro implantation, as well as with avoidance and management of postoperative complications.

*Senior Instructor(s): Anthony J Aldave MD**

Instructor(s): Esen K Akpek MD, James Aquavella MD*, Michael W Belin MD*, James Chodosh MD MPH*, Kathryn A Colby MD PhD*, Claes H Dohlman MD PhD*, Sadeer B Hannush MD*

Endothelial Keratoplasty (DSEK/DSAEK/DMEK/DMAEK): Current Strategies to Improve Results and Avoid Complications

Course: 155 Sunday
 Room: R05 10:15 AM - 12:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will feature a video and slide presentation of the current surgical technique, instrumentation, and complications of endothelial keratoplasty (EK)3/4/Descemet-stripping automated EK (DSAEK) and Descemet membrane EK (DMEK)3/4 from the largest prospective series in the world (> 1800 cases). Easier and faster DSAEK and DMEK techniques will be emphasized. Current modifications of EK that avoid complications will be stressed. Various techniques for DSAEK insertion (forceps, Busin glide, "pull through," injectors) will be shown and correlated with their induced endothelial damage. EK combined with vitrectomy, secondary IOL, and cataract surgery will be presented, including special care using "precut" and "prestripped" tissue. The course will emphasize an ethical, prospective approach to this new surgery and methods on how to avoid common surgical and postoperative pitfalls.

Objective: At the conclusion of the course, the attendees will recognize the principles of EK surgical technique that produce low complications and excellent vision.

*Senior Instructor(s): Mark A Terry MD**

Instructor(s): Michael D Straiko MD, Paul M Phillips MD*

* Top 10% in subject area. **NEW** New Course **Education Level Key:** BAS = Basic, INT = Intermediate, ADV = Advanced Target Audience:

COMP = Comprehensive Ophthalmologist, SUB = Subspecialist, COMPSUB = Comprehensive & Subspecialist.

Up-to-date information is available in the Program Search on the Academy's website: www.aao.org/2013.

Extreme Corneal Ectasia: Battle of the Bulge

Course: 163 Sunday
Room: R01 10:15 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Advanced-stage ectatic disorders of the cornea may be associated with extreme thinning and forward protrusion of the cornea. Surgical intervention is often necessary to restore tectonic integrity and corneal anatomy, besides improving eyesight. Customized grafts—D-shaped, banana or crescent shaped, large diameter corneoscleral grafts, epikeratoplasty, lamellar grafts, wedge excision, and other techniques—are used in such situations. This course will discuss indications, preoperative evaluation, investigations, surgical planning and stepwise execution, managing intra- and postoperative complications, and postoperative care. A variety of clinical cases will be presented, along with videos, to enable discussion and audience interaction.

Objective: At the end of the course, the attendee will have a clear understanding of the various surgical options available in the management of extreme corneal ectasia. Application of appropriate surgical techniques will help improve vision as well as corneal anatomy and shape.

Senior Instructor(s): *Rajesh Fogla MD FRCS**

Instructor(s): *Sheraz M Daya MD**, *Rasik B Vajpayee MD*, *Pravin Vaddavalli MD*, *Rishi Swarup MBBS FRCS*, *Vincenzo Sarnicola MD*, *Donald Tan MD FRCS FRCOphth**

Current Topics in Cornea/External Disease: Highlights of the Basic and Clinical Science Course 8

Course: 174 Sunday
Room: 223 2:00 - 4:15 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course is presented by the authors of Section 8 Basic and Clinical Science Course series on the latest in diagnosis and treatment in cornea and external disease.

Objective: At the conclusion of this course the participant should be able to diagnose and manage the patient with tear dysfunction. They should be able to recognize common infectious, neoplastic, and immune-related diseases and prescribe appropriate treatment. They should be able to differentiate the common corneal dystrophies. They should understand the role of collagen crosslinking, Descemet-stripping automated endothelial keratoplasty, Descemet membrane endothelial keratoplasty, deep anterior lamellar keratoplasty, and penetrating keratoplasty for the treatment of corneal disease.

Senior Instructor(s): *Robert W Weisenthal MD*

Instructor(s): *Charles S Bouchard MD*, *Stephen E Orlin MD*, *Kathryn A Colby MD PhD**, *Elmer Tu MD**, *Natalie A Afshari MD*, *Denise de Freitas MD*

NEW Cell-Based Therapy for Ocular Surface Reconstruction

Course: 179 Sunday
Room: 340 2:00 - 3:00 PM
Education Level: ADV Target Audience: COMPSUB

Synopsis: Ocular surface integrity is dependent on the intricate homeostatic loop that is governed by stem cells residing in the limbal niche. In this course, we will discuss (1) the role of stem cells in ocular surface health and disease, (2) stem cell-based therapy to manage them, (3) identification and quantification of stem cell deficiency using clinical signs, cell markers, and impression cytology, (4) preoperative assessment to choose appropriate procedures, (5) techniques of stem cell retrieval and transplantation, (6) ex vivo expansion techniques, (7) direct stem cell transplantation and in vivo expansion, (8) the role of other stem cells sources (oral mucosa, dental pulp, hair follicle), (9) postoperative assessment, and (10) maintenance of stem cell health and outcomes of various forms of therapies for ocular surface disorders.

Objective: At the end of the course, attendees will be able to identify candidates for stem cell therapy, use appropriate techniques for stem cell retrieval, expansion, and transplantation, and effectively manage them postoperatively.

Senior Instructor(s): *Somasheila I Murthy MD*

Instructor(s): *Shigeru Kinoshita MD**, *Scheffer C G Tseng MD PhD**, *Sayan Basu MBBS***, *Jatin Naresh Ashar MD*, *Anurag Mathur MBBS*

Ocular Surface Disease Management: Moving From Adequate to Expert

Course: 198 Sunday
Room: 338 2:00 - 4:15 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Ocular surface disease encompasses several entities, including keratoconjunctivitis sicca and meibomian gland dysfunction, that share a common denominator: an inflamed and desiccated ocular surface. In this course, the pathogenesis, signs and symptoms, and diagnosis of specific ocular surface disease entities will be discussed. Case presentations will be used to help guide discussion of management and treatment options.

Objective: This course will help the clinician understand the pathophysiology and management of ocular surface disease. Attendees will (1) improve the diagnostic skills and therapeutic techniques used with keratoconjunctivitis sicca, blepharitis / meibomian gland dysfunction, and atypical conjunctival diseases, (2) understand the pathophysiology of ocular surface disease, (3) increase their knowledge of drugs available to treat ocular surface disease, and (4) have a working differential diagnosis of the irritated and red eye.

Senior Instructor(s): *Gregg J Berdy MD**

Instructor(s): *Joseph Tauber MD**

★ Help! A Corneal Ulcer Just Walked In! What Do I Do Next?

Course: 203 Sunday
Room: 210 2:00 - 4:15 PM
Education Level: ADV Target Audience: COMPSUB

Synopsis: Ophthalmologists invariably encounter corneal ulcers in practice. The knee-jerk response is to treat with fourth-generation fluoroquinolones. However, this may be ineffective and could actually be detrimental in autoimmune or noninfectious keratitis. Features to identify in diagnosing and differentiating between the various types of corneal ulceration (infectious and noninfectious) will be presented. The various established and experimental medical and surgical therapies to treat corneal ulceration will be described, along with an explanation of which therapies may be useful for which types of ulcers. A flow chart for formulating a therapy plan for corneal ulceration will also be presented.

Objective: At the conclusion of this course, the attendees will be able to (1) differentiate the various types of corneal ulceration, (2) determine which ulcers need emergent, urgent, or routine therapy, and (3) formulate a logical and stepwise treatment plan and decide when referral to a tertiary center is necessary.

Senior Instructor(s): *Sonal S Tuli MD*

Endothelial Keratoplasty Techniques

Course: 121 Sunday
Room: 342 3:15 - 5:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will explore the various surgical techniques used for endothelial keratoplasty (EK): Descemet-stripping EK, Descemet-stripping automated EK, and Descemet membrane EK. Emphasis will be placed on basic techniques that minimize complications and maximize donor endothelial survival. Methods of donor tissue preparation, insertion, unfolding, and positioning will be discussed. Benefits and problems with tissue injectors will be presented. Techniques to promote donor tissue adhesion and to avoid primary graft failure will be emphasized. Detailed videos and discussion of EK in complex and combined cases will be presented.

Objective: At the conclusion of the course, participants will understand the safest methods of EK to avoid dislocation, primary graft failure, and pupillary block, and how to enhance faster visual rehabilitation.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): *Mark A Terry MD**

Instructor(s): *Kenneth M Goins MD*, *George O D Rosenwasser MD**

Endothelial Keratoplasty Surgery: Comprehensive Overview and Surgical Pearls

Course: 122 Sunday
 Room: 208 3:15 - 5:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Endothelial keratoplasty (EK) has become the standard of care for the surgical treatment of endothelial diseases of the cornea. This course will utilize international corneal experts to teach a comprehensive overview of a variety of surgical techniques for Descemet-stripping EK (DSEK), including donor tissue preparation, various tissue insertion techniques, and intraoperative surgical pearls. The course will also provide a review of the various potential complications of DSEK and their associated management strategies. Finally, tips for starting Descemet membrane EK (DMEK) will be reviewed, along with various surgical pearls and outcomes of DMEK techniques.

Objective: At the conclusion of the course, the attendee will understand indications, surgical techniques, surgical pearls, and potential complications of DSEK and DMEK.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

*Senior Instructor(s): Edward J Holland MD**

Instructor(s): Francis W Price Jr MD, Donald Tan MD FRCS FRCOphth*, Massimo Busin MD*, Mark J Mannis MD, David T Vroman MD*, William Barry Lee MD*, Keith A Walter MD**

Allergic Eye Disease: An Enigma for Physicians

Course: 207 Sunday
 Room: 215 3:15 - 4:15 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Ocular allergy is a common disorder, affecting up to 20% of the population. Allergic eye diseases affect overall quality of life. Because of their varied presentations, they are often missed or may mimic other ocular surface pathologies and sometimes even infection. This may delay their diagnosis and management. We will present a series of cases that depict the various common and uncommon manifestations of allergic eye diseases. Topics include seasonal, perennial, vernal, atopic, and toxic keratoconjunctivitis and their complications and sequelae. A stepwise algorithm approach will describe management for each, including the role of topical steroidal and nonsteroidal formulations, cyclosporine, mast cell stabilizers and antihistaminics, topical and oral anti-inflammatory and immunosuppressive drugs, and prevention and management of complications.

Objective: At the end of the course, attendee will be able to differentiate various forms of ocular allergies and formulate a logical stepwise treatment plan for them.

Senior Instructor(s): Neal P Barney MD

Instructor(s): Jatin Naresh Ashar MD, Somasheila I Murthy MD, Victor L Perez MD, Anurag Mathur MBBS*

Anterior Segment Imaging: A Practical Guide for Ophthalmologists

Course: 214 Sunday
 Room: 333 4:30 - 5:30 PM
 Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will provide a comprehensive review of established and newer anterior segment imaging instruments and their practical clinical uses for evaluation of pathology of the cornea and angle. Instructors will cover anterior segment OCT, ultrasound biomicroscopy, in vivo confocal microscopy, and corneal topography. The course will emphasize a case-based approach to choosing when to use each imaging modality, what it adds to clinical practice, and how to interpret the images.

Objective: This course will provide a practical and comprehensive review of anterior segment imaging techniques for comprehensive ophthalmologists and anterior segment specialists. At the end of the course, attendees will be able to choose the appropriate imaging modality to use for individual patients in the clinical setting.

*Senior Instructor(s): Roni M Shtein MD**

Instructor(s): Shahzad I Mian MD, Sayoko E Moroi MD PhD*, Maria A Woodward MD*

How to Successfully Accomplish Endothelial Keratoplasty in the Presence of Significant Ocular Comorbidities

Course: 218 Sunday
 Room: 221 4:30 - 5:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will outline successful surgical strategies for accomplishing endothelial keratoplasty (EK) in the presence of comorbidities that make successful completion of surgery more challenging. The instructors will offer pearls for EK in phakic eyes; in the presence of cataract, aphakia, iris coloboma or zonular dehiscence, aniridia, anterior chamber IOLs, iris or scleral fixated posterior chamber IOLs; in unicameral eyes; and with failed penetrating or endothelial keratoplasty, and trabeculectomy or tube shunt. Clinical examples will illustrate points where appropriate steps may help avoid unwanted complications. Slides and videos of case studies will be shown, emphasizing dangers and solutions.

Objective: This course is designed to enable participants to learn from our experience and avoid complications while shortening their learning curve for EK in the presence of ocular comorbidities.

*Senior Instructor(s): Kathryn A Colby MD PhD**

Instructor(s): Alan Sugar MD, Jayne Weiss MD, Christopher Rapuano MD**

Diagnosis And Management of Corneal Perforation

Course: 226 Sunday
 Room: R05 4:30 - 5:30 PM
 Education Level: INT Target Audience: COMP

Synopsis: Corneal perforation is an ophthalmic emergency that requires prompt diagnosis and treatment. Although infectious keratitis is a common cause, other causes such as corneal xerosis and collagen vascular diseases are also important differential diagnoses, especially in cases that do not respond to conventional medical therapy. Based on the size and location of the corneal perforation, various treatment options are applicable that include medical therapy, corneal gluing, amniotic membrane transplantation, and corneal transplantation.

Objective: At the end of the course the attendee will have a clear understanding of the concepts of stepwise management of corneal perforation.

Senior Instructor(s): Vishal Jhanji MD

*Instructor(s): Rasik B Vajpayee MD, Sujata Das MBBS, Namrata Sharma MD MBBS, Jodhbir S Mehta FRCS FRCOPHTH**

★ Recent Developments in the Diagnosis and Management of Conjunctival Tumors

Course: 314 Monday
 Room: 215 9:00 - 11:15 AM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Conjunctival tumors have a varied spectrum of clinical presentation. These are often misdiagnosed as simulating conditions, often resulting in inappropriate management and tumor recurrence. The aim of this course is to provide a systematic overview of clinical manifestations of conjunctival tumors and to discuss recent concepts in diagnosis, management, and prognosis. Clinical evaluation of a case of conjunctival tumors and typical and atypical manifestations will be demonstrated with well-documented clinical cases. Systemic associations will be discussed. Advantages of anterior segment imaging techniques will be highlighted. Evidence-based treatment protocols, and indications and outcome of newer treatment modalities such as topical chemotherapy and plaque brachytherapy will be discussed. Standard surgical procedures will be demonstrated with video films.

Objective: This course is designed to enable participants to accurately diagnose and appropriately manage common conjunctival tumors.

Senior Instructor(s): Santosh G Honavar MD

Instructor(s): Carol L Shields MD, Carol L Karp MD, Jerry A Shields MD

NEW Pediatric Corneal Infections: A Systematic Approach to Diagnosis and Management

Course: 320 Monday
Room: 221 9:00 - 10:00 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: Infectious keratitis is a common cause of childhood blindness. This course will describe the etiology of keratitis at various pediatric ages (neonatal, infantile, and later); the clinical features; the differentiating features of noninfective keratitis; risk factors, detailed protocol for microbiological workup; and treatment, including the role of systemic therapy and surgical therapy. A logical, stepwise approach preserves vision. The course will end with an interactive discussion on a number of difficult, commonly encountered clinical scenarios, with pearls for management for each one.

Objective: The course is designed to highlight the etiology, clinical profile, and systematic approach to the management of pediatric microbial keratitis.

Senior Instructor(s): *Sunita Chaurasia MD*

Instructor(s): *Muralidhar Ramappa MBBS, Rasik B Vajpayee MD, Kathryn A Colby MD PhD*, Jatin Naresh Ashar MD*

★ Pterygium: The Outcome Measure Is Now Cosmesis, Not Recurrence

Course: 322 Monday
Room: 214 9:00 - 11:15 AM
Education Level: BAS Target Audience: COMP

Synopsis: PERFECT for Pterygium (pterygium extended removal followed by extended conjunctival transplantation) not only results in minimal recurrences (1 recurrence in 1000 patients with 99% follow-up of more than 1 year) but also provides an excellent cosmetic result.

Objective: Attendees will understand the differences between the PERFECT for Pterygium surgical procedure and routine autoconjunctival surgery for pterygium. They will be prepared to treat pterygium as a significant disease, with "serious surgery" designed to achieve a low recurrence rate and a cosmetic appearance at 1 year, with the site of the pterygium undetectable. Attendees will be able to incorporate into their pterygium surgery any components of PERFECT for Pterygium that they do not already use. They will understand the expected postoperative course and therapy and the complications of this surgery. Above all else, they will learn a new respect for this disease, which has so often been trivialized in the past.

Senior Instructor(s): *Lawrence W Hirst MD MBBS MPH DO FRACO FRACS**

Instructor(s): *Ivan R Schwab MD FACS, Linda Rose MD PhD**

How to Successfully Accomplish Endothelial Keratoplasty in the Presence of Significant Ocular Comorbidities

Course: 326 Monday
Room: 346 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will outline successful surgical strategies for accomplishing endothelial keratoplasty (EK) in the presence of comorbidities that make successful completion of surgery more challenging. The instructors will offer pearls for EK in phakic eyes; in the presence of cataract, aphakia, iris coloboma or zonular dehiscence, aniridia, anterior chamber IOLs, iris or scleral fixated posterior chamber IOLs; in unicameral eyes; and with failed penetrating or endothelial keratoplasty, and trabeculectomy or tube shunt. Clinical examples will illustrate points where appropriate steps may help avoid unwanted complications. Slides and videos of case studies will be shown, emphasizing dangers and solutions.

Objective: This course is designed to enable participants to learn from our experience and avoid complications while shortening their learning curve for EK in the presence of ocular comorbidities.

Senior Instructor(s): *Sadeer B Hannush MD*

Instructor(s): *Anthony J Aldave MD*, Henry D Perry MD**

Anterior Lamellar Keratoplasty: Principles and Practice

Course: 131 Monday
Room: 342 10:15 AM - 12:30 PM
Education Level: ADV Target Audience: SUB

Synopsis: This course will cover current and evolving practice in anterior lamellar keratoplasty. Topics include evolving lamellar techniques, including the "big bubble," modified Melles, viscodissection, Ferrara, and automated and femtosecond lamellar techniques. A series of didactic lectures will be provided, with technique pearls (and complications), supported by video presentations and handouts. The lecture portion is a prerequisite for the wet lab, where candidates will be guided through many techniques.

Objective: The participant should leave the course with an understanding of various options for performing anterior lamellar keratoplasty. The participant will have a thorough understanding of the indications, advantages, and disadvantages of each of these techniques. Additional hands-on training on the use of some of these procedures will be provided in the associated laboratory.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): *Sheraz M Daya MD**

Instructor(s): *Sadeer B Hannush MD, Woodford S Van Meter MD FACS, William W Culbertson MD*, Luigi Fontana MD PhD, Shigeto Shimmura MD, Donald Tan MD FRCS FRCOphth**

Extreme Cornea: Diagnostic and Management Dilemmas in Your Practice

Course: 335 Monday
Room: 218 10:15 AM - 12:30 PM
Education Level: ADV Target Audience: SUB

Synopsis: The faculty of the Massachusetts Eye and Ear Infirmary Cornea Service will present challenging clinical and surgical cases of corneal conditions that often pose a dilemma in both diagnostic and treatment decision making. The topics will include optimal management of corneal melting disorders, early and end-stage autoimmune diseases, irregular corneal astigmatism, and anterior segment trauma. Recognition of sentinel signs of ocular surface tumors, innovative uses of scleral lenses and keratoprotheses, and novel techniques of measuring IOP in severe corneal disease with alternative devices will be discussed.

Objective: At the conclusion of this course, attendees will be able to recognize and use innovative strategies to manage commonly encountered yet complicated corneal and external disease conditions.

Senior Instructor(s): *Ula Jurkunas MD**

Instructor(s): *Kathryn A Colby MD PhD*, James Chodosh MD MPH*, Roberto Pineda II MD*, Deborah S Jacobs MD*, Samir A Melki MD PhD**

Failed Graft: Never Say Die!

Course: 367 Monday
Room: 225 2:00 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will describe the selection of appropriate surgical procedure for the high-risk failed grafts, such as repeat penetrating keratoplasty (PK), Descemet-stripping endothelial keratoplasty (DSEK), or keratoprosthesis. Even DSEK and deep anterior lamellar keratoplasty (DALK) may fail over time and repeat surgery may be required. Keratoprosthesis may be the answer to multiple failed grafts. Surgical techniques and modifications required for performing DSEK for failed PK, repeat DSEK, repeat DALK, postoperative immunosuppressive regimen, and outcomes of such surgeries will be discussed. A panel discussion on expert consensus on controversial issues regarding Descemet scoring, graft sizing for DSEK for failed PK, and multiple repeat PK / keratoprosthesis will conclude the course.

Objective: At the conclusion of this course, attendees will be familiar with the indications and patient selection for re-grafts, surgical techniques and modifications, follow-up, and risks of repeat graft (PK, DSEK, DALK, and keratoprosthesis) for failed grafts.

Senior Instructor(s): *Jatin Naresh Ashar MD*

Instructor(s): *Sonia H Yoo MD*, David S Rootman MD*, Anthony J Aldave MD*, Mark A Terry MD*, Pravin Vaddavalli MD*

Instruction Courses

Next-Generation Technologies for the Diagnosis and Treatment of Dry Eye and Meibomian Gland Dysfunction

Course: 374
Room: R05
Education Level: INT
Monday
2:00 - 4:15 PM
Target Audience: COMP

Synopsis: While diagnostics and treatments for dry eye are advancing, the majority of practitioners limit their interventions to giving out artificial tears. The panel of experts in this course will engage members of the audience to share their experiences with the presented technologies. The panel will discuss new diagnostic devices such as the InflammaDry Detector, the LipiView Interferometer, and tear osmolarity measurement, as well as the use of existing devices such as high-resolution OCT and topography to evaluate dry eye. Newer, as yet not widely used therapeutic strategies will be discussed including LipiFlow, intense pulsed light lasers, and Maskin Meibomian Probes. Finally, emerging therapeutics on the horizon will be discussed.

Objective: Attendees will collaborate with faculty to both summarize and disseminate our growing intuitions about how to approach and successfully treat one of the most common problems seen in the office daily.

*Senior Instructor(s): Linda Rose MD PhD**

Instructor(s): William B Trattler MD, Parag A Majumdar MD*, Marguerite B McDonald MD*, Penny Asbell MD FACS*, Mina Massaro-Giordano MD**

Herpes Simplex Keratitis: When Herpes Isn't a Dendrite, and Vice Versa

Course: 386
Room: 218
Education Level: ADV
Monday
2:00 - 4:15 PM
Target Audience: COMPSUB

Synopsis: Herpes simplex keratitis (HSK) is the most common cause of corneal blindness in developed nations. Many cases are missed because ophthalmologists are unaware of the nondendritic manifestations of HSK, such as geographic, marginal, necrotizing, endotheliitis, and interstitial keratitis. Features and pathophysiology of the different forms of HSK and clues to their diagnosis will be presented. A logical plan for treatment will be presented, including when and how to use antivirals, steroids, and surgery. Major literature on herpes simplex keratitis will also be briefly discussed.

Objective: At the conclusion of this course, attendees will be able to (1) diagnose common as well as unusual forms of HSV keratitis, (2) formulate a logical treatment plan based on their understanding of the pathophysiology of the different manifestations of herpes, and (3) get a general understanding of the newer treatment modalities on the horizon.

Senior Instructor(s): Sonal S Tuli MD

Innovative Uses of Adhesives in Anterior Segment Surgery

Course: 395
Room: 220
Education Level: INT
Monday
3:15 - 5:30 PM
Target Audience: COMPSUB

Synopsis: This course will present the use of cyanoacrylate, fibrin-based, and other new adhesives for corneal wounds, cataract surgery, pterygium surgery, LASIK complications, dislocated IOLs, limbal stem cell transplants, and glaucoma surgery.

Objective: At the conclusion of this course, the attendee will be able to identify and describe the use of various adhesives for corneal disorders, cataract / corneal procedures, dislocated IOL procedures, LASIK complications, and glaucoma procedures.

*Senior Instructor(s): Terry Kim MD**

Instructor(s): Amar Agarwal MD, Sadeer B Hannush MD, David R Hardten MD*, Robert J Noecker MD*, Christopher Rapuano MD*, David C Ritterband MD*, Jonathan B Rubenstein MD**

Keratoconus 360°

Course: 399
Room: 215
Education Level: INT
Monday
3:15 - 5:30 PM
Target Audience: COMPSUB

Synopsis: This course will provide an overview of the current modalities of diagnosing subclinical and clinical keratoconus and strategies for its management. Topics will include features of keratoconus, identifying subclinical keratoconus on corneal topography, corneal biomechanics in ectasia, use of intracorneal ring segments for the surgical

management of keratoconus, collagen crosslinking and photorefractive keratectomy for progressive keratoconus, management of acute hydrops, and keratoplasty (penetrating, femtosecond laser-assisted, anterior, and deep lamellar) in keratoconus. The course will end with a series of case discussions and clinical scenarios.

Objective: Attendees will be able to apply diagnostic techniques accurately to diagnose subclinical and clinical keratoconus and choose appropriate treatment alternatives in its management. At the end of the course, attendees will also be familiar with the approach to managing various complications in the surgical management of keratoconus.

Senior Instructor(s): Pravin Vaddavalli MD

Instructor(s): Michael W Belin MD, A John Kanellopoulos MD*, Sonia H Yoo MD*, Damien Gatinel MD*, Donald Tan MD FRCS FRCOphth*, Ana Hoffing-Lima MD MBA*

NEW Peripheral Ulcerative Keratitis: Diagnosis and Management

Course: 401
Room: 210
Education Level: INT
Monday
3:15 - 4:15 PM
Target Audience: COMPSUB

Synopsis: Peripheral ulcerative keratitis (PUK) is a difficult entity to treat as it usually has systemic associations. The epidemiology, immunopathogenesis, and comprehensive workup of a case of PUK (clinical examination, ocular and systemic investigations), including Mooren ulcer, will be discussed. A treatment algorithm will be highlighted, focusing on the indications, duration, and strategies of topical and systemic immunosuppressive therapy as well as surgical modes of therapy such as glue, amniotic membrane transplants, and keratoplasty.

Objective: By the end of the course, the attendee will be well versed in the logical workup and treatment therapy of a case of PUK.

Senior Instructor(s): Namrata Sharma MD MBBS

Instructor(s): Rasik B Vajpayee MD, Somasheila I Murthy MD, Tushar Agarwal MD

NEW Meibomian Gland Dysfunction and Chronic Blepharitis

Course: 411
Room: R05
Education Level: INT
Monday
4:30 - 5:30 PM
Target Audience: COMP

Synopsis: The role of meibomian gland dysfunction (MGD) in chronic blepharitis and ocular surface disease is rapidly evolving. MGD is a form of chronic blepharitis and is recognized as a cause of ocular surface disease. Subgroups of MGD will be discussed along with pathophysiological mechanisms, including the role of bacteria and lipolytic exoenzymes, meibum changes, and tear evaporation. Acute and chronic phase therapy will be presented. The role of topical therapies as well as systemic therapies will be discussed as they relate to both lid and ocular surface abnormalities.

Objective: At the conclusion of this course, attendees will be able to diagnose and treat MGD and associated ocular surface disease.

*Senior Instructor(s): James P McCulley MD FACS FRCOphth**

NEW Management of Ocular Chemical Injuries

Course: 414
Room: 210
Education Level: INT
Monday
4:30 - 5:30 PM
Target Audience: COMPSUB

Synopsis: Acute ocular chemical burn is an emergency and needs immediate management, which includes copious irrigation, topical steroids, autologous and cord serum, amniotic membrane transplantation, and even tissue adhesives and tectonic keratoplasty in severe cases. In chronic chemical burns, a stepwise approach in the management of ocular surface reconstruction that depends on the laterality and the severity of limbal stem cell deficiency, including the limbal transplantation (direct and cultivated), will be discussed. Visual rehabilitative approaches that include keratoplasty and keratoprosthesis will also be discussed.

Objective: At the end of the course, the attendee will be well versed in the acute and emergency management of ocular chemical burns (as should be every ophthalmologist) and will be aware of ocular surface transplantation techniques. This course will give a holistic overview of the management of ocular chemical burns.

Senior Instructor(s): Namrata Sharma MD MBBS

Instructor(s): Rasik B Vajpayee MD, Vishal Jhanji MD, Tushar Agarwal MD

Follow the Cornea: Do You Know Where Your Corneal Transplant Tissue Comes From?

Course: 417 Monday
Room: R01 4:30 - 5:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: The first steps of corneal transplant surgery take place in the eye bank. Through a combination of brief talks and expert panel discussions, we will inform the corneal surgeon about the process of eye tissue banking. We will (1) follow the path of tissue through recovery to distribution for corneal transplantation, (2) provide the evidence-based standards for surgical tissue selection, (3) discuss trends in eye banking, and (4) inform corneal surgeons on ways to get involved in the process.

Objective: At the conclusion of this course, the attendee will understand the intricacies of corneal donation and tissue processing, will know the results of the Cornea Donor Study, will appreciate the complexity of the eye banks' work, and will know ways to become involved with eye banks. The goal is to educate corneal surgeons in order to promote sustainability, to maintain availability of corneal tissue, and to broaden the surgeon's knowledge of the vital resource of eye banking.

Senior Instructor(s): *Kristiana D Neff MD**

Instructor(s): *Maria A Woodward MD, Bennie H Jeng MD, Roni M Shtein MD*, Mark J Mannis MD, Marian Sue Macsai-Kaplan MD*, David B Glasser MD, Monty Montoya**, Kevin P Corcoran CAE*

Anterior Segment Reconstruction Following Trauma

Course: 507 Tuesday
Room: 208 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will cover the presentation and the primary and secondary management of chemical and mechanical injury of the anterior segment including all aspects of anterior segment reconstruction. Topics will include etiology and acute management of chemical injuries and penetrating trauma, primary and secondary repair of corneal injuries, secondary IOLs, and corneal transplantation.

Objective: At the conclusion of this course, the attendee will be able to understand the key concepts in relation to the presentation and the contemporary management of anterior segment repair following severe trauma.

Senior Instructor(s): *Charles McGhee PhD FRCOphth FRANZCO**

Instructor(s): *Peter Zloty MD, Alexandra Crawford MD, Edward J Holland MD*, Michael W Belin MD*, Helen V Danesh-Meyer MD MBChB**, Donald Tan MD FRCS FRCOphth*, Noor Ali MBChB*

Surgical Strategies for Recurrent Pterygium With or Without Motility Restriction

Course: 514 Tuesday
Room: 346 9:00 - 11:15 AM
Education Level: BAS Target Audience: COMPSUB

Synopsis: Although surgeries for primary pterygium have been successfully practiced by many general ophthalmologists, pterygium recurrence with or without motility restriction presents a great challenge.

Objective: At the conclusion of this course, through interactive discussion, surgical video demonstration, and case presentation, the attendee will have learned the pathology and risk factors that explain how recurrence occurs, as well as the most up-to-date published surgical strategies to prevent recurrence and restore ocular motility: cicatrix lysis, amniotic membrane transplantation, intraoperative application of mitomycin C, muscle sheath recreation, and sealing the gap between conjunctiva and Tenon with anchoring sutures with or without additional conjunctival autograft or oral mucosal graft. Furthermore, this new information can be used to correct other ocular surface diseases manifesting cicatricial complications due to primary diseases or following surgeries for glaucoma, strabismus, and retinal problems.

Senior Instructor(s): *Scheffer C G Tseng MD PhD**

Big Bubble Technique of Deep Anterior Lamellar Keratoplasty: A Simplified Approach to Successful Surgery

Course: 515 Tuesday
Room: 211 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: The big bubble technique for deep anterior lamellar keratoplasty (DALK) allows successful baring of the host Descemet membrane (DM). Visual results are comparable to penetrating keratoplasty, with no risk of endothelial rejection. This course will deal with basic surgical technique in a detailed, stepwise manner, using surgical videos, and will also cover instrumentation, patient selection, preoperative workup and investigations, and postoperative management. Both intraoperative and postoperative complications, along with their management, will be discussed. The role of the femto-second laser will also be presented.

Objective: At the end of the course, the attendee will have a clear understanding of case selection, surgical technique, postoperative care, and appropriate management of complications using the big bubble technique of DALK surgery.

Senior Instructor(s): *Rajesh Fogla MD FRCS**

Instructor(s): *Mark A Terry MD*, David S Rootman MD*, Luigi Fontana MD PhD*

Atypical Keratitis

Course: 521 Tuesday
Room: 340 9:00 - 10:00 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: Since many patients with corneal ulcer are managed empirically based on clinical features, it is important to be familiar with not only the classical but also the atypical clinical features. This course will present atypical features of common pathogens as well as clinical features of uncommon pathogens using representative cases. The course will also provide pearls for establishing diagnosis of such atypical cases, including the role of newer diagnostic modalities such as confocal microscopy and molecular methods.

Objective: To make participants familiar with atypical keratitis cases and provide pearls for early diagnosis.

Senior Instructor(s): *Prashant Garg MD**

Instructor(s): *Yoshitsugu Inoue MD PhD, Terrence P O'Brien MD*, Elmer Tu MD**

Descemet Membrane Endothelial Keratoplasty (DMEK and Thin Cut DSAEK) and Related Advanced Endothelial Keratoplasty Techniques

Course: 525 Tuesday
Room: R05 9:00 - 11:15 AM
Education Level: ADV Target Audience: COMP

Synopsis: Descemet-stripping automated endothelial keratoplasty (DSAEK) is the treatment of choice for endothelial dysfunction, yet a significant proportion of patients without ocular comorbidity fail to achieve maximal visual potential. Transplantation of only the Descemet membrane and endothelium, a procedure known as Descemet membrane endothelial keratoplasty (DMEK), allows a significantly higher proportion of patients to achieve 20/25 or better vision. In addition, DMEK significantly reduces the risk of immunologic graft rejection.

Objective: This course will cover indications and contraindications for DMEK, related techniques like Descemet membrane automated endothelial keratoplasty, and thin cut DSAEK; describe the surgical techniques in detail; discuss intra- and postoperative complications and management; present visual and refractive outcomes and endothelial cell losses.

Senior Instructor(s): *Francis W Price Jr MD**

Endothelial Keratoplasty in Challenging Cases

Course: 556 Tuesday
Room: 217 11:30 AM - 12:30 PM
Education Level: ADV Target Audience: SUB

Synopsis: The indications for endothelial keratoplasty have rapidly expanded, to the point that this surgery is now appropriate for endothelial failure of almost any etiology. In this course the instructors will use video and case presentations to explain the various techniques for challenging cases, such as post-penetrating keratoplasty, phakia, apha-

Instruction Courses

kia, buphthalmos, patients with anterior chamber IOLs, patients with filtering glaucoma procedures / devices, patients with long-standing / severe corneal edema, situations in which visualization is particularly poor, or in patients of pediatric age. Visual outcomes and complications will also be discussed in detail.

Objective: Attendees will gain information that is instrumental in choosing the type of surgery appropriate for patients with endothelial failure and complicating ocular factors.

Senior Instructor(s): Jacqueline E Beltz MBBS

Instructor(s): Massimo Busin MD, Vincenzo Scordia MD, Robert C Arffa MD, Silvana A Madi MD*

Ocular Surface Diseases in Cancer Patients: Update on Clinical Spectrum and Treatment

Course: 561 Tuesday
Room: R04 11:30 AM - 12:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: In this course the clinical spectrum and management of ocular surface diseases due to cancer treatment will be summarized. Update of new cancer treatments and their ocular side effects will be covered. Special surgical considerations in cancer patients will be discussed in an interactive format.

Objective: This course is designed to provide an overview and update of ocular surface diseases that result from modern cancer treatments. At the conclusion of the course, the attendees will be able to recognize and treat the spectrum of the ocular surface diseases in cancer patients.

*Senior Instructor(s): Stella K Kim MD**

*Instructor(s): Kimberly C Sippel MD**

Complications in Collagen Crosslinking : Diagnosis, Management, and Prevention

Course: 562 Tuesday
Room: 221 11:30 AM - 12:30 PM
Education Level: ADV Target Audience: COMPSUB

Synopsis: This course will present a didactic approach to the clinical experience of complications encountered with several collagen crosslinking (CXL) treatments for indications such as (1) keratoconus, (2) ectasia following refractive surgery, (3) prophylactic CXL in LASIK and PRK, and (4) CXL in bullous keratopathy. Cornea scarring, infectious keratitis, delayed epithelial healing, regression, and endothelial decompensation were the most common complications encountered. Medical and surgical and treatment techniques of the above will be presented and discussed in detail.

Objective: The participants will share our vast experience in CXL and the potential complications encountered in managing progressive keratoconus, post-LASIK ectasia, bullous keratopathy, prophylactic CXL in LASIK and PRK, and lamellar grafts in order to stabilize and potentially visually rehabilitate these patients.

*Senior Instructor(s): A John Kanellopoulos MD**

*Instructor(s): Gregory Pamel MD**, Henry D Perry MD*, R Doyle Stulting MD PhD*, Eric D Donnenfeld MD*, Soosan Jacob FRCS*

NEW Mastering Transepithelial and Epithelial-Off Corneal Collagen Crosslinking for Keratoconus and Post-LASIK Ectasia

Course: 580 Tuesday
Room: 211 12:45 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will identify appropriate candidates for corneal collagen crosslinking (CXL) and methods to optimize epithelial-on and epithelial-off CXL, as well as when to use higher UV energy levels. Additional treatment options, such as topo-guided PRK and Intacs will be reviewed. Techniques to reduce the risk of CXL will be described.

Objective: Attendees will learn from U.S. and international experts, who will share pearls for performing either epithelial-on or epithelial-off CXL. Additional uses of CXL, such as for corneal infections, stabilization of patients with a history of radial keratotomy and visual fluctuations, and pseudophakic corneal edema, will be reviewed.

*Senior Instructor(s): Roy Scott Rubinfeld MD**

Instructor(s): William B Trattler MD, A John Kanellopoulos MD*, Aleksandar Stojanovic MD, Parag A Majumdar MD*, George O Waring IV MD*, Jonathan H Talamo MD**

Descemet-Stripping Automated Endothelial Keratoplasty Cliffhangers

Course: 581 Tuesday
Room: R04 12:45 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will be comprised of video- and case-based presentations of difficult situations that may arise during Descemet-stripping automated endothelial keratoplasty (DSAEK), both during the learning curve and in experienced hands. Case scenarios will include surgical challenges such as floppy iris, inverted graft, identifying orientation of the lenticule, managing synechiae, and dealing with a shallow anterior chamber. The course will also focus on overcoming poor visualization, post-keratoplasty DSAEK, DSAEK following trabeculectomy and tube shunts, DSAEK in phakic and aphakic eyes, and DSAEK in children. Management of postoperative complications including dislocated lenticules and repeat DSAEK will also be dealt with. The course will end with an introduction to Descemet membrane endothelial keratoplasty (DMEK) and will identify common problems faced by surgeons converting to DMEK.

Objective: At the end of the course, attendees will be familiar with challenging situations that may arise during DSAEK and maneuvers to manage and prevent them.

Senior Instructor(s): Pravin Vaddavalli MD

Instructor(s): Sonia H Yoo MD, Mark A Terry MD*, Anthony J Aldave MD*, David S Rootman MD*, Jatin Naresh Ashar MD*

NEW Descemet Membrane Endothelial Keratoplasty

Course: 597 Tuesday
Room: 224 12:45 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course intends to provide a full description of the Descemet membrane endothelial keratoplasty (DMEK) surgical technique, emphasizing the key steps necessary to make DMEK feasible in various conditions. The course will present the results and the lessons learned after more than 500 DMEK surgeries with a maximum follow-up of 6 years. Descemet membrane graft harvesting and preparation will be shown, indications and limitations of DMEK will be discussed, the standardized surgical technique will be explained, and additional alternative techniques and surgical considerations for challenging cases will be presented.

Objective: At the conclusion of this course, the attendee will be able to recognize the special characteristics of this lamellar keratoplasty technique, appreciate its advantages, and distinguish its limitations. The course intends to offer a stepwise approach to less experienced DMEK surgeons and useful surgical pearls to the more experienced.

*Senior Instructor(s): Gerrit RJ Melles MD PhD**

Instructor(s): Vasilios S Liarakos MD, Isabel Dapena, Lianne Ham PhD, Jack S Parker MD, Marina Rodriguez Calvo De Mora MD, Lamis Baydoun MD

Advances in Treatment of Severe Ocular Surface Disease: Views From Experts on the Front Lines

Course: 599 Tuesday
Room: 209 2:00 - 4:15 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Exciting new treatment approaches to severe ocular surface diseases (Stevens-Johnson syndrome, graft versus host disease, chemical injuries, and others) have emerged in the past few years. In this course, leading experts in the field will present their own innovations as well as their perspectives on the latest developments. In Stevens-Johnson syndrome, for example, interventions in the acute disease phase, including topical and systemic medications, specialty contact lenses, and amniotic membrane application, have shown great promise in limiting devastating long-term ocular sequelae. For patients with chronic ocular findings, treatment with mucous membrane grafts, specialty devices such as prosthetic replacement of the ocular surface ecosystem (PROSE), and keratoprostheses constitute potential sight-restoring interventions.

Objective: This course is designed to update general and subspecialty ophthalmologists on sophisticated novel treatment approaches to severe ocular surface disease.

*Senior Instructor(s): Jessica B Ciralsky MD**

Instructor(s): C Stephen Foster MD, Stella K Kim MD*, Darren G Gregory MD*, Esen K Akpek MD*, Kimberly C Sippel MD*, Peter A D Rubin MD, Deborah S Jacobs MD**

★ Top 10% in subject area. **NEW** New Course **Education Level Key:** BAS = Basic, INT = Intermediate, ADV = Advanced Target Audience:

COMP = Comprehensive Ophthalmologist, SUB = Subspecialist, COMPSUB = Comprehensive & Subspecialist.

Up-to-date information is available in the Program Search on the Academy's website: www.aao.org/2013.

Top 10 Hot Corneal Surgical Tips for 2013

Course: 601
Room: 210
Education Level: INT
Target Audience: COMPSUB

Tuesday
3:15 - 5:30 PM

Synopsis: An expert panel of experienced corneal surgeons presents their annual survey of the hottest corneal surgical tips for 2013. Each surgical tip has been carefully selected for novelty and maximum potential impact on clinical practice. Annually updated topics include time-saving office techniques (eg, rebubbling, amniotic membrane grafting), refinements of common operations (eg, Descemet-stripping automated endothelial keratoplasty, pterygium), and pearls for cutting-edge surgical procedures (eg, Descemet membrane endothelial keratoplasty, deep anterior lamellar keratoplasty, femtosecond keratoplasty, keratoprosthesis, stem cell grafts). A rapid-fire format with expert panel commentary and audience Q&A will promote lively discussion, and annual refreshing of topics and a rotating faculty ensure that material is fresh and of interest to repeat attendees.

Objective: Through step-by-step instructions, surgical video, and detailed handouts, the practitioner will gain practical, specific, and immediately applicable knowledge of improved techniques and approaches for common and challenging corneal surgical problems.

Senior Instructor(s): David G Hwang MD

Instructor(s): Eduardo C Alfonso MD*, Sadeer B Hannush MD, Allan Slomovic MD*, Geoffrey C Tabin MD, Mark A Terry MD*

Electronic Health Records

EHR An Approach to Selecting and Implementing Electronic Health Records in Your Practice

Jointly Sponsored by the Academy's Annual Meeting Program Committee and Medical Information Technology Committee

Course: 197
Room: 215
Education Level: INT
Target Audience: COMPSUB

Sunday
2:00 - 3:00 PM

Synopsis: This course will present a framework for implementing an electronic health record (EHR) system in an ophthalmic practice. We will discuss methods for assessing practice needs, creating a request for proposals (RFP), assessing vendors, and planning deployment of a system. These issues will all be discussed in the context of federal incentives to use EHR in your practice. Attendees will also be made aware of relevant resources available from the Academy.

Objective: At the conclusion of this course, attendees will be able to (1) design a strategy for assessing the needs of their practices in terms of an EHR system, (2) create an RFP to be sent to vendors of appropriate EHR systems, (3) evaluate responses to RFPs and the vendors that provide them, and (4) design an implementation strategy for an EHR system.

Senior Instructor(s): Michael V Boland MD PhD

Instructor(s): Michael F Chiang MD*, Flora Lum MD, Linda L Wedemeyer MD, Michele C Lim MD, Brittny Wachter CPC OCS, Paulette Hottle

NEW EHR Electronic Health Record and Image Data Management Implementation: Rapid-Fire Presentations and Panel Discussion

Jointly Sponsored by the Academy's Annual Meeting Program Committee and Medical Information Technology Committee

Course: 223
Room: 222
Education Level: BAS
Target Audience: COMPSUB

Sunday
4:30 - 5:30 PM

Synopsis: Electronic health record (EHR) systems are slated to become commonplace in medicine over the next few years regardless of practice setting, geographic location, or subspecialty focus. Ophthalmology faces significant obstacles to this progression due to the unique features of its practice with regards to clinical workflow and data management. These obstacles, among others, explain why adoption of EHR systems within ophthalmology practices has been poor. This course will be presented in a rapid-fire format to allow for a wider overview than the traditional EHR courses.

Objective: To (1) describe the clinical and economic impact of EHR conversion, (2) discuss the methods for receiving a return on investment for your EHR conversion, (3) provide details on how data management in the EHR era has changed, (4) highlight the compliance issues involved when using EHR systems, and (5) discuss using EHR for research and administrative tasks.

Senior Instructor(s): Rishi P Singh MD*

Instructor(s): Michael V Boland MD PhD, David E Silverstone MD, K David Epley MD*

EHR Electronic Health Records: Compliance and Medicolegal Issues

Jointly sponsored by the Academy's Annual Meeting Program Committee and Medical Information Technology Committee and the American Academy of Ophthalmic Executives' EHR Subcommittee

Course: 302
Room: 333
Education Level: INT
Target Audience: COMPSUB

Monday
9:00 - 11:15 AM

Synopsis: This course will demonstrate how electronic health records (EHRs), while improving the quality of medical records, can also create problems that can trigger serious medicolegal and compliance issues. This course will explore how EHRs can be used wisely or foolishly. Case studies will be presented to illustrate problems created by the use of EHRs.

Objective: By the conclusion of this course, attendees will be able to (1) describe some strengths of EHR systems that can improve compliance with chart documentation requirements, (2) describe some "tricks" that could hurt documentation reliability and compliance, (3) identify features in EHRs that pose the greatest threats, and (4) modify EHR utilization to improve documentation reliability and compliance.

Senior Instructor(s): David E Silverstone MD

Instructor(s): Kevin J Corcoran*, Michele C Lim MD

NEW EHR Maximizing Your Electronic Health Records System's Productivity and Financial Benefits

Jointly Sponsored by the Academy's Annual Meeting Program Committee and Medical Information Technology Committee

Course: 537
Room: 355
Education Level: INT
Target Audience: COMPSUB

Tuesday
10:15 - 11:15 AM

Synopsis: This course is intended to familiarize attendees with the possible productivity gains and financial advantages of using an electronic health records (EHR) system in their practices. Information presented will include overall preconceptions and myths about productivity in an electronic environment, and will explain how these myths are not entirely true. Using examples and institutional data, scenarios and examples will be shared to demonstrate the vast benefits of EHRs, and to explain how the return on investment goes far beyond any meaningful use payments the government provides.

Objective: At the end of this course, participants will be familiar with some of the basic impacts an EHR system might have on practice productivity and financial health. The attendees will also learn actionable items to maximize their return on investment.

Senior Instructor(s): Colin McCannel MD*

Instructor(s): Rishi P Singh MD*, Michael F Chiang MD*, Michele C Lim MD

Ethics

The Institutional Review Board Submission Process: Why Should I Care, and What If I Don't?

Course: 220
Room: 217
Education Level: BAS
Target Audience: COMPSUB

Sunday
4:30 - 5:30 PM

Synopsis: This course will define research, how/what to submit to IRBs, and applicability of research rules/regulations. Discussion will include existing guidelines / regulations for all research, types of IRB review (full, expedited, exempt), institutional vs. private review boards, statutory authority of the Office for Human Research Protections (OHRP), regulations impacting prospective and retrospective human research, and special informed consent required by research. Via case studies, participants will discuss real-life obstacles, multiple submissions requiring different reviewing bodies, and the potential consequences of not following ethical practices in IRB submission.

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Objective: At the conclusion of this course, attendees will be able to identify ethical dilemmas in human research and the OHRP's specific regulations, describe the special nature of research-based informed consent, resolve the identified ethical dilemmas, and ethically manage IRB interactions.

*Senior Instructor(s): Christie L Morse MD**

Instructor(s): Anthony J Aldave MD, Keith D Carter MD FACS, Roberto Pineda II MD*, R V Paul Chan MD, Carla J Siegfried MD**

NEW EHR Digital Devices & Patient Care: Confidentiality, Encryption, HIPAA and Ethical Considerations

Jointly Sponsored by the Academy's Annual Meeting Program Committee and the Ethics Committee

Course: 510 Tuesday
Room: 220 9:00 - 10:00 AM
Education Level: BAS Target Audience: COMP

Synopsis: This course will explain the HIPAA Privacy and Security Rules which protect the privacy of individually identifiable health information. Also discussed will be attendees' responsibilities under federal law, proper use of various mobile devices, encryption strategies, the multiple password conundrum, e-mail authorizations, patient use of social media for communication of health issues, and the relevant ethical issues.

Objective: At the conclusion of the course, attendees will be able to identify key components of secure electronic communication and data storage practices, the HIPAA Privacy and Security Rules, the HITECH Breach Notification Rule, and safeguards needed to ensure the protection of private health information.

*Senior Instructor(s): Christie L Morse MD**

Instructor(s): Anthony J Aldave MD, R V Paul Chan MD, Keith D Carter MD FACS, Nadia Martyn JD*

General Medical Care

NEW SO Defending the Ophthalmologist in a Medical Malpractice Lawsuit

Course: 389 Monday
Room: R02 2:00 - 4:15 PM
Education Level: BAS Target Audience: COMP

Synopsis: This course will provide an overview of medical malpractice cases specific to ophthalmology. Topics include malpractice litigation statistics and terms important to an understanding of malpractice, a review of the malpractice lawsuit process, and common theories of liability against ophthalmologists. Informed consent, the role of the expert witness, and the importance of preparation will be highlighted.

Objective: The current medical malpractice crisis presents ever-increasing challenges to the ophthalmologist. At the conclusion of this course, the physician will be both educated in and presented with effective approaches to minimize liability and maximize an effective defense.

*Senior Instructor(s): Robert Ritch MD FACS**

Instructor(s): Kenneth R Larywon JD, Thomas A Mobilia JD

Drug-Related Adverse Effects of Clinical Importance to the Ophthalmologist

Course: 590 Tuesday
Room: 355 12:45 - 1:45 PM
Education Level: INT Target Audience: COMP

Synopsis: This course will describe adverse ocular reactions from topical ocular and systemic medications, with a focus on recently reported adverse events identified by the National Registry of Drug-Induced Ocular Side Effects (Portland, Oregon) and applying the WHO classification system.

Objective: At the conclusion of this course, attendees will be able to recognize drug-related adverse ocular and systemic side effects when they occur in association with drugs commonly used by clinicians. Only those medications of clinical importance to ophthalmologists will be discussed.

*Senior Instructor(s): Rick W Fraunfelder MD**

Glaucoma

Computerized Scanning Imaging of the Optic Nerve and Retinal Nerve Fiber Layer

Course: 103 Sunday
Room: 225 9:00 - 11:15 AM
Education Level: BAS Target Audience: COMP

Synopsis: This lecture, required for the hands-on workshop, introduces the participant to the principles of computerized scanning imaging. This is a basic course featuring current technologies. The main emphasis in this course will be spectral (Fourier) domain OCT, although some discussion of scanning laser polarimetry and topography (Heidelberg Retinal Tomography) will be included.

Objective: By the conclusion of this course, participants will be able to (1) understand the scientific basis for imaging, (2) understand how scanning imaging may be used in clinical practice, (3) learn how imaging can be applied to the optic nerve head, retinal nerve fiber layer, and macula, with emphasis on glaucoma, (4) understand the relationship between structure and function, and (5) differentiate normal from abnormal scans through appropriate clinical examples. A question-and-answer session will be held at the end of the presentations, during which time questions will be entertained by the faculty.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Neil T Chaplin MD

Instructor(s): E Randy Craven MD, Howard Barnebey MD**

Glaucoma Laser Therapy: Innovations and Advice From the Experts

Course: 105 Sunday
Room: R03 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will provide a comprehensive review of laser procedures used to treat glaucoma. Topics discussed will include argon laser trabeculoplasty (ALT), selective laser trabeculoplasty (SLT), micropulse laser trabeculoplasty (MLT), cyclophotocoagulation (both endoscopic and transscleral), iridotomy (Nd:YAG, argon, and diode), iridoplasty, and laser suture lysis. Indications, treatment techniques, and postoperative care will be discussed in detail during the didactic portion of the course. During the laboratory section, participants will have the opportunity to perform endoscopic cyclophotocoagulation, transscleral cyclophotocoagulation, SLT, ALT, MLT, and iridotomies under the supervision of the course instructors.

Objective: At the conclusion of this course, attendees will be able to understand the indications and techniques for the various laser therapies used in the treatment of glaucoma. After the laboratory section, they will have hands-on experience using these modalities on animal eyes.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Lisa S Gamell MD

Instructor(s): Robert J Noecker MD, Joel S Schuman MD*, Jorge A Alvarado MD, Mark A Latina MD*, Malik Y Kahook MD*, Brian E Flowers MD**

Managing Angle-Closure Glaucoma With Crystalline Lens Removal and Adjunctive Procedures

Course: 158 Sunday
Room: 224 10:15 AM - 12:30 PM
Education Level: INT Target Audience: COMP

Synopsis: Preoperative diagnostics and ample surgical video will be used to demonstrate a unified approach and specific techniques to safely perform phacoemulsification as a definitive treatment for angle-closure glaucoma. In addition, adjunctive procedures such as goniosynechialysis, endoscoplasty, pars plana vitreous tap, irido-zonulo-hyaloidectomy, and pupilloplasty will be demonstrated. Tools such as capsular tension rings, pupillary rings, iris hooks, and microinstrumentation to enhance surgical success will be presented.

★ Top 10% in subject area. **NEW** New Course **Education Level Key:** BAS = Basic, INT = Intermediate, ADV = Advanced Target Audience:

COMP = Comprehensive Ophthalmologist, SUB = Subspecialist, COMPSUB = Comprehensive & Subspecialist.

Up-to-date information is available in the Program Search on the Academy's website: www.aao.org/2013.

Objective: This course is designed to provide surgeons with an approach and tools for safely performing phacoemulsification in the management of angle-closure glaucoma and to introduce adjunctive procedures to further enhance outcomes in these cases.

Senior Instructor(s): Devesh K Varma MD*

Instructor(s): Iqbal K Ahmed MD*, Garry P Condon MD*, Sebastien Gagne MD**, Diamond Y Tam MD

Cell Biology, Genetics, and Outflow Biochemistry of Glaucoma in 2013 and Beyond

Course: 169 Sunday
Room: 214 11:30 AM - 12:30 PM
Education Level: INT Target Audience: SUB

Synopsis: An overview of cell biology-based theories relevant to glaucoma will be presented. A very brief clinical summary of the discussions of the Trabecular Meshwork Society meeting in December 2012 will be presented, along with other recent biological advances pertaining to glaucoma. Uniquely, we emphasize the substantial relevance of these findings and theories to clinical practice.

Objective: This course will give the attendee the tools to discuss the pros and cons of future genetic testing. The attendee will understand how specific concepts in cell biology, such as the cytokine-modulated responses to trabeculoplasty, impact clinical care of the glaucoma patient. After the session, many attendees will engage in an ongoing scientific dialog about specific aspects of glaucoma, conducted through email. Handouts consist of numerous articles disseminated through a large file email service (Yousendit) and will serve as a partial basis for these ongoing discussions about the biology of the meshwork.

Senior Instructor(s): John R Samples MD*

Instructor(s): Murray A Johnstone MD*

SO Normal-Tension Glaucoma: Evaluation and Treatment

Course: 170 Sunday
Room: 225 11:30 AM - 12:30 PM
Education Level: BAS Target Audience: COMP

Synopsis: A neuro-ophthalmologist will review neurologic conditions misdiagnosed as normal-tension glaucoma (NTG) and present the appropriate diagnostic evaluation. A glaucoma specialist will discuss the pathophysiology of NTG and appropriate medical and surgical therapies.

Objective: This course will enable participants to identify NTG patients who deserve further neurologic evaluation and to become familiar with the appropriate treatment of patients with glaucoma and normal IOP.

Senior Instructor(s): Mark L Moster MD*

Instructor(s): Marlene R Moster MD*

Glaucoma Filtration Device Mini-shunt: Friend or Foe?

Course: 172 Sunday
Room: 346 2:00 - 3:00 PM
Education Level: ADV Target Audience: COMPSUB

Synopsis: This course will provide practical tips in the use of Ex-PRESS shunts, including videos to demonstrate surgery to insert and remove the shunt if necessary. The management pearls for treatment of complications will be highlighted with illustrative cases.

Objective: This course will review indications and contraindications for the use of Ex-PRESS shunts and practical tips for insertion. The course will also discuss prevention of complications and management of these, if they should occur.

Senior Instructor(s): Annapurna Singh MD

Instructor(s): Richard A Lehrer MD*

Continuous 24-Hour IOP Monitoring for Glaucoma

Course: 177 Sunday
Room: 355 2:00 - 3:00 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: Intraocular pressure (IOP), the only modifiable risk factor for glaucoma, is a dynamic parameter. Peak IOPs occurring outside clinic hours remain undetected in many glaucoma patients. Recent availability of telemetric devices for continuous 24-hour IOP monitoring has the potential to improve glaucoma care.

Objective: This course will review (1) the nature of 24-hour IOP and its clinical significance and (2) the role of 24-hour IOP monitoring technologies in clinical practice. At the conclusion of this course, the attendees will understand the complexities of 24-hour IOP patterns and how to integrate current technologies for monitoring IOP into the clinical management of glaucoma patients.

Senior Instructor(s): Kaweh Mansouri MD*

Instructor(s): Syril Dorairaj MD, Christopher Kai-shun Leung MD MBChB*, Arthur J Sit MD*, Robert N Weinreb MD*

Glaucoma Postop Care in the Office: A Video Compendium of Techniques—When and How to Intervene

Course: 184 Sunday
Room: R02 2:00 - 4:15 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will demonstrate strategies and techniques used during the postoperative period of trabeculectomy and glaucoma drainage implant procedures to increase surgical success.

Objective: At the conclusion of this course, the attendee will be able to identify causes of surgical failure and early postoperative complications that require intervention. The strategies, timing, and techniques used to deal effectively with postoperative management of trabeculectomy and glaucoma implants will be discussed in detail and demonstrated with the use of slitlamp video footage to allow attendees to utilize these procedures in their own offices. The instructors, who have diverse training backgrounds, will show variations in technique that will allow even the seasoned glaucoma surgeon an opportunity for learning.

Senior Instructor(s): Cynthia Mattox MD FACS*

Instructor(s): Chandrasekharan Krishnan MD, Susan S Liang MD, Alan E Lowinger MD

The Management of Neovascular Glaucoma in 2013

Course: 201 Sunday
Room: 214 2:00 - 3:00 PM
Education Level: ADV Target Audience: SUB

Synopsis: This course will present cases and data on various etiologies of neovascular glaucoma and will discuss different methods to eradicate or reduce rubeosis iridis / angle neovascularization and different management options, including the use of trabeculectomy with mitomycin C, glaucoma drainage implants, and various cycloablative procedures. The role of intravitreal bevacizumab in the management of neovascular glaucoma will be stressed, and audience participation will be encouraged.

Objective: At the conclusion of the course, the attendees will have gained confidence in managing patients with neovascular glaucoma of varied etiology.

Senior Instructor(s): Anil K Mandal MD

Instructor(s): Peter Andreas Netland MD PhD*, K V Chalam MD PhD, Scott D Lawrence MD*

Trabeculectomy by Internal Approach Surgery for Adult Open-Angle Glaucoma

Course: 119 Sunday
Room: 340 3:15 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will cover the Trabectome, an FDA-cleared instrument for angle-based surgery for open-angle glaucoma via an internal approach. The didactic part of the course will describe accumulated data from an ongoing case series (over 5000 eyes), published data, and comparative trials with cataract surgery alone, trabeculectomy, and aqueous tube shunt. Indications, surgical technique, IOP outcomes, and complications will be described during a one-hour didactic course. Surgical tips including proper identification of angle structures using the gonioscopic approach will be emphasized. This may also be followed by a hands-on lab session using inverted corneal donor rings for practice.

Objective: At the conclusion of the course, attendees will understand the indications, surgical technique, IOP outcomes, and complications associated with this device.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Brian A Francis MD*

Instructor(s): Sameh Mosaed MD*, Nils A Loewen MD*

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Glaucoma Filtration Surgery

Course: 124 Sunday
Room: 335 3:15 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course provides a comprehensive review of the techniques and complications of glaucoma filtration surgery. Glaucoma surgical technique will be stressed in this update of filtration surgery, with a heavy emphasis on surgical video presentations. The course will also discuss novel surgical techniques used in filtration surgery, such as Ex-PRESS shunts, as compared to conventional surgery. A panel discussion with questions and answers will conclude the session.

Objective: This course will review surgical anatomy, basic trabeculectomy techniques, antimetabolites (including 5-fluorouracil and mitomycin C), and postoperative management and complications.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Steven L Mansberger MD*

Instructor(s): George A Cioffi MD, Jeffrey M Liebmann MD*, F Jane Durcan MD, Robert D Fechtner MD FACS*, Kuldev Singh MD MPH*, George A Cioffi MD, Celso Tello MD*

Schlemm Canal Surgery

Course: 125 Sunday
Room: 214 3:15 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Early results of nonpenetrating glaucoma surgery, an alternative approach in glaucoma filtering surgery, have shown comparable results to other methods, with a reduction in overall complications. Yet this technique has a learning curve, with its own set of unique challenges. This course will present a systematic, multimedia, video-assisted review of the anatomy, rationale, explanation, and illustration of canaloplasty.

Objective: This course will explain (1) the procedure's method of re-establishing aqueous outflow, (2) the procedure's advantages, disadvantages, risks, and benefits, and (3) the identification of glaucomas where the procedure would have highest probability of success. Recent clinical results and innovations to enhance the procedure will also be discussed.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Richard A Lehrer MD*

Instructor(s): Iqbal K Ahmed MD*, Alan S Crandall MD*, Robert Stegmann MD**, Clive O Peckar MD*, Howard Barnebey MD*, John R Kearney MD

Canal, Trab, or Tube: What Should I Do?

Course: 219 Sunday
Room: R04 4:30 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Surgical options for glaucoma today include filtering surgeries and newer minimally invasive technologies that increase outflow through physiologic channels. How does a glaucoma surgeon choose from all these available options? A case presentation format will highlight optimal clinical scenarios to help a surgeon pick cases appropriate for Schlemm canal surgery or traditional filtering surgery. Presentations will emphasize case selection, surgical pearls, potential pitfalls, and postop management.

Objective: On completion of this course, the attendees will be able to tailor glaucoma surgery to their individual patient, offering a customized approach and integrating newer minimally invasive procedures into their surgical practices.

Senior Instructor(s): Arvind Neelakantan MD*

Instructor(s): Ronald Leigh Fellman MD OCS*, Quang H Nguyen MD*, Keith Barton MD*

NEW Canal-Based Glaucoma Surgery: Canaloplasty vs. Microstent Implantation: Everything You Want to Know

Course: 221 Sunday
Room: 223 4:30 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: In this course the anatomy and pathophysiology of the Schlemm canal and its role in glaucoma, ultrasound studies of the canal, canal surgery (canaloplasty and microstent) indications, surgical techniques, outcomes, and management of complications will be discussed using surgical video footage and clinical pictures. Techniques for performing combination cataract and canal surgery and variations in difficult cases will be addressed. Future strategies for improving the surgical outcomes, including in the design and antifibrosis agents, will be discussed.

Objective: At the conclusion of this course, the attendee will be able to understand the basic anatomy, pathophysiology, indications, surgical techniques (including combination surgeries), and management of intra- and postoperative complications of canal based surgeries (canaloplasty and microstent implantation).

Senior Instructor(s): Ramesh S Ayyala MD FRCS*

Instructor(s): Thomas W Samuelson MD*

★ Improving Success in Filtration Surgery: Intraoperative Surgical Techniques and Postoperative Management of the Failing Filter

Course: 319 Monday
Room: 338 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will describe techniques for successful performance of trabeculectomy, nonpenetrating glaucoma procedures, and micro-incisional glaucoma (MIGS) procedures and will comprehensively review postoperative management of the failing glaucoma operation.

Objective: At the end of this course, attendees will understand the available techniques for enhancing glaucoma surgery success, including antimetabolite administration, and will understand postoperative adjuncts for dealing with failing filtration characterized by either high IOP or low IOP.

Senior Instructor(s): Husam Ansari MD PhD*

Instructor(s): Bradford J Shingleton MD*

Computerized Perimetry Lecture: Visual Field Testing and Interpretation, Emphasizing Glaucoma

Jointly Sponsored by the Academy's Skills Transfer Advisory Committee and the American Glaucoma Society

Course: 132 Monday
Room: 335 10:15 AM - 12:30 PM
Education Level: BAS Target Audience: COMP

Synopsis: This lecture reviews computerized perimetry, emphasizing glaucoma and the Humphrey field analyzer. Topics will include the stepwise interpretation of individual visual fields (VFs), the significance of each portion of the VF printout, determining if the VF is reliable and if it is normal or abnormal, tips for obtaining a more reliable VF and for selecting the appropriate test, SITA, SWAP, frequency doubling perimetry, and the analysis of a series of VFs for progression. Numerous, mostly glaucomatous, case examples will be used. Note: Octopus perimetry will be covered in the lab.

Objective: This course will provide participants with the background knowledge necessary to be more comfortable with visual field interpretation and to be prepared for the separate laboratory session.

Note: This is the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Julia Whiteside-de Vos MD MPH*

Instructor(s): Todd W Perkins MD*

★ Update Your Anterior Chamber Angle Skills: How to Best Examine, Grade, and Treat

Course: 336 Monday
 Room: 220 10:15 AM - 12:30 PM
 Education Level: INT Target Audience: COMP

Synopsis: Studies show we look at the chamber angle in less than half of all initial glaucoma patient visits. Why? This course is about improving your chamber angle organizational skills to overcome chamber angle neglect. It will put everything together for the comprehensive ophthalmologist: how to best look at the angle, distinguish normal from abnormal angles, indent crowded angles, record your findings, and treat the iris and angle with laser therapy. In addition, important landmarks for up and coming canal procedures will be emphasized.

Objective: At the conclusion of the course, attendees will be able to better view the angle, improve their treatment of the angle, know when to perform and better record their gonioscopic findings, and be updated on the risks and benefits of laser peripheral iridotomy, selective laser trabeculoplasty, argon laser trabeculoplasty, and iridoplasty.

*Senior Instructor(s): Ronald Leigh Fellman MD OCS**

Instructor(s): Ronald L Gross MD, Silvia D Orengo-Nania MD*, Thomas W Samuelson MD*, Mark B Sherwood MD*, Steven T Simmons MD, George L Spaeth MD FACS*, Arvind Neelakantan MD**

What's Your Next Step? Case Studies in Glaucoma Management

Course: 348 Monday
 Room: 338 11:30 AM - 12:30 PM
 Education Level: BAS Target Audience: COMP

Synopsis: Both challenging and everyday glaucoma cases will be presented and discussed in a panel format. Visual fields and OCT, among other ancillary tests, will be used to demonstrate the case presentations. Audience participation will be encouraged.

Objective: At the conclusion of the course, the participants will have a better understanding of common glaucoma cases with diagnostic or interventional dilemmas.

Senior Instructor(s): Prithvi S Sankar MD

Instructor(s): Eydie G Miller MD, Cynthia L Grosskreutz MD PhD*, Sarwat Salim MD**

★ Top 10 Pitfalls, Problem Solving, and Interpretive Strategy for Automated Threshold Perimetry

Course: 350 Monday
 Room: 222 11:30 AM - 12:30 PM
 Education Level: INT Target Audience: COMP

Synopsis: This course presents a step-by-step interpretive strategy for automated threshold perimetry. This course will also teach recognition of the most common pitfalls encountered and problem solving to avoid misinterpretation, underdiagnosis, and overdiagnosis.

Objective: Participants will learn to (1) systematically interpret central threshold visual fields, (2) recognize common pitfalls, including testing "legally blind" eyes, low reliability message, testing children, normal gray scale display in the presence of early scotomas, isolated peripheral nasal steps, severe visual field loss, limitations of computerized interpretation, SITA variability, and pseudo-scotomas or pseudo-progression due to artifact (miosis, ptosis, lens rim), and (3) problem solve using nonstandard parameters (eg, size V stimulus) or alternate strategies (eg, central 10-degree or peripheral 30/60 degree field). This course was designed to optimize automated perimetry evaluation and monitoring and to eliminate common interpretational errors.

Senior Instructor(s): Alan H Zalta MD

*Instructor(s): John S Cohen MD**

NEW The Art and Science of Glaucoma Drainage Devices: How to Optimize Your Surgical Results

Course: 353 Monday
 Room: R01 11:30 AM - 12:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: The basic differences among the different glaucoma drainage devices (GDDs) including design, size, biomaterial, the pathophysiology of the resulting blebs, indications, surgical techniques, outcomes, and management of complications will be discussed using surgical video footage and clinical pictures. Techniques to perform different surgeries such as Descemet-stripping automated endothelial keratoplasty, penetrating keratoplasty, phaco / posterior chamber IOL, and pupilloplasty in the presence of or combined with GDD will be discussed. Future strategies for improving the surgical outcomes, including in the design and antifibrosis agents, will be discussed.

Objective: At the conclusion of this course, the attendee will be able to understand the basic differences among the different GDDs, the pathophysiology of the resulting blebs, the indications, surgical techniques (including combination surgeries), and management of intra- and postoperative complications.

*Senior Instructor(s): Ramesh S Ayyala MD FRCS**

*Instructor(s): Steven Gedde MD**

Argon Laser Peripheral Iridoplasty: All You Need to Know

Course: 355 Monday
 Room: 214 11:30 AM - 12:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will cover all you need to know about argon laser peripheral iridoplasty (ALPI)—from indications, contraindications, techniques, and pearls to results to complications and their management. Slitlamp photographs and videos will be extensively used in the course, the handout, and the course DVD-ROM to illustrate the critical techniques.

Objective: At the conclusion of this course, the attendee will be able to safely, effectively, and confidently perform ALPI in the appropriate patients.

*Senior Instructor(s): Clement C Y Tham MBBS**

*Instructor(s): Robert Ritch MD FACS**

Medical Therapy for Open-Angle Glaucoma: A Complete Review of the Pharmacodynamics, Pharmacokinetics, and Toxicity of All Potentially Useful Drugs

Course: 362 Monday
 Room: 346 11:30 AM - 12:30 PM
 Education Level: ADV Target Audience: COMP

Synopsis: This course will present the pharmacodynamics, pharmacokinetics, and toxicity of drugs potentially useful for open-angle glaucoma (OAG) treatment, including parasympathomimetics, sympathomimetics, sympatholytics, carbonic anhydrase inhibitors, prostaglandin analogs, osmotics, neuroprotectors, blood flow enhancers, marijuana, Ginkgo biloba, and other alternative therapies.

Objective: Participants will be able to treat OAG more effectively by enhancing compliance and risk-benefit ratios.

Senior Instructor(s): Allan J Flach MD

Complications Following Glaucoma Filtering Surgery: Face Them Boldly, Manage Them Efficiently

Course: 366 Monday
 Room: R05 11:30 AM - 12:30 PM
 Education Level: ADV Target Audience: SUB

Synopsis: This course will review the early detection, prevention, and specific management strategy of the common complications that may be associated with glaucoma filtering surgery, such as hyphema, shallow to flat anterior chamber, early or late leaking bleb, encapsulated blebs, hypotony, the "wipeout" phenomenon, blebitis, bleb infection, and endophthalmitis.

Objective: At the conclusion of the course, attendees will be able to face complications following glaucoma filtering surgery more boldly and manage them more efficiently.

Senior Instructor(s): Anil K Mandal MD

Instructor(s): Peter Andreas Netland MD PhD, Dale K Heuer MD*, Eve J Higginbotham MD, Sriram Sonty MD FACS**

Implantation of Glaucoma Drainage Devices

Course: 137 Monday
 Room: 342 2:00 - 4:15 PM
 Education Level: BAS Target Audience: COMPSUB

Synopsis: The first part of this course is didactic, covering the indications, pathophysiology, surgical technique, postoperative management, and complications of drainage devices (from anterior chamber tube to extraocular reservoir). The second part is hands-on, with implantation of Molteno, Krupin, Baerveldt, Ahmed, and Schocket devices on porcine eyes. Ex-PRESS shunt, Trabectome, and canaloplasty will not be covered.

Objective: At the conclusion of this course, the attendee will be aware of principles and techniques of glaucoma drainage device implantation.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Richard P Mills MD MPH

Instructor(s): Ronald Leigh Fellman MD OCS, George Baerveldt MD*, Anne Louise Coleman MD PhD*, Frederick M Kapetansky MD, Donald L Budenz MD MPH*, Paul A Sidoti MD, Angelo P Tanna MD**

★ Tubes, Ties, and Videotape: Surgical Video of Baerveldt Glaucoma Implants and Managing Complications

Course: 390 Monday
 Room: 211 2:00 - 4:15 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will present clinical photos, patient history, and edited surgical videos of several challenging glaucoma cases and will demonstrate efficient techniques for tube insertion and how to manage postoperative complications. The instructor will demonstrate how to reposition, extend, trim, cover, revise, and tie-off problematic tubes and will discuss how tubes are used in conjunction with surgery for cataracts, corneal failure, and retinal detachment.

Objective: At the conclusion of this course, the attendee will be able to formulate an appropriate surgical plan for a glaucoma drainage implant and be better prepared to avoid and manage potential complications.

Senior Instructor(s): Herbert P Fechter MD

Evidence-Based Guidelines in the Management of Glaucoma

Course: 393 Monday
 Room: 214 3:15 - 5:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Early detection and treatment of glaucoma are of paramount importance to reduce the burden of blindness and its economic impact on society. Two important questions often confront a glaucoma specialist when initiating therapy: Who needs to be treated? And how should a patient be treated? This course will address the evidence-based guidelines for treating glaucoma and review the invaluable information from major clinical trials (Glaucoma Laser Trial, Selective Laser Trabeculoplasty vs. Medical Therapy study, Ocular Hypertension Treatment Study, European Glaucoma Prevention Study, Early Manifest Glaucoma Trial, Collaborative Initial Glaucoma Treatment Study, Advanced Glaucoma Intervention Study, etc.) that have enhanced our understanding of the risk factors and treatment strategies at various stages of the disease.

Objective: At the conclusion of the course, the attendee will be knowledgeable about when and how to treat glaucoma patients based on evidence, including many of the major clinical trials that have guided clinical decision making in glaucoma practice.

*Senior Instructor(s): Sarwat Salim MD**

Instructor(s): Malik Y Kahook MD, Shan C Lin MD*, Raghu Mudumbai MD, Peter Andreas Netland MD PhD*, Joel S Schuman MD*, Quang H Nguyen MD*, Jody R Piltz-Seymour MD**

NEW Managing Uveitic Glaucoma

Course: 406 Monday
 Room: 338 3:15 - 4:15 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will cover the examination, monitoring, and management of uveitic glaucoma. Case presentations will be used to identify characteristic phenotypic features that help identify specific uveitic conditions, as well as the mechanism of IOP elevation. An algorithm for medically managing such patients will be discussed. Particular emphasis will be placed on defining the important features indicating when surgical intervention is required. Surgical options will be discussed, and video presentations will be used to demonstrate techniques to avoid complications in these patients.

Objective: At the conclusion of this course, attendees will have gained confidence in managing glaucoma / refractory ocular hypertension in uveitic patients. The attendee will be able to recognize different mechanisms of IOP elevation and instigate appropriate medical management and monitoring. They will appreciate the indications and options for surgery and understand the associated risks in this patient group.

*Senior Instructor(s): Nicholas Strouthidis FRCOPHTH MBBS MD**

Instructor(s): Keith Barton MD, Emmett T Cunningham Jr MD PhD MPH*

NEW Lifestyle Intervention for the Treatment/Prevention of Age-related Eye Disorders: Practical Application

Course: 413 Monday
 Room: R04 4:30 - 5:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Ocular disorders such as cataract / presbyopia, Fuchs endothelial corneal dystrophy, dry eye, AMD, and glaucoma are related to aging. Recent advances in understanding the mechanism of aging have provided the opportunity to interfere with the aging process to prevent and/or treat ocular diseases. This course will detail how age-related changes in the immune system and mitochondrial dysfunction with attendant oxidative stress can contribute to the pathogenesis of eye disease. Specific interventions using diet, exercise, supplementation with vitamins and minerals, antioxidant intervention, and stress reduction techniques target these pathologies.

Objective: At the end of this course, the attendee will understand the major aging hypotheses and learn their practical application through lifestyle intervention. The attendee will be able to incorporate the new knowledge and skills for themselves and in clinical practice for preventive and therapeutic management of age-related eye disorders.

*Senior Instructor(s): Kazuo Tsubota MD**

Instructor(s): Jonathan Crowston MBBS PhD, Ula Jurkunas MD*, Scott M MacRae MD**

3-D Optic Disc Viewing: Top 10 Pitfalls in Identifying Glaucoma Damage and Progression

Course: 421 Monday
 Room: 222 4:30 - 5:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Participants will wear red-blue glasses to view 3-D PowerPoint projections of stereoscopic optic disc images. The most common pitfalls in identifying glaucomatous disc damage (including optic disc anomalies, swelling, and atrophy) will be viewed, discussed, and correlated with visual field loss. Characteristic glaucomatous disc changes will be highlighted, including vertical elongation of cupping and pallor, cup-to-disc asymmetry, focal excavation, nerve fiber layer defects, and splinter hemorrhages. Special emphasis will be placed on simultaneous viewing of serial stereoscopic images that demonstrate progressive glaucomatous disc damage over time, including the evolution of rim notching, circumferential vessel beading, laminar dot sign, and vessel course changes.

Objective: While viewing stereoscopic optic disc images, physicians will learn to identify 1) glaucomatous disc damage and progression and 2) the most common optic disc anomalies and pathologies that may confound this assessment.

Senior Instructor(s): Alan H Zalta MD

Angle Closure and Angle-Closure Glaucoma

Jointly Sponsored by the Academy's Annual Meeting Program Committee and the Asia Pacific Glaucoma Society

Course: 531 Tuesday
Room: 215 9:00 - 11:15 AM
Education Level: ADV Target Audience: COMPSUB

Synopsis: Practically and logically, our course will define and classify these glaucomas, outline their prevalence and incidence, outline methods of assessment, and discuss pathophysiological mechanisms before covering medical, laser, and surgical strategies of prevention and treatment and current approaches to management of the acute angle-closure crisis.

Objective: After the course, participants will have a deeper and broader understanding of the burden and current classification of angle closure and angle-closure glaucoma, an awareness of pathophysiological principles underlying choices of new treatment strategies, and a detailed update on how best to prevent and to manage this spectrum of the glaucomas.

Senior Instructor(s): Tetsuya Yamamoto MD*

Instructor(s): Clement C Y Tham MBBS*, Paul T K Chew MD*, Tin Aung FRCS PhD*, Ki Ho Park MD*, Prin Rojanapongpun MD*, Ning Li Wang MD, Ching Lin Ho FRCS MBBS*

Combined Cataract Surgery With Glaucoma Surgery: Guidelines, Indications, Methods, Techniques, and Postoperative Management

Course: 540 Tuesday
Room: 225 10:15 AM - 12:30 PM
Education Level: ADV Target Audience: COMP

Synopsis: This course will provide a comprehensive review of guidelines and indications for combined cataract / glaucoma filtering surgery based on glaucoma severity, IOP control, extent of optic nerve damage, level of visual field loss, and type of glaucoma. Preoperative considerations from determination of surgical site, antimetabolite use, poorly dilating pupil, shallow anterior chamber, and posterior synechiae will be discussed. Surgical methods, anesthesia, one or two-site surgery, and surgical techniques will be explained. Glaucoma filtering surgery methods from conjunctival dissection and wound architecture to antimetabolite use will be stressed. Anticipation, avoidance, management of surgical and postsurgical complications, and postoperative management of glaucoma will be explained.

Objective: At the conclusion of this course, attendees will be able to proceed with combined cataract / glaucoma surgery, determine best surgical method, avoid complications, and manage postoperative glaucoma course.

Senior Instructor(s): Leon G Partamian MD*

Instructor(s): Eve J Higginbotham MD, Cynthia Mattox MD FACS*, David Lee MD*, Marlene R Moser MD*, Anastasios P Costarides MD PhD*, Thomas W Samuelson MD*

Needling for Failed Blebs: All You Need to Know

Course: 549 Tuesday
Room: 228 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Needling appears to be a simple procedure, but its success is very technique-dependent. This course will revisit the procedure in a step-by-step manner and with a lot of video illustrations (based on the first-prize winning video of the fourth World Glaucoma Congress), showing the proper way to perform each step of the procedure. The course will cover all you need to know about needling, from indications, contraindications, techniques and pearls, choosing the right adjunct, and results to complications and their management. Slitlamp photographs and videos will be extensively used in the course, the handout, and the course DVD-ROM to illustrate the critical techniques.

Objective: At the conclusion of this course, participants will be able to safely, effectively, and confidently perform needling, select the right adjunct, and achieve good results.

Senior Instructor(s): Dennis S C Lam MD

Instructor(s): Mingguang He MD PhD, Christopher Kai-shun Leung MD MBChB, Clement C Y Tham MBBS*

What's New in Normal-Tension Glaucoma?

Jointly Sponsored by the Academy's Annual Meeting Program Committee and the Asia Pacific Glaucoma Society

Course: 555 Tuesday
Room: 333 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will cover recent advances in the pathogenesis, early diagnosis, risk factors, and treatment of normal-tension glaucoma (NTG). Based on rich clinical experience and proven study results, the authors will provide current and new information on NTG. The recent advances in the structural and functional diagnostic technology, risk factors for the development and progression of NTG, neuroimaging issues, and current strategies for treating NTG will be shared with attendees.

Objective: At the conclusion of this course, attendees will be able to assess and manage NTG patients with greater knowledge and confidence.

Senior Instructor(s): Ki Ho Park MD*

Instructor(s): Kazuhisa Sugiyama MD PhD, Makoto Aihara MD PhD*, Dexter Yu-Lung Leung DRCOPTH FRCS, Tae-Woo Kim MD PhD*

Ophthalmoscopic Evaluation of the Optic Disc and Retinal Nerve Fiber Layer

Course: 560 Tuesday
Room: 338 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course covers the ophthalmoscopic evaluation of optic disc, cup, neuro-retinal rim, parapapillary atrophy, disc hemorrhages, retinal nerve fiber layer, and retinal vessel width.

Objective: The course will help participants to (1) understand pseudogliomatous macrocupping and pseudonormal minicupping, (2) detect early glaucomatous changes, (3) differentiate glaucoma types by disc morphology, (4) distinguish glaucomatous optic neuropathy from nonglaucomatous optic nerve atrophy, (5) consider ethnic differences in the disc appearance, (6) discuss pathogenic implications of the disc morphology for glaucoma, (7) perform the dynamic optic disc assessment using modified ophthalmodynamometry for estimation of central retinal artery and vein pressure, orbital tissue pressure, and brain pressure, (8) understand the presence of cerebrospinal fluid pressure, and (9) differentiate alpha, beta, gamma, and delta zones of parapapillary atrophy by OCT and histology.

Senior Instructor(s): Jost B Jonas MD*

Top 10 Essentials of Gonioscopy: 3-D Viewing and Interpretation

Course: 566 Tuesday
Room: 222 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Participants will wear red-blue glasses to view 3-D PowerPoint projections of stereoscopic gonioscopy and slitlamp images. Identifying traditional gonioscopic anatomy may be confounded by a variety of anterior chamber angle pathologies. The use of different gonioscopes and indispensable gonioscopy techniques (dynamic indentation and termination of the corneal light wedge) will be discussed. Special emphasis will be placed on the evaluation of narrow angles, decision making for laser iridotomy, and laser treatment of the angle and iris. Pathologic variations in overly deep anterior chambers, angle blood vessels, increased trabecular meshwork pigment, peripheral anterior synechiae due to anterior mechanisms with or without membranes and posterior mechanisms with or without pupillary block, and anterior chamber angle clefts will be presented.

Objective: While viewing stereoscopic images, the attendee will learn essential gonioscopic anatomy, examination techniques, and categorization with variations in pathology.

Senior Instructor(s): Alan H Zalta MD

Understanding and Utilizing Glaucoma Imaging

Course: 576 Tuesday
 Room: 209 12:45 - 1:45 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Recent advances in imaging have led the way to better understanding of a variety of pathological mechanisms in glaucoma. We are now able to obtain high-resolution images of the anterior segment, iridocorneal angle, retinal nerve fiber layer, and optic nerve head. This has enabled us to use various types of imaging for the detection and monitoring of glaucoma progression, as well as aiding our diagnostic skills in assessing prognosis for interventions and when to intervene. This course will concentrate on the modalities of ultrasound biomicroscopy, anterior segment OCT, and a new angle imaging technique, RetCam. Optic nerve head evaluation techniques such as Heidelberg Retinal Tomography and retinal nerve fiber layer assessment by time domain OCT and spectral domain (high-definition) OCT will also be discussed.

Objective: At the conclusion of this course, the attendee will be able to incorporate these insights into the diagnosis and management of glaucoma patients.

Senior Instructor(s): Shamira Perera MBBS*

Instructor(s): David Goh MBBS

Global Ophthalmology

NEW | GO Global Initiatives for Cataract Surgery Efficiency and Sustainability

Course: 552 Tuesday
 Room: 355 11:30 AM - 12:30 PM
 Education Level: BAS Target Audience: COMP

Synopsis: Developed countries have excellent service models that enable access for patients and also interventions like manual sutureless small-incision cataract surgery (SICS) that offer cost-effective outcomes. However, eye care services in developing countries often lack management capacity to function at full potential and with financial sustainability. This course shares proven strategies that helped build clinical and organizational capacity to create sustainable and quality eye surgery programs. A panel presentation, followed by audience discussion, will explore the building blocks of an effective service, including the use of various cataract surgical procedures such as SICS and phacoemulsification.

Objective: Upon completion of this course, participants will be able to (1) understand the components of a viable, organizationally and financially sustainable eye care service, (2) recognize how a team approach leads to enhanced efficiency and effectiveness, even in the short-term, and (3) influence constructive changes for sustainable eye hospitals.

Senior Instructor(s): Susan Lewallen MD

Intraocular Inflammation, Uveitis

Medical and Surgical Therapy and Diagnosis of Uveitis

Course: 189 Sunday
 Room: 220 2:00 - 4:15 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Recent advances have increased our ability to identify a specific etiology for many cases of uveitis. Medical and surgical therapeutic advances have also produced dramatic improvements in our ability to care for patients with uveitis. This course will present our system.

Objective: This course will enable participants to recognize, investigate, and treat patients with uveitis.

Senior Instructor(s): C Stephen Foster MD*

Instructor(s): Emil Mitchel Opremcak MD, Albert T Vitale MD*

How to Evaluate a Patient With Uveitis

Sociedad Panamericana de Enfermedades Inflammatorias Oculares of the Pan American

Course: 318 Monday
 Room: R08 9:00 - 11:15 AM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will focus on the step-by-step evaluation of patients with uveitis by using case presentations to illustrate specific uveitis entities. Each course instructor will present interesting cases as unknowns for discussion by the panel of instructors. Course attendees will also be invited to present their own mystery cases by submitting the cases in advance. The rationale for ordering laboratory evaluations / ancillary tests and for the treatment plan will be explained in detail.

Objective: Attendees will have ample opportunity to participate in this interactive course and will experience how a uveitis specialist analyzes each patient. Presentations will include both infectious and noninfectious entities in patients with anterior, intermediate, posterior, and pan-uveitis. Special emphasis will be given to the newest treatment modalities. At the completion of this course, the attendee will be able to formulate a tailored laboratory evaluation for the entities presented.

Senior Instructor(s): Careen Yen Lowder MD PhD*

Instructor(s): Emilio M Dodds MD, Janet Louise Davis MD*, James Philip Dunn Jr MD, Debra A Goldstein MD*, Sunil K Srivastava MD*

★ Decoding the Uveitis Workup: Why, When, and What to Order

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Uveitis Society (AUS)

Course: 506 Tuesday
 Room: 223 9:00 - 11:15 AM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will primarily focus on the stepwise, cost-effective uveitis workup utilizing the history and clinical presentation. Uveitis entities will be classified in a fashion that simplifies and optimizes the workup and reduces unnecessary testing. Clinical cases will highlight important features.

Objective: Upon completion of this course, participants will be able to (1) selectively order appropriate diagnostic tests based on the clinical presentation of various uveitis entities in a cost-effective fashion and (2) interpret the results of diagnostic tests.

Senior Instructor(s): Sarkis H Soukiasian MD

Instructor(s): Michael E Zegans MD*, Russell N Van Gelder MD PhD*

International (Dis)Agreement on Infectious Uveitis

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Uveitis Society (AUS)

Course: 575 Tuesday
 Room: R01 12:45 - 3:00 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Infectious uveitis is estimated to be responsible for 10%-30% of all uveitis cases. In some parts of the world toxoplasmosis alone is responsible for up to 50% of all posterior uveitis. Infectious uveitis poses unique diagnostic and therapeutic challenges. Uveitis resulting from infections can masquerade as noninfectious uveitis. The diagnosis may require an anterior chamber or vitreous tap. While autoimmune uveitis requires long-term immunosuppressive therapy, most infectious uveitides can be treated with short-term antimicrobial therapy. It is therefore highly desirable to identify possible infectious etiology in idiopathic uveitis. The instructors will present a variety of challenging cases from around the world, with interactive discussion sessions.

Objective: At the end of this course, the audience will be able to develop a stepwise approach to diagnosing and managing infectious uveitis entities.

Senior Instructor(s): Rubens Belfort Jr MD PhD*

Instructor(s): Hatice N Sen MD, Robert B Nussenblatt MD, Gary N Holland MD, Emilio M Dodds MD, Narsing A Rao MD, Khalid F Tabbara MD*, Careen Yen Lowder MD PhD*, Bahram Bodaghi MD PhD*, Cristina Muccioli MD, Ronald E Smith MD*, Thomas A Albin MD*, Heloisa Nascimento MD

Medical Education

NEW Keys to Successful Publication in the Good Ophthalmology Journal

Course: 356 Monday
Room: R02 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: The editors-in-chief of the three major general ophthalmology journals will offer suggestions on preparing research for publication, including the initial steps in research, construction of manuscripts, and expectations of the peer review process. Helpful do's and don'ts will be offered to aspiring authors. Audience members may recount their expectations, experiences, and challenges to the editors.

Objective: At the conclusion of the course, the attendee will be able to understand how to select a journal to match a specific research study, the essential elements of a manuscript, and how the manuscript will be handled during the peer review process. Audience interaction with the editors is anticipated to alleviate apprehensions about the process and encourage properly focused energy in offering new research to the peer reviewed literature. Audience members may introduce related topics during a panel discussion.

Senior Instructor(s): Thomas J Liesegang MD

Instructor(s): Daniel M Albert MD FACS*, George B Bartley MD

CANCELED

NEW Strategy and Statistics in Clinical Research: A Nonstatistician's Guide to Thinking, Designing, and Executing

Course: 418 Monday
Room: R02 4:30 - 5:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will provide clear, nontechnical explanations of the statistics in clinical trials and outcomes-based technique / surgical studies, from hypothesis formulation through analysis. The instructors will provide easy-to-follow study design and statistics templates for common studies performed in ophthalmic research for attendees to use outside of the course setting.

Objective: At the conclusion of this course, the attendee will be able to properly design and execute a clinical research study.

Senior Instructor(s): Craig N Czysz DO

Instructor(s): Jill Annette Foster MD FACS*, James J Jenkins II PhD

NEW Surgical Education: Improving Upon and Going Beyond the Apprentice Model

Course: 557 Tuesday
Room: R01 11:30 AM - 12:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: Presenters will cover a wide variety of surgical education techniques, including traditional surgery, wet lab, cognitive computer modeling, and simulation. They will focus on how to improve traditional teaching techniques and how to incorporate new techniques and technologies. The course will include strategies to optimize the use of existing resources and will give attendees a look at modalities to incorporate in the future.

Objective: To review and critique existing and new techniques in surgical education.

Senior Instructor(s): Andrew J Hendershot MD

Instructor(s): Andrew G Lee MD*, Karl C Golnik MD, Thomas A Oetting MD, Bonnie A Henderson MD*, Tiago Bisol MD

Neuro-Ophthalmology

★ Understanding Nystagmus: A Practical Approach for the Clinician

Course: 190 Sunday
Room: R04 2:00 - 4:15 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: This course reviews the clinical features of different types of nystagmus. By using a systematic pathophysiologic approach, clinicians will develop a rational decision-making process in the diagnosis and management of nystagmus. Numerous videos will be presented.

Objective: To impart an understanding of nystagmus using a practical approach. At the conclusion of this course, the attendees will be able to identify the salient features of different types of nystagmus, including their etiology and pathophysiology, as well as important diagnostic and treatment issues. This course will aid attendees in improving their clinical management of nystagmus.

Senior Instructor(s): Agnes M Wong MD*

SO Diagnostic and Therapeutic Dilemmas in Neuro-Ophthalmology

Course: 191 Sunday
Room: 333 2:00 - 4:15 PM
Education Level: ADV Target Audience: SUB

Synopsis: In this course, actual diagnostic and therapeutic clinical dilemmas will be presented by a panel of university-based neuro-ophthalmologists, with members of the audience participating in the generation of differential diagnoses and therapeutic strategies.

Objective: At the conclusion of the course, the attendee will be able to address difficult problems in the diagnosis and management of neuro-ophthalmic cases.

Senior Instructor(s): Nancy J Newman MD*

Instructor(s): Neil R Miller MD*, Valerie Biousse MD*, Mark L Moster MD*, Andrew G Lee MD*

★ Diagnosis, Optic Neuropathy: Now What?

Course: 222 Sunday
Room: 224 4:30 - 5:30 PM
Education Level: BAS Target Audience: COMP

Synopsis: Optic neuropathies demonstrate characteristic clinical features regardless of the underlying etiology. In this course, illustrative cases and discussion will identify specific features of common optic neuropathies, including optic neuritis, arteritic and non-arteritic anterior ischemic optic neuropathy (AION and NAIION), and compressive optic neuropathies. Current recommendations for evaluation and treatment will be presented.

Objective: At the conclusion of this course, the attendee will be able to diagnose common optic neuropathies and distinguish them from less common etiologies. The attendee will know when and what studies, treatments, and referrals to initiate for distinct diagnoses.

Senior Instructor(s): Kenneth S Shindler MD PhD

Instructor(s): Gabrielle R Bonhomme MD, Madhura A Tamhankar MD, Nicholas J Volpe MD*

Visual Fields in Neuro-Ophthalmology

Jointly sponsored by the Academy's Annual Meeting Program Committee and the North American Neuro-Ophthalmology Society (NANOS)

Course: 224 Sunday
Room: R02 4:30 - 5:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will provide an overview of visual fields, with an emphasis on neuro-ophthalmic conditions. The role of visual fields in neuro-ophthalmology will be put in perspective. Guidelines will be suggested for choosing the best field technique. Some of the newest field techniques will be discussed. Anatomic correlations with visual fields will be comprehensively detailed. Reliability and artifacts in visual fields will be reviewed. Case examples of visual field defects will be presented, with audience participation.

Objective: At the end of this course, participants should be able to maximize their use of visual fields as a component of the complete evaluation in assessment of neuro-ophthalmology patients.

Senior Instructor(s): Susan M Pepin MD

Instructor(s): Jacqueline A Leavitt MD, Steven A Newman MD

Instruction Courses

P ★ **Case-Based Approach to Isolated Eye Pain**

Course: 359 Monday
Room: R04 11:30 AM - 12:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: Patients with eye pain and a normal ophthalmologic examination often present to the ophthalmologist. In this course, differential diagnosis, pathophysiology, management, and cases of isolated eye pain will be discussed in an interactive fashion.

Objective: The attendee will be able to identify common causes of isolated eye pain and summarize current treatment options.

*Senior Instructor(s): Michael S Lee MD**

Instructor(s): Gregory S Kosmorsky DO

The Vertical Diplopia Dilemma, Made Simple

Course: 365 Monday
Room: 211 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: In the majority of patients, the etiology of vertical diplopia can be established by careful history taking and clinical examination. In this course, illustrative cases and discussion will identify specific features of common causes of vertical diplopia such as cranial nerve palsy, thyroid orbitopathy, myasthenia gravis, and orbital and head trauma. A systematic approach toward evaluation and critical management pathways will be presented.

Objective: At the conclusion of the course, the attendee will be able to diagnose common causes of vertical diplopia. A systematic approach toward management will aid the attendee in ordering appropriate tests, identifying patients requiring emergent management, and making appropriate referrals to specialists.

Senior Instructor(s): Madhura A Tamhankar MD

Instructor(s): Kenneth S Shindler MD PhD, Nicholas J Volpe MD, Collin M McClelland MD*

Emergency Neuro-Ophthalmology: Diagnosis and Management

Jointly sponsored by the Academy's Annual Meeting Program Committee and the North American Neuro-Ophthalmology Society (NANOS)

Course: 369 Monday
Room: 228 2:00 - 4:15 PM
Education Level: BAS Target Audience: COMP

Synopsis: This course will present a case-based review of the emergency management of acute and transient vision loss, optic nerve swelling, pupillary disorders, and ocular motility defects.

Objective: To teach participants to identify and manage patients with true neuro-ophthalmic emergencies, and to review the differential diagnosis and management of acute vision loss, anisocoria, and ophthalmoplegia.

*Senior Instructor(s): Nicholas J Volpe MD**

*Instructor(s): Mark L Moster MD**

P **What You Need to Know About Headache: A Pain for the Patient and a Pain for the Doctor**

Jointly sponsored by the Academy's Annual Meeting Program Committee and the North American Neuro-Ophthalmology Society (NANOS)

Course: 523 Tuesday
Room: 338 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: Patients are often seen by or referred to the ophthalmologist because of headache or eye pain. These patients present a diagnostic and therapeutic challenge, as many will have no apparent ocular etiology for their pain. The purpose of this course is to present a simplified framework for diagnosis and management of these patients that will both streamline their evaluation and provide guidelines for potentially beneficial therapeutic interventions. This course will use a case-based approach to discuss various headache syndromes with ocular manifestations.

Objective: At the conclusion of this course, the attendees will be able to identify the major categories of underlying diagnoses for headache and eye pain, develop a succinct strategy for history and clinical examination to confirm the suspected diagnosis, and develop treatment goals in order to help their patients.

Senior Instructor(s): Peter A Quiros MD

*Instructor(s): Lynn K Gordon MD PhD**

Swollen Disks, Headache, and Vision Loss: A Case-Based Approach to Pseudotumor Cerebri

Course: 559 Tuesday
Room: 223 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: What do you do when a patient with bilateral disc swelling presents? How do you determine the urgency of evaluation and make the right diagnosis? Using a case-based approach, we will emphasize the workup that every patient needs and will show how to use technology (CT, MRI/MR venography, spectral domain OCT, visual fields) to help recognize the warning signs of sight-threatening disease. We will also discuss new treatment options, including venous sinus stenting, and the long-term consequences of pseudotumor cerebri.

Objective: At the conclusion of this course, the attendee will be able to identify features of optic disc swelling that suggest sight-threatening disease and will understand the evaluation and referral process. Attendees will be able to interpret the results of diagnostic imaging techniques and recognize critical findings of venous sinus disease. They will become familiar with current strategies for the treatment of patients with idiopathic intracranial hypertension and describe the indications for medical and surgical or interventional treatments.

*Senior Instructor(s): Prem S Subramanian MD PhD**

Instructor(s): Vivek R Patel MD

★ **YO** **Curbside Consultation in Neuro-Ophthalmology**

Course: 570 Tuesday
Room: R08 12:45 - 3:00 PM
Education Level: INT Target Audience: COMP

Synopsis: This course offers brief, concise, and practical answers to those questions that are often left unanswered by traditional texts and references in neuro-ophthalmology. The presenters will use a case-based format to pose and answer questions of neuro-ophthalmic interest to the general ophthalmologist. The presentations will be given in a "curbside consult" format that will be educational and entertaining.

Objective: At the conclusion of this course, attendees will be able to provide management solutions to common neuro-ophthalmic presentations, including papilledema, optic neuritis, neuroretinitis, anterior ischemic optic neuropathy, optic atrophy, common visual field defects, and ocular motor cranial neuropathies.

*Senior Instructor(s): Andrew G Lee MD**

Instructor(s): Lanning B Kline MD, Paul W Brazis MD

Ocular Tumors and Pathology

How to Get the Most Out of Your Pathologist

Course: 239 Sunday
Room: R01 4:30 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will cover biopsy and excision techniques for intraocular, conjunctival, eyelid, and orbital lesions. Fine-needle aspiration biopsy techniques will be reviewed. The handling and submission of specimens to the pathology laboratory will be discussed. The common mistakes during biopsy and excision of lesions and how to avoid them will be pointed out. Pitfalls in pathologic processing and assessment of specimens will be reviewed. This will be an interactive course with audio-visual demonstration of biopsy and excision techniques.

Objective: The attendee will learn (1) the approaches to biopsy and excision of intraocular, conjunctival, eyelid, and orbital lesions and (2) fine-needle biopsy techniques, including fresh tissue harvesting, as well as their pathological processing.

Senior Instructor(s): Hakan Demirci MD

*Instructor(s): Irina V Koreen MD PhD**, Victor M Elnor Ph D MD**

★ Top 10% in subject area. **NEW** New Course **Education Level Key:** BAS = Basic, INT = Intermediate, ADV = Advanced Target Audience:

COMP = Comprehensive Ophthalmologist, SUB = Subspecialist, COMPSUB = Comprehensive & Subspecialist.

Up-to-date information is available in the Program Search on the Academy's website: www.aao.org/2013.

Practical Ocular Oncology for the Comprehensive Ophthalmologist: What You Should Know

Course: 505 Tuesday
Room: R03 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will consist of presentations and discussions of the topics in ophthalmic oncology most important for comprehensive ophthalmologists. These include classic but distinctive fundus lesions, including choroidal melanoma, retinoblastoma, metastatic carcinoma, intraocular lymphoma, and other neoplastic lesions both benign and malignant. The presenters will emphasize the clinical diagnosis and current management as well as "hot topics" in ocular oncology. Current and future management in cancer and how it can affect the eye will also be discussed (eg, target therapy in systemic cancer has shown ocular side effects). Participation of the audience will be encouraged with representative cases.

Objective: At the end of this course, attendees will be able to identify the most common intraocular tumors as well as to understand current management and how patients can present at a general ophthalmology practice. This course will help comprehensive ophthalmologist to counsel oncology patients.

Senior Instructor(s): Miguel A Materin MD

Instructor(s): James Augsburger MD, Zelia M Correa MD, Hakan Demirci MD, Dan S Gombos MD, J William Harbour MD*, Brian P Marr MD, Prithvi Mruthyunjaya MD*, Jose S Pulido MD MS

Pediatric Ocular Tumors

Course: 530 Tuesday
Room: 217 9:00 - 10:00 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will cover the important ocular tumors affecting children. An organized presentation will be given on the recognition and management of tumors of the eyelid, conjunctiva, intraocular structures, and orbit. Retinoblastoma management will be summarized. Various cases will be presented, along with discussion of management.

Objective: At the conclusion of this course, the attendee should be able to identify the most common ocular tumors of childhood and understand management strategies.

Senior Instructor(s): Carol L Shields MD

Instructor(s): Jerry A Shields MD

Uveal Melanoma Therapies: Protons, Plaques, and Eyewall Resection

Course: 565 Tuesday
Room: R02 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: The course will overview the indications, contraindications, complications, and results with various therapies for uveal melanoma using an illustrative case approach with audience participation. The data set for the course is approximately 4000 cases managed by the author and others. Iris, ciliary body, and uveal tumors will be discussed, and the advantages and disadvantages of various treatment modalities will be delineated, along with an approach for the surgeon on how to optimize results.

Objective: At the conclusion of the course, the participant should be able to select optimum therapy for each type of patient, determine the relative risks and successes of each procedure, and determine how to minimize treatment complications.

Senior Instructor(s): Devron H Char MD

Instructor(s): Devron H Char MD

Ophthalmic History

SO Evolution's Witness: How Eyes Evolved

Course: 181 Sunday
Room: 208 2:00 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Although the journey to spatial vision actually began billions of years ago, the Cambrian explosion (543-490 million years ago) saw the first known eye. The Cambrian was a crucible of evolution and spawned nearly all ocular designs. This was followed by descent over millions of years, providing an unimaginable variety of eyes with at least

10 different models. Some eyes display spectacular creativity, with mirror, scanning, or telephoto optics. From initial photoreception 3.75 billion years ago to early spatial recognition in the first cupped eyespot in *Euglena* to fully formed camera-style eyes the size of beach balls in ichthyosaurs, animals have processed light to compete and survive in their respective niches. Vision is evolution's greatest gift and its greatest triumph. This course will present the story of the evolution of eyes.

Objective: To stimulate curiosity about the novelties and the triumphs of the evolution of the eye.

Senior Instructor(s): Ivan R Schwab MD FACS

SO Vision and the Artist

Course: 582 Tuesday
Room: 215 12:45 - 1:45 PM
Education Level: BAS Target Audience: COMP

Synopsis: This course fuses ophthalmology and art. We will demonstrate how art teaches ophthalmology and how ophthalmology enhances the appreciation of art. We will discuss how light, dark, and contrast underlie vision and make representation in art possible. We will also discuss how art may reflect eye disease in the artist and demonstrate the functional effects of failing vision. Art from all ages will be shown, with special attention to the question of eye disease in Rembrandt, Cassatt, Degas, Monet and O'Keeffe. Simulations of the artists' own view of their work will illustrate how different disabilities have affected different artists.

Objective: Attendees should gain understanding of how visual processes and eye disease affect their patients and gain new appreciation of art.

Senior Instructor(s): Michael F Marmor MD*

Instructor(s): James G Ravin MD

Optics, Refraction, Contact Lenses

Review of Clinical Optics

Course: 157 Sunday
Room: 217 10:15 AM - 12:30 PM
Education Level: BAS Target Audience: COMP

Synopsis: This review of clinical optics will prepare ophthalmology residents to take the Ophthalmic Knowledge Assessment Program examination and graduates of residency training programs to take the written qualifying examination of the American Board of Ophthalmology. It will also serve as a refresher course for those in practice. The course will be taught in a question-and-answer format, focusing on problem solving. Content and illustrations will be drawn from the American Academy of Ophthalmology's Basic and Clinical Science Course book on clinical optics.

Objective: At the conclusion of the course, participants will be better prepared to answer multiple-choice optics questions on written examinations.

Senior Instructor(s): Kevin M Miller MD*

Contact Lens in Ophthalmology Practice

Jointly Sponsored by the Academy's Annual Meeting Program Committee and the Contact Lens Association of Ophthalmologists (CLAO)

Course: 227 Sunday
Room: 209 4:30 - 5:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: In this course, the incentives, scope-of-practice options, and resource requirements for contact lens practice will be presented. Practitioners from various practice settings, including comprehensive solo practice, academic practice, cornea practice, and multispecialty practice, will present their experiences in offering contact lens services to their patients. Both private and institutional practices will be represented. Useful resources will be reviewed.

Objective: At the completion of this program, the participant will understand (1) the incentives for offering contact lens as part of comprehensive eye care, (2) options for offering a limited scope or full range of contact lens services, (3) resource requirements for a range of contact lens services and practice models, and (4) availability of resources for reference.

Senior Instructor(s): Deborah S Jacobs MD*

Instructor(s): S Lance Forstot MD FACS*, Bruce Koffler MD*, Thomas L Steinemann MD*

Orbit, Lacrimal, Plastic Surgery

Cosmetic Botulinum Toxin and Facial Fillers: An Introductory Course

Course: 111 Sunday
 Room: 338 10:15 AM - 12:30 PM
 Education Level: BAS Target Audience: COMPSUB

Synopsis: Principles of aesthetic facial injection of botulinum toxin and facial fillers will be presented in a didactic format.

Objective: At the conclusion of this course, the attendee will better understand the salient anatomy, clinical techniques (including complication avoidance), and pharmacological principles pertaining to aesthetic injection of these substances.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Kathleen M Duerksen MD

Instructor(s): Michael S McCracken MD, Deborah D Sherman MD, John Joseph Martin MD**

Fundamental Facelifting Techniques

Jointly Sponsored by the Academy's Skills Transfer Advisory Committee and the American Society of Ophthalmic Plastic & Reconstructive Surgery (ASOPRS)

Course: 112 Sunday
 Room: 215 10:15 AM - 12:30 PM
 Education Level: INT Target Audience: SUB

Synopsis: This basic course will consist of a step-by-step slide and video presentation of a preoperative assessment, surgical facial anatomy, fundamental facelifting techniques, postoperative care, and potential complications. A downloadable course manual will be available to participants.

Objective: Participants will acquire the ability to select appropriate patients, develop hands-on familiarity with facial surgical anatomy, perform safe surgical dissection, provide appropriate postoperative care, and integrate facelifting into their aesthetic oculo-facial practice.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Brett S Kotlus MD

Instructor(s): Tanuj Nakra MD, Robert M Schwarcz MD, Bobby S Korn MD PhD FACS**

Periocular Tumors and Techniques of Eyelid Reconstruction

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Ophthalmic Plastic & Reconstructive Surgery (ASOPRS)

Course: 150 Sunday
 Room: 335 10:15 AM - 12:30 PM
 Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will give an overview of the most common benign and malignant skin lesions that involve the periocular region, will highlight the general features of malignancy, will provide a detailed description of the most common eyelid neoplasms, will describe the different biopsy techniques, and will provide the requisites to reconstruct the upper and lower eyelid under any circumstance.

Objective: At the conclusion of this course, the attendee will be able to recognize malignant and benign tumors, differentiate among the various types of malignant lesions, safely diagnose every suspicious periocular tumor, and master the most useful techniques for upper and lower eyelid reconstruction.

Senior Instructor(s): Jeffrey A Nerad MD

Instructor(s): Francesco P Bernardini MD, Martin H Devoto MD, Robert C Kersten MD, Carlo de Conciliis MD

Facial Fracture Repair: Better Outcomes and Improved Technique

Course: 153 Sunday
 Room: 223 10:15 AM - 12:30 PM
 Education Level: ADV Target Audience: SUB

Synopsis: This course will provide a detailed discussion of valuable pearls for the reconstruction of common facial fractures that are often seen within the scope of an oculo-facial practice, but not commonly taught during fellowship training. The content will include valuable insight regarding the management of zygomatic complex, naso-orbital-ethmoidal complex, and extensive multiple wall fractures of the orbit and roof and frontal sinus fractures.

Objective: This course is designed to provide participants with a high-level understanding of the preoperative planning, nuances, and pitfalls of the most recent management and repair techniques of facial fractures from an orbitocentric perspective. In addition, participants should gain sufficient knowledge to improve surgical outcomes through the application of these techniques.

Senior Instructor(s): Eli L Chang MD

Instructor(s): Peter A D Rubin MD, Jeremiah P Tao MD, Vikram D Durairaj MD, Hui Bae Harold Lee MD, William R Nunery MD*

Stereo Anatomy of the Orbit, Eyelid, and Lacrimal System: A Surgeon's Perspective

Course: 164 Sunday
 Room: 333 10:15 AM - 12:30 PM
 Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will provide a comprehensive review of orbital, eyelid, and lacrimal system anatomy using projected stereo images of meticulous cadaveric dissections. Surgical approaches and complications will be emphasized.

Objective: This course will acquaint participants with the anatomy of the orbit / ocular adnexa and increase their confidence when operating in these areas.

*Senior Instructor(s): Asa Dan Morton III MD**

Instructor(s): David B Lyon MD FACS, Victor M Elnor Ph D MD, Kimberly Cockerham MD FACS**

Basic Browlift: Principles and Techniques

Course: 165 Sunday
 Room: 220 10:15 AM - 12:30 PM
 Education Level: BAS Target Audience: COMPSUB

Synopsis: There are many brow elevation techniques, and in general the procedure should be tailored to the specific patient. This course will review the anatomical foundations, evaluation, patient selection, and treatment of brow ptosis. The techniques reviewed will include direct, mid-forehead, pretrichial, coronal, limited incision, and browpepxy.

Objective: At the conclusion of the course, the attendee will be able to describe the anatomical foundations of brow ptosis, evaluate the patient with brow ptosis, list the different techniques available for brow elevation, and select which procedure is most appropriate for the particular patient.

Senior Instructor(s): Richard C Allen MD PhD

Instructor(s): Jill S Melicher Larson MD, Keith D Carter MD FACS

Tips for Cosmetic Eyelid Surgery in Asian Patients

Course: 168 Sunday
 Room: 211 11:30 AM - 12:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Asian people have different anatomic characteristics from non-Asian people, and different beauty standards as well. To obtain a satisfactory surgical outcome, it is important to understand the distinct points in anatomy and surgical techniques. This course will present detailed anatomic differences, as well as surgical pearls on cosmetic eyelid surgery such as double eyelid operation, upper lid blepharoplasty, and epicanthoplasty for Asian patients.

Objective: At the conclusion of this course, the attendee will be familiar with different approaches and unique surgical techniques for performing various cosmetic eyelid procedures in Asian patients.

Senior Instructor(s): Yoon-Duck Kim MD

Instructor(s): Don Kikkawa MD*, Randal Pham MD FACS, Kyung In Woo MD

NEW Fat Grafting and Volume Restoration

Course: 115 Sunday
Room: 335 2:00 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: The purpose of this prerequisite didactic course is to present facial fat grafting as a technique for volume restoration. Indications for surgery, patient selection, alternatives to surgery, surgical techniques and instrumentation, and postoperative details will be reviewed. An interactive case presentation will allow attendees to participate.

Objective: At the conclusion of this course, the attendee will be acquainted with facial fat grafting techniques and appropriate patient selection, as well as addressing potential postoperative complications. The course will enable the attendee to formulate a customized approach to a patient's needs and goals.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): David Khoramian Isaacs MD

Instructor(s): Robert M Schwarcz MD*, Tanuj Nakra MD, Norman Shorr MD, Robert A Goldberg MD*

Blepharoplasty

Course: 116 Sunday
Room: 225 2:00 - 4:15 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will cover the latest techniques in upper and lower eyelid blepharoplasty. Basic and advanced surgical techniques, eyelid anatomy, patient selection, preoperative evaluation, and avoidance of complications will be discussed. A course handbook with illustrations outlining the surgical techniques will be provided.

Objective: This course will provide participants with the techniques required to perform successful upper and lower eyelid blepharoplasties.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Keith D Carter MD FACS

Instructor(s): Mark A Alford MD, Richard C Allen MD PhD, Richard L Anderson MD FACS*, Adam G de la Garza MD, Robert C Kersten MD, Jill S Melicher Larson MD, Jeffrey A Nerad MD

Where Neuro-Ophthalmology and Oculoplastics Collide: Challenging Cases and Topics

Course: 234 Sunday
Room: 338 4:30 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Many oculoplastic conditions are straightforward and require routine surgical interventions. Occasionally, however, seemingly benign signs or symptoms may represent other life- and/or vision-threatening neurologic conditions. This course will emphasize detection of these potentially dangerous pathologies that could result in devastating results without cooperation between two subspecialties for appropriate patient care. This interactive panel-fashion course aims to provide a detailed understanding of certain hard-to-diagnose disorders of oculoplastics that overlap with the neuro-ophthalmology field.

Objective: At the end of this course, the participant will be able to (1) recognize which ptosis patient may require additional workup, (2) list and describe diagnostic criteria of myasthenia gravis, CN III palsy, chronic progressive external ophthalmoplegia, Horner syndrome, and muscular dystrophies, (3) recognize common and subtle symptoms and signs of giant cell arteritis, and (4) outline the indications for optic nerve sheath fenestration.

Senior Instructor(s): Altug Cetinkaya MD

Instructor(s): Karl C Golnik MD

Thyroid Eye Disease

Jointly sponsored by the Academy's Annual Meeting Program Committee and the International Thyroid Eye Disease Society (ITEDS)

Course: 304 Monday
Room: 211 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: Thyroid eye disease (TED) can be challenging to manage. This course provides a practical update to help the ophthalmologist care for the patient with TED. The International Thyroid Eye Disease Society (ITEDS) "VISA" standardized evaluation form will be utilized in the discussion of the clinical evaluation and management of this disorder. An overview of favored approaches for surgical management will also be provided.

Objective: By the conclusion of this course, participants should understand (1) disease activity, progress, and severity, (2) the ITEDS-VISA classification, (3) the use of the ITEDS-VISA classification for management, (4) management during the active phase, including conservative therapy, medical therapy, radiotherapy, and urgent surgery, and (5) management during the quiescent phase, including conservative therapy and surgical intervention.

Senior Instructor(s): Mark J Lucarelli MD FACS

Instructor(s): Kenneth V Cahill MD FACS, Peter J Dolman MD, Raymond Douglas MD PhD*, Jonathan J Dutton MD PhD, Victor M Elnor Ph D MD*, Steven E Feldon MD*, Michael Kazim MD, Don Kikkawa MD*, Jennifer A Sivak-Callcott MD, Jimmy M Uddin MD

NEW Evaluation and Treatment of Lower Lid Ectropion, Entropion, and Retraction

Course: 310 Monday
Room: 210 9:00 - 10:00 AM
Education Level: BAS Target Audience: COMPSUB

Synopsis: Lower eyelid malpositions are common and include entropion, ectropion, and retraction. Etiologies of entropion include involutional, cicatricial, and spastic; etiologies of ectropion include involutional, cicatricial, paralytic, and mechanical; and etiologies of retraction include involutional, cicatricial, and paralytic. Surgical management is based upon the underlying etiology.

Objective: At the conclusion of the course, the attendee will be able to identify and classify each of the lower lid malpositions by their etiologies. In addition, the participant will be able to develop an appropriate surgical plan for each of the malpositions.

Senior Instructor(s): Richard C Allen MD PhD

Instructor(s): Erin Shriver MD, Jill S Melicher Larson MD

Evaluation and Management of Orbital Cellulitis

Course: 313 Monday
Room: 340 9:00 - 10:00 AM
Education Level: BAS Target Audience: COMPSUB

Synopsis: Orbital cellulitis is a condition that may be associated with vision- and life-threatening complications. Despite numerous medical advances in antimicrobial therapy, radiographic imaging, and surgical technique, the treatment of orbital cellulitis remains challenging. Successful management requires prompt diagnosis, aggressive medical therapy, and in some cases, timely surgical intervention. Through lectures, video, and panel discussions, participants will learn to manage these patients confidently.

Objective: This course will familiarize participants with the clinical features, radiographic presentation, and current medical and surgical treatment options for orbital cellulitis.

Senior Instructor(s): Michael T Yen MD*

Instructor(s): Thomas Edward Johnson MD

Inflammatory Orbital Disorders and Their Differential Diagnoses

Course: 351 Monday
Room: 215 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will cover the inflammatory orbital disorders and their differential diagnosis. The systemic manifestations of inflammatory disorders, including infections, Graves eye disease, inflammatory pseudotumor and IgG-4 variant, Sjögren disease, sarcoidosis, Wegener granulomatosis, adult xanthogranulomatous disease, and fungal

Instruction Courses

infections, will be discussed. The clinical and imaging characteristics, the differential diagnosis from orbital malignancy, and current management options for orbital inflammations will be reviewed. This will be an interactive course with case presentations and discussions.

Objective: The attendee will learn how to evaluate, provide a differential diagnosis for, and manage patients with inflammatory orbital diseases.

Senior Instructor(s): Hakan Demirci MD

Instructor(s): Victor M Elnor Ph D MD, Christine C Nelson MD, Alon Kahana MD PhD, Raymond Douglas MD PhD*, Terry A Smith***

Controversies and Advances in Pediatric Oculoplastic Surgery

Course: 358 Monday
Room: 333 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: A panel of experienced oculoplastic, pediatric, and pediatric oculoplastic surgeons will combine (1) short lectures on controversial topics, presented by pediatric and oculoplastics for differing views and (2) challenging case discussions. Topics include congenital ptosis with poor levator function, timing of surgery, uni- vs. bilateral repair, technique (frontalis sling, levator / tarsal resection), material choice, and whether bilateral surgery and levator extirpation are needed in Marcus-Gunn ptosis. Other topics include congenital nasolacrimal duct obstruction, timing / order of repair, Pediatric Eye Disease Investigator Group recommendations, balloon dacryoplasty, anophthalmia management with dermis fat, static and hydrogel expanders, periorbital hemangioma treatment, and advanced techniques.

Objective: The attendee should be better equipped to make treatment recommendations that incorporate the expertise of both specialties for these difficult pediatric oculoplastic issues.

Senior Instructor(s): Cat Burkat MD

Instructor(s): Francesco P Bernardini MD, Martin H Devoto MD, William R Katowitz MD, Morris E Hartstein MD, Monte D Mills MD, Michael C Struck MD, Shubhra Goel MD*

Endoscopic Transnasal Lacrimal Surgery: Principles and Practice

Course: 135 Monday
Room: 340 2:00 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: The transnasal diagnosis and treatment of lacrimal outflow disorders will be presented. Endoscopic nasal anatomy, transnasal dacryocystorhinostomy surgical techniques, endoscopic Jones tubes placement, and endoscopic diagnosis and management of lacrimal disorders will be covered.

Objective: At the conclusion of this course, participants will understand transnasal endoscopic diagnosis and treatment of lacrimal outflow disorders.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Francois Codere MD

Instructor(s): Bruce M Massaro MD, Jennifer A Sivak-Callcott MD

Introduction to Aesthetic Facial Surgery by Fractional Lasers, Intense Pulsed Light, Radiofrequency, and Ultrasound Devices

Course: 138 Monday
Room: 335 3:15 - 5:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will focus primarily on ablative fractional and nonfractional laser resurfacing and incisional blepharoplasty because this is the only rejuvenating technology limited to physicians. Preoperative, intraoperative, and postoperative care, management of complications, and marketing will be covered. There will also be introductions to the latest in nonablative fractional resurfacing, radiofrequency, and microfocused ultrasound.

Objective: By the conclusion of this course, attendees will be able to (1) compare and contrast the many different devices on the market, (2) have introductory knowledge of how to incorporate such new technologies into their practices, and (3) recognize and manage complications of these devices.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

*Senior Instructor(s): Julie A Woodward MD**

*Instructor(s): Erin Holloman MD**, Raminder K Saluja MD**, Usha P Reddy MD, Randal Pham MD FACS, Adam J Scheiner MD*, John Joseph Martin MD*, Ioannis P Glavas MD*

Endoscopic Forehead and Eyebrow Elevation

Course: 140 Monday
Room: 340 3:15 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: The aesthetic evaluation of the patient with eyebrow ptosis, the anatomy of the eyebrow and forehead, and a description of the endoscopic brow and forehead elevation procedure will be discussed. A course handbook will be provided, detailing the surgical technique.

Objective: This course is designed to provide an understanding of the preoperative patient evaluation, pertinent surgical anatomy, and technique of endoscopic brow and forehead elevation.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Stuart R Seiff MD

Instructor(s): Louis Savar MD, Susan R Carter MD

Avoiding and Managing Blepharoplasty Complications

Course: 427 Monday
Room: 211 4:30 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will discuss the management of upper and lower blepharoplasty complications, with particular emphasis on avoiding complications. Instead of presenting a list of complications and their remedies, this course will present a methodology that places complications in different categories. By understanding that complications can arise from technique errors or judgment errors, the blepharoplasty surgeon can better plan and execute more successful surgery. This course will teach the surgeon how to avoid common trouble spots and how to manage complications when they do arise.

Objective: At the conclusion of this course, participants will understand why complications occur and will learn how to plan for successful procedures and how to manage blepharoplasty complications, including orbital hemorrhage, asymmetric lid creases, webbing, too much fat removed, lower lid retraction, rounded lateral canthus, and the unhappy blepharoplasty patient.

Senior Instructor(s): Morris E Hartstein MD

*Instructor(s): Don Kikkawa MD**

Management of Orbital Tumors: Case Presentation and Discussion

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Ophthalmic Plastic & Reconstructive Surgery (ASOPRS)

Course: 508 Tuesday
Room: R08 9:00 - 11:15 AM
Education Level: ADV Target Audience: COMPSUB

Synopsis: This course will focus on management of orbital tumors through representative cases from the instructors' orbital practices. Emphasis will be on clinical pictures showing initial presentation, imaging characteristics of orbital lesions, surgical approach, and the role of ancillary treatment options such as radiotherapy and/or systemic chemotherapy.

Objective: This course is designed to enable the orbital and oculoplastic specialist to appropriately diagnose orbital tumors and become familiar with the multidisciplinary management of orbital tumors using illustrative cases and the collective experience of the course instructors.

Senior Instructor(s): Bita Esmali MD FACS

Instructor(s): Geoffrey E Rose FRCOphth, Timothy J Sullivan MBBS, Dale R Meyer MD FACS, Jonathan J Dutton MD PhD

★ Top 10% in subject area. **NEW** New Course **Education Level Key:** BAS = Basic, INT = Intermediate, ADV = Advanced Target Audience:

COMP = Comprehensive Ophthalmologist, SUB = Subspecialist, COMPSUB = Comprehensive & Subspecialist.

Up-to-date information is available in the Program Search on the Academy's website: www.aao.org/2013.

★ Optimizing Outcomes and Minimizing Complications in Oculofacial Plastic Procedures: A Case-Based Approach

Course: 524 Tuesday
Room: 221 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will present a practical, case-based guide for the evaluation, planning, and surgical management of common oculofacial plastic procedures. The course will feature high-definition surgical videos of selected cases, including blepharoplasty, eyelid and brow ptosis repair, and nonsurgical procedures such as botulinum toxin and subcutaneous filler injections. Emphasis will be placed on optimizing surgical outcomes and minimizing and managing complications, using case-based vignettes.

Objective: At the conclusion of this course, the attendee will be able to evaluate and manage common outpatient oculofacial plastic procedures in an efficient manner with optimal outcomes.

*Senior Instructor(s): Bobby S Korn MD PhD FACS**

Instructor(s): Don Kikkawa MD, Karim G Punja MD, Richard L Scawn MD, Nattawut Wanumkarng MD*

Advanced Techniques in Orbital Decompression and Expansion

Course: 145 Tuesday
Room: 342 10:15 AM - 12:30 PM
Education Level: ADV Target Audience: SUB

Synopsis: This course is designed to foster creative thinking in orbital decompression. Staging, planning, and techniques for orbital decompression will be reviewed, including deep lateral, fat removal, transcaruncular, and endoscopic. Surgical versatility and creative decision making will be stressed.

Objective: This course is designed to acquaint participants with a variety of techniques for orbital decompression and to enable them to design an individualized approach based on the patient's needs and goals.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

*Senior Instructor(s): Robert A Goldberg MD**

Instructor(s): Raymond Douglas MD PhD, Norman Shorr MD, Catherine Hwang MD, Mehryar Taban MD, Joseph L Lin MD**, Daniel B Rootman MD MSc, Alice Siew Ching Goh MD*

Lotions, Potions, Botulinum Toxin, and Fillers: Nonlaser Rejuvenation for the Ophthalmologist

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Ophthalmic Plastic & Reconstructive Surgery (ASOPRS)

Course: 534 Tuesday
Room: 209 10:15 AM - 12:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: Cosmeceuticals, botulinum toxin, chemical peels, and soft tissue fillers all provide nonlaser options for minimally invasive facial rejuvenation. This course will review facial skin analysis and therapeutic options available to patients. Assessment, indications, and techniques for use of botulinum toxin, chemical peels, and soft tissue fillers will be discussed.

Objective: At the end of this course, attendees will be familiar with cosmeceutical categories and applications and will understand the indications, techniques, and complications (management and avoidance) for botulinum toxin, soft tissue fillers, and chemical peels.

Senior Instructor(s): Femida Kherani MD

Instructor(s): Christopher M DeBacker MD, Jill Annette Foster MD FACS, Scott M Goldstein MD*, Wendy W Lee MD**

★ Complete Guide to the Evaluation and Management of Ptosis

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Ophthalmic Plastic & Reconstructive Surgery (ASOPRS)

Course: 539 Tuesday
Room: 210 10:15 AM - 12:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will provide a comprehensive understanding of ptosis syndromes and surgical treatments. Surgical techniques, including Müller muscle resection and levator and frontalis sling surgery, will be presented in detail.

Objective: Upon completion of this course, participants will gain a thorough understanding of ptosis syndromes and their evaluation and management. Participants will evaluate, categorize, and surgically plan for the ptosis patient.

Senior Instructor(s): Morris E Hartstein MD

Instructor(s): Adam G Buchanan MD, Gabriela Espinoza MD, Steven M Couch MD

Facial Nerve Palsy: Anatomy, Etiology, Evaluation, and Management

Course: 547 Tuesday
Room: 346 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will present the facial nerve anatomy, etiology, ocular complications, and treatment of facial nerve palsy.

Objective: At the conclusion of the course, the attendee will be able to evaluate and provide comprehensive management for patients with facial nerve palsy. In addition, theoretical knowledge of surgical techniques will be obtained.

Senior Instructor(s): Ioannis Mavrikakis MD PhD

Instructor(s): Efsthathios T Detorakis MD PhD, Konstadinos Boboridis MD, George C Charonis MD***

Enucleation, Evisceration, and Care of the Anophthalmic Socket

Course: 563 Tuesday
Room: 218 11:30 AM - 12:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: Enucleation and evisceration techniques will be reviewed, along with the available implant materials. The indications and contraindications of each of the techniques and care of the subsequent anophthalmic socket will be discussed.

Objective: At the conclusion of this course, the attendee will be able to discuss the appropriate circumstance when either an enucleation or evisceration would be performed, recite the surgical procedure for each of the techniques, and differentiate between the available implants and indicate when each would be appropriately used. The attendee will also be able to formulate a plan for any early and late postoperative sequelae.

Senior Instructor(s): Richard C Allen MD PhD

Instructor(s): Erin Shriver MD, Jeffrey A Nerad MD

★ Oculoplastic Office Procedures: Video Clips

Course: 578 Tuesday
Room: R05 12:45 - 1:45 PM
Education Level: INT Target Audience: COMP

Synopsis: Detailed instruction with emphasis on pearls of office eyelid and lacrimal surgeries will be presented with the use of video clips. The following procedures will be discussed: incision and drainage of a chalazion, lesion biopsy, lesion excisions, tarsorrhaphy (chemical and surgical), lacrimal probing and irrigation, punctoplasty, punctal cauterization, canaliculotomy, entropion repair, ectropion repair, and upper eyelid blepharoplasty.

Objective: Participants will be shown the relevant anatomy and surgical steps in performing office eyelid and lacrimal procedures.

Senior Instructor(s): Susan M Tucker MD

Instructor(s): Nancy A Tucker MD

Instruction Courses

★ Oculoplastic Procedures for the General Ophthalmologist

Course: 586 Tuesday
Room: 223 12:45 - 1:45 PM
Education Level: BAS Target Audience: COMP

Synopsis: This course will describe basic and effective procedures for the treatment of involuntional ectropion and entropion, tarsorrhaphy, marginal eyelid lesions, dermatochalasis, and aponeurogenic involuntional ptosis.

Objective: At the conclusion of this course, the attendee will be able to select and perform the appropriate surgical technique for the treatment of common eyelid problems encountered in a general ophthalmology practice.

Senior Instructor(s): Robert C Kersten MD

Instructor(s): Francesco P Bernardini MD, Carlo de Conciliis MD, Martin H Devoto MD, Jose R Montes MD

Diagnosis and Management of Essential Blepharospasm and Hemifacial Spasm

Course: 594 Tuesday
Room: 222 12:45 - 1:45 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: Patients with eyelid and facial spasms frequently present to ophthalmologists. The diagnosis and treatment of essential blepharospasm and hemifacial spasm is straightforward and gratifying. Through lectures, video, and panel discussions, participants will learn to manage these patients confidently.

Objective: This course will familiarize participants with the diagnostic features and current treatment options for blepharospasm, hemifacial spasm, and related facial dystonias.

*Senior Instructor(s): Richard L Anderson MD FACS**

*Instructor(s): Michael T Yen MD**

Pediatric Ophthalmology, Strabismus

Management of Pediatric Cataracts

Course: 156 Sunday
Room: 222 10:15 AM - 12:30 PM
Education Level: ADV Target Audience: COMPSUB

Synopsis: This course highlights the paradigms for management of pediatric cataracts. Adhering to these paradigms will enhance intraoperative performance and ensure a good technical and functional outcome.

Objective: At the conclusion of this course, the attendee will understand the clinical pearls and tips for enhancing outcomes following pediatric cataract surgery.

*Senior Instructor(s): Abhay Raghukant Vasavada MBBS FRCS**

Instructor(s): Rupal H Trivedi MBBS MS, Kanwal K Nischal MBBS*, Michael O'Keefe MD, Deborah K VanderVeen MD*, Bharti Kishore Nihalani Gangwani MD*

ROP Screening and Treatment: What You Wanted to Know but Were Afraid to Ask (Intermediate/Advanced)

Course: 166 Sunday
Room: 208 10:15 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Retinopathy of prematurity (ROP) can be a difficult and challenging disease to manage. This course is intended for established screeners / treaters familiar with ROP management who would like to enhance their proficiency. This course will provide practical advice on how to safely and effectively screen and treat children, with an emphasis on clinical pearls designed to improve the approach to this condition. Topics include updated findings of the Early Treatment for ROP study (ETROP), the accurate diagnosis of plus disease, pitfalls in managing aggressive posterior ROP, the impact of oxygen on ROP, the appropriate time to refer for vitreoretinal surgery, medicolegal issues, the role of telemedicine and photodocumentation, and the use of anti-VEGF therapy. This will be followed by a presentation of challenging cases and how they were managed.

Objective: At the conclusion of this course, the attendee will be better able to recognize children progressing to treatment-requiring ROP and to more effectively deal with the challenges of laser treatment.

*Senior Instructor(s): Thomas Lee MD**

Instructor(s): Michael F Chiang MD, William V Good MD, Kenneth W Wright MD*, G Baker Hubbard MD, R V Paul Chan MD, Anne M Menke RN PhD, Maria Ana Martinez-Castellanos MD*

New Techniques for Strabismus Surgery

Course: 117 Sunday
Room: 217 2:00 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Over the past several years, important surgical innovations have made strabismus surgery safer and more effective. This course will teach the use of novel strabismus surgical techniques, including grooved hook for suturing the muscle insertion, minimally invasive techniques (rectus central tenotomy and plication), and use of amniotic membrane transplant for restrictive strabismus. Video will be presented to help teach the techniques. Outcome studies of surgical procedures will be presented.

Objective: At the conclusion of this course, the attendee will be able to use new strabismus surgical techniques to improve surgical outcomes and reduce complications.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

*Senior Instructor(s): Kenneth W Wright MD**

Instructor(s): Yi Ning Strube MD, Luke W Deitz MD

Approach to Genetic Eye Diseases for the Comprehensive Ophthalmologist

Course: 216 Sunday
Room: R03 4:30 - 5:30 PM
Education Level: BAS Target Audience: COMP

Synopsis: This course will focus on the comprehensive ophthalmologist's role in the diagnosis and treatment of genetic eye diseases. The course will review the pertinent medical background, review the availability of diagnostic testing, including how to obtain it, and discuss nondirective counseling. Illustrative cases will be used to highlight pertinent aspects of the management of these patients.

Objective: By the end of this course, participants will be able to understand (1) how to approach and evaluate a patient and family with a genetic eye disorder, (2) the principles of inheritance patterns, (3) where to find reliable information and laboratory diagnostics, including the NIH eyeGENE network on genetic disorders, (4) guidelines on genetic counseling, and (5) complexities of the process.

Senior Instructor(s): Johnny Tang MD

Instructor(s): J Bronwyn Bateman MD, Wadih M Zein MD, Pamela C Sieving MA MS AHIP

NEW Diplopia After Cataract and Refractive Surgery

Course: 237 Sunday
Room: 215 4:30 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Diplopia after cataract or refractive surgery is frustrating for the anterior segment surgeon and can be challenging for the strabismus specialist. We will provide a case-based approach to the evaluation and management of patients with diplopia after cataract or refractive surgery. Case presentations will illustrate how some problems can be avoided prior to anterior segment surgery, and other cases will illustrate how to manage the patient when problems occur. Specific topics to be covered will include monocular vs. binocular diplopia, pre-existing strabismus, need for a specific refractive state, need for a specific fixation pattern, longstanding optical blur, myotoxicity, and technical or optical problems. Audience participation and discussion will be encouraged.

Objective: At the completion of this course, the attendee should have a greater understanding of how to avoid diplopia after cataract and refractive surgery, and if diplopia occurs, how to evaluate and manage the patient.

*Senior Instructor(s): Jonathan M Holmes MD**

Instructor(s): Rosanne Superstein MD

★ Difficult Strabismus Problems: Diagnosis and Management 2013

Course: 300 Monday
Room: 223 9:00 - 11:15 AM
Education Level: ADV Target Audience: SUB

Synopsis: Case presentations of complex strabismus will form the basis for panel discussion and audience participation in this course on proper diagnosis and management. Diagnostic techniques such as orbital imaging, forced ductions, saccadic velocity, and active force generation testing will be discussed as they apply to specific cases. Reoperations, cranial nerve palsies, trauma, Duane syndrome, Brown syndrome, and thyroid ophthalmopathy are representative topics.

Objective: This course is intended to enhance participants' ability to accurately diagnose and treat complicated strabismus patients. Surgical and nonsurgical options will be elaborated.

Senior Instructor(s): Burton J Kushner MD

*Instructor(s): Edward G Buckley MD, David G Hunter MD PhD**

NEW The Developmental Glaucomas: Diagnosis and Management in 2013

Course: 321 Monday
Room: R05 9:00 - 11:15 AM
Education Level: ADV Target Audience: SUB

Synopsis: This course will present the diagnostic evaluation, differential diagnosis, and management of the pediatric glaucomas. Recent advances in medical and surgical therapies, including antifibrotic therapy (mitomycin C and 5-fluorouracil), glaucoma drainage devices, and cycloablative procedures, will be discussed.

Objective: At the conclusion of the course, the attendees will be familiar with the holistic treatment of the pediatric glaucomas using medical, surgical, genetic, and rehabilitation approaches in an integrated manner.

Senior Instructor(s): Anil K Mandal MD

Instructor(s): Peter Andreas Netland MD PhD, David S Walton MD**, Dale K Heuer MD*, Eve J Higginbotham MD*

Nightmares in Pediatric Cataract Surgery

Course: 333 Monday
Room: 221 10:15 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: In this video- and case-based presentation, cataract surgery in children with association of anterior segment trauma, anterior segment dysgenesis, microcornea, subluxation, posterior lenticonus, persistent fetal vasculature, coloboma, after keratoplasty (penetrating / endothelial), after glaucoma filtering surgery, uveitis, and extended anterior capsulorrhexis will be discussed. These cases are prone to develop intraoperative complications. Modifications in standard surgical technique will be discussed.

Objective: At the end of this course, the attendee will be able to identify challenging situations that arise in complicated pediatric cataract surgery, including the surgical modifications required and the optimal outcomes of surgery.

Senior Instructor(s): Ramesh Kekunnaya MBBS MD

Instructor(s): Pravin Vaddavalli MD, Muralidhar Ramappa MBBS, Kanwal K Nischal MBBS, Jatin Naresh Ashar MD*

Strabismus Surgery: A Comprehensive Approach

Course: 377 Monday
Room: 222 2:00 - 3:00 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: There are many techniques for performing any particular strabismus surgery. This course will consist of video-based, step-by-step strabismus surgery, ranging from basic surgeries to advanced. The techniques will be explained along with the logic behind each step of the surgery, including a few tips on the possible complications.

Objective: Knowing, understanding, and seeing of all the techniques is helpful for surgeons who perform strabismus surgery. The intention of this course is to give a broader view of surgical concepts for all strabismus surgeries and to clarify any doubts at the end with case presentations and a question-and-answer session.

Senior Instructor(s): Venkateshwar Bhoompally MD

Instructor(s): Ramesh Kekunnaya MBBS MD, Sherwin Isenberg MD, Federico G Velez MD, Stacy L Pineles MD, Inez B Y Wong MBBCHIR*

NEW Diplopia Made Ridiculously Simple: Management of Diplopia for the Comprehensive Ophthalmologist

Course: 407 Monday
Room: R03 3:15 - 4:15 PM
Education Level: BAS Target Audience: COMP

Synopsis: This course will use diplopia case examples to illustrate important clinical management concerns, including when to consider medical workup, surgery, and non-surgical methods of alleviating diplopia. This course will demonstrate how press-on (Fresnel) prisms, ground-in prisms, and occlusive methods can be used to treat diplopia.

Objective: At the conclusion of this course, the attendee will be able to (1) identify diplopic patients who need further evaluation for medical issues, (2) understand which diplopic patients should be managed surgically vs. nonsurgically, (3) clinically evaluate for and appropriately prescribe press-on and ground-in prisms, and (4) understand the indications for occlusive devices (eg, spot patch, occlusive contact lens, and frosted tape) for diplopia.

*Senior Instructor(s): Laura B Enyedi MD**

Instructor(s): Michelle J Cabrera MD

Management of Strabismus in Thyroid Eye Disease

Course: 425 Monday
Room: 224 4:30 - 5:30 PM
Education Level: INT Target Audience: SUB

Synopsis: Strabismus associated with thyroid eye disease (TED) is one of the more challenging types of ocular misalignments to correct. A variety of techniques have been described using adjustable as well as fixed sutures. This course will review the steps in the preoperative examination of the patient in the office, the gathering of necessary information to determine the muscles to be operated on, and the operative technique used by the instructors. Video clips will be used to partly transfer the necessary skills. A summary of the literature on the topic will also be given.

Objective: Upon completion of the course, participants will be able to (1) list the clinical data necessary for management of the patient with TED and strabismus, (2) describe the operative steps involved in the surgical technique used to correct the ocular misalignment, and (3) understand the differences between the different surgical techniques for the correction of strabismus in TED and the pros and cons for each.

*Senior Instructor(s): Elias I Traboulsi MD**

Instructor(s): Paul Joseph Rychwalski MD, Natalie Kerr MD

Pediatric Uveitis: What You Need to Know

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Uveitis Society

Course: 512 Tuesday
Room: 209 9:00 - 10:00 AM
Education Level: INT Target Audience: SUB

Synopsis: This course will cover the challenging issue of pediatric uveitis through case presentation and interactive discussion with the audience. More than 10% of blindness due to uveitic conditions occurs in the pediatric population. Among etiologic entities, juvenile idiopathic arthritis, infectious diseases, and pars planitis remain predominant.

Objective: At the conclusion of this course, the attendee will be able to diagnose common intraocular inflammatory conditions in children, evaluate the severity of disease, and propose a tailored workup. Therefore it will be possible to select the best therapeutic strategy in each situation and propose systemic immunosuppressors, when necessary.

*Senior Instructor(s): Janet Louise Davis MD**

Instructor(s): Bahram Bodaghi MD PhD, Debra A Goldstein MD**

What's New and Important in Pediatric Ophthalmology and Strabismus for 2013

Jointly Sponsored by the Academy's Annual Meeting Program Committee and the American Association for Pediatric Ophthalmology and Strabismus (AAPOS)

Course: 569 Tuesday
 Room: 221 12:45 - 3:00 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will provide a stimulating overview of important publications from a variety of peer-reviewed journals from 20012/2013 in the field of pediatric ophthalmology and strabismus.

Objective: At the conclusion of this workshop, attendees will be able to (1) understand the latest research in retinopathy of prematurity prevention and treatment, (2) understand the causes of various forms of strabismus, as elucidated by the most recent research, (3) be aware of the resources available for genetic testing and how to more wisely implement genetic testing into their practices, (4) understand trends in pediatric cataract and refractive surgery and implement this new information into their practices, and (5) understand the latest information on therapeutic treatment options for amblyopia.

Senior Instructor(s): Jitka L Zabal-Ratner MD

Instructor(s): Darron A Bacal MD, Arlene V Drack MD*, Patrick J Droste MD, Majida A Gaffar MD, Ramesh Kekunnaya MBBS MD, Stacy L Pineles MD, Terri L Young MD*

Imaging Studies in Strabismus

Course: 577 Tuesday
 Room: 346 12:45 - 3:00 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: In order to recognize the mechanism of eye movement disorders, imaging studies of brain and orbit are essential. The most recent imaging studies show not only anatomical abnormalities but also functional abnormalities of extraocular muscles. Various types of strabismus cases are associated with abnormal findings on images, such as thyroid ophthalmopathy, esotropia with high myopia, strabismus reoperation, rupture of extraocular muscle after trauma, and special types of congenital strabismus. It is important for comprehensive ophthalmologists and strabismus specialists to be familiar with recent advances in imaging studies of strabismus.

Objective: This course will show the findings of orbital and brain CT/MRI and present strategies for the treatment of special types of strabismus. At the conclusion of this course, the attendee will be able to recognize the importance of imaging studies and understand how their findings instruct the management of strabismus.

Senior Instructor(s): Miho Sato MD PhD

Instructor(s): Joseph L Demer MD PhD*, Tsuranu Yokoyama, Jeong-Min Hwang MD, Sonal R Farzavandi FRCS, Jonathan M Holmes MD*

Refractive Surgery

The Surgical Correction of Astigmatism

Course: 108 Sunday
 Room: 355 10:15 AM - 12:30 PM
 Education Level: INT Target Audience: COMP

Synopsis: This course will supply participants with the necessary principles, theories, and practical instruction in the various forms of astigmatic keratotomy (PRI, limbal relaxing incisions) and nonincisional astigmatism correction (LASIK, toric IOLs).

Objective: Attendees will gain an understanding of techniques used to evaluate and manage astigmatism as a primary procedure and as an adjunct to lens surgery.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Jean-Luc Febraro MD*

Instructor(s): Hamza N Khan MD FACS*, Kurt A Buzard MD, Miles H Friedlander MD, Ronald N Gaster MD FACS*, David H Haight MD, Jack T Holladay MD MSEE FACS*, Douglas D Koch MD*, R Bruce Wallace MD*

Phakic IOLs

Course: 109 Sunday
 Room: R02 10:15 AM - 12:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will educate the participant on the use of phakic IOLs in refractive surgery. Topics of discussion will include patient selection and preoperative testing, IOL power calculations, postoperative care, complication management, surgical technique, and managing residual refractive error. Phakic IOLs currently available in the United States will be emphasized.

Objective: At the course conclusion, the participant will understand indications for the use of phakic IOLs and key management aspects of phakic IOL candidates.

Note: This is the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Thomas M Harvey MD*

Instructor(s): Sherman W Reeves MD MPH*, David R Hardten MD*, Stephen S Lane MD*, Jack T Holladay MD MSEE FACS*, Scott D Barnes MD*, Paul J Harton Jr MD*, Gregory Parkhurst MD*, Elizabeth A Davis MD*

Femto Laser: Diagnosis and Management of Intraoperative and Postoperative Complications With the Use of a Femtosecond Laser for LASIK Surgery

Course: 171 Sunday
 Room: R03 11:30 AM - 12:30 PM
 Education Level: BAS Target Audience: COMPSUB

Synopsis: We will discuss the surgical complications that occur with femtosecond laser flap creation: data entry errors, centration difficulties, suction loss, interface entry issues, vertical gas breakthrough, and flap tears. Also covered will be the diagnosis and management of postoperative complications: flap slippage, interface inflammation, how to distinguish these from diffuse lamellar keratitis, interface haze, transient light sensitivity, rainbow glare, etc. This course is recommended for those surgeons who have recently purchased or already use a femtosecond laser.

Objective: This course will educate users of the potential risks associated with femtoLASIK flap creation.

Senior Instructor(s): Christopher L Blanton MD*

Instructor(s): Perry S Binder MD*, Jonathan H Talamo MD*, Ronald R Krueger MD*, Sonia H Yoo MD*

YO A Step-by-Step Primer to Starting LASIK in 2013

Jointly Sponsored by the Academy's Annual Meeting Program Committee and the International Society of Refractive Surgery (ISRS)

Course: 178 Sunday
 Room: 209 2:00 - 4:15 PM
 Education Level: BAS Target Audience: SUB

Synopsis: This course will provide an overview of the principles underlying the safe modern practice of LASIK, as well as pearls of surgical technique to benefit the beginning LASIK surgeon. Technology overview will include wavefront sensing, excimer laser, microkeratome, femtosecond, and modern topographic technologies. Prevention and management of complications will be covered.

Objective: The attendee will acquire a broad understanding of the scientific principles underlying the various technologies involved in the practice of LASIK. The course will provide the foundations for patient selection, surgical planning, and operating technique, as well as an overview of complication avoidance and management.

Senior Instructor(s): Dan Z Reinstein MD*

Instructor(s): Daniel S Durrie MD*, David R Hardten MD*, Jack T Holladay MD MSEE FACS*, Stephen G Slade MD FACS*, Gustavo E Tamayo MD*

Danger Zone: Refractive Surgery Nightmares and Worst-Case Scenarios: A Video-Based Course

Jointly Sponsored by the Academy's Annual Meeting Program Committee and the International Society of Refractive Surgery (ISRS)

Course: 187 Sunday
Room: 222 2:00 - 4:15 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Refractive surgery has its own danger zones. Various refractive surgery techniques, from surface ablation to LASIK and phakic IOLs, can have disasters that have to be handled with care. In this course, collagen crosslinking for ectasia and other conditions will be taught. Viscocannula-assisted reinversion of an implantable contact lens will be shown. Topics like flap complications, decentered ablations, and iatrogenic ectasia will be explained in detail. Attendees will be taught how to manage eyes with previous LASIK flaps and how to address problems with Kerarings and other intrastromal ring segments.

Objective: At the conclusion of this course, the attendee will know how to manage refractive surgery catastrophes, perform crosslinking, and treat iatrogenic keratectasia, flap complications, and femtosecond problems.

Senior Instructor(s): Amar Agarwal MD*

Instructor(s): Ronald R Krueger MD*, Athiya Agarwal MD*, Alaa M Eldanasoury MD*, Marguerite B McDonald MD*, Sonia H Yoo MD*, A John Kanellopoulos MD*, Soosan Jacob FRCS, Theo Seiler MD PhD*, Agarwal Ashvin MBBS

NEW Femtosecond Laser for Cornea Surgery: The Actual Options

Course: 312 Monday
Room: R02 9:00 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: The use of femtosecond laser for cornea and refractive surgery has rapidly expanded, to the point that this technology is now the gold standard, state-of-the-art procedure for cornea and refractive treatments. In this course instructors will use video and case presentations to explain the five different femtosecond laser platforms used for most techniques in routine cases such as flap creation, intrastromal ring segment implantation, penetrating, anterior lamellar, and endothelial keratoplasties, and refractive lenticule extraction. The panel will discuss the benefits and advantages of the different laser platforms. Clinical outcomes and complications will also be discussed in detail.

Objective: Attendees will gain information about the similarities and differences among the most popular femtosecond lasers and their use in all the cornea and refractive techniques.

Senior Instructor(s): Arturo J Ramirez-Miranda MD*

Instructor(s): Arturo S Chayet MD*, Ramon Naranjo-Tackman MD*, Alejandro Navas MD*, Marco A Cantero MD, Luis Izquierdo Jr MD, Tito Ramirez-Luquin MD, Enrique O Graue Hernandez MD

Advanced Corneal Topographic Analysis

Jointly Sponsored by the Academy's Annual Meeting Program Committee and the International Society of Refractive Surgery (ISRS)

Course: 349 Monday
Room: 228 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will discuss advanced topographic analysis in the patient evaluation process for the comprehensive clinician and refractive surgeon, focusing on understanding and recognizing normal and abnormal topographic patterns generated by multiple technologies, including standard Placido imaging, slitbeam-based imaging (Orbscan II), Scheimpflug imaging (Pentacam), and wavefront imaging.

Objective: By the conclusion of this course, the participants will be able to (1) identify subtle abnormal topographic patterns that place patients at increased risk for postoperative complications, including ectasia, (2) differentiate truly abnormal preoperative topographies from artifactual images, and (3) effectively utilize topographic imaging techniques to demonstrate corneal pathology before keratorefractive refractive surgery.

Senior Instructor(s): J Bradley Randleman MD

Instructor(s): William J Dupps MD PhD*

Anterior Segment OCT

Course: 376 Monday
Room: 338 2:00 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Optical coherence tomography (OCT) can measure corneal and anterior segment anatomy with micron-level precision. Recent advances in speed and software for corneal power and pachymetry / epithelial thickness mapping makes this technology increasingly useful in a wide variety of diagnostic and surgical planning applications.

Objective: By the conclusion of this course, the participants will be able to use OCT for (1) planning of LASIK and other laser refractive and therapeutic procedures, (2) calculating and selecting IOL power for cataract surgery after previous laser vision correction, (3) detecting forme fruste keratoconus, (4) fitting phakic IOL implants and following postoperative results, and (5) assessing risk for angle closure.

Senior Instructor(s): David Huang MD PhD*

Instructor(s): Georges D Baikoff MD*, Douglas D Koch MD*

State-of-the-Art Use of the Femtosecond Laser for Keratoplasty, Cataract Surgery, and Astigmatic Incisions

Course: 381 Monday
Room: R08 2:00 - 3:00 PM
Education Level: ADV Target Audience: COMP

Synopsis: This course will present worldwide experts to discuss their femtosecond laser surgery experiences.

Objective: Femtosecond laser surgery is a dramatic change from standard methods. Advantages, disadvantages, revolutionary changes in techniques, and different femtosecond laser surgery platforms will be presented.

Senior Instructor(s): Francis W Price Jr MD*

ISRS Laser Refractive Surgery Course

Jointly Sponsored by the Academy's Skills Transfer Advisory Committee and the International Society of Refractive Surgery (ISRS)

Course: 141 Monday
Room: 346 3:15 - 5:30 PM
Education Level: INT Target Audience: SUB

Synopsis: This course will start with the basics of how conventional and laser microkeratomes work and what one needs to know before performing LASIK and surface ablation. It will move on to cover tips, step by step, with presentations discussing the newest applications and developments in LASIK and surface ablation. The prevention and treatment of complications will be covered in detail.

Objective: This course is designed to give participants the information and skills needed for LASIK and surface ablation, including patient selection, basic principles, postoperative care, and management of complications.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Michael C Knorz MD*

Instructor(s): Jason E Stahl MD, Richard L Lindstrom MD*, Jack T Holladay MD MSEE FACS*

Corneal Topographic Analysis and Anterior Segment Imaging: Pearls for Your Clinical Practice

Course: 403 Monday
Room: 217 3:15 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will present a systematic approach to the interpretation of corneal topographies and anterior segment imaging studies using didactic instruction combined with numerous clinical examples. The course will highlight several imaging systems and technologies, including Placido-based topography, single and dual Scheimpflug imaging, OCT, and scanning slit beam imaging.

Objective: At the conclusion of this course, the attendee will understand the different technologies used to image the anterior segment, be able to use the different maps and displays available on multiple devices, know the advantages and disadvantages of the most common topographers and imaging devices, and use the study results to manage common clinical situations in corneal, cataract, and refractive surgery.

*Senior Instructor(s): Mitchell P Weikert MD**

Instructor(s): Douglas D Koch MD, Thomas Kohnen MD*, Cynthia Roberts PhD*, Surendra Basti MBBS*, William J Dupps MD PhD*, Li Wang MD*

Refractive Lensectomy: Indications, Lenses, Formulas, Outcomes

Course: 574 Tuesday
 Room: 342 12:45 - 1:45 PM
 Education Level: ADV Target Audience: COMP

Synopsis: This course will present different approaches using refractive lensectomy as a refractive surgical procedure to achieve spectacle independence for far and near. The indications, contraindications, IOL calculation and selection (monofocal, multifocal, accommodative), and patient selection criteria for successful outcomes will be shown and discussed in a didactic format.

Objective: At the conclusion of this course, the attendee will be able to define the best indications and most frequent contraindications of refractive lens exchange, identify the best IOL calculation method, know how to manage astigmatism, select the best choice for a multifocal IOL and the best cases for accommodative IOLs, and understand practical tips to achieve a high patient satisfaction rate with refractive lens exchange.

*Senior Instructor(s): Jorge L Alio MD PhD**

Instructor(s): Warren E Hill MD, Michael C Knorz MD*, Mark Packer MD*, Eric D Donnenfeld MD*, Andrzej Grzybowski MD**

Secrets of Highly Successful Refractive Cataract Surgery Practices

Course: 585 Tuesday
 Room: 218 12:45 - 1:45 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Newly redesigned from last year to include femtosecond surgery, toric IOLs, limbal relaxing incisions, and aspheric monovision, this course is given by experienced surgeons and practice management experts who will review marketing, patient selection and education, staff organization, biometry / lens selection, and pearls for success.

Objective: Participants will be able to describe the following aspects of successful refractive cataract surgical practices: (1) steps toward successful marketing and patient communication, (2) regulatory, billing, and legal aspects of using premium technology and techniques, and (3) clinical pearls for achieving optimal outcomes.

*Senior Instructor(s): John A Hovanessian MD**

Instructor(s): David R Hardten MD, Kevin J Corcoran**

Solving the High Myopia Problem With Phakic IOLs

Course: 600 Tuesday
 Room: 335 3:15 - 5:30 PM
 Education Level: ADV Target Audience: COMPSUB

Synopsis: This course will present a review of state-of-the-art knowledge on anterior and posterior chamber phakic IOLs, with information on patient, eye, and IOL selection, surgical techniques, and management of intra- and postoperative complications. Special attention will be dedicated to diagnostic instruments for patient selection and follow-up.

Objective: Participants will be able to assess phakic IOLs as a valuable tool in refractive surgery. Experience, imaging, and long-term follow-up will provide a safer approach to phakic IOLs. At the conclusion of this course, attendees will be able to understand the phakic IOL's potential and possible weak points in order to decide whether to add phakic IOLs advanced technology to their practices.

*Senior Instructor(s): Matteo Piovella MD**

Instructor(s): Georges D Baikoff MD, Dimitri Dementiev MD*, Luca Gualdi MD, David R Hardten MD*, Gregory Parkhurst MD**

Retina, Vitreous

Macular OCT: Mastering the Basics

Course: 110 Sunday
 Room: R08 10:15 AM - 12:30 PM
 Education Level: BAS Target Audience: COMP

Synopsis: This course provides basic instruction on accurate interpretation of OCTs of common macular pathologies, as well as instruction on how to identify and prevent common OCT artifacts. The course also provides a clinically meaningful review of indications and limitations of OCT in the diagnosis and management of common macular diseases such as AMD, diabetic maculopathy, epiretinal membrane, macular holes, vitreomacular traction, central serous retinopathy, vascular occlusions, and postoperative cystoid macular edema.

Objective: Upon completion of this course, participants should be able to (1) accurately interpret OCTs of common macular pathologies, (2) describe the indications for and limitations of OCT in the diagnosis and management of macular diseases, and (3) identify, interpret, and correct common OCT artifacts.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

*Senior Instructor(s): John S Pollack MD**

Instructor(s): John S Pollack MD, Cynthia A Toth MD*, Anat Loewenstein MD*, Dante Pieramici MD*, Nadia Khalida Waheed MD*

Retinaws: A Comprehensive Video-Oriented Course on Challenging Retinal Cases in the Operating Room

Course: 159 Sunday
 Room: 221 10:15 AM - 12:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Retina specialists often work in a "shark-infested" world. Unexpected events are a fact of life, and learning how not to get bitten is an effective way to practice safely and efficiently. This course consists of video presentations describing challenging cases and unexpected events during retinal surgery. Faculty will share their experience in predicting, treating, and preventing unexpected outcomes during retinal detachment surgery, diabetic vitrectomy surgery, small-gauge surgery, and complex vitreoretinal surgery.

Objective: At the conclusion of this course, attendees will be able to predict, treat, and prevent unexpected events during and after vitreoretinal surgery.

*Senior Instructor(s): Kourous Rezaei MD**

Instructor(s): Kirk H Packo MD, Francesco Boscia MD*, Virgilio Morales-Canton MD*, Marco Mura MD*, Sundaram Natarajan MD, Hiroko Terasaki MD**

★ Mystery Retina 2013: Interactive Discussion of Challenging Cases

Course: 160 Sunday
 Room: 346 10:15 AM - 12:30 PM
 Education Level: ADV Target Audience: SUB

Synopsis: The instructors will present 20 to 25 diagnostically challenging "mystery retina" cases. The majority of the presentations will include interpretation of color photographs, fluorescein angiography, and OCT imaging studies. When indicated, indocyanine green angiography, echography, autofluorescence, enhanced depth imaging, infrared images, electrophysiologic studies, microperimetry, CT, MRI, cytology, and/or histopathology will also be shown. The cases will be presented as unknowns, and audience participation will be encouraged. At the completion of the case presentations, the attendees will receive a handout summarizing the cases, complete with pertinent references and images.

Objective: At the conclusion of this course, attendees will be better able to assess and evaluate a variety of diagnostically challenging "mystery retina" cases. They should also be able to establish a more complete differential diagnosis, know how to make the best use of ancillary diagnostic tests, and formulate a definitive treatment plan.

*Senior Instructor(s): William F Mieler MD**

Instructor(s): Lee M Jampol MD, Jerry A Shields MD, Richard F Spaide MD*, Lawrence A Yannuzzi MD*

Visual Electrophysiology Testing: Principles and Clinical Applications

Course: 161 Sunday
Room: 340 10:15 - 11:15 AM
Education Level: INT Target Audience: COMPSUB

Synopsis: Visual electrophysiologic tests are diagnostic tools that are helpful or essential in a variety of retinal and visual disorders. This course, approved by the International Society for Clinical Electrophysiology of Vision (ISCEV), provides a comprehensive overview of clinical electrophysiologic tests with a focus on basic principles (including ISCEV standards) and clinical applications. A variety of clinical cases will be presented to illustrate the appropriateness and utility of visual electrophysiology testing.

Objective: At the conclusion of this course, the attendee will understand the basic principles and clinical applications of full-field electroretinogram (ERG), multifocal ERG, electro-oculogram, and pattern visual evoked potential, enabling the attendee to incorporate these tests effectively in clinical practice.

Senior Instructor(s): Byron L Lam MD*

Instructor(s): Michael F Marmor MD*, Mitchell Brigell PhD*

Diagnosis and Treatment of Polypoidal Choroidal Vasculopathy

Course: 175 Sunday
Room: R03 2:00 - 4:15 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Polypoidal choroidal vasculopathy (PCV) is a condition characterized by multiple, recurrent, serosanguineous pigment epithelial detachment and neurosensory retinal detachment due to abnormal choroidal polypoidal, aneurysmal lesions. PCV is particularly prevalent in Asians and occurs in up to 40% of cases presenting as neovascular AMD; it may pose a diagnostic challenge to ophthalmologists. This instruction course aims to provide a comprehensive overview of the diagnosis and treatment of PCV through review of the currently available literature, illustrative case examples, and interactive panel discussion.

Objective: By the completion of this course, participants will understand the epidemiology of PCV, the differences between PCV and AMD, the use of various diagnostic tools for PCV, the available treatment options for PCV, and the overall management strategy for PCV.

Senior Instructor(s): Timothy Y Lai MBBS*

Instructor(s): Fumi Gomi MD PhD*, Gregg T Kokame MD*, Adrian H Koh MD*, Won Ki Lee MD*

Update on Treatments for Diabetic Retinopathy: Clinically Relevant Results from the Diabetic Retinopathy Clinical Research Network

Course: 186 Sunday
Room: R05 2:00 - 4:15 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will present clinically relevant results of recently completed Diabetic Retinopathy Clinical Research Network (DRCRnet) protocols and through case examples will demonstrate implementation of these results into clinical practice.

Objective: At the conclusion of this course, the attendee will be able to describe the results of recently completed DRCRnet protocols. Specifically, the attendee will learn what role topical NSAIDs can play in the progression of noncentral diabetic macular edema (DME) to center-involved DME. The attendee will learn whether intravitreal ranibizumab is beneficial in decreasing the number of vitrectomies in eyes with vitreous hemorrhage secondary to proliferative diabetic retinopathy (PDR). The course will also include a review of the ongoing DRCRnet protocols, including the trial comparing ranibizumab, bevacizumab, and aflibercept for DME and the ranibizumab for PDR trials. Finally, the attendee will be able to apply these results to clinically relevant situations in daily practice.

Senior Instructor(s): Carl W Baker MD*

Instructor(s): Abhish R Bhavsar MD*, Neil M Bressler MD*, Susan B Bressler MD*, Scott M Friedman MD*, Lee M Jampol MD*, Jennifer K Sun MD*, John A Wells III MD*

Spectral Domain OCT Interpretation for the General Ophthalmologist

Course: 192 Sunday
Room: 228 2:00 - 4:15 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: The purpose of this course is to provide general ophthalmologists with basic knowledge for incorporating spectral domain OCT (SD-OCT) into clinical practice. Attendees will be given an overview of scanning protocols on various SD-OCT systems on the market today. Lecturers will present an organized method for analysis of images and identification of pathology in the anterior segment, optic nerve, vitreous, macula, and choroid. The course will have a special focus on use of SD-OCT in patients with glaucoma and/or retinal disease.

Objective: At the conclusion of this course, the attendee will be able select appropriate SD-OCT scanning protocols and analyze pathology in SD-OCTs of the anterior segment, optic nerve, and posterior segment, especially to detect preperimetric glaucoma, progression of glaucoma, and the most common retinal pathology.

Senior Instructor(s): Purnima S Patel MD

Instructor(s): Vikas Chopra MD*, Rajeev Kumar R Pappuru MBBS MD, Srinivas R Sadda MD*, Alexander C Walsh MD*

Retinal and Choroidal Manifestations of Selected Systemic Diseases 2013

Jointly Sponsored by the Academy's Annual Meeting Program Committee and Pan-American Retina and Vitreous Society

Course: 196 Sunday
Room: R06 2:00 - 4:15 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will discuss the current state of retinal and choroidal manifestations of selected systemic diseases, including uveitis in selected diseases (toxoplasmosis, tuberculosis, Lyme, dengue fever, Bartonella / catscratch disease, Toxocara), changes in pregnancy, vascular tumors, syphilis, paraneoplastic syndromes, atypical uveal metastasis, systemic hypertension, Vogt-Koyanagi-Harada syndrome, and fungal diseases. Experts from the United States, Asia, and South America will discuss the impact that systemic diseases have had in the posterior pole of the eye worldwide. Topics are rotated every year to cover a wider variety of diseases.

Objective: At the conclusion of this course, participants will understand the variety of retinal and choroidal manifestations of selected systemic diseases in and outside the United States.

Senior Instructor(s): J Fernando Arevalo MD FACS*

Instructor(s): Rubens Belfort Jr MD PhD*, Carol L Shields MD, Jerry A Shields MD, William F Mieler MD*, Careen Yen Lowder MD PhD*, Lihteh Wu MD*, Francisco J Rodriguez MD*, Alay S Banker MD

Retinal OCT Interpretation 101

Course: 199 Sunday
Room: R08 2:00 - 3:00 PM
Education Level: BAS Target Audience: COMP

Synopsis: OCT is increasingly being used to diagnose and manage retinal diseases. This is an introductory, basic-level course for those who are not retinal specialists and are interested in learning about OCT and interpretation of OCT images of retinal conditions. In this course, we will review the fundamentals of OCT, with emphasis on interpreting and recognizing OCT images obtained from various retinal conditions, through examples, to become more proficient at differentiating normal from pathologic findings.

Objective: At the conclusion of this course, the participants will be able to (1) discuss how OCT works and list differences between time domain and spectral domain OCT, (2) understand potential sources of artifacts, (3) recognize OCT images of common retinal diseases, and (4) learn to incorporate OCT into a practice.

Senior Instructor(s): Judy E Kim MD

Instructor(s): Jennifer Irene Lim MD*

Simplifying Treatment of Diabetic Retinopathy for the Comprehensive Ophthalmologist: What You Really Need to Know in 2013

Course: 208 Sunday
 Room: 217 3:15 - 4:15 PM
 Education Level: INT Target Audience: COMP

Synopsis: A review of recent publications and clinical trials involving diabetic retinopathy (DR), including Diabetes Control and Complications Trial, Early Treatment Diabetic Retinopathy Study, Diabetic Retinopathy Study, etc. Indications / techniques of laser, control of systemic disease, anti-VEGF intravitreal injections and steroid treatment in the management of DR will be discussed. Actual patient cases and management with panel discussion / audience participation will include every DR scenario seen in clinical practice.

Objective: To present management and treatment approaches for DR, enabling participants to understand (1) focal and panretinal photocoagulation, (2) anti-VEGF intravitreal injections, and (3) other pharmacotherapy. At the conclusion of this course, attendees will be confident about when and how to use laser based on current 2013 DR literature (DRCRnet articles on laser, ranibizumab, and steroids) and proficient in determining when and how often to implement intravitreal injections as an adjunct to laser.

Senior Instructor(s): John O Mason MD

Instructor(s): Richard M Feist MD, Michael A Albert MD, Thomas A Finley MD, Jacob Yunker MD

How to Interpret Fundus Fluorescein Angiography and Autofluorescence

Course: 306 Monday
 Room: 228 9:00 - 11:15 AM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will teach how to interpret fundus fluorescein angiography (FA) and fundus autofluorescence images (FAF). A step-by-step guide will be used, supported by (1) targeted review of the retinochoroidal anatomy, (2) illustrations to acquire a "visual" understanding of fluorescence patterns, and (3) numerous FA and FAF images correlating these patterns with fundus findings. The majority of vascular, degenerative, inflammatory, hereditary, and tumoral chorioretinal pathologies will be reviewed, and the audience will be taught how to recognize these diseases based on the imagery.

Objective: The attendee will be empowered with the know-how to recognize and interpret the angiographic and autofluorescent features of the majority of chorioretinal pathologies and to recognize these disease entities based on the angiographic and autofluorescence findings.

Senior Instructor(s): Sawsan R Nowlaty MD

Instructor(s): Hardeep S Dhindsa MD, Albert T Vitale MD*

NEW Challenging Cases in Neovascular AMD

Jointly Sponsored by the Academy's Annual Meeting Program Committee and The Retina Society

Course: 308 Monday
 Room: R04 9:00 - 11:15 AM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Recently, several mechanisms have been proposed for neovascular AMD, and new frontiers in genetics have been referred to. Currently, the treatment of neovascular AMD with pharmacologic agents has been well established, and novel drugs have been developed to control the disease. Nevertheless, the precise mechanism of disease and the reasons for treatment failure in some cases remain unknown. This course will offer an interactive discussion of unresponsive, atypical, and recalcitrant cases of neovascular AMD by international experts in this field.

Objective: This session will provide an outline of some intricate neovascular AMD cases, propose a rationale for their complexity, and present appropriate treatment strategies. Anti-VEGF agents will be discussed, as well as other pharmacologic drugs and nonpharmacologic treatment. At the conclusion, the attendee will be able to understand possible mechanisms for such cases of neovascular AMD with poor prognosis and suggest a suitable treatment strategy for each presented case.

Senior Instructor(s): Luiz Lima MD

Instructor(s): William F Mieler MD*, Philip J Rosenfeld MD PhD*, Pravin U Dugel MD*, Frank G Holz MD*, Lihteh Wu MD*, Michel Eid Farah MD, Eduardo B Rodrigues MD*

Management of High-Risk ROP in the 21st Century: Thermal-Destructive vs. Pharmacologic Treatment

Course: 311 Monday
 Room: 217 9:00 - 11:15 AM
 Education Level: ADV Target Audience: COMPSUB

Synopsis: This course will describe the identification of high-risk ROP eyes and will present the rationale for both thermal and pharmacologic treatment.

Objective: By the conclusion of this course, attendees will be better able to (1) identify aggressive posterior ROP, (2) distinguish typical stage 3 ROP from flat stage 3 ROP, (3) understand the rationale for both thermal (laser) and pharmacologic (anti-VEGF) treatment, (4) be familiar with the technique of current thermal laser treatment for posterior retinal disease, specifically dealing with flat neovascularization, and (5) be familiar with the technique of off-label pharmacologic management using available FDA-approved anti-VEGF drugs.

Senior Instructor(s): Michael T Trese MD*

Instructor(s): Antonio Capone Jr MD*, Kimberly A Drener MD PhD*, Lois E H Smith MD PhD*

NEW Vitreoretinal Surgery: Video Presentation and Discussion

Jointly Sponsored by the Academy's Annual Meeting Program Committee and the European Vitreo-Retinal Society

Course: 316 Monday
 Room: R03 9:00 - 11:15 AM
 Education Level: INT Target Audience: SUB

Synopsis: This course will present a large number of surgical videos from around the world that highlight advances in vitreoretinal surgery. The course will update vitreoretinal surgeons on the newest surgical techniques and their advantages and disadvantages. The indications for various surgical approaches will be discussed, along with surgical tips and specific approaches for a variety of clinical scenarios.

Objective: At the conclusion of this course, the attendee will be familiar with advances in vitreoretinal surgical techniques and will have a better understanding of newest techniques.

Senior Instructor(s): Ron Afshari Adelman MD MPH

Instructor(s): Colin McCannel MD*, Frank H Koch MD*, Jerzy Nawrocki MD PhD, Gaurav K Shah MD*, Cesare Forlini MD, Antonia M Jousseaume MD PhD, Hassan Aly Mortada MD**, Giampaolo Gini MD, Grazia Pertile MD, Ihab S Othman MD, Ivan Fiser MD PhD, Barbara Parolini MD**, Sengul C Ozdek MD*

Diabetic Macular Edema: 2013 Update on Management

Course: 339 Monday
 Room: 225 10:15 AM - 12:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will summarize the molecular mechanisms, imaging studies, control of systemic factors, laser therapies, new pharmacotherapies, and surgical strategies in the management of diabetic macular edema (DME). Major clinical trials (Diabetes Control and Complications Trial, Epidemiology of Diabetes Interventions and Complications, UK Prospective Diabetes Study, Action to Control Cardiovascular Risk in Diabetes, Early Treatment Diabetic Retinopathy Study, Diabetic Retinopathy Study, and Diabetic Retinopathy Clinical Research) will be reviewed. There will be case presentations / discussion by a panel.

Objective: At the conclusion of this course, the attendees will be able to (1) recognize the molecular mechanisms of DME, (2) review major clinical trials on DME, (3) understand the role of imaging studies, and (4) manage DME patients based on a combination approach of control of systemic factors, laser therapy, pharmacotherapy (anti-VEGF and steroids), and surgical therapies.

Senior Instructor(s): Arup Das MD PhD*

Instructor(s): Thomas R Friberg MD*, Robert N Frank MD, Lloyd P Aiello MD PhD*, Michael S Ip MD*, George A Williams MD*, Andre J Witkin MD

NEW Your First 20 Dates With the Internal Limiting Membrane: Tips on Macular Surgery Techniques for Beginners

Course: 344 Monday
Room: 210 10:15 - 11:15 AM
Education Level: ADV Target Audience: COMPSUB

Synopsis: This course will outline principles of macular surgery, management of complications, and an approach to extended indications of internal limiting membrane (ILM) peel. A practical and interactive way to achieve successful ILM peel for the beginner will be discussed, with interesting videos. Specific topics will include instrumentation, imaging modalities in evaluation of the vitreomacular interface, vital dyes and safety considerations, techniques of ILM peel, tips for avoiding complications, and the role of ILM peel in cases other than macular holes. Audience participation will be encouraged, and a comprehensive handout will be provided.

Objective: Upon completion of the course, the attendee will have gained greater insight into safe and efficient ways of performing macular surgery. The course will provide beginners with a foundation for developing ILM peel skills and understanding of how to manage complications during macular surgery.

Senior Instructor(s): Malhar Soni MD MS DNB FRCS*

Instructor(s): David R Chow MD*, Peter W Stalmans MD PhD*, Paul E Tornambe MD*

Diabetic Vitrectomy

Course: 357 Monday
Room: R08 11:30 AM - 12:30 PM
Education Level: ADV Target Audience: SUB

Synopsis: This course will use video and panel discussions, along with some didactic lecturing, to review the current indications, techniques, and results of vitrectomy for complications of proliferative diabetic retinopathy and diabetic macular edema. The merit of preoperative and postoperative adjunctive treatments (such as preoperative intravitreal bevacizumab or postoperative tamponade) will also be discussed. Emphasis will be placed on highlighting the advantages of each technique, particularly in situations shown on the video presentations.

Objective: At the completion of the course, attendees will be familiar with several intraoperative techniques and maneuvers that can be employed to increase anatomic and visual success. Moreover, attendees will be able to judiciously employ preoperative, intraoperative, and postoperative adjunctive treatments that will benefit the patient.

Senior Instructor(s): Petros Carvounis MD FRCS*

Instructor(s): Andrew J Barkmeier MD, Jorge A Fortun MD*

★ Diagnostic Ophthalmic Ultrasonography

Course: 372 Monday
Room: R04 2:00 - 4:15 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will present a slide and video demonstration of diagnostic ophthalmic ultrasonographic techniques. Several case presentations will be included to highlight the evaluation, interpretation, and differentiation of a wide variety of ophthalmic disorders. Ultrasonographic findings will be correlated with fundus photography, OCT, computed tomography, MRI, indocyanine green angiography, fluorescein angiography, and histopathology.

Objective: This course will review techniques of diagnostic ophthalmic ultrasonography, including B-scan, diagnostic A-scan, and ultrasound biomicroscopy. The course will highlight the interpretation and diagnostic features of ultrasonographic images using well-illustrated cases. Correlation with ancillary diagnostic tests will also be presented.

Senior Instructor(s): Brandy C Hayden BS

Instructor(s): Arun D Singh MD

Diabetes 2013: Course on Diabetic Retinopathy

Course: 139 Monday
Room: 333 3:15 - 5:30 PM
Education Level: INT Target Audience: COMP

Synopsis: This course will present a rational approach to the diagnosis and treatment of diabetic retinopathy based on first understanding results and recommendations of the Diabetic Retinopathy Study and Early Treatment Diabetic Retinopathy Study and subsequently reviewing DRCRnet publications that may modify some of those recommendations. Case presentations made to a panel of experts will illustrate the role of OCT and pharmacotherapy relative to laser therapy.

Objective: By the conclusion of this course, participants will be able to understand (1) the clinical indications for laser treatment of diabetic retinopathy and (2) the role of pharmacotherapy and OCT in current management of diabetic retinopathy.

Note: This is also the lecture portion of a Skills Transfer lab. To enroll in the lab, see the Skills Transfer section.

Senior Instructor(s): Keye Luc Wong MD*

Instructor(s): Abdhish R Bhavsar MD*, Alexander J Brucker MD*, Emily Y Chew MD, Harry W Flynn MD*, Arthur D Fu MD, Justin L Gottlieb MD, Sam Edward Mansour MD*

Advanced Vitreoretinal Surgical Techniques and Instrumentation

Course: 392 Monday
Room: 221 3:15 - 5:30 PM
Education Level: ADV Target Audience: SUB

Synopsis: This interactive, case-based course will highlight the latest developments in vitreoretinal surgery. The panel will make extensive use of videos to discuss the most advanced approaches to vitreoretinal surgery, including the advantages of newer instrumentation.

Objective: At the end of this course, attendees will be familiar with the latest advances in surgical instrumentation and techniques used for the treatment of macular diseases, retinal detachment, ocular trauma, retained lens material, and diabetic retinopathy.

Senior Instructor(s): Sunir J Garg MD*

Instructor(s): Julia A Haller MD*, Tarek S Hassan MD*, Allen C Ho MD*, Mark W Johnson MD*, Carl D Regillo MD FACS*, George A Williams MD*

Retinal Pharmacotherapy

Course: 402 Monday
Room: 225 3:15 - 5:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: The management of retinal diseases has changed in recent years, as the focus has moved into pharmacologic treatments. Several currently existing and upcoming drugs are being used to treat various retinal diseases. This course will provide an in-depth knowledge of the drugs in retinal pharmacotherapy.

Objective: This course will serve as an overview of how various drugs may work in the retina. The session will present cutting-edge results of clinical trials, such as the Comparison of AMD Treatment Trial (CATT), as well as an overview of the techniques and complications in retinal pharmacotherapy. The most important drugs available in clinical practice, ranibizumab (Lucentis), bevacizumab (Avastin), aflibercept (Eylea), and dexamethasone intravitreal implant (Ozurdex), will be presented in detail. At the conclusion, the attendee will be able to understand the indications, applications, and status of drugs available in retinal pharmacotherapy.

Senior Instructor(s): Eduardo B Rodrigues MD*

Instructor(s): Andrew P Schachat MD*, Michel Eid Farah MD, Quan Dong Nguyen MD*, Carsten H Meyer MD**, Philip J Rosenfeld MD PhD*, William F Mieler MD*, Fernando M Penha MD*

Instruction Courses

NEW Vitreoretinal Surgical Rounds, Unleashed!

Course: 424 Monday
Room: 338 4:30 - 5:30 PM
Education Level: ADV Target Audience: COMPSUB

Synopsis: This course will feature an interactive panel discussion with debate about different surgical approaches to a wide spectrum of vitreoretinal pathology and management of complications during vitreoretinal surgery and in the postoperative period. Challenging cases will be presented, with drawings, intraoperative photos, and high-definition videos simulating the Saturday morning Duke vitreoretinal surgical rounds.

Objective: At the conclusion of this course, the attendee will be able to (1) determine the differences between and proper selection of 20-, 23-, 25-, and 27-gauge vitrectomy instrumentation, (2) identify and manage complications associated with different surgical approaches, (3) differentiate between the available light options with a better selection of diffusion light pipes, lighted picks, and chandeliers, according to the selected approach, and (4) recognize the evolving value of intraoperative OCT in vitreoretinal surgical techniques.

Senior Instructor(s): Tamer H Mahmoud MD

Instructor(s): Glenn J Jaffe MD*, Cynthia A Toth MD*, Carl C Awh MD*, Dean Elliott MD*, Eric A Postel MD, Sharon Fekrat MD, Prithvi Mruthyunjaya MD*, Paul Hahn MD PhD, Eric W Schneider MD, Glenn C Yiu MD

Engineering and Physics Principles: A Primer for the Vitreoretinal Surgeon

Course: 501 Tuesday
Room: 214 9:00 - 11:15 AM
Education Level: BAS Target Audience: SUB

Synopsis: A firm grasp of engineering and physics is necessary to develop solid vitreoretinal surgical skills regardless of the specific surgical equipment being used. This course will provide a practical, clinically relevant treatment of the basic physical principles at play in vitrectomy surgery, as well as why and how these principles can be leveraged to benefit the patient. Specific topics may include fluid statics, fluid dynamics, impingement pressure, duty cycle, vitreous dynamics, slug flow, vitrectomy circuit, and dynamic IOP. These intimidating-sounding concepts are really quite intuitive, and they can be easily applied for the benefit of the retinal patient.

Objective: At the conclusion of this course, the attendee will understand the basic engineering principles outlined above and how they relate to performing safe and efficient vitreoretinal surgery.

Senior Instructor(s): Christopher D Riemann MD*

Instructor(s): Kirk H Packo MD*

Evaluation of Early-Onset Hereditary Retinal Degeneration in Infants and Children

Course: 509 Tuesday
Room: 342 9:00 - 10:00 AM
Education Level: BAS Target Audience: COMPSUB

Synopsis: Infants and children with inherited retinal degenerations can present with typical retinal findings. However, sometimes they may present with normal or near normal retinal appearance. Although retinal function testing is sometimes required for a definitive diagnosis, the diagnosis is often suspected or confirmed by ocular history, family history, and clinical examination. This course will provide a step-by-step approach to the diagnosis of early-onset retinal degenerations, with discussion of when to utilize electrophysiological testing, OCT, and genetic testing. This course will also discuss resources available at various levels for parents of affected children and ophthalmologists.

Objective: At the conclusion of the course, the pediatric and comprehensive ophthalmologist will be able to better diagnose and differentiate among the early-onset inherited retinal degenerations.

Senior Instructor(s): Sandeep Grover MD*

Instructor(s): Byron L Lam MD*, Craig A McKeown MD

Intraocular Foreign Body Injuries: An Update

Jointly sponsored by the Academy's Annual Meeting Program Committee and the American Society of Ocular Trauma and the International Society of Ocular Trauma

Course: 522 Tuesday
Room: R01 9:00 - 10:00 AM
Education Level: BAS Target Audience: COMPSUB

Synopsis: Using intraoperative videotapes, this course will review all aspects of managing patients with intraocular foreign bodies: history, epidemiology, pathophysiology, evaluation, instrumentation, timing, management principles and practice, complications, prognosis and outcome, and controversies.

Objective: To provide ophthalmologists with the necessary information for optimal treatment of patients with intraocular foreign body injuries.

Senior Instructor(s): Ferenc P Kuhn MD PhD

Instructor(s): Jose Dalma MD

Practical Considerations for Telemedicine Diabetic Retinopathy Screening

Jointly Sponsored by the Academy's Annual Meeting Program Committee and the American Telemedicine Association

Course: 553 Tuesday
Room: R05 11:30 AM - 12:30 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Evidence-based recommendations for diabetes eye care are highly effective in reducing the risk for vision loss. However, poor compliance with recommendations for retinal examinations to ensure early detection of diabetic retinopathy (DR) remains a major unresolved challenge in ophthalmology. Telemedicine programs based on remote digital retinal imaging have demonstrated the potential to complement current DR surveillance methods and increase the rate of DR assessment. Clinical recommendations, technical requirements for hardware, software and personnel, and operational considerations will be discussed. Successful business models and financial and reimbursement factors will be presented.

Objective: At the conclusion of this course, the attendee will understand the rationale for telemedicine DR assessment and have a framework for implementation of a remote program for evaluation of DR.

Senior Instructor(s): Ingrid E Zimmer-Galler MD*

Instructor(s): Mark B Horton MD, Paolo Antonio S Silva MD

Epiretinal Membranes: Etiologies, Perioperative Management, Surgical Techniques, and Case Discussions

Course: 564 Tuesday
Room: 214 11:30 AM - 12:30 PM
Education Level: BAS Target Audience: COMPSUB

Synopsis: This course is organized into three presentations on the etiologies, perioperative management, and surgical techniques for epiretinal membranes (ERMs): (1) etiologies of ERMs (eg, vitreoschisis), (2) indications for surgery (eg, functional and anatomical impairment); pre-, intra-, and postoperative management concerns (including avoiding operating on clinically insignificant ERMs and management of cataract, vitreous, peripheral retina); and recognition of specific problems that put patients at risk for less optimal outcomes, and (3) optimal surgical approaches and avoidance of complications. These three presentations will be followed by a question-and-answer session and then case presentations.

Objective: At the conclusion of this course, the attendee will know the etiologies and management implications of different types of ERMs, understand how to recognize and surgically manage the different symptoms caused by ERMs, and gain insight into surgical approaches to improve visual outcomes and reduce complications.

Senior Instructor(s): Albert O Edwards MD PhD

Instructor(s): Colin McCannel MD*, Mark W Johnson MD*

OCT: Interpretation and Clinical Applications

Course: 568 Tuesday
Room: 228 12:45 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Through a series of lectures and case presentations, participants will become familiar with the use of OCT for a large variety of posterior pole disorders / pathologies.

★ Top 10% in subject area. **NEW** New Course **Education Level Key:** BAS = Basic, INT = Intermediate, ADV = Advanced Target Audience:

COMP = Comprehensive Ophthalmologist, SUB = Subspecialist, COMPSUB = Comprehensive & Subspecialist.

Up-to-date information is available in the Program Search on the Academy's website: www.aao.org/2013.

Objective: At the conclusion of the course, the attendee will be able to interpret OCT images for the diagnosis and/or management of patients with posterior pole disorders.

Senior Instructor(s): Caroline R Bauman MD

Instructor(s): Carmen A Puliafito MD MBA, Joel S Schuman MD*, Cynthia A Toth MD*, Michael S Ip MD*, Brandon J Lujan MD*

★ Controversies in the Management of Open-Globe Injuries Involving the Posterior Segment

Course: 573 Tuesday
Room: R02 12:45 - 1:45 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Controversies in the management of open-globe injuries will be presented and thoroughly discussed. An overview of the problem will be provided, followed by a detailed breakdown of the controversies for which controlled clinical data regarding management are incomplete. These areas include the timing of vitrectomy, use of prophylactic antibiotics, placement of prophylactic cryotherapy and/or scleral buckle, management of intraocular foreign bodies, use of silicone oil, concurrent placement of primary IOLs, management of hypotony, and surgery on NLP eyes. Guidelines for treatment will be provided based on clinical data and the experience of the presenters. Several videos will be presented, documenting select procedures and techniques.

Objective: This course is designed to provide an update on the clinical management of controversial issues in the setting of open-globe injuries through the use of slide presentations, videotapes, and interactive panel discussions. A comprehensive handout will be provided.

*Senior Instructor(s): William F Mieler MD**

Instructor(s): Ferenc P Kuhn MD PhD

Retinoblastoma 2013: They Live and See!

Course: 579 Tuesday
Room: 210 12:45 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: Recent advances in the diagnosis and management of retinoblastoma have contributed to improved outcome. The new staging and grouping systems are now clinically validated. Modern diagnostic and management strategies such as wide-field imaging, transpupillary thermotherapy, chemoreduction, and intravitreal and periocular chemotherapy are effective in improving eye and vision salvage. Selective intra-arterial chemotherapy is an exciting new development. Minimal manipulation enucleation has been optimized. Adjuvant therapy for histopathologic high-risk factors identified following enucleation has reduced the risk of systemic metastasis. A multimodal protocol is effective in orbital retinoblastoma. Genetic studies now help in prenatal diagnosis and screening of siblings. The course will highlight the practical aspects in the current standard of care for retinoblastoma.

Objective: To enable the participants to incorporate recent advances in the diagnosis and management of retinoblastoma into their practices.

Senior Instructor(s): Santosh G Honavar MD

Instructor(s): Ralph Eagle MD, Brenda L Gallie MD*, Ashwin C Mallipatna MBBS, Carol L Shields MD, Jerry A Shields MD, Arun D Singh MD*

Endoscopic-Assisted Ophthalmic Surgery: Anterior and Posterior Segment Techniques

Course: 588 Tuesday
Room: R03 12:45 - 3:00 PM
Education Level: ADV Target Audience: COMPSUB

Synopsis: This course will introduce the concept of endoscope-assisted intraocular surgery and will showcase video-based presentations of a wide range of anterior and posterior segment procedures. Pearls for rapid attainment of endoscopic proficiency will be discussed. Anterior segment surgery will include cataract/IOL, trauma and glaucoma (including goniosynechiolysis, cyclodialysis cleft repair, plateau iris treatment, and endoscopic cyclophotocoagulation). Posterior segment surgery will include management of blunt and penetrating trauma, safe sutured IOL removal, sclerotomy site pathology, cyclitic membranes, rhegmatogenous retinal detachment (RD) and traction RD in retinopathy of prematurity, familial exudative vitreoretinopathy and persistent fetal vasculature syndrome. The presenters are experienced anterior and posterior segment surgeons familiar with endoscopy.

Objective: To educate anterior and posterior segment surgeons on how intraocular endoscopy can assist them in complex surgical procedures.

*Senior Instructor(s): S Chien Wong MBBS FRCS**

Instructor(s): Brian A Francis MD, Robert J Noecker MD*, Thomas Lee MD**

Ocular Ultrasound

Course: 589 Tuesday
Room: 214 12:45 - 3:00 PM
Education Level: BAS Target Audience: COMP

Synopsis: This course will present the examination techniques and diagnostic findings of ocular ultrasound utilizing standardized A- and B-scan technology as applied in the clinical setting.

Objective: Upon the completion of the course, the attendee will be able to explain the basic principles and examination techniques of ocular ultrasound as applied to pathological conditions in the eye.

Senior Instructor(s): Roger P Harrie MD

Instructor(s): Ronald L Green MD

★ State-of-the-Art Techniques and Technologies for Microincision Vitrectomy Surgery to Treat Complex Vitreoretinal Diseases

Course: 591 Tuesday
Room: 225 12:45 - 3:00 PM
Education Level: ADV Target Audience: SUB

Synopsis: This interactive course will highlight state-of-the-art surgical techniques and technologies for small-gauge vitrectomy. The topics include 23-gauge endoscopic vitrectomy, and 25- and 27-gauge sutureless vitrectomy to treat challenging vitreoretinal pathologies, such as advanced retinal detachment, proliferative vitreoretinopathy, proliferative diabetic retinopathy, subretinal hemorrhage, ocular trauma, and pediatric cases. The instructors will make extensive use of videos to engage the attendees in the discussion of the most advanced techniques, newer instrumentation, and surgical adjuncts to facilitate safe and efficient approaches with minimizing surgical complications.

Objective: At the end of this course, the attendees will not only be familiar with state-of-the-art microincision vitrectomy surgery but will also get a glimpse of future technological advances.

*Senior Instructor(s): Yusuke Oshima MD**

Instructor(s): Carl C Claes MD, Pravin U Dugel MD*, Jeffrey S Heier MD*, Shunsuke Osawa MD*, Ehab N El Rayes MD PhD, Fabio Patelli MD*

Surgery of Retinal Detachment

Course: 593 Tuesday
Room: 333 12:45 - 3:00 PM
Education Level: INT Target Audience: COMPSUB

Synopsis: This course will review the principles involved in managing rhegmatogenous retinal detachment. We will provide a detailed, comprehensive, state-of-the-art approach to techniques of scleral buckling, primary vitrectomy, and pneumatic retinopexy for the management of selected detachments. Principles of buckle placement, selection of elements, drainage, and use of gases and other adjuncts will be described.

Objective: At the conclusion of this course, the attendee will be able to (1) discuss the advantages and disadvantages of scleral buckling, vitrectomy, and pneumatic retinopexy, (2) identify the indications and contraindications and technique of drainage of subretinal fluid, (3) select the appropriate gas for intraocular injections, (4) discuss postoperative management of retinal detachment patients, and (5) recognize alternate techniques for the management of different types of retinal detachments.

Senior Instructor(s): Daniel P Joseph MD PhD

Instructor(s): Harry W Flynn MD, George A Williams MD*, Edwin Hurlbut Ryan MD**

★ Principles of Pediatric Vitreoretinal Surgery in Retinopathy of Prematurity

Course: 595 Tuesday
 Room: 340 12:45 - 3:00 PM
 Education Level: ADV Target Audience: COMPSUB

Synopsis: This course will deal with the management of retinopathy of prematurity (ROP) retinal detachment. It will also touch on early treatment of peripheral retinal ablation and possible pharmacologic therapy and its relationship to management of retinal detachment therapy. We will primarily deal with techniques of vitreoretinal surgery for ROP, including video presentations for stage 4A, 4B, and 5 ROP with and without enzymatic manipulation of the vitreoretinal juncture and core vitreous.

Objective: The attendee will be knowledgeable about the management of ROP vitreoretinal surgery techniques including enzymatic as well as nonenzymatic approaches.

Senior Instructor(s): Michael T Trese MD*

Instructor(s): Philip J Ferrone MD*, Antonio Capone Jr MD*, Kimberly A Drenger MD PhD*

NEW Peering to the Periphery: Applications of Wide-Angle Retinal Imaging

Course: 596 Tuesday
 Room: 217 12:45 - 3:00 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: Wide-angle retinal imaging platforms have gained increased popularity. Numerous applications have been demonstrated, including disease documentation, diagnosis, and targeted treatment of retinal diseases. Utilizing wide-angle angiography and autofluorescence provides insights into retinal and choroidal conditions such as macular degeneration, diabetic retinopathy, retinal vascular disease, and ocular tumors. Pitfalls with these technologies include artifact registration and false color processing, which may result in inaccurate diagnosis. Cases will be presented to highlight the clinical applications of wide-angle imaging.

Objective: After completing this course, the attendee will be able to identify imaging options for retinal peripheral diseases, understand the role of wide-angle angiography in retinal vascular disease, identify critical imaging artifacts, and understand applications of these technologies in pediatric and ocular oncology patients.

Senior Instructor(s): Prithvi Mruthyunjaya MD*

Instructor(s): Szilard Kiss MD*, Seenu M Hariprasad MD*, R V Paul Chan MD, Michael P Kelly FOPS, Sunil K Srivastava MD*

Systemic Therapeutic Agents and Retinal Toxicity

Course: 602 Tuesday
 Room: 338 3:15 - 5:30 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: This course will provide a thorough review of systemic (and select intravitreal) medications that are capable of causing various patterns of retinal toxicity. Examples of all of these types and patterns of toxicity will be presented, including disruption of the retinal pigment epithelium, retinal vascular occlusion, cystoid macular edema / retinal edema, crystalline deposition, uveitis, miscellaneous, and subjective visual symptoms. The mechanism of action will be discussed. Numerous examples of all conditions will be shown, and time will be allotted for questions and answers. A comprehensive referenced handout will be provided to all attendees.

Objective: At the conclusion of the course, the attendee will be able to (1) recognize the various patterns of toxicity induced by a variety of systemic, topical, and intravitreal medications, (2) recognize medications capable of causing subjective visual symptoms, and (3) better understand the clinical setting in which toxicity is most likely to occur.

Senior Instructor(s): William F Mieler MD*

Instructor(s): George A Williams MD*, David F Williams MD*, Scott R Sneed MD, David Sarraf MD*

Vision Rehabilitation

SO Low Vision Rehabilitation for Ophthalmologists

Course: 176 Sunday
 Room: R01 2:00 - 4:15 PM
 Education Level: INT Target Audience: COMPSUB

Synopsis: As an ophthalmologist, you have the skills necessary to help low vision patients with vision rehabilitation. These basic, informative low vision testing tools will help your patients achieve their visual potential.

Objective: After completion of this course, you will know how to use the necessary tools as a resident, comprehensive ophthalmologist, or retinal specialist to incorporate low vision rehabilitation into your practice.

Senior Instructor(s): Robert M Christiansen MD FACS

Instructor(s): Paul Homer MD, Gwen K Sterns MD

NEW SO Should My Visually Impaired Patient Be Driving?

Course: 325 Monday
 Room: 209 9:00 - 10:00 AM
 Education Level: BAS Target Audience: COMPSUB

Synopsis: This course will cover the current evidence-based information on visual risk factors for motor vehicle collision involvement and impaired driving performance, ethical and legal issues for managing visually impaired patients who want to drive, where ophthalmologists can refer patients for driving assessments and what these services are, case studies presented by specialists in this area, and the increasingly common cases of older drivers who are likely to have medical comorbidities in addition to visual impairment. A nationally recognized expert panel will lead the course.

Objective: At the conclusion of this course, participants will be familiar with visual characteristics that elevate crash risk, methods for managing and referring to driving assessment specialists those visually impaired patients who want to drive, the ophthalmologist's important role in having a dialogue about vision and driving with visually impaired patients, and practical information from case studies that facilitate clinical practice.

Senior Instructor(s): Cynthia Owsley MSPH PhD*

Instructor(s): David B Carr MD*, Lylas G Mogk MD*, Jennifer Elgin

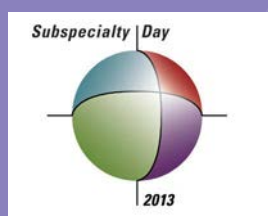
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Disclaimer: Some courses may not be available, or may be audio only, due to permissions not granted from the original presenter.

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ONE® NETWORK 2.0: MEET THE EDITORS

Saturday, Nov. 16, 3:00 – 5:00 p.m.

Satisfy your sweet tooth and toast the launch of the newly redesigned ONE Network. Meet the editors and see for yourself why it's the go-to source for clinical content, practice guidelines and more.

CELEBRATE THE IRIS™ REGISTRY LAUNCH

Sunday, Nov. 17, 3:00 – 5:00 p.m.

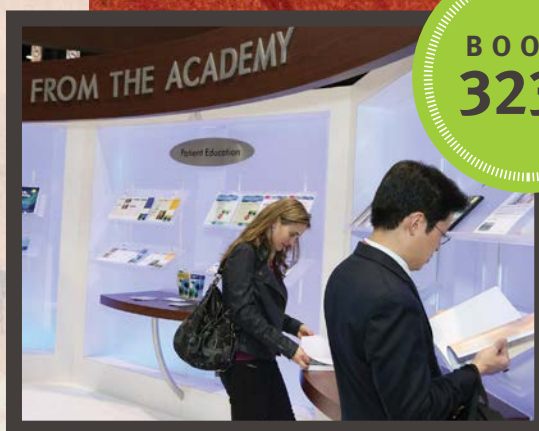
Enjoy coffee and a snack while you demo the nation's first comprehensive, EHR-based eye disease clinical registry. Learn how you can use clinical data to improve care delivery and patient outcomes.

OPHTHALMOLOGY MEET AND GREET

Sunday, Nov. 17, 12:00 – 3:00 p.m.

Monday, Nov. 18, 9:00 – 11:00 a.m.

Authors and peer reviewers for *Ophthalmology* are invited to stop by and meet members of the journal's editorial board.



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Skills Transfer Program

Sunday – Tuesday, Nov. 17 - 19

NEW New course

R Lab is available to Residents only

EQUIP Participants are required to bring specific equipment to the course

W Participants are required to sign an infectious disease transmission waiver/release form

These hands-on courses offer intensive training in surgical and diagnostic techniques, with direct supervision and a low participant-to-instructor ratio. Attendance is limited to physicians only, except where noted in the course description. (The term physician refers to the definition in the Federal Register: “those individuals licensed to practice medicine and surgery or osteopathy.”)

Skills Transfer courses are intended to provide instruction leading to new knowledge and/or skills. The Academy does not certify competence upon completion of Academy courses. Academy courses are not intended to serve as a basis for requesting new or expanded privileges.

Tickets and The Academy Plus Course Pass

Skills Transfer Labs are ticketed events - they are not included in the Academy Plus course pass and must be purchased separately.

If you are registering for a Skills Transfer lab (LAB), and a prerequisite lecture (LEC) is indicated, you must attend both courses. The lecture is included with the lab - you do not need to purchase the Academy Plus course pass to attend the lecture.

Members in Training automatically receive a 50% discount on all Skills Transfer labs, except where noted. For labs available to Residents only, the Member in Training discount has already been applied.

Skills Transfer Didactic courses/lectures are included in the Academy Plus course pass. By purchasing Academy Plus you may attend the lecture without purchasing the lab.

Note: Due to Fire Marshal regulations, seating capacities in courses/lectures are limited. Seating is available on a first-come basis, so please plan accordingly.

Selection Committee

The Skills Transfer Advisory Committee selected all Skills Transfer Courses and Labs.

Associate Secretary

Thomas W Samuelson MD

Committee Members

Iqbal K Ahmed MD

William Barry Lee MD

Susan R Carter MD

Kevin M Miller MD

Jack A Cohen MD FACS

David D Verdier MD

Skills Transfer Course Contributors

The Academy gratefully acknowledges the following companies for their generous support of equipment and supplies used during the Skills Transfer Course Program:



We would also like to thank the following companies for their contributions in the Cataract, Refractive Surgery/Cornea, Glaucoma, Retina and Plastics Skills Transfer Labs:

Durable Equipment / Instruments:

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Tissue:

Bio-Tissue Inc.
Vision Share Eyebank Network

Cataract

Advanced Refractive Cataract Surgery and Anterior Segment Reconstruction

Course Director(s): Brock K Bakewell MD*

Prerequisite Didactic

Course: LEC102 Sunday, 9:00 - 11:15 AM
Room: 211 Target Audience: COMPSUB
EduLevel: INT

Synopsis: This course is designed for surgeons who (1) want to achieve a higher level of emmetropic results by addressing toricity through the use of limbal relaxing incisions, toric IOLs, and bioptics, and (2) want to expand their armamentarium for dealing with difficult cataract cases, dislocated IOLs, and traumatized eyes.

Objective: This course will cover iris and scleral suture fixation techniques for IOLs, chopping techniques, capsular tension rings, artificial iris vs. primary closure for iris defects, pars plana vitrectomy, introduction to femtosecond cataract surgery, and strategies for dealing with challenging cases. These techniques will be presented in the didactic course and will be practiced in the Skills Transfer lab.

Instructor(s): Brock K Bakewell MD, Louis D Skip Nichamin MD*, William J Fishkind MD FACS*, Samuel Masket MD*, Warren E Hill MD*, Steven H Dewey MD*, Lisa B Arbisser MD*, Garry P Condon MD*, Alan S Crandall MD*, Richard S Hoffman MD*, Robert P Liss MD, Mark K Walsh MD*

Labs

Synopsis: This course is designed for surgeons who (1) want to achieve a higher level of emmetropic results by addressing toricity through the use of limbal relaxing incisions, toric IOLs, and bioptics, and (2) want to expand their armamentarium for dealing with difficult cataract cases, dislocated IOLs, and traumatized eyes.

Objective: This course will cover iris and scleral suture and sutureless fixation techniques for IOLs, chopping techniques, capsular tension rings, artificial iris vs. primary closure for iris defects, pars plana vitrectomy, introduction to femtosecond cataract surgery, and strategies for dealing with challenging cases.

Select one of the following

Course: LAB102A Sunday, 3:30 - 5:30 PM
Room: 356 Target Audience: COMPSUB
Fee: \$320 EduLevel: INT

Instructor(s): Robert P Liss MD, Louis D Skip Nichamin MD, Warren E Hill MD*, Bonnie A Henderson MD*, Ayman Naseri MD*, Garry P Condon MD*, James A Bryan III MD, Michael G Orr MD, Richard S Hoffman MD*, Roger C Furlong MD, Michele M Bloomer MD, Steven H Dewey MD*, Jeff S Maltzman MD, Corey A Miller MD, Bruce David Nichols MD, Lynn Polonski MD**, Kevin Lee Waltz MD*, Christine S Ament MD, M Todd Brown MD**, Cynthia S Chiu MD**

Course: LAB102B Monday, 3:30 - 5:30 PM
Room: 356 Target Audience: COMP
Fee: \$320 EduLevel: INT

Senior Instructor(s): Roger C Furlong MD,

Instructor(s): Steven H Dewey MD, George Beiko MD*, William S Clifford MD*, Kenneth J Rosenthal MD FACS**, Douglas Katsev MD*, Robert A Kaufer MD*, Jeff H Pettey MD*, Richard S Davidson MD*, James T Banta MD, Pablo Miguel Arregui MD*, Saman Garg**, Charles S Ahn MD*, Donald Stone MD, Robert J Weinstock MD*, Helen K Wu MD*, Susan M MacDonald MD*

YO Management of Vitreous for the Anterior Segment Surgeon

Course Director(s): Natalie A Afshari MD

Prerequisite Didactic

Course: LEC106 Sunday, 9:00 - 11:15 AM
Room: R04 Target Audience: COMPSUB
EduLevel: INT

Synopsis: This course will review the anatomy, physiology, and pathophysiology of the vitreous and will present vitrectomy techniques for challenging anterior segment surgery scenarios. Topics will include management of vitreous loss from the anterior and posterior approach, utilizing the vitrector for decompression in challenging cataract cases, and visualizing the vitreous with triamcinolone acetonide (Kenalog).

Objective: This course is designed to enhance the anterior segment surgeon's familiarity with anterior and posterior vitrectomy techniques for challenging anterior segment cases.

Instructor(s): Iqbal K Ahmed MD, Rosa Braga-Mele MD*, Ron Afshari Adelman MD MPH, Keith A Warren MD*, Baseer U Khan MD*, Thomas A Oetting MD*

Labs

Synopsis: This Skills Transfer course will present management of vitreous during complicated anterior segment surgery. A variety of vitrectomy techniques will be discussed. Topics will include anterior vitrectomy, pars plana access to the anterior vitreous, and effective use of small-gauge instrumentation.

Objective: This course is designed to enhance participants' technical skills in handling vitreous during complicated anterior segment surgery.

Select one of the following

Course: LAB106A Sunday, 11:30 AM - 1:00 PM
Room: 356 Target Audience: COMPSUB
Fee: \$280 EduLevel: INT

Instructor(s): Ron Afshari Adelman MD MPH, Sherleen Huang Chen MD, Baseer U Khan MD, Gary S Schwartz MD, Roberto Pineda II MD*, Jack A Cohen MD FACS, Ali R Djalilian MD, Aryan Shayegani MD, Jerzy Nawrocki MD PhD, Francesco Boscia MD*, Shameema Sikder MD*, Robert B Bhisitkul MD*, Thomas A Oetting MD, Shahzad I Mian MD*, Joung Y Kim MD, William Barry Lee MD**

Course: LAB106B Monday, 1:00 - 2:30 PM
Room: 356 Target Audience: COMPSUB
Fee: \$280 EduLevel: INT

Instructor(s): Ron Afshari Adelman MD MPH, Bonnie A Henderson MD, Maria Mendicino Aaron MD, Sherleen Huang Chen MD, Baseer U Khan MD*, Gary S Schwartz MD, Ivan J Suner MD*, Roberto Pineda II MD*, Jack A Cohen MD FACS, Neda Shamie MD*, Ali R Djalilian MD, Aryan Shayegani MD, Jerzy Nawrocki MD PhD, Francesco Boscia MD*, Brad H Feldman MD*, Shameema Sikder MD*, Robert B Bhisitkul MD*, Majid Moshirfar MD**, Thomas A Oetting MD, Kenneth M Goins MD*

Phacoemulsification and Advanced Techniques: The Core Curriculum

Course Director(s): Steven H Dewey MD*

Prerequisite Didactic

Course: LEC120 Sunday, 3:15 - 5:30 PM
Room: 211 Target Audience: COMPSUB
EduLevel: INT

Synopsis: In this course, a faculty of experienced surgeons will present the latest phaco techniques and technologies that are applicable to ophthalmologists at every level of experience. This comprehensive course will cover the steps of phacoemulsification, including incisions, capsulorrhexis, hydrodissection, and

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest.

Skills Transfer Program

phaco techniques with an emphasis chop. Safe cortex removal and IOL implantation will be demonstrated. Capsular tension rings, pupil expanders, hooks, capsular staining, and related techniques will also be presented. This course will teach the most up-to-date phacoemulsification techniques to both individuals with little or no experience with the method and those wishing to refine or update their technique or transitioning from other cataract surgery methods.

Objective: This course is designed to teach participants the principals and skills necessary to understand and perform state-of-the-art phacoemulsification safely and efficiently.

Instructor(s): Anita Nevyas-Wallace MD, Ricardo G Glikin MD, Nick Mamalis MD*, Helen K Wu MD*, Mark H Blecher MD, Thomas A Oetting MD*

Labs

Synopsis: In the past few years, noteworthy new phaco technologies have altered the way surgeons execute and analyze the procedure. In this course, the latest phaco techniques and technologies will be presented. The most topical techniques will be taught, including wound construction, capsulorrhexis, capsular staining, phaco chop techniques, techniques for operating the mature cataract, astigmatism management, capsular tension rings, and pupil expanders and hooks. New machine principles, including micropulse phaco and torsional phaco, will be assessed. Training will be one on one, allowing for customization of the techniques emphasized for each surgeon attendee.

Objective: By the conclusion of this course, the surgeon attendee should understand the concepts influencing the latest phaco machine technologies and phaco techniques and attain the skills necessary for undertaking them.

Select one of the following

Course: LAB120A Monday, 8:00 - 9:30 AM
Room: 356 Target Audience: COMPSUB
Fee: \$280 EduLevel: INT

Senior Instructor(s): Anita Nevyas-Wallace MD, Gerald Roper MD**

Instructor(s): Boris Malyugin MD PhD, Randall J Olson MD, Chi-Wah (Rudy) Yung MD, Donald J Doughman MD, Linda M Tsai MD, Steven R Sarkisian MD*, Marc A Michelson MD*, Audrey R Talley-Rostov MD*, Herbert J Ingraham MD, Nan Wang MD PhD, Surendra Basti MBBS*, Frank W Bowden III MD FACS, Stephen E Orlin MD, Michael Sulewski MD, William Wiley MD*, Robert W Weisenthal MD, Steven D Vold MD*, R Bruce Wallace MD*, Stephen V Scoper MD*, Deepinder K Dhaliwal MD*, Luther Fry MD FACS*, Kristiana D Neff MD**

Course: LAB120B Tuesday, 8:00 - 9:30 AM
Room: 356 Target Audience: COMPSUB
Fee: \$280 EduLevel: INT

Senior Instructor(s): Gerald Roper MD, Anita Nevyas-Wallace MD**

Instructor(s): David R Hardten MD, Warren E Hill MD*, Alan N Carlson MD*, Jeffrey Whitman MD OCS*, Bennett Chotiner MD*, Erik A Chotiner MD, Ricardo G Glikin MD, Michael Hater MD**, Herbert J Nevyas MD, Florentino E Palmon MD, Clark L Springs MD*, P Dee G Stephenson MD FACS*, Linda M Tsai MD, James F Freeman MD*, Kevin M Miller MD*, Asim R Piracha MD*, Maria Cirone Scott MD*, Cathleen McCabe MD*, Tom Coffman MD**, James A Katz MD*, Dan B Tran MD**

R Phacoemulsification and Advanced Techniques Lab for Ophthalmology Residents

Course: LAB120C Tuesday, 1:00 - 3:00 PM
Room: 356 Target Audience: COMP
Fee: \$175 EduLevel: BAS

Note: MIT discount already applied.

Senior Instructor(s): Maria Mendicino Aaron MD

Instructor(s): Natalie A Afshari MD, Ron Afshari Adelman MD MPH, David B Krebs MD, Nina A Goyal MD, Raj K Goyal MD MPH, Hilary A Beaver MD*, Michael H Goldstein MD*, Bonnie A Henderson MD*, Robert S Bailey MD, Chi-Wah (Rudy)*

Yung MD, C Diane Song MD, Thomas A Oetting MD, Nan Wang MD PhD, Rahul T Pandit MD, Jill R Wells MD, Joung Y Kim MD, Amy Grossman Coburn MD, Paul B Pruett MD, Maria A Woodward MD, Clark L Springs MD*, Preston H Blomquist MD, Daniel H Chang MD**

Manual Extracapsular Cataract Extraction Surgery: Indications and Techniques

*Course Director(s): Bonnie A Henderson MD**

Prerequisite Didactic

Course: LEC123 Sunday, 3:15 - 5:30 PM
Room: 346 Target Audience: COMP
EduLevel: BAS

Synopsis: Although extracapsular cataract extractions by large incision (ECCE) and small incision (SICS) are still performed routinely throughout the world, phacoemulsification surgery has become the standard of care in many countries, and therefore ECCE/SICS is no longer being taught. However, understanding how to perform this surgery competently is still crucial when faced with complications during phacoemulsification surgery, or when an ECCE approach may be a better choice for the patient.

Objective: By the conclusion of this course, the attendee will (1) have learned and be able to practice primary ECCE and SICS surgery, (2) have learned and be able to practice how to convert from a clear corneal phacoemulsification to either a ECCE or a SICS approach, and (3) better understand how to deal with complications of ECCE surgery.

*Instructor(s): Geoffrey C Tabin MD, Maria Mendicino Aaron MD, Jeff H Pettey MD**

Labs

Synopsis: Although extracapsular cataract extractions by large incision (ECCE) and small incision (SICS) are still performed routinely throughout the world, phacoemulsification surgery has become the standard of care in many countries, and therefore ECCE/SICS is no longer being taught. However, understanding how to perform this surgery competently is still crucial when faced with complications during phacoemulsification surgery or when an ECCE approach may be a better choice for the patient.

Objective: By the conclusion of this course, the attendee will (1) have learned and be able to practice primary ECCE and SICS surgery, (2) have learned and be able to practice how to convert from a clear corneal phacoemulsification to either a ECCE or a SICS approach, and (3) better understand how to deal with complications of ECCE surgery.

Select one of the following

Course: LAB123A Monday, 10:30 AM - 12:00 PM
Room: 356 Target Audience: COMP
Fee: \$280 EduLevel: BAS

Instructor(s): Bonnie A Henderson MD, Eduardo C Alfonso MD*, Maria Mendicino Aaron MD, Geoffrey C Tabin MD, Preston H Blomquist MD, Jeff H Pettey MD*, Abhay Raghukant Vasavada MBBS FRCS*, Francisco J Gutierrez-Carmona MD PhD, Soosan Jacob FRCS, Amar Agarwal MD*, Dianna L Bordewick MD, Neera Kanjani, Surendra Basti MBBS*, Samar K Basak MD DNB MBBS*, Arup Chakrabarti MBBS, Nilesh Kanwarram Kanjani BMBS, Joung Y Kim MD, Zaiba Malik MD*

Course: LAB123B Tuesday, 10:30 AM - 12:00 PM
Room: 356 Target Audience: COMP
Fee: \$280 EduLevel: BAS

Instructor(s): Bonnie A Henderson MD, Eduardo C Alfonso MD*, Maria Mendicino Aaron MD, Geoffrey C Tabin MD, Preston H Blomquist MD, Francisco J Gutierrez-Carmona MD PhD, Abhay Raghukant Vasavada MBBS FRCS*, Jeff H Pettey MD*, Soosan Jacob FRCS, Amar Agarwal MD*, Dianna L Bordewick MD, Neera Kanjani, Surendra Basti MBBS*, Samar K Basak MD DNB MBBS*, Nilesh Kanwarram Kanjani BMBS, Arup Chakrabarti MBBS, Joung Y Kim MD, Zaiba Malik MD*

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest.

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Skills Transfer Program

YO Astigmatism in the Cataract Patient

Course Director(s): Louis D Skip Nichamin MD*

Prerequisite Didactic

Course: LEC130 Monday, 10:15 AM - 12:30 PM
Room: 355 Target Audience: COMPSUB
EduLevel: INT

Synopsis: This course will cover management techniques for pre-existing astigmatism, specifically at the time of implant surgery, with focus upon intralimbic relaxing incisions, toric IOLs, and laser (femto / excimer) treatment modalities.

Objective: At the conclusion of this course, participants will be able to plan and perform the techniques necessary to control postcataract astigmatism.

Instructor(s): Louis D Skip Nichamin MD*, Jonathan B Rubenstein MD*

Lab

Synopsis: This course will cover management techniques for pre-existing astigmatism, specifically at the time of implant surgery, with focus upon intralimbic relaxing incisions, toric IOLs, and laser (femto / excimer) treatment modalities.

Objective: At the conclusion of this course, participants will be able to plan and perform the techniques necessary to control postcataract astigmatism.

Course: LAB130A Monday, 1:30 - 3:00 PM
Room: 345 Target Audience: COMPSUB
Fee: \$230 EduLevel: INT

Instructor(s): Louis D Skip Nichamin MD*, Brock K Bakewell MD*, Rosa Braga-Mele MD*, Y Ralph Chu MD*, Jonathan Davidorf MD*, Steven J Dell MD*, Randy J Epstein MD*, Leslie Grosinger MD, James C Hays MD*, Warren E Hill MD*, Richard S Hoffman MD*, Terry Kim MD*, Nick Mamalis MD*, Kevin M Miller MD*, Parag D Parekh MD MPA*, Gerald Roper MD*, Kenneth J Rosenthal MD FACS**, Alan Victor Spigelman MD, David T Vroman MD*, R Bruce Wallace MD*

An Innovative Approach to Iris Fixation of an IOL Without Capsular Support: Hands-on and Practical

Course Director(s): Paul R Rosenberg MD FACS

Course: LAB142 Monday, 4:00 - 5:00 PM
Room: 349 Target Audience: COMP
Fee: \$65 EduLevel: INT

Synopsis: This course will present an innovative variation of a McCannel / Siepser small-incision retrievable suture technique for peripheral iris fixation in the absence of capsule support for secondary foldable IOLs and dislocated IOLs. This technique will be demonstrated with video, animation, and hands-on practice with a model.

Objective: Surgeons will learn the rationale for iris fixation of a foldable implant and will add this technique to their arsenal of management options for IOL dislocation and aphakia. Their understanding of the practical method of suturing will be cemented by a hands-on approach.

Instructor(s): Elana S Rosenberg MD

Microsurgical Suturing Techniques

Course Director(s): Marian Sue Macsai-Kaplan MD*

Prerequisite Didactic

Course: LEC144 Tuesday, 10:15 AM - 12:30 PM
Room: 340 Target Audience: COMPSUB
EduLevel: BAS

Synopsis: This course will cover basic microsurgical suturing techniques. In addition, principles, theories, and practical instruction in corneal-scleral laceration and corneal wound repair, management of cataract wound problems, including wound burns, and extension of clear corneal incisions will be offered.

Objective: This course offers basic microsurgical suturing training that is applicable in the management of penetrating keratoplasty suturing, corneal lacerations, and cataract wound problems.

Instructor(s): Marian Sue Macsai-Kaplan MD*, Woodford S Van Meter MD FACS

Lab

Synopsis: This course will cover basic microsurgical suturing techniques. In addition, principles, theories, and practical instruction in corneal-scleral laceration and corneal wound repair, management of cataract wound problems, including wound burns, and extension of clear corneal incisions will be offered.

Objective: This course will offer basic microsurgical suturing training that is applicable in the management of penetrating keratoplasty suturing, corneal lacerations, and cataract wound problems.

Course: LAB144A Tuesday, 1:30 - 3:30 PM
Room: 345 Target Audience: COMPSUB
Fee: \$210 EduLevel: BAS

Instructor(s): Marian Sue Macsai-Kaplan MD*, Woodford S Van Meter MD FACS, Andrew J W Huang MD MPH*, Carol L Karp MD, Anthony J Lubniewski MD*, Joel Sugar MD, Angelo P Tanna MD*, R Doyle Stulting MD PhD*, Anthony J Johnson MD, William Barry Lee MD*, Charles S Bouchard MD, David B Glasser MD, Aaleya F Koreishi MD*, Michael W Belin MD*, Andrea Kara-Jose MD, Ali R Djalilian MD, Bruno M Fontes MD*, Anat Galor MD*, Michael Saidel MD*, Satya Reddy MD, Julie H Tsai MD, Jennifer Y Li MD, Robert S Feder MD, Denise de Freitas MD, Jeanine Bagai MD

Computers, Information Technology

Computer Courses are open to all registrants.

Note: Each participant must bring their own devices.

EQUIP The iPhone for Ophthalmologists (Basic)

Course Director(s): Vinay A Shah MD*

Course: LAB114 Sunday, 1:30 - 3:30 PM
Room: 350 Target Audience: COMPSUB
Fee: \$120 EduLevel: BAS

Synopsis: Eighty percent of physicians utilize smartphones, and this number is expected to rise. Recently, the iPhone has covered about 50% of the smartphone market. This course will introduce the user to more intermediate applications of the iPhone and iPad in the following areas: (1) office management: calendar, ICD-9, schedules, (2) patient care tools: near vision card, Amsler grid, color plates, optokinetic nystagmus drum, pupil gauge, patient consents, and external, slitlamp, and fundus photos, (3) patient education material: diagrams / videos, (4) physician education / reference material: eye atlas, study guides, pharmacopoeia, and board review material, (5) marketing of one's practice through social media and a Personalized Doctor app, (6) use of the iPhone for personal use, from making a conference call to using various handy apps.

Objective: After the course, the attendees will understand and be able to use the iPhone for patient care, as a reference guide, for their own education, and to be more efficient.

Instructor(s): Ron K Lord MD*, Hemang K Pandya MD, Rohit Krishna MD*, Michael A Cassell MD**, Theodore Leng MD*, Robert T Chang MD*, Alex W Cohen MD

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Skills Transfer Program

EQUIP The iPhone for Ophthalmologists (Advanced)

Course Director(s): Vinay A Shah MD*

Course: LAB129

Room: 350

Fee: \$120

Monday, 9:00 - 11:00 AM

Target Audience: COMPSUB

EduLevel: ADV

Synopsis: Eighty percent of physicians utilize smartphones, and this number is expected to rise. Recently, the iPhone has covered about 50% of the smartphone market. This course will introduce the user to intermediate to advanced applications of the iPhone & iPad in following areas: (1) office management: calendar, ICD-9, schedules, (2) patient care tools: near vision card, Amsler grid, color plates, optokinetic nystagmus drum, pupil gauge, patient consents, and external, slitlamp, and fundus photos, (3) patient education material: diagrams / videos, (4) physician education / reference material: eye atlas, study guides, pharmacopoeia, and board review material, (5) marketing of one's practice through social media and a Personalized Doctor app, (6) use of the iPhone for personal use, from making a conference call to using various handy apps.

Objective: After the course, the attendees will have an advanced platform understanding and be able to use the iPhone for patient care, as a reference guide, for their own education, and to be more efficient.

Instructor(s): Ron K Lord MD, Hemang K Pandya MD, Rohit Krishna MD*, Robert T Chang MD*, Michael A Cassell MD**, Theodore Leng MD**

EQUIP **YO** Enhancing Your Presentation Using Keynote by Apple, Inc. for the Intermediate User

Course Director(s): Robert F Melendez MD MBA

Course: LAB133

Room: 350

Fee: \$95

Monday, 1:00 - 2:30 PM

Target Audience: COMPSUB

EduLevel: INT

Synopsis: The purpose of this Skills Transfer course is to help enhance your keynote presentations. This course is intended for intermediate users who already know how to use Keynote software (Apple, Inc.).

Objective: At the conclusion of this course, attendees will be able to incorporate video, audio, and special graphics into their slide presentations. They will learn how to build 3-D graphs and tables with special graphics, and how to build transition slides that flow nicely. We will also provide a list of third-party apps to enhance your presentations.

Instructor(s): Robert F Melendez MD MBA, John W Kitchens MD, Andrew A Moshfeghi MD**

Cornea, External Disease

W Surgery for Severe Corneal and Ocular Surface Disease

Course Director(s): Ali R Djalilian MD, Gunther Grabner MD*

Course: LEC104

Room: 214

Sunday, 9:00 - 11:15 AM

Target Audience: COMPSUB

EduLevel: INT

Synopsis: This course is intended for ophthalmologists who plan to expand their surgical skills in the management of severe corneal and ocular surface disease. The topics will include amniotic membrane transplantation, limbal stem cell transplantations, and keratoprosthesis.

Objective: At the conclusion of this course, the attendee will be able to (1) describe the indications and apply the surgical techniques for amniotic membrane transplantation, (2) recognize limbal stem cell deficiency and effectively apply the various surgical techniques for limbal stem cell transplantation, (3) recognize and successfully prevent / treat limbal allograft rejection using systemic immunosup-

pression, and (4) describe the patient selection, surgical techniques, and postoperative management of patients with keratoprosthesis.

Instructor(s): Edward J Holland MD, Scheffer C G Tseng MD PhD*, James Chodosh MD MPH*, Ahmad Kheirkhah MD, Maria S Cortina MD, Victor L Perez MD**

Lab

Synopsis: This course is intended for ophthalmologists who plan to expand their surgical skills in the management of severe corneal and ocular surface disease. The topics will include amniotic membrane transplantation, limbal stem cell transplantations, and keratoprosthesis.

Objective: At the conclusion of this course, the attendee will be able to (1) describe the indications and apply the surgical techniques for amniotic membrane transplantation, (2) recognize limbal stem cell deficiency and effectively apply the various surgical techniques for limbal stem cell transplantation, (3) recognize and successfully prevent / treat limbal allograft rejection with the use of systemic immunosuppression, and (4) describe the patient selection, surgical techniques, and postoperative management of patients with keratoprosthesis.

Course: LAB104A

Room: 345

Fee: \$240

Sunday, 3:30 - 5:30 PM

Target Audience: COMPSUB

EduLevel: INT

Instructor(s): Ali R Djalilian MD, Andrew J W Huang MD MPH, Jose Gomes MD*, Jose J de la Cruz Napoli MD*, Joung Y Kim MD, David D Verdier MD, Daniel H Scorsetti MD, Julie H Tsai MD, Heather M Skeens MD**, Pedram Hamrah MD*, Vadrevu K Raju MD FRCS FACS, Anthony J Lubniewski MD*, Ahmad Kheirkhah MD, Kristiana D Neff MD*, Clara C Chan MD*, Maria S Cortina MD, Aisha S Traish MD**, Andrea Y Ang MBBS, Guillermo Amescua MD, Leela V Raju MD, Victor L Perez MD**

Endothelial Keratoplasty Techniques

Course Director(s): Mark A Terry MD*

Prerequisite Didactic

Course: LEC121

Room: 342

Sunday, 3:15 - 5:30 PM

Target Audience: COMPSUB

EduLevel: BAS

Synopsis: This course will explore the various surgical techniques used for endothelial keratoplasty (EK): Descemet-stripping EK, Descemet-stripping automated EK, and Descemet membrane EK. Emphasis will be placed on basic techniques that minimize complications and maximize donor endothelial survival. Methods of donor tissue preparation, insertion, unfolding, and positioning will be discussed. Benefits and problems with tissue injectors will be presented. Techniques to promote donor tissue adhesion and to avoid primary graft failure will be emphasized. Detailed videos and discussion of EK in complex and combined cases will be presented.

Objective: At the conclusion of the course, participants will understand the safest methods of EK to avoid dislocation, primary graft failure, and pupillary block, and how to enhance faster visual rehabilitation.

Instructor(s): Mark A Terry MD, Kenneth M Goins MD, George O D Rosenwasser MD**

Lab

Synopsis: This laboratory course will allow participants to become familiar with the instrumentation and surgical techniques involved with various forms of endothelial keratoplasty (EK): Descemet-stripping EK, Descemet-stripping automated EK, and Descemet membrane EK. Use of the femtosecond laser for donor preparation may be available. Safe methods of donor insertion, unfolding, and positioning will be stressed. Techniques of promoting donor adherence and avoiding primary graft failure will be practiced.

Objective: At the conclusion of this course, the participants will understand the complexity and required instrumentation for these various techniques of endothe-

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Skills Transfer Program

lial keratoplasty. Techniques to avoid complications and preserve donor endothelial cells will be understood.

Note: Participants will be sharing equipment.

Course: LAB121A Monday, 8:00 - 10:00 AM
Room: 345 Target Audience: COMPSUB
Fee: \$240 EduLevel: BAS

Instructor(s): Mark A Terry MD, George O D Rosenwasser MD*, Kenneth M Goins MD, Neda Shamie MD*, Anand K Shah MD, Irving M Raber MD*, Paul M Phillips MD, David D Verdier MD, Mark S Gorovoy MD, Edwin S Chen MD, Thomas John MD*, Ann McColgin MD, Robert L Schultze MD*, Michael D Straiiko MD*, Mark Greiner MD, Jeffrey M Goshe MD, Julia C Talajic MD, Peter B Veldman MD, Colleen C Grace MD, Jennifer Y Li MD, Rajesh Fogla MD FRCS*, Luciene Sousa MD*, Karen L Hoar MD**, Ashraf F Amayem MD, Anita Panda MD FAMS FICS FICO MRCOPHTH**, Alexandre S Marcon MD, Vincenzo Sarnicola MD*

W Endothelial Keratoplasty Surgery: Comprehensive Overview and Surgical Pearls

*Course Director(s): Edward J Holland MD**

Prerequisite Didactic

Course: LEC122 Sunday, 3:15 - 5:30 PM
Room: 208 Target Audience: COMPSUB
EduLevel: INT

Synopsis: Endothelial keratoplasty (EK) has become the standard of care for the surgical treatment of endothelial diseases of the cornea. This course will utilize international corneal experts to teach a comprehensive overview of a variety of surgical techniques for Descemet-stripping EK (DSEK), including donor tissue preparation, various tissue insertion techniques, and intraoperative surgical pearls. The course will also provide a review of the various potential complications of DSEK and their associated management strategies. Finally, tips for starting Descemet membrane EK (DMEK) will be reviewed, along with various surgical pearls and outcomes of DMEK techniques.

Objective: At the conclusion of the course, the attendee will understand indications, surgical techniques, surgical pearls, and potential complications of DSEK and DMEK.

Instructor(s): Francis W Price Jr MD, Donald Tan MD FRCS FRCOphth*, Massimo Busin MD*, Mark J Mannis MD, David T Vroman MD*, William Barry Lee MD*, Keith A Walter MD**

Lab

Synopsis: Endothelial keratoplasty (EK) has become the standard of care for the surgical treatment of endothelial diseases of the cornea. This course will utilize international corneal experts to teach the various steps of Descemet-stripping EK (DSEK), including donor tissue preparation and specific surgical steps, with individual stations to practice various tissue insertion techniques. Surgical videos of DSEK insertion techniques and surgical pearls will be reviewed during the course to enhance performance of various steps. Attendees will receive hands-on experience with all steps of DSEK, including donor tissue preparation steps with Descemet membrane EK (DMEK).

Objective: At the end of this course, participants will understand all steps of DSEK and have hands-on experience with donor tissue preparation and surgical steps of DSEK and DMEK.

Course: LAB122A Monday, 11:00 AM - 1:00 PM
Room: 345 Target Audience: COMPSUB
Fee: \$240 EduLevel: INT

Instructor(s): Francis W Price Jr MD, Friedrich E Kruse MD, Donald Tan MD FRCS FRCOphth*, David B Glasser MD, Massimo Busin MD*, Mark J Mannis MD, David T Vroman MD*, William Barry Lee MD*, Keith A Walter MD*, David D Verdier MD, Shahzad I Mian MD*, Richard S Davidson MD*, Clara C Chan MD*, Andrea Y Ang MBBS, Kristiana D Neff MD*, Heather M Skeens MD**, Mahshad Darvish-Zargar*

*MD, Jennifer Y Li MD, J Brian Foster MD**, Kenneth C Mathys MD, Joseph S Tims MD, Florentino E Palmon MD, Michael J Taravella MD*, Vipul C Shah MD, Charles L Thompson MD*

Anterior Lamellar Keratoplasty: Principles and Practice

Course Director(s): Sheraz M Daya MD, Sadeer B Hannush MD*

Prerequisite Didactic

Course: LEC131 Monday, 10:15 AM - 12:30 PM
Room: 342 Target Audience: SUB
EduLevel: ADV

Synopsis: This course will cover current and evolving practice in anterior lamellar keratoplasty. Topics include evolving lamellar techniques, including the "big bubble," modified Melles, viscodissection, Ferrara, and automated and femtosecond lamellar techniques. A series of didactic lectures will be provided, with technique pearls (and complications), supported by video presentations and handouts. The lecture portion is a prerequisite for the wet lab, where candidates will be guided through many techniques.

Objective: The participant should leave the course with an understanding of various options for performing anterior lamellar keratoplasty. The participant will have a thorough understanding of the indications, advantages, and disadvantages of each of these techniques. Additional hands-on training on the use of some of these procedures will be provided in the associated laboratory.

Instructor(s): Woodford S Van Meter MD FACS, William W Culbertson MD, Luigi Fontana MD PhD, Shigeto Shimmura MD, Donald Tan MD FRCS FRCOphth**

Lab

Synopsis: This wet-lab course will cover current and evolving practice in anterior lamellar keratoplasty. An international faculty will cover different lamellar dissection techniques and will include the "big bubble," viscodissection, modified Melles, and automated and femtosecond lamellar deep anterior lamellar keratoplasty. Avoiding and managing complications will also be discussed. Candidates will be personally guided through these techniques by expert and experienced faculty, and there will be opportunity for in-depth discussion.

Objective: The participant should leave the course with an understanding of various options for performing anterior lamellar keratoplasty. The participant will have a thorough understanding of the indications, advantages, and disadvantages of each of these techniques. Additional hands-on training on the use of some of these procedures will be provided in the associated laboratory.

Course: LAB131A Monday, 3:30 - 5:30 PM
Room: 345 Target Audience: SUB
Fee: \$240 EduLevel: ADV

Instructor(s): Sadeer B Hannush MD, Sheraz M Daya MD, Woodford S Van Meter MD FACS, William W Culbertson MD*, Luigi Fontana MD PhD, Shigeto Shimmura MD, Donald Tan MD FRCS FRCOphth*, Brandon Ayres MD*, Deepinder K Dhaliwal MD*, Jose Gomes MD*, Nabil E Habib FRCOphth*, Samer Hamada MD, Damian Lake MBChB, Mayank A Nanavaty MD, Rebecca Papadopoulos MD, Irving M Raber MD*, Konstantinos Samaras MD, Vincenzo Sarnicola MD, Mike Tappin FRCOphth**, Elmer Tu MD*, Federico Badala MD, Rajesh Fogla MD FRCS*, Hamed Mofeez Anwar MD, Francesca Harman MBBS***

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Skills Transfer Program

Glaucoma

Is It Time to Replace Gonioscopy by Anterior Segment Imaging in the Diagnosis and Management of Angle-Closure Glaucoma?

Course Director(s): *Syril Dorairaj MD*

Course: LAB101 Sunday, 9:00 - 11:00 AM
Room: 343 Target Audience: COMPSUB
Fee: \$130 EduLevel: BAS

Synopsis: Angle-closure glaucomas (ACGs) are a group of disorders characterized by mechanical blockage of the trabecular meshwork by the peripheral iris, resulting from interactions between the structures and hydrodynamics inside the eye. Imaging of the anterior segment (AS) is an essential tool aiding the diagnosis and understanding the mechanism and management of ACG. Various imaging devices are now available, each one representing particular technical advantages / disadvantages over the others. Anterior segment imaging cannot replace the direct visualization of angle structures, but it can overcome some of the limitations of gonioscopy by providing a more objective means of obtaining a qualitative and quantitative evaluation of the angle. These imaging techniques are enlightening clinicians and researchers about the importance of making an early diagnosis, establishing underlying causal mechanisms, and evaluating treatments.

Objective: The participant should leave the course with an understanding of imaging techniques, the importance of making an early diagnosis, establishing underlying causal mechanisms, and evaluating treatments.

Instructor(s): Christopher Kai-shun Leung MD MBChB, Vishal Jhanji MBBS, Paul F Palmberg MD PhD*, Clement C Y Tham MBBS*, Tin Aung FRCS PhD**

Computerized Scanning Imaging of the Optic Nerve and Retinal Nerve Fiber Layer

Course Director(s): *Neil T Choplin MD*

Prerequisite Didactic

Course: LEC103 Sunday, 9:00 - 11:15 AM
Room: 225 Target Audience: COMP
EduLevel: BAS

Synopsis: This lecture, required for the hands-on workshop, introduces the participant to the principles of computerized scanning imaging. This is a basic course featuring current technologies. The main emphasis in this course will be spectral (Fourier) domain OCT, although some discussion of scanning laser polarimetry and topography (Heidelberg Retinal Tomography) will be included.

Objective: By the conclusion of this course, participants will be able to (1) understand the scientific basis for imaging, (2) understand how scanning imaging may be used in clinical practice, (3) learn how imaging can be applied to the optic nerve head, retinal nerve fiber layer, and macula, with emphasis on glaucoma, (4) understand the relationship between structure and function, and (5) differentiate normal from abnormal scans through appropriate clinical examples. A question-and-answer session will be held at the end of the presentations, during which time questions will be entertained by the faculty.

Instructor(s): Neil T Choplin MD, E Randy Craven MD, Howard Barnebey MD**

Labs

Synopsis: This workshop will familiarize participants with the clinical uses of computerized scanning imaging of the retina and optic nerve, with emphasis on spectral (Fourier) domain OCT. The main focus of the workshop will be interpretation of representative printouts from clinical examples. Instructors will be available to discuss scanning laser polarimetry (GDx) and confocal scanning tomography (Heidelberg Retinal Tomography) for interested participants.

Objective: By the conclusion of this course, participants will be able to (1) understand image quality control and the indications for repeating images, (2) become

familiar with the analysis software, and (3) practice interpretation of representative cases.

Select one of the following

Course: LAB103A Sunday, 12:00 - 2:00 PM
Room: 343 Target Audience: COMP
Fee: \$130 EduLevel: BAS

Instructor(s): Neil T Choplin MD, E Randy Craven MD, Howard Barnebey MD**

Course: LAB103B Monday, 11:00 AM - 1:00 PM
Room: 343 Target Audience: COMP
Fee: \$130 EduLevel: BAS

Instructor(s): Neil T Choplin MD, E Randy Craven MD, Howard Barnebey MD**

Glaucoma Laser Therapy: Innovations and Advice From the Experts

Course Director(s): *Lisa S Gamell MD*

Prerequisite Didactic

Course: LEC105 Sunday, 9:00 - 11:15 AM
Room: R03 Target Audience: COMPSUB
EduLevel: INT

Synopsis: This course will provide a comprehensive review of laser procedures used to treat glaucoma. Topics discussed will include argon laser trabeculoplasty (ALT), selective laser trabeculoplasty (SLT), micropulse laser trabeculoplasty (MLT), cyclophotocoagulation (both endoscopic and transscleral), iridotomy (Nd:YAG, argon, and diode), iridoplasty, and laser suture lysis. Indications, treatment techniques, and postoperative care will be discussed in detail during the didactic portion of the course. During the laboratory section, participants will have the opportunity to perform endoscopic cyclophotocoagulation, transscleral cyclophotocoagulation, SLT, ALT, MLT, and iridotomies under the supervision of the course instructors.

Objective: At the conclusion of this course, attendees will be able to understand the indications and techniques for the various laser therapies used in the treatment of glaucoma. After the laboratory section, they will have hands-on experience using these modalities on animal eyes.

Instructor(s): Robert J Noecker MD, Joel S Schuman MD*, Jorge A Alvarado MD, Mark A Latina MD*, Malik Y Kahook MD*, Brian E Flowers MD**

Lab

Synopsis: This course will provide a comprehensive review of laser procedures used in the treatment of glaucoma. Topics discussed will include argon laser trabeculoplasty (ALT), selective laser trabeculoplasty (SLT), micropulse laser trabeculoplasty (MLT), cyclophotocoagulation (both endoscopic and transscleral), iridotomy (Nd:YAG, argon, diode, and krypton), and iridoplasty. Laser enhancement of filtering procedures will be covered as well, including laser suture lysis and bleb revision. During the laboratory section, participants will have the opportunity to perform endoscopic cyclophotocoagulation, transscleral cyclophotocoagulation, SLT, ALT, MLT, and iridotomies under the supervision of the course instructors.

Objective: At the conclusion of this course, attendees will be able to understand the indications and techniques for the various laser therapies used in the treatment of glaucoma. After the laboratory section, they will have hands-on experience using these modalities on animal eyes.

Note: Participants will be sharing equipment.

Course: LAB105A Sunday, 12:30 - 2:30 PM
Room: 354 Target Audience: COMPSUB
Fee: \$240 EduLevel: INT

Instructor(s): Robert J Noecker MD, Joel S Schuman MD*, Jorge A Alvarado MD, Mark A Latina MD*, Malik Y Kahook MD*, Brian E Flowers MD*, Martin Uram MD**

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Skills Transfer Program

W Trabeculotomy by Internal Approach Surgery for Adult Open-Angle Glaucoma

Course Director(s): Brian A Francis MD*

Prerequisite Didactic

Course: LEC119 Sunday, 3:15 - 5:30 PM
Room: 340 Target Audience: COMPSUB
EduLevel: INT

Synopsis: This course will cover the Trabectome, an FDA-cleared instrument for angle-based surgery for open-angle glaucoma via an internal approach. The didactic part of the course will describe accumulated data from an ongoing case series (over 5000 eyes), published data, and comparative trials with cataract surgery alone, trabeculectomy, and aqueous tube shunt. Indications, surgical technique, IOP outcomes, and complications will be described during a one-hour didactic course. Surgical tips including proper identification of angle structures using the gonioscopic approach will be emphasized. This may also be followed by a hands-on lab session using inverted corneal donor rings for practice.

Objective: At the conclusion of the course, attendees will understand the indications, surgical technique, IOP outcomes, and complications associated with this device.

Instructor(s): Sameh Mosaed MD*, Nils A Loewen MD*

Labs

Synopsis: During a one-hour lab session, attendees will practice with a Trabectome console and handpiece, with adjustable power level and foot-pedal control, and a tissue model consisting of an inverted human corneal ring, including the trabecular meshwork. The corneal donor ring will be pin-fixed to a rubber holding device and submerged in BSS. Practice surgery will be done via an operating microscope, enabling a realistic view of the instrument effects as the Schlemm canal is unroofed by electroablation. Simultaneous video illustrating the gonioscopic view and live surgeries will also be presented.

Objective: At the course conclusion, attendees will have had a realistic exposure to the surgical technique and one-on-one discussion of the advantages and disadvantages of the Trabectome procedure.

Select one of the following

Course: LAB119A Monday, 7:30 - 8:30 AM
Room: 354 Target Audience: COMPSUB
Fee: \$165 EduLevel: INT

Instructor(s): Donald S Minckler MD*, Sameh Mosaed MD*, Quang H Nguyen MD*, Douglas J Rhee MD*, Paul A Sidoti MD, George Baerveldt MD*, Arthur J Sit MD*, Michael C Stiles MD*, Steven D Vold MD*, Martha Motuz Leen MD*, Marina A Ramirez MD**, Edward M Barnett MD PhD**, Troy M Tanji MD, Mitsunori Watanabe MD**, Masahiro Maeda MD

Course: LAB119B Monday, 9:00 - 10:00 AM
Room: 354 Target Audience: COMPSUB
Fee: \$165 EduLevel: INT

Instructor(s): George Baerveldt MD*, Carla J Siegfried MD*, Douglas J Rhee MD*, Martha Motuz Leen MD*, Donald S Minckler MD*, Paul A Sidoti MD, Quang H Nguyen MD*, Sameh Mosaed MD*, Arthur J Sit MD*, Masahiro Maeda MD

Glaucoma Filtration Surgery

Course Director(s): Steven L Mansberger MD*

Prerequisite Didactic

Course: LEC124 Sunday, 3:15 - 5:30 PM
Room: 335 Target Audience: COMPSUB
EduLevel: INT

Synopsis: This course provides a comprehensive review of the techniques and complications of glaucoma filtration surgery. Glaucoma surgical technique will be stressed in this update of filtration surgery, with a heavy emphasis on surgical video presentations. The course will also discuss novel surgical techniques used in filtration surgery, such as Ex-PRESS shunts, as compared to conventional surgery. A panel discussion with questions and answers will conclude the session.

Objective: This course will review surgical anatomy, basic trabeculectomy techniques, antimetabolites (including 5-fluorouracil and mitomycin C), and postoperative management and complications.

Instructor(s): George A Cioffi MD, Jeffrey M Liebmann MD*, F Jane Durcan MD, Robert D Fechtner MD FACS*, Kuldev Singh MD MPH*, George A Cioffi MD, Celso Tello MD*

Labs

Synopsis: This Skills Transfer course will offer hands-on instruction on glaucoma filtration surgery, specifically for the general ophthalmologist. The lab session will provide experience with the techniques of trabeculectomy.

Objective: Using porcine eyes and dissection microscopes (one per student), glaucoma surgical techniques will be performed. Surgical anatomy, scleral flap dissection, fistula creation, iridectomy, and closure techniques will be performed.

Select one of the following

Course: LAB124A Monday, 11:00 AM - 12:30 PM
Room: 354 Target Audience: COMPSUB
Fee: \$190 EduLevel: INT

Senior Instructor(s): John C Morrison MD

Instructor(s): Young H Kwon MD PhD*, Paul A Sidoti MD, Frank J Mares MD, Michael R Banitt MD*, Christopher J Engelman MD, Steven D Vold MD*, Tak Yee Tania Tai MD, George A Cioffi MD, Mansi Parikh MD

R W Glaucoma Surgical Lab for Ophthalmology Residents

Course: LAB124B Monday, 4:00 - 5:30 PM
Room: 354 Target Audience: COMP
Fee: \$100 EduLevel: BAS

Note: MIT discount already applied.

Senior Instructor(s): Thomas W Samuelson MD*

Instructor(s): Thomas W Samuelson MD*, Iqbal K Ahmed MD*, George L Spaeth MD FACS*, Mark B Sherwood MD*, Michael C Stiles MD*, Leslie S Jones MD*, Jonathan S Myers MD*, James D Brandt MD*, Martha M Wright MD, Garry P Condon MD*, Julia Whiteside-de Vos MD MPH*, Richard Lee MD*, Steven Gedde MD*, J Brent Bond MD*, Robert P Liss MD, Husam Ansari MD PhD*, Amy W Gemperli MD, Davinder S Grover MD*, Christine L Larsen MD, Nathan M Radcliffe MD*

W Schlemm Canal Surgery

Course Director(s): Richard A Lehrer MD*

Prerequisite Didactic

Course: LEC125 Sunday, 3:15 - 5:30 PM
Room: 214 Target Audience: COMPSUB
EduLevel: INT

Synopsis: Early results of nonpenetrating glaucoma surgery, an alternative approach in glaucoma filtering surgery, have shown comparable results to other methods, with a reduction in overall complications. Yet this technique has a learn-

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Skills Transfer Program

ing curve, with its own set of unique challenges. This course will present a systematic, multimedia, video-assisted review of the anatomy, rationale, explanation, and illustration of canaloplasty.

Objective: This course will explain (1) the procedure's method of re-establishing aqueous outflow, (2) the procedure's advantages, disadvantages, risks, and benefits, and (3) the identification of glaucomas where the procedure would have highest probability of success. Recent clinical results and innovations to enhance the procedure will also be discussed.

Instructor(s): Richard A Lehrer MD, Iqbal K Ahmed MD*, Alan S Crandall MD*, Robert Stegmann MD**, Clive O Peckar MD*, Howard Barnebey MD*, John R Kearney MD*

Lab

Synopsis: This course will demonstrate and train attendees in the procedure of viscodilation of the Schlemm canal. Attendees will be mentored in the procedure, with microscopic dissection and catheter and tension suture placement in the Schlemm canal.

Objective: At the conclusion of this course, the attendees should have a good understanding of and hands-on ability to perform this procedure, from the insertion of the microcatheter through placement of the suture invaginating the trabecular meshwork.

Note: Attendees should have experience with nonpenetrating glaucoma surgery.

Course: LAB125A
Room: 354
Fee: \$240
Monday, 1:30 - 3:30 PM
Target Audience: COMPSUB
EduLevel: INT

Senior Instructor(s): Richard A Lehrer MD, Iqbal K Ahmed MD**

Instructor(s): Alan S Crandall MD, Clive O Peckar MD*, Robert Stegmann MD**, Howard Barnebey MD*, John R Kearney MD, Robert P Liss MD, Baseer U Khan MD*, Sebastien Gagne MD***

Computerized Perimetry Lecture: Visual Field Testing and Interpretation, Emphasizing Glaucoma

Jointly Sponsored by the Academy's Skills Transfer Advisory Committee and the American Glaucoma Society (AGS)

*Course Director(s): Julia Whiteside-de Vos MD MPH**

Prerequisite Didactic

Course: LEC132
Room: 335
Monday, 10:15 AM - 12:30 PM
Target Audience: COMP
EduLevel: BAS

Synopsis: This lecture reviews computerized perimetry, emphasizing glaucoma and the Humphrey field analyzer. Topics will include the stepwise interpretation of individual visual fields (VFs), the significance of each portion of the VF printout, determining if the VF is reliable and if it is normal or abnormal, tips for obtaining a more reliable VF and for selecting the appropriate test, SITA, SWAP, frequency doubling perimetry, and the analysis of a series of VFs for progression. Numerous, mostly glaucomatous, case examples will be used.

Objective: This course will provide participants with the background knowledge necessary to be more comfortable with visual field interpretation and to be prepared for the separate laboratory session.

Instructor(s): Julia Whiteside-de Vos MD MPH, Todd W Perkins MD**

Lab

Synopsis: This lab will prepare clinicians to interpret computerized visual fields (VFs) and use them more effectively in the diagnosis and management of glaucoma patients. The first 30 minutes of the lab will be devoted to a lecture regarding Octopus perimetry. Subsequently, participants will practice interpreting Humphrey or Octopus unknown VFs under the guidance of an experienced instructor. Examples will include individual VFs and series of VFs for progression evaluation, using event

and trend progression analysis methods corresponding to the type of perimeter the participant has chosen for concentration.

Objective: This course is designed to enable participants to master the skills necessary for interpreting automated VFs and for using them in the management of glaucoma patients.

Course: LAB132A
Room: 343
Fee: \$130
Monday, 2:00 - 4:00 PM
Target Audience: COMP
EduLevel: BAS

Instructor(s): Jonathan S Myers MD, E Randy Craven MD*, Anand V Mantravadi MD*, Todd W Perkins MD*, Jeffrey S Schultz MD*, David E Silverstone MD, Martha M Wright MD*

Implantation of Glaucoma Drainage Devices

Course Director(s): Richard P Mills MD MPH

Prerequisite Didactic

Course: LEC137
Room: 342
Monday, 2:00 - 4:15 PM
Target Audience: COMPSUB
EduLevel: BAS

Synopsis: The first part of this course is didactic, covering the indications, pathophysiology, surgical technique, postoperative management, and complications of drainage devices (from anterior chamber tube to extraocular reservoir). The second part is hands-on, with implantation of Molteno, Krupin, Baerveldt, Ahmed, and Schocket devices on porcine eyes. Ex-PRESS shunt, Trabectome, and canaloplasty will not be covered.

Objective: At the conclusion of this course, the attendee will be aware of principles and techniques of glaucoma drainage device implantation.

Instructor(s): Ronald Leigh Fellman MD OCS, George Baerveldt MD*, Anne Louise Coleman MD PhD*, Frederick M Kapetansky MD, Donald L Budenz MD MPH*, Paul A Sidoti MD, Angelo P Tanna MD**

Lab

Synopsis: The first part of this course is didactic, covering the indications, pathophysiology, surgical technique, postoperative management, and complications of drainage devices (from anterior chamber tube to extraocular reservoir). The second part is hands-on, with implantation of Molteno, Krupin, Baerveldt, Ahmed, and Schocket devices on porcine eyes. Ex-PRESS shunt, Trabectome, and canaloplasty will not be covered.

Objective: By the conclusion of this course, attendees will be able to complete a drainage device implantation in a fresh tissue eye.

Course: LAB137A
Room: 354
Fee: \$240
Tuesday, 8:00 - 10:00 AM
Target Audience: COMPSUB
EduLevel: BAS

Instructor(s): Ronald Leigh Fellman MD OCS, Mark S Juzych MD**, Paul A Sidoti MD, Martha Motuz Leen MD*, Alfred M Solish MD*, Keith Barton MD*, Frederick M Kapetansky MD, Howard Barnebey MD*, Eugenio J Maul MD, Margaret Sophia Spencer MD, Marianne E Feitl MD, Simon K Law MD*, Joern B Soltau MD*, Steven Gedde MD*, Sameh Mosaed MD*, JoAnn A Giacconi MD**

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Neuro-Ophthalmology

Neuroimaging in Ophthalmology

Jointly Sponsored by the Academy's Skills Transfer Advisory Committee and the North American Neuro-Ophthalmology Society (NANOS)

Course Director(s): Christopher C Glisson DO*

Course: LAB127
Room: 343
Fee: \$130

Monday, 8:00 - 10:00 AM
Target Audience: COMPSUB
EduLevel: INT

Synopsis: This review of CT and MRI scans of the head and orbit will improve participants' knowledge of anatomy and imaging analysis using illustrative cases. The course will be supervised by experienced neuro-ophthalmologists and will employ a hands-on format. Through detailed discussion and review of cases and related films, participants will gain knowledge to enhance skills used when ordering and interpreting imaging.

Objective: Participants will recognize normal and pathologic structures on CT and MRI scans, and become proficient at reviewing neuroimaging studies and recognizing the indications for ordering various types of imaging.

Instructor(s): Michael S Vaphiades DO, Eric Eggenberger DO*, Eric L Berman MD, Jade Schiffman MD, Larry P Frohman MD*, Jacqueline A Leavitt MD, Michael C Brodsky MD**, Nicholas J Volpe MD*, Rosa A Tang MD*, Julie Falardeau MD, John Pula MD**, Melissa W Ko MD**, Roger E Turbin MD, Fiona E Costello MD*

Optics, Refraction, Contact Lenses

EQUIP Soft Contact Lens Fitting for the Practicing Ophthalmologist

Contact Lens Association of Ophthalmologists (CLAO)

Course Director(s): Peter C Donshik MD*, William H Ehlers MD

Course: LAB107
Room: 350
Fee: \$120

Sunday, 9:30 AM - 12:00 PM
Target Audience: COMP
EduLevel: BAS

Synopsis: To appropriately utilize contact lenses in practice, the Eye M.D. needs to recognize suitable candidates, select the most appropriate lens, and know how to fit and evaluate the contact lens. This course is for Eye M.D.s who want to add or expand soft contact lens fitting in their practices. The learning format includes PowerPoint presentations, videos, and interactive computer simulations to demonstrate and teach soft contact lens fitting skills. The attendee will utilize computer simulation to place and evaluate multiple soft contact lens fittings. Individual assistance will be available to attendees during the computer simulation training.

Objective: This course will teach the practitioner (1) recognition of suitable candidates, (2) appropriate soft lens selection, (3) soft spherical and toric lens fitting, and (4) patient and practice management.

Note: Each participant is required to bring their own PC laptop or MAC computer to the course, and computers must be able to load CDs. Windows XP, Windows Vista, or Windows 7 is required.

Instructor(s): Melvin I Freeman MD FACS*, William T Driebe MD, Zoraida Fiol-Silva MD*, Michael H Goldstein MD*, Jeanine Suchecki MD, Bruce Koffler MD*, Peter R Kastl MD PhD, John S Massare PhD, William H Ehlers MD

Orbit, Lacrimal, Plastic Surgery

YO Basic Oculoplastic Surgery

Course Director(s): Eve E Moscato MD

Course: LAB100
Room: 349
Fee: \$245

Sunday, 8:00 - 10:30 AM
Target Audience: COMP
EduLevel: BAS

Synopsis: This course is designed to refresh the ophthalmologist's basic oculoplastic skills in a laboratory setting (employing porcine specimens), while simultaneously reviewing the fundamentals of ophthalmic plastic and reconstructive surgery knowledge. The basic principles involved in choosing suture materials and types of suture needle for various oculoplastics procedures will be reviewed. Surgical positioning and instrumentation will be touched upon as the course participants perform various surgical techniques employed in ophthalmic plastic and reconstructive surgery, with instructor assistance.

Objective: To provide participants with an opportunity to hone surgical skills that are employed in basic oculoplastics procedures such as eyelid lesion removal, eyelid margin lesion resection and reconstruction, eyelid laceration repair, ectropion repair, and blepharoplasty. A very basic introduction to ptosis repair will also be presented.

Instructor(s): Christopher I Zoumalan MD, Raymond I Cho MD, Parag D Gandhi MD, Alice Song MD, Julia Song MD, Jennifer Trew Scruggs MD, Edward Wladis MD*, Harmeet S Gill MD, Keshini C Parbhu MD, Bryan J Winn MD, Sarit M Patel MD, Carrie L Morris MD, Amy M Fowler MD, Louis Savar MD, Ami Ashvin Shah MD, Michael Kangwhi Yoon MD, Lyndon B Lee MD**, Jill S Melicher Larson MD, Elizabeth M Palkovacs MD

EQUIP W Cosmetic Botulinum Toxin and Facial Fillers: An Introductory Course

Course Director(s): Kathleen M Duerksen MD

Prerequisite Didactic

Course: LEC111
Room: 338

Sunday, 10:15 AM - 12:30 PM
Target Audience: COMPSUB
EduLevel: BAS

Synopsis: Principles of aesthetic facial injection of botulinum toxin and facial fillers will be presented in a didactic format.

Objective: At the conclusion of this course, the attendee will better understand the salient anatomy, clinical techniques (including complication avoidance), and pharmacological principles pertaining to aesthetic injection of these substances.

Instructor(s): Michael S McCracken MD, Deborah D Sherman MD*, John Joseph Martin MD*

Lab

Synopsis: Taught by experienced instructors, the lab provides hands-on, personalized instruction in the basics of botulinum toxin and facial filler injections utilizing cadaver heads.

Objective: At the completion of the lab, the participant will be able to identify the proper sites, doses, and indications for injection of botulinum toxin and facial fillers. The participant will demonstrate proper injection technique with the goal of avoiding technique-related complications.

Note: Participants are required to bring surgical loupes.

Course: LAB111A
Room: 352
Fee: \$305

Sunday, 1:30 - 3:00 PM
Target Audience: COMPSUB
EduLevel: BAS

Instructor(s): Michael S McCracken MD, Deborah D Sherman MD*, Cat Burkat MD, Christopher M DeBacker MD, Jeffrey P Edelstein MD*, Craig Erwin Geist MD, Ioannis P Glavas MD, Morris E Hartstein MD, Ronald W Kristan MD, John Joseph Martin MD*, Dale R Meyer MD FACS, Gary Borodic MD*, Rona Z Silkiss MD FACS,

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Skills Transfer Program

Charles B Slonim MD FACS*, Julie A Woodward MD*, Jane J Olson MD, Dawn C Buckingham MD, Kenneth David Steinsapir MD*, Asa Dan Morton III MD*, Fred S Bodker MD

EQUIP W Fundamental Facelifting Techniques

Jointly Sponsored by the Academy's Skills Transfer Advisory Committee and the American Society of Ophthalmic Plastic & Reconstructive Surgery (ASOPRS)

Course Director(s): Brett S Kotlus MD

Prerequisite Didactic

Course: LEC112 Sunday, 10:15 AM - 12:30 PM
Room: 215 Target Audience: SUB
EduLevel: INT

Synopsis: This basic course will consist of a step-by-step slide and video presentation of a preoperative assessment, surgical facial anatomy, fundamental facelifting techniques, postoperative care, and potential complications. A downloadable course manual will be available to participants.

Objective: Participants will acquire the ability to select appropriate patients, develop hands-on familiarity with facial surgical anatomy, perform safe surgical dissection, provide appropriate postoperative care, and integrate facelifting into their aesthetic oculo-facial practice.

Instructor(s): Tanuj Nakra MD, Robert M Schwarcz MD*, Bobby S Korn MD PhD FACS*

Lab

Synopsis: Step-by-step cadaver dissection will demonstrate surgical anatomy, safe surgical planes, and fundamental facelifting techniques, including cervical-mental restoration, flap and skin redraping, drain placement, and skin closure.

Objective: Participants will acquire hands-on familiarity with the surgical anatomy and basic facelifting techniques so they will be able to incorporate facelifting procedures into their aesthetic practices.

Note: Participants are required to bring surgical loupes.

Course: LAB112A Monday, 11:00 AM - 1:00 PM
Room: 352 Target Audience: SUB
Fee: \$410 EduLevel: INT

Instructor(s): Bobby S Korn MD PhD FACS*, Robert M Schwarcz MD*, Tanuj Nakra MD, David E Holck MD, Joel Kopelman MD**, Stuart R Seiff MD, Allan E Wulc MD FACS*, Roger A Dailey MD*, Kevin Ira Perman MD, Kenneth David Steinsapir MD*, Susan M Hughes MD FACS**, Kathleen M Duerksen MD, William R Nunery MD, Jill Annette Foster MD FACS*, Mikel W Lo MD, John D Ng MD*, Asa Dan Morton III MD*, Christopher M DeBacker MD, John Joseph Martin MD*, Kenneth E Morgenstern MD**, Adam S Hassan MD, Janet M Neigel MD*, Scott M Goldstein MD*, Geva E Mannor MD MPH, Dustin M Heringer MD, David Khoramian Isaacs MD

Enucleation and Evisceration: Theory and Practice

Course Director(s): Parag D Gandhi MD

Course: LAB113 Sunday, 11:30 AM - 2:00 PM
Room: 349 Target Audience: COMPSUB
Fee: \$245 EduLevel: INT

Synopsis: This course will cover the theory and practice of enucleation and evisceration surgery with detailed surgical steps, hands-on practical training, and video demonstrations. Implants will be available for attendees to use on porcine orbits.

Objective: By the conclusion of this course, participants will be able to (1) understand preoperative evaluation and imaging, (2) develop an instrument set and implant options before surgery, (3) understand and anticipate anesthesia requirements, (4) understand and perform steps of enucleation and evisceration surgeries, (5) develop and implement a framework for deciding which procedure to choose and when, (6) understand the history of orbital implants and gain facility with im-

plants currently available and identify their advantages, (7) understand the advantages and disadvantages of wrapping and pegging implants, (8) gain familiarity with management of early postoperative complications, and (9) describe how to manage late complications and the postenucleation socket syndrome.

Instructor(s): Mauricio Chavez MD**, Maria Kirzhner MD, Gary J Lelli MD, Marcus M Marcet MD, Eve E Moscato MD, Andrew Munro MD, Sarit M Patel MD, Erin Shriver MD, Manoj M Thakker MD, M Reza Vagefi MD

NEW EQUIP W Fat Grafting and Volume Restoration

Course Director(s): David Khoramian Isaacs MD

Prerequisite Didactic

Course: LEC115 Sunday, 2:00 - 3:00 PM
Room: 335 Target Audience: COMPSUB
EduLevel: INT

Synopsis: The purpose of this prerequisite didactic course is to present facial fat grafting as a technique for volume restoration. Indications for surgery, patient selection, alternatives to surgery, surgical techniques and instrumentation, and postoperative details will be reviewed. An interactive case presentation will allow attendees to participate.

Objective: At the conclusion of this course, the attendee will be acquainted with facial fat grafting techniques and appropriate patient selection, as well as addressing potential postoperative complications. The course will enable the attendee to formulate a customized approach to a patient's needs and goals.

Instructor(s): Robert M Schwarcz MD*, Tanuj Nakra MD, Norman Shorr MD, Robert A Goldberg MD*

Lab

Synopsis: The purpose of this course is to allow attendees to have a hands-on cadaver learning module in fat grafting. Lectures, video presentations, and laboratory demonstrations on cadavers will teach tumescent anesthesia, fat harvesting, and fat grafting techniques.

Objective: At the conclusion of this course, the attendee will be familiar with safe and effective fat grafting techniques and addressing potential postoperative complications. The course will enable the attendee to formulate a customized approach to a patient's needs and goals.

Note: Participants are required to bring surgical loupes.

Course: LAB115A Monday, 8:00 - 10:00 AM
Room: 352 Target Audience: COMPSUB
Fee: \$410 EduLevel: BAS

Instructor(s): Robert A Goldberg MD*, Norman Shorr MD, Robert M Schwarcz MD*, Mehryar Taban MD, Catherine Hwang MD, Joseph L Lin MD**, Daniel B Rootman MD MSc, Tanuj Nakra MD

EQUIP W Blepharoplasty

Course Director(s): Keith D Carter MD FACS

Prerequisite Didactic

Course: LEC116 Sunday, 2:00 - 4:15 PM
Room: 225 Target Audience: COMPSUB
EduLevel: INT

Synopsis: This course will cover the latest techniques in upper and lower eyelid blepharoplasty. Basic and advanced surgical techniques, eyelid anatomy, patient selection, preoperative evaluation, and avoidance of complications will be discussed. A course handbook with illustrations outlining the surgical techniques will be provided.

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Objective: This course will provide participants with the techniques required to perform successful upper and lower eyelid blepharoplasties.

Instructor(s): Keith D Carter MD FACS, Mark A Alford MD, Richard C Allen MD PhD, Richard L Anderson MD FACS, Adam G de la Garza MD, Robert C Kersten MD, Jill S Melicher Larson MD, Jeffrey A Nerad MD*

Lab

Synopsis: This course is designed to provide hands-on laboratory experience with the techniques used in upper and lower eyelid blepharoplasty. Videos of techniques will be presented, along with personal assistance with cadaver dissection.

Objective: Participants will be shown the clinically relevant anatomy as it relates to performing upper and lower eyelid blepharoplasties.

Note: Participants are required to bring surgical loupes.

Course: LAB116A Monday, 2:00 - 4:00 PM
Room: 352 Target Audience: COMPSUB
Fee: \$410 EduLevel: INT

Instructor(s): Keith D Carter MD FACS, Mark A Alford MD, Richard C Allen MD PhD, Richard L Anderson MD FACS, Francesco P Bernardini MD, Carlo de Conciliis MD, Adam G de la Garza MD, Martin H Devoto MD, Jill S Melicher Larson MD, Robert C Kersten MD, Jose R Montes MD, Jeffrey A Nerad MD, Rachel K Sobel MD*

W Oculoplastic Surgery: Anatomic Foundations, Surgical Techniques, and Enhanced Results

Course Director(s): Cat Burkat MD

Course: LAB118 Sunday, 3:00 - 5:30 PM
Room: 349 Target Audience: COMPSUB
Fee: \$155 EduLevel: INT

Synopsis: Anatomic principles provide the cornerstone of successful oculofacial surgery. This course will cover the anatomic foundations to be considered when performing surgical procedures of the eyebrow, forehead, upper and lower eyelids, midface, and lacrimal system. A series of short lectures will be followed by interactive demonstration of clinically relevant anatomy on various cadaver prosections.

Objective: This course is designed to provide knowledge of anatomic foundations on which participants can build successful oculofacial surgical procedures.

Instructor(s): Mark J Lucarelli MD FACS, Arash Jian-Amadi MD, Richard Angrist MD, Christina H Choe MD, Alon Kahana MD PhD, Don Kikkawa MD, Bobby S Korn MD PhD FACS*, Jan W Kronish MD, David B Lyon MD FACS, Marcus M Marcet MD, John J McGetrick MD FACS, Karim G Punja MD, Nicholas A Ramey MD, John G Rose Jr MD, Joseph P Shovlin MD, Manoj M Thakker MD, Katherine M Whipple MD, Edward Wladis MD*, Roberta Gausas MD***

EQUIP W Workshop in Techniques of Lacrimal Intubation

*Course Director(s): Arthur Perry MD**

Course: LAB126 Sunday, 4:00 - 5:30 PM
Room: 352 Target Audience: COMPSUB
Fee: \$305 EduLevel: INT

Synopsis: This course will review indications for silicone intubation and will show different intubation systems and techniques. Participants will spend most of the course time actually performing the intubation procedure on cadavers.

Objective: Participants should leave the course feeling confident that they can successfully intubate the lacrimal system and understand both the indications for this procedure and possible complications.

Note: Participants are required to bring surgical loupes.

Instructor(s): Bruce B Becker MD, Jeffrey P Edelstein MD*, Arthur Perry MD*, Melissa L Meldrum-Aaberg MD, Bert Bowden MD, Karim G Punja MD, Scott M Goldstein MD*, Adam S Hassan MD, Asa Dan Morton III MD**

Orbitofacial Fracture Repair: Plating Workshop

Course Director(s): Jeremiah P Tao MD, Eli L Chang MD

Course: LAB128 Monday, 8:00 - 11:00 AM
Room: 349 Target Audience: SUB
Fee: \$180 EduLevel: INT

Synopsis: We will introduce the orbitocentric approach to facial fracture repair, including anatomy, principals of rigid internal fixation, and best surgical approaches. A series of lectures will be followed by a lab that introduces fixation systems and plating concepts. Model skulls, facial plating hardware, and instrumentation will be provided.

Objective: At the conclusion of the course, the attendee will be able to understand the benefits of an orbitocentric approach to orbitofacial bone repair. In addition, participants will gain practical experience with facial plating and instrumentation.

Instructor(s): William R Nunery MD, Hui Bae Harold Lee MD, Peter J Timoney MBBCh, Mithra O Gonzalez MD

Workshop in Flap Techniques in Oculoplastic Surgery

Course Director(s): Dawn C Buckingham MD

Course: LAB134 Monday, 1:00 - 3:00 PM
Room: 349 Target Audience: COMPSUB
Fee: \$130 EduLevel: INT

Synopsis: This course will begin with a discussion of various suturing materials and techniques. Basic flap techniques will then be discussed, including advancement, rotation, and bilobe and rhomboid flaps. Additionally, Z-plasty, Y-V plasty, and the management of dog ears will be covered. These techniques are crucial in achieving the best possible cosmetic result in periorbital reconstruction. The majority of the course will be a hands-on practicum, during which participants may perform these procedures under the supervision of experienced course instructors, utilizing pig's feet.

Objective: At the conclusion of this course, the participant will be more familiar with various suturing techniques useful in periorbital wound closure and will have a better understanding of the indications for and techniques utilized in flap reconstruction of periorbital cutaneous defects.

Instructor(s): George O Stasior MD, Suzanne K Freitag MD, Morris E Hartstein MD, Junhee Lee MD, Sang H Hong MD, Cat Burkat MD, Nicholas A Ramey MD, Alice Song MD, Renzo Zaldivar MD

EQUIP W Endoscopic Transnasal Lacrimal Surgery: Principles and Practice

Course Director(s): Francois Codere MD

Prerequisite Didactic

Course: LEC135 Monday, 2:00 - 3:00 PM
Room: 340 Target Audience: COMPSUB
EduLevel: INT

Synopsis: The transnasal diagnosis and treatment of lacrimal outflow disorders will be presented. Endoscopic nasal anatomy, transnasal dacryocystorhinostomy surgical techniques, endoscopic Jones tubes placement, and endoscopic diagnosis and management of lacrimal disorders will be covered.

Objective: At the conclusion of this course, participants will understand transnasal endoscopic diagnosis and treatment of lacrimal outflow disorders.

Instructor(s): Francois Codere MD, Bruce M Massaro MD, Jennifer A Sivak-Callcott MD

Lab

Synopsis: This course will present the transnasal diagnosis and treatment of lacrimal outflow disorders. Endoscopic nasal anatomy, transnasal dacryocystorhinostomy surgical techniques, endoscopic placement of Jones tubes, endoscope-

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest.

Skills Transfer Program

assisted intubation, and use of the endoscope for diagnosis and management of lacrimal disorders will be covered.

Objective: At the conclusion of this course, participants will understand transnasal endoscopic diagnosis and treatment of lacrimal outflow disorders.

Note: Participants are required to bring surgical loupes.

Course: LAB135A Tuesday, 11:00 AM - 1:30 PM
Room: 352 Target Audience: COMPSUB
Fee: \$460 EduLevel: INT

*Instructor(s): Francois Codere MD, Bruce M Massaro MD, Jennifer A Sivak-Callcott MD, Jorge Corona MD, Steven C Dresner MD, Angela M Dolmetsch MD, James H Merritt MD, Jamie Wong MD**, John T Harvey MD, Liat Attas-Fox MD, Patrick R Boulos MD**

Introduction to Aesthetic Facial Surgery by Fractional Lasers, Intense Pulsed Light, Radiofrequency, and Ultrasound Devices

*Course Director(s): Julie A Woodward MD**

Prerequisite Didactic

Course: LEC138 Monday, 3:15 - 5:30 PM
Room: 335 Target Audience: COMPSUB
EduLevel: BAS

Synopsis: This course will focus primarily on ablative fractional and nonfractional laser resurfacing and incisional blepharoplasty because this is the only rejuvenating technology limited to physicians. Preoperative, intraoperative, and postoperative care, management of complications, and marketing will be covered. There will also be introductions to the latest in nonablative fractional resurfacing, radiofrequency, and microfocused ultrasound.

Objective: By the conclusion of this course, attendees will be able to (1) compare and contrast the many different devices on the market, (2) have introductory knowledge of how to incorporate such new technologies into their practices, and (3) recognize and manage complications of these devices.

Instructor(s): Julie A Woodward MD, Erin Holloman MD**, Raminder K Saluja MD**, Usha P Reddy MD, Randal Pham MD FACS, Adam J Scheiner MD*, John Joseph Martin MD*, Ioannis P Glavas MD*

Lab

Synopsis: This course will focus primarily on ablative traditional laser skin resurfacing, ablative fractional resurfacing, and incisional laser surgery because these procedures naturally compliment blepharoplasty and are the only rejuvenating technologies limited to physicians. Preoperative, intraoperative, and postoperative care as well as management of complications will be covered. There will also be information presented on Intense Pulsed Light since this is a very multifunctional device. Instructors with in depth knowledge about a variety of other energy based devices will be available for questions.

Objective: At the completion of this course, participants will (1) understand safe application of rejuvenation technology, (2) learn how to manage complications, and (3) start to choose which devices and procedures to incorporate into their current practices.

Note: Participants will be sharing equipment.

Course: LAB138A Tuesday, 11:00 AM - 1:00 PM
Room: 354 Target Audience: COMPSUB
Fee: \$240 EduLevel: BAS

Instructor(s): Julie A Woodward MD, John Joseph Martin MD*, Randal Pham MD FACS, Adam J Scheiner MD*, Michael Richard MD, Ioannis P Glavas MD, Wendy W Lee MD*, Usha P Reddy MD, Amina Husain MD, Kristina M Price MD, Sara T Wester MD*

EQUIP W Endoscopic Forehead and Eyebrow Elevation

Course Director(s): Stuart R Seiff MD

Prerequisite Didactic

Course: LEC140 Monday, 3:15 - 5:30 PM
Room: 340 Target Audience: COMPSUB
EduLevel: INT

Synopsis: The aesthetic evaluation of the patient with eyebrow ptosis, the anatomy of the eyebrow and forehead, and a description of the endoscopic brow and forehead elevation procedure will be discussed. A course handbook will be provided, detailing the surgical technique.

Objective: This course is designed to provide an understanding of the preoperative patient evaluation, pertinent surgical anatomy, and technique of endoscopic brow and forehead elevation.

Instructor(s): Louis Savar MD, Susan R Carter MD

Lab

Synopsis: A brief lecture outlining the steps in endoscopic forehead and eyebrow elevation will be followed by step-by-step cadaver dissections for hands-on experience with the equipment and surgical technique.

Objective: Participants will obtain a familiarity with the surgical anatomy of the brow and forehead, instrumentation, planes of dissection, and closure techniques in endoscopic forehead and eyebrow elevation.

Note: Participants are required to bring surgical loupes.

Course: LAB140A Tuesday, 7:30 - 10:00 AM
Room: 352 Target Audience: SUB
Fee: \$460 EduLevel: INT

Senior Instructor(s): Susan R Carter MD

Instructor(s): Kimberly Cockerham MD FACS, Kathleen M Duerksen MD, Jill Annette Foster MD FACS*, David E Holck MD, John Bryan Holds MD*, Asa Dan Morton III MD*, Eve E Moscato MD, Harmeet S Gill MD, Morris E Hartstein MD, Craig N Cxyz DO, Louis Savar MD, Rona Z Silkiss MD FACS*

W Surgical Anatomy of the Eyelids: Cadaver Demonstration

Course Director(s): Edward H Bedrossian MD FACS

Course: LAB143 Tuesday, 8:00 - 10:30 AM
Room: 349 Target Audience: COMPSUB
Fee: \$155 EduLevel: INT

Synopsis: Using slides, video, and cadaver prosections, this course will demonstrate landmarks important in the correction of brow ptosis, blepharoptosis, ectropion, entropion, and retraction. Included will be a precourse quiz and participant interaction.

Objective: This course is designed to (1) review eyelid anatomy, (2) show structures in prosected cadavers, and (3) improve surgical technique.

*Instructor(s): Edward H Bedrossian MD FACS, Robert C Della Rocca MD**, Bryan Arthurs MD FRCSC*

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EQUIP W Advanced Techniques in Orbital Decompression and Expansion

Course Director(s): Robert A Goldberg MD*

Prerequisite Didactic

Course: LEC145
Room: 342
Tuesday, 10:15 AM - 12:30 PM
Target Audience: SUB
EduLevel: ADV

Synopsis: This course is designed to foster creative thinking in orbital decompression. Staging, planning, and techniques for orbital decompression will be reviewed, including deep lateral, fat removal, transcaruncular, and endoscopic. Surgical versatility and creative decision making will be stressed.

Objective: This course is designed to acquaint participants with a variety of techniques for orbital decompression and to enable them to design an individualized approach based on the patient's needs and goals.

Instructor(s): Raymond Douglas MD PhD*, Norman Shorr MD, Catherine Hwang MD, Mehryar Taban MD, Joseph L Lin MD**, Daniel B Rootman MD MSc, Alice Siew Ching Goh MD

Lab

Synopsis: Through lectures, video presentations, and laboratory dissection, various techniques for orbital decompression will be reviewed, including deep lateral, fat removal, transcaruncular, and endoscopic. Surgical versatility and creative decision making will be stressed.

Objective: This course is designed to acquaint participants with a variety of techniques for orbital decompression and to enable them to design an individualized approach based on the patient's needs and goals.

Note: Participants are required to bring surgical loupes and headlamps.

Course: LAB145A
Room: 352
Fee: \$460
Tuesday, 2:30 - 5:00 PM
Target Audience: SUB
EduLevel: ADV

Instructor(s): Norman Shorr MD, Jonathan W Kim MD, Raymond Douglas MD PhD*, Tanuj Nakra MD, Ronald Mancini MD, Mehryar Taban MD, Catherine Hwang MD, Joseph L Lin MD**, Daniel B Rootman MD MSc, Alice Siew Ching Goh MD, Raman Malhotra MBChB FRCOphth, Aline Pimentel MD, Payam Vali Morgan MD**

W Surgical Anatomy of the Orbit and Lacrimal System: Cadaver Demonstration

Course Director(s): Robert C Della Rocca MD**

Course: LAB146
Room: 349
Fee: \$130
Tuesday, 12:00 - 2:00 PM
Target Audience: COMPSUB
EduLevel: INT

Synopsis: In this course, instructors will address small groups of attendees (4 to 5 persons). Surgical anatomy and clinical correlation will be emphasized. Several short didactic lectures with slide demonstrations will present nasolacrimal surgery, orbital fracture repair, and anterior and medial orbitotomy. Associated neuroanatomy correlation will be included.

Objective: This course is designed to familiarize participants with surgical anatomical landmarks encountered in orbital and lacrimal surgery. Specific surgical techniques will be demonstrated.

Instructor(s): Robert C Della Rocca MD**, Edward H Bedrossian MD FACS, Meredith A Abbott MD, David A Della Rocca MD**, Harsha S Reddy MD, Chaneve Jeanniton MD

Pediatric Ophthalmology, Strabismus

W New Techniques for Strabismus Surgery

Course Director(s): Kenneth W Wright MD*

Prerequisite Didactic

Course: LEC117
Room: 217
Sunday, 2:00 - 3:00 PM
Target Audience: COMPSUB
EduLevel: INT

Synopsis: Over the past several years, important surgical innovations have made strabismus surgery safer and more effective. This course will teach the use of novel strabismus surgical techniques, including grooved hook for suturing the muscle insertion, minimally invasive techniques (rectus central tenotomy and plication), and use of amniotic membrane transplant for restrictive strabismus. Video will be presented to help teach the techniques. Outcome studies of surgical procedures will be presented.

Objective: At the conclusion of this course, the attendee will be able to use new strabismus surgical techniques to improve surgical outcomes and reduce complications.

Instructor(s): Yi Ning Strube MD, Luke W Deitz MD

Lab

Synopsis: This hands-on lab will transfer the surgical skills required for the use of new strabismus techniques. Attendees will actually perform the procedures. Specific techniques will include use of the grooved hook for safe suturing of tight muscles and suturing of muscles during topical anesthesia surgery. Techniques for amniotic membrane transplant useful in the treatment of restrictive strabismus will be taught. Minimally invasive techniques of partial rectus tenotomy and plication will be presented. The minimally invasive procedures have utility for the treatment of small-angle strabismus.

Objective: At the conclusion of the course, the attendee will be able to perform new strabismus surgical techniques that will improve patient care and clinical outcomes.

Course: LAB117A
Room: 354
Fee: \$180
Sunday, 3:30 - 5:30 PM
Target Audience: COMPSUB
EduLevel: INT

Instructor(s): Yi Ning Strube MD, Lisa S Thompson MD, Luke W Deitz MD, Rebecca S Leenheer MD

Refractive Surgery

The Surgical Correction of Astigmatism

Course Director(s): Jean-Luc Febraro MD*, Hamza N Khan MD FACS*

Prerequisite Didactic

Course: LEC108
Room: 355
Sunday, 10:15 AM - 12:30 PM
Target Audience: COMP
EduLevel: INT

Synopsis: This course will supply participants with the necessary principles, theories, and practical instruction in the various forms of astigmatic keratotomy (PRI, limbal relaxing incisions) and nonincisional astigmatism correction (LASIK, toric IOLs).

Objective: Attendees will gain an understanding of techniques used to evaluate and manage astigmatism as a primary procedure and as an adjunct to lens surgery.

Instructor(s): Kurt A Buzard MD, Miles H Friedlander MD, Ronald N Gaster MD FACS*, David H Haight MD, Jack T Holladay MD MSEE FACS*, Douglas D Koch MD*, R Bruce Wallace MD*

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Lab

Synopsis: This practical hands-on wet lab- and video-based course allows participants to improve their management of astigmatism, identify appropriate surgical candidates for astigmatism correction, and select the best techniques for each case, either combined with lens surgery or alone. Participants will learn to mark appropriately for toric IOLs and perform corneal incisions (peripheral corneal relaxing incisions or limbal relaxing incisions), and will learn pearls and common pitfalls of each. The impact of various cataract incisions on astigmatism (surgically induced astigmatism) and laser vision correction will be discussed.

Objective: Attendees will gain an understanding of techniques used to evaluate and manage astigmatism as a primary procedure and as an adjunct to lens surgery.

Course: LAB108A Sunday, 1:00 - 2:30 PM
Room: 345 Target Audience: COMPSUB
Fee: \$190 EduLevel: INT

Instructor(s): Jean-Luc Febbraro MD, Hamza N Khan MD FACS*, Jean-Luc Febbraro MD*, Kurt A Buzard MD, Miles H Friedlander MD, Ronald N Gaster MD FACS*, Paul Gilwit MD FACS, David H Haight MD, R Bruce Wallace MD*, Douglas D Koch MD*, Baseer U Khan MD**

Phakic IOLs

*Course Director(s): Thomas M Harvey MD**

Prerequisite Didactic

Course: LEC109 Sunday, 10:15 AM - 12:30 PM
Room: R02 Target Audience: COMPSUB
EduLevel: INT

Synopsis: This course will educate the participant on the use of phakic IOLs in refractive surgery. Topics of discussion will include patient selection and preoperative testing, IOL power calculations, postoperative care, complication management, surgical technique, and managing residual refractive error. Phakic IOLs currently available in the United States will be emphasized.

Objective: At the course conclusion, the participant will understand indications for the use of phakic IOLs and key management aspects of phakic IOL candidates.

Instructor(s): Sherman W Reeves MD MPH, David R Hardten MD*, Stephen S Lane MD*, Jack T Holladay MD MSEE FACS*, Scott D Barnes MD*, Paul J Harton Jr MD*, Gregory Parkhurst MD*, Elizabeth A Davis MD**

Lab

Synopsis: Using pig eyes, the participant will have the opportunity to practice the insertion of phakic IOLs. Instructors will be available to assist and answer questions. FDA-approved phakic IOLs will be emphasized and available for implantation.

Objective: This wet lab will enable the participant to practice the surgical technique of inserting phakic IOLs.

Course: LAB109A Sunday, 1:30 - 3:00 PM
Room: 356 Target Audience: COMPSUB
Fee: \$280 EduLevel: INT

Instructor(s): David R Hardten MD, D Rex Hamilton MD*, Scott D Barnes MD*, Thomas M Harvey MD*, Andrew J Velazquez MD, John P Berdahl MD*, Anthony J Lombardo MD PhD, William Wiley MD*, Sherman W Reeves MD MPH*, Preeya K Gupta MD*, George O Waring MD*, Gregory Pamel MD**, Andrew C Shatz MD*, Asim R Piracha MD*, Michael Vrabc MD*, Paul J Dougherty MD*, Lisa Nijm MD, Paul J Harton Jr MD*, Gregory Parkhurst MD*, Scott M MacRae MD**

ISRS Laser Refractive Surgery Course

Jointly Sponsored by the Academy's Skills Transfer Advisory Committee and the International Society of Refractive Surgery (ISRS)

*Course Director(s): Michael C Knorz MD**

Prerequisite Didactic

Course: LEC141 Monday, 3:15 - 5:30 PM
Room: 346 Target Audience: SUB
EduLevel: INT

Synopsis: This course will start with the basics of how conventional and laser microkeratomes work and what one needs to know before performing LASIK and surface ablation. It will move on to cover tips, step by step, with presentations discussing the newest applications and developments in LASIK and surface ablation. The prevention and treatment of complications will be covered in detail.

Objective: This course is designed to give participants the information and skills needed for LASIK and surface ablation, including patient selection, basic principles, postoperative care, and management of complications.

Instructor(s): Jason E Stahl MD, Richard L Lindstrom MD, Jack T Holladay MD MSEE FACS**

Labs

Synopsis: The wet lab is designed for those interested in learning techniques in laser refractive surgery. Mechanical microkeratomes, femtosecond lasers, excimer lasers, and corneal inlays will be available in the lab, with experienced surgeons on hand to assist with questions and to demonstrate techniques.

Objective: Participants will become acquainted with a broad array of both mechanical and laser microkeratomes and how they work with excimer lasers.

Select one of the following

Course: LAB141A Tuesday, 8:00 - 10:00 AM
Room: 345 Target Audience: COMPSUB
Fee: \$240 EduLevel: BAS

Note: Participants will be sharing equipment.

*Senior Instructor(s): George O Waring IV MD**

Instructor(s): Jason E Stahl MD, David R Hardten MD, Vance Michael Thompson MD*, Wallace Chamon MD*, Minoru Tomita MD PhD*, Parag A Majumdar MD*, Karolinne M Rocha MD, Sherman W Reeves MD MPH*, Mihai Pop MD**, Elizabeth Yeu MD*, Calvin G Eshbaugh MD**, Duane A Wiggins MD, Raj K Goyal MD MPH*, Paul C Kang MD*, William Wiley MD*, John J DeStafeno MD, Thomas M Harvey MD*, John P Berdahl MD*, Brandon Ayres MD*, Jodhbir S Mehta FRCS FRCOPHTH*, Suphi Taneri MD*, Ashvin Agarwal*

Jointly Sponsored by the Academy's Skills Transfer Advisory Committee and the International Society of Refractive Surgery (ISRS)

R YO Laser Refractive Surgery for Ophthalmology

Residents

Course: LAB141B Tuesday, 10:30 AM - 12:30 PM
Room: 345 Target Audience: COMPSUB
Fee: \$140 EduLevel: BAS

Note: MIT discount already applied. Participants will be sharing equipment.

*Senior Instructor(s): George O Waring MD**

Instructor(s): Jason E Stahl MD, Daniel S Durrie MD, Shachar Tauber MD*, Scott D Barnes MD*, Renato Ambrosio Jr MD*, John A Hovanessian MD*, David A Goldman MD*, Michael Vrabc MD*, Erin D Stahl MD*, James C Loden MD*, Allen Boghossian DO, Michael J Collins MD FACS, Ryan T Smith MD, Lisa Nijm MD, Erik Letko MD, Jeremy Z Kieval MD*, Jessica B Ciralsky MD*, Aylin Kilic MD, Jason P Brinton MD*

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest.

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Retina, Vitreous

Macular OCT: Mastering the Basics

Course Director(s): John S Pollack MD*

Prerequisite Didactic

Course: LEC110 Sunday, 10:15 AM - 12:30 PM
Room: R08 Target Audience: COMP
EduLevel: BAS

Synopsis: This course provides basic instruction on accurate interpretation of OCTs of common macular pathologies, as well as instruction on how to identify and prevent common OCT artifacts. The course also provides a clinically meaningful review of indications and limitations of OCT in the diagnosis and management of common macular diseases such as AMD, diabetic maculopathy, epiretinal membrane, macular holes, vitreomacular traction, central serous retinopathy, vascular occlusions, and postoperative cystoid macular edema.

Objective: Upon completion of this course, participants should be able to (1) accurately interpret OCTs of common macular pathologies, (2) describe the indications for and limitations of OCT in the diagnosis and management of macular diseases, and (3) identify, interpret, and correct common OCT artifacts.

Instructor(s): John S Pollack MD*, Cynthia A Toth MD*, Anat Loewenstein MD*, Dante Pieramici MD*, Nadia Khalida Waheed MD

Lab

Synopsis: This course will provide attendees with a small-group interactive format (5-6 attendees per instructor) for hands-on experience reviewing and evaluating OCTs covering a wide range of common macular diseases, with emphasis on sharpening the OCT-interpretation skills of the attendees. Attendees will rotate with all instructors, covering a variety of topics, including but not limited to AMD, vascular occlusions, epiretinal membrane, vitreomacular traction, macular holes, diabetic retinopathy, and postoperative cystoid macular edema. Attendees are invited to bring one challenging case for discussion at the end of the lab, time permitting.

Objective: Upon completion of this course, participants should be able to (1) identify the OCT features of normal and abnormal macular anatomy, (2) diagnose common macular pathologies based on specific OCT characteristics, and (3) identify, correct, and prevent common OCT artifacts.

Course: LAB110A Sunday, 3:00 - 5:00 PM
Room: 343 Target Audience: COMP
Fee: \$130 EduLevel: BAS

Instructor(s): John S Pollack MD*, Jack A Cohen MD FACS, Dafna Goldenberg MD*, Brandon G Busbee MD*, Sanford F Chen MD, Justis Ehlers MD

Diabetes 2013: Course on Diabetic Retinopathy

Course Director(s): Keye Luc Wong MD*

Prerequisite Didactic

Course: LEC139 Monday, 3:15 - 5:30 PM
Room: 333 Target Audience: COMP
EduLevel: INT

Synopsis: This course will present a rational approach to the diagnosis and treatment of diabetic retinopathy based on first understanding results and recommendations of the Diabetic Retinopathy Study and Early Treatment Diabetic Retinopathy Study and subsequently reviewing DRCRnet publications that may modify some of those recommendations. Case presentations made to a panel of experts will illustrate the role of OCT and pharmacotherapy relative to laser therapy.

Objective: By the conclusion of this course, participants will be able to understand (1) the clinical indications for laser treatment of diabetic retinopathy and (2) the role of pharmacotherapy and OCT in current management of diabetic retinopathy.

Instructor(s): Keye Luc Wong MD*, Abdhish R Bhavsar MD*, Alexander J Brucker MD*, Emily Y Chew MD, Harry W Flynn MD*, Arthur D Fu MD, Justin L Gottlieb MD, Sam Edward Mansour MD*

Lab

Synopsis: The latest in diagnostic methods and treatment techniques will be reviewed in small groups using case presentations. Panel discussions with an extensive faculty will highlight current treatment controversies in which DRCRnet results may modify Diabetic Retinopathy Study (DRS) and Early Treatment Diabetic Retinopathy Study (ETDRS) recommendations.

Objective: By the conclusion of this course, participants will be able to understand the clinical indications for pharmacotherapy and laser treatment of diabetic retinopathy and to know the best treatment techniques based on DRS, ETDRS, and DRCRnet clinical trial results.

Course: LAB139A Tuesday, 8:00 - 10:30 AM
Room: 343 Target Audience: COMP
Fee: \$150 EduLevel: INT

Instructor(s): Keye Luc Wong MD*, Justin L Gottlieb MD, Gary W Abrams MD*, Michael M Altaweel MD*, Neal H Atebara MD, Maria H Berrocal MD*, Robert A Braunstein MD, David J Browning MD PhD*, Alexander J Brucker MD*, Clement K Chan MD*, Suresh R Chandra MD, John H Drouilhet MD FACS*, Michael S Ip MD*, Richard H Johnston MD, James L Kinyoun MD

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest.

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— Amar Agarwal, MD

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- c. Residents in Nairobi
- d. A grandmother in Warner, Oklahoma

e. All of the above



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Important Safety Information about the WaveLight® Excimer Laser Systems

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Caution: Federal (U.S.) law restricts the WaveLight® Excimer Laser Systems to sale by or on the order of a physician. Only practitioners who are experienced in the medical management and surgical treatment of the cornea, who have been trained in laser refractive surgery (including laser calibration and operation) should use a WaveLight® Excimer Laser System.

Indications: FDA has approved the WaveLight® Excimer Laser for use in laser-assisted in situ keratomileusis (LASIK) treatments for:

- the reduction or elimination of myopia of up to -12.0 DS and up to 6.0 D of astigmatism at the spectacle plane;
- the reduction or elimination of hyperopia up to +6.0 DS with and without astigmatic refractive errors up to 5.0 D at the spectacle plane, with a maximum manifest refraction spherical equivalent of +6.0 D;
- the reduction or elimination of naturally occurring mixed astigmatism of up to 6.0 D at the spectacle plane; and
- the wavefront-guided reduction or elimination of myopia of up to -7.0 DS and up to 3.0 D of astigmatism at the spectacle plane.

The WaveLight® Excimer Laser Systems are only indicated for use in patients who are 18 years of age or older (21 years of age or older for mixed astigmatism) with documentation of a stable manifest refraction defined as ≤ 0.50 D of preoperative spherical equivalent shift over one year prior to surgery, exclusive of changes due to unmasking latent hyperopia.

Contraindications: The WaveLight® Excimer Laser Systems are contraindicated for use with patients who:

- are pregnant or nursing;
- have a diagnosed collagen vascular, autoimmune or immunodeficiency disease;
- have been diagnosed keratoconus or if there are any clinical pictures suggestive of keratoconus; or
- are taking isotretinoin (Accutane®) and/or amiodarone hydrochloride (Cordarone®).

Warnings: The WaveLight® Excimer Laser Systems are not recommended for use with patients who have:

- systemic diseases likely to affect wound healing, such as connective tissue disease, insulin dependent diabetes, severe atopic disease or an immunocompromised status;
- a history of Herpes simplex or Herpes zoster keratitis;
- significant dry eye that is unresponsive to treatment;
- severe allergies; or
- an unreliable preoperative wavefront examination that precludes wavefront-guided treatment.

The wavefront-guided LASIK procedure requires accurate and reliable data from the wavefront examination. Every step of every wavefront measurement that may be used as the basis for a wavefront-guided LASIK procedure must be validated by the user. Inaccurate or unreliable data from the wavefront examination will lead to an inaccurate treatment.

Precautions: The safety and effectiveness of the WaveLight® Excimer Laser Systems have not been established for patients with:

- progressive myopia, hyperopia, astigmatism and/or mixed astigmatism, ocular disease, previous corneal or intraocular surgery, or trauma in the ablation zone;
- corneal abnormalities including, but not limited to, scars, irregular astigmatism and corneal warpage;
- residual corneal thickness after ablation of less than 250 microns due to the increased risk for corneal ectasia;
- pupil size below 7.0 mm after mydriatics where applied for wavefront-guided ablation planning;

- history of glaucoma or ocular hypertension of > 23 mmHg;
- taking the medication sumatriptan succinate (Imitrex®);
- corneal, lens and/or vitreous opacities including, but not limited to cataract;
- iris problems including, but not limited to, coloboma and previous iris surgery compromising proper eye tracking; or
- taking medications likely to affect wound healing including (but not limited to) antimetabolites.

In addition, safety and effectiveness of the WaveLight® Excimer Laser Systems have not been established for:

- treatments with an optical zone < 6.0 mm or > 6.5 mm in diameter, or an ablation zone > 9.0 mm in diameter; or
- wavefront-guided treatment targets different from emmetropia (plano) in which the wavefront calculated defocus (spherical term) has been adjusted;

In the WaveLight® Excimer Laser System clinical studies, there were few subjects with cylinder amounts > 4 D and ≤ 6 D. Not all complications, adverse events, and levels of effectiveness may have been determined for this population.

Pupil sizes should be evaluated under mesopic illumination conditions. Effects of treatment on vision under poor illumination cannot be predicted prior to surgery.

Adverse Events and Complications

Myopia: In the myopia clinical study, 0.2% (2/876) of the eyes had a lost, misplaced, or misaligned flap reported at the 1 month examination.

The following complications were reported 6 months after LASIK: 0.9% (7/818) had ghosting or double images in the operative eye; 0.1% (1/818) of the eyes had a corneal epithelial defect.

Hyperopia: In the hyperopia clinical study, 0.4% (1/276) of the eyes had a retinal detachment or retinal vascular accident reported at the 3 month examination.

The following complications were reported 6 months after LASIK: 0.8% (2/262) of the eyes had a corneal epithelial defect and 0.8% (2/262) had any epithelium in the interface.

Mixed Astigmatism: In the mixed astigmatism clinical study, two adverse events were reported. The first event involved a patient who postoperatively was subject to blunt trauma to the treatment eye 6 days after surgery. The patient was found to have an intact globe with no rupture, inflammation or any dislodgement of the flap. UCVA was decreased due to this event. The second event involved the treatment of an incorrect axis of astigmatism. The axis was treated at 60 degrees instead of 160 degrees.

The following complications were reported 6 months after LASIK: 1.8% (2/111) of the eyes had ghosting or double images in the operative eye.

Wavefront-Guided Myopia: No adverse events occurred during the postoperative period of the wavefront-guided LASIK procedures. In the Control Cohort (traditional LASIK treatment) one subject undergoing traditional LASIK had the axis of astigmatism programmed as 115 degrees instead of the actual 155 degree axis. This led to cylinder in the left eye.

The following complications were reported 6 months after wavefront-guided LASIK in the Study Cohort: 1.2% (2/166) of the eyes had a corneal epithelial defect; 1.2% (2/166) had foreign body sensation; and 0.6% (1/166) had pain. No complications were reported in the Control Cohort.

Clinical Data

Myopia: The myopia clinical study included 901 eyes treated, of which 813 of 866 eligible eyes were followed for 12 months. Accountability at 3 months was 93.8%, at 6 months was 91.9%, and at 12 months was 93.9%. Of the 782 eyes eligible for the uncorrected visual acuity (UCVA) analysis of effectiveness at the 6-month stability time point, 98.3% were corrected to 20/40 or better, and 87.7% were corrected to 20/20 or better. Subjects who responded to a patient satisfaction questionnaire before and after LASIK reported the following visual symptoms at a "moderate" or "severe" level at least 1% higher at 3 months post-treatment than at baseline: visual fluctuations (28.6% vs. 12.8% at baseline).

Long term risks of LASIK for myopia with and without astigmatism have not been studied beyond 12 months.

Hyperopia: The hyperopia clinical study included 290 eyes treated, of which 100 of 290 eligible eyes were followed for 12 months. Accountability at 3 months was 95.2%, at 6 months was 93.9%, and at 12 months was 69.9%. Of the 212 eyes eligible for the UCVA analysis of effectiveness at the 6-month stability time point, 95.3% were corrected to 20/40 or better, and 69.4% were corrected to 20/20 or better. Subjects who responded to a patient satisfaction questionnaire before and after LASIK reported the following visual symptoms as "much worse" at 6 months post-treatment: halos (6.4%); visual fluctuations (6.1%); light sensitivity (4.9%); night driving glare (4.2%); and glare from bright lights (3.0%).

Long term risks of LASIK for hyperopia with and without astigmatism have not been studied beyond 12 months.

Mixed Astigmatism: The mixed astigmatism clinical study included 162 eyes treated, of which 111 were eligible to be followed for 6 months. Accountability at 1 month was 99.4%, at 3 months was 96.0%, and at 6 months was 100.0%. Of the 142 eyes eligible for the UCVA analysis of effectiveness at the 6-month stability time point, 97.3% achieved acuity of 20/40 or better, and 69.4% achieved acuity of 20/20 or better. Subjects who responded to a patient satisfaction questionnaire before and after LASIK reported the following visual symptoms at a "moderate" or "severe" level at least 1% higher at 3 months post-treatment than at baseline: sensitivity to light (52.9% vs. 43.3% at baseline); visual fluctuations (43.0% vs. 32.1% at baseline); and halos (42.3% vs. 37.0% at baseline).

Long term risks of LASIK for mixed astigmatism have not been studied beyond 6 months.

Wavefront-Guided Myopia: The wavefront-guided myopia clinical study included 374 eyes treated; 188 with wavefront-guided LASIK (Study Cohort) and 186 with Wavefront Optimized® LASIK (Control Cohort). 166 of the Study Cohort and 166 of the Control Cohort were eligible to be followed at 6 months. In the Study Cohort, accountability at 1 month was 96.8%, at 3 months was 96.8%, and at 6 months was 93.3%. In the Control Cohort, accountability at 1 month was 94.6%, at 3 months was 94.6%, and at 6 months was 92.2%.

Of the 166 eyes in the Study Cohort that were eligible for the UCVA analysis of effectiveness at the 6-month stability time point, 99.4% were corrected to 20/40 or better, and 93.4% were corrected to 20/20 or better. Of the 166 eyes in the Control Cohort eligible for the UCVA analysis of effectiveness at the 6-month stability time point, 99.4% were corrected to 20/40 or better, and 92.8% were corrected to 20/20.

In the Study Cohort, subjects who responded to a patient satisfaction questionnaire before and after LASIK reported the following visual symptoms at a "moderate" or "severe" level at least 1% higher at 3 months post-treatment than at baseline: light sensitivity (47.8% vs. 37.2% at baseline) and visual fluctuations (20.0% vs. 13.8% at baseline). In the Control Cohort, the following visual symptoms were reported at a "moderate" or "severe" level at least 1% higher at 3 months post-treatment than at baseline: halos (45.4% vs. 36.6% at baseline) and visual fluctuations (21.9% vs. 18.3% at baseline).

Long term risks of wavefront-guided LASIK for myopia with and without astigmatism have not been studied beyond 6 months.

Information for Patients: Prior to undergoing LASIK surgery with a WaveLight® Excimer Laser System, prospective patients must receive a copy of the relevant Patient Information Booklet, and must be informed of the alternatives for correcting their vision, including (but not limited to) eyeglasses, contact lenses, photorefractive keratectomy, and other refractive surgeries.

Attention: Please refer to a current WaveLight® Excimer Laser System Procedure Manual for a complete listing of the indications, complications, warnings, precautions, and side effects.

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Sunday, Nov. 17
8:30 – 10:00 AM
The Great Hall

Join your colleagues at the 2013 Opening Session. Hear from the Academy's President and CEO, celebrate the leaders in the profession and learn about the latest innovation from AAO.

The IRIS™ Registry: Ophthalmology's Moon Shot?

Panel Moderator: Michael X Repka MD, Medical Director, Government Affairs

Panelists: Michael F Chiang MD, Chair, Academy's Committee on Medical Information Technology; Paul P Lee MD JD, Advisory Member, Hoskins Center for Quality Eye Care; David May MD PhD, Chair, Board of Governors American College of Cardiology; William L Rich III MD, Academy's Medical Director, Health Policy

In 2014 the American Academy of Ophthalmology will launch the IRIS™ Registry. In many respects, this will be the most significant project the Academy has ever undertaken. If successful, it will usher in a new era wherein ophthalmologists will have the data to review their own processes and outcomes of care in their continual quest for excellence. The IRIS registry will generate powerful data in defining the impact and value of the care ophthalmologists provide. It may assist ophthalmologists in the American Board of Ophthalmology's Maintenance of Certification process. And it will ignite a new vehicle for clinical research. But there is a lot to be done, and there remain challenges. Listen as some of the registry experts discuss the IRIS initiative, the important issues before all of us, and take questions from the audience.

Time	Topic	Speaker
8:30 AM	Opening Remarks	Jonathan B Rubenstein MD
8:38 AM	Academy President's Address	Paul Sternberg Jr MD
8:44 AM	Academy Awards	
8:56 AM	Laureate Award: Daniel Albert, MD, MS	Paul R Lichter MD
8:59 AM	Academy's Chief Executive Officer's Address	David W Parke II MD
9:05 AM	Academy's President-Elect's Address	Gregory L Skuta MD
9:10 AM	The IRIS™ Registry: Ophthalmology's Moon Shot?	Panel Moderator: Michael X Repka MD, Medical Director, Government Affairs
9:30 AM	Introduction of the Jackson Memorial Lecture	Jonathan B Rubenstein MD
9:32 AM	Jackson Memorial Lecture: The History and Evolution of Lasers in Ophthalmology: A Review of the Interactions Between Physicians, Patients, and Photons	Mark S Blumenkranz MD
9:57 AM	Jackson Memorial Lecture Award Presentation	Thomas J Liesegang MD
9:58 AM	Concluding Remarks	Jonathan B Rubenstein MD
10:00 AM	End of Session	

Opening Session



2013 Laureate Award: Daniel M Albert MD

Dr. Albert is a Professor at the University of Madison-Wisconsin. His scientific and medical research has opened new pathways for the treatment of ocular tumors, specifically melanoma and retinoblastoma. His dedication and leadership in education has inspired many and helped shape the way we teach and learn.



Jackson Memorial Lecture: Mark S Blumenkranz MD

Dr. Blumenkranz is the H.J. Smead Professor and Chairman of the Department of Ophthalmology at Stanford University. He is a noted vitreoretinal surgeon whose primary clinical interests center on the medical and surgical treatment of vitreoretinal diseases. He was instrumental in developing the successful laser vision correction program at Stanford.

2013 Academy Awards

Guests of Honor

Thomas M Aaberg Sr MD, Andrew P Schachat MD, and William B Snyder MD

Distinguished Service Award

Public Trustees of the American Academy of Ophthalmology Board of Trustees Humphrey J F Taylor and Paul B Ginsburg PhD

Special Recognition Award

American Academy of Ophthalmology Leadership Development Program (LDP)

Outstanding Humanitarian Service Award

Mario R Angi MD and Gullapalli N Rao MD

Straatsma Award for Excellence in Resident Education

Andreas K Lauer MD

International Blindness Prevention Award

Mohammad Daud Khan MD

Outstanding Advocate Award

Michael W Brennan MD

For a full description of all Academy Awards and award recipients, turn to Tab 1, Awards, page 1.

Spotlight Sessions and Symposia



Saturday — Tuesday, Nov. 16 - 19

Spotlight Sessions and Symposia are free of charge and open to all attendees.

GO Global Ophthalmology

SO Endorsed by Senior Ophthalmologist Committee

YO Endorsed by Young Ophthalmologist Committee

EHR Electronic Health Records

Selection Committee

The Special Projects Committee developed the Spotlight on Ophthalmic Office Emergencies; the Spotlight on OCT; The Great Debate: Retina; The Great Debate: Glaucoma; Best of Anterior Segment Specialty Meetings 2013; Best of Posterior Segment Specialty Meetings 2013; Grand Rounds; Late Breakers Symposium; and the Academy Cafés.

The Annual Meeting Program Committee selected all other spotlight sessions and symposia.

See page page 33 for committee details.

Saturday, Nov. 16

GO What are the Opportunities and Resources for Working in Developing Countries?

Event No: SYM01 2:00 - 3:30 PM
Room: 255

*Combined meeting with the Academy's Global Education and Outreach Committee
Chair(s): David S Friedman MD MPH PhD*, Linda M Lawrence MD*

This symposium will provide information to individuals interested in expanding their engagement with eye health providers in developing countries. The focus will be on providing information to the audience about resources available to them and to their partners overseas, introducing the audience to the major non-profits working in this sphere, educating eye care providers about the needs of local institutions and reviewing key factors to consider when engaging in work in these locations.

2:00 PM The Academy's Global Alliances
*Richard L Abbott MD**

Resources Available

2:02 PM Where and How Ophthalmologists Can Contribute Most in Developing Countries
Bruce E Spivey MD FACS

2:07 PM International Council of Ophthalmology Educational Programs and Other Resources for Global Ophthalmologists
William C Felch JR

2:12 PM LAICO's Organizational Capacity Building for Enhancing Eye Care
Srinivasan Kavitha MD

2:19 PM Resources Available through the AAO
Linda M Lawrence MD

2:24 PM ONE Network Resources
*James C Tsai MD MBA**

2:29 PM Q&A

NGO Panel Discussion

2:40 PM Helen Keller Institute's Ongoing Eye Health Activities
Nick Kourgalis MA

2:45 PM Orbis Overview
*Brian C Leonard MD**

2:50 PM The Fred Hollows Fellowship Program
Richard T Le Mesurier MBChB

2:55 PM Bringing Added Value to the Mission
*Victoria M Sheffield**

3:00 PM Q&A

3:10 PM Perspective of the Local Ophthalmologists
Kunle O Hassan MBBS

3:15 PM Q&A

3:30 PM End of Session

Sunday, Nov. 17

YO Introduction to Cornea and Lens-Based Refractive Surgery for Residents

Event No: SYM02 8:00 - 11:00 AM
Room: 228

Sponsored by the International Society of Refractive Surgery (ISRS)

Chair(s): Ronald R Krueger MD, J Bradley Randleman MD*

This session will provide an overview of the most relevant topics on corneal and lens-based refractive surgery, including patient evaluation, topographic evaluation, a step-by-step surgical explanation of LASIK and surface ablation proce-

dures, discussion of surgical complication recognition and management, and decision trees for choosing appropriate premium IOL candidates and managing complications unique to these individuals. This will provide a basis upon which individuals in training may begin to grow their knowledge base and gain comfort in practicing independently after graduation. The session will be an interactive didactic led by recognized experts and international leaders in the field of refractive surgery, but will be specifically directed at the resident education level, as opposed to many of the courses at AAO directed towards specialists already in practice. This focus should allow the resident to gain the optimal learning experience.

8:00 AM Welcome and Opening Remarks
*J Bradley Randleman MD, Ronald R Krueger MD**

8:02 AM Basic LASIK Patient Evaluation
*Ronald R Krueger MD**

8:20 AM Topographic and Tomographic Evaluation
*Renato Ambrosio Jr MD**

8:40 AM Step-by-Step PRK and LASIK
*Sonia H Yoo MD**

9:00 AM LASIK and Cataract Surgery Nightmares: How to Avoid Them?
*Amar Agarwal MD**

9:20 AM LASIK/PRK Complications and Management
*David R Hardten MD**

9:40 AM Decision Tree: When PRK and When LASIK
*Marguerite B McDonald MD**

10:00 AM Patient Selection for Refractive Lens Exchange
Jason E Stahl MD

10:20 AM Toric, Multifocal, and Accommodating IOLs
J Bradley Randleman MD

10:40 AM Management of the Dissatisfied Premium IOL Patient
*Bonnie A Henderson MD**

10:58 AM Closing Remarks
Ronald R Krueger MD, J Bradley Randleman MD*

11:00 AM End of Session

Spotlight on Ophthalmic Office Emergencies: Things You Don't Want to Miss

Event No: SPO3 10:30 AM - 12:00 PM
Room: La Nouvelle Orleans AB

Chair(s): Rolando Toyos MD, Preeya K Gupta MD**

Ophthalmic emergencies are not always common but critical to recognize and manage with speed and efficiency. This case-based presentation will cover how to recognize, triage, and manage a broad range of ophthalmic emergencies.

10:30 AM Introduction
*Preeya K Gupta MD**

10:32 AM My Eye is Red After Cataract Surgery
Paul Hahn MD PhD

10:42 AM I Can't See and Don't Feel Well
*M Tariq Bhatti MD**

10:52 AM I See Double and Have a Terrific Headache
*Nicholas J Volpe MD**

11:02 AM Panel Discussion

11:08 AM I'm Feeling Nauseated
*Nathan M Radcliffe MD**

11:18 AM I Got Poked in the Eye, and Now I Can't See!
Derek W Del Monte MD

11:28 AM Panel Discussion

11:34 AM My Eye is Swollen Shut
Michael Richard MD

11:44 AM I Fell Asleep in my Contact Lenses
*Jessica B Ciralsky MD**

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest.

Spotlight Sessions & Symposia

Sunday, Nov. 17 (cont.)

- 11:54 AM Panel Discussion
12:00 PM End of Session

Innovation in Ophthalmology: From Theory to Therapy

Event No: SYM03 10:30 AM - 12:00 PM
Room: New Orleans Theater C

Chair(s): Emmett T Cunningham Jr MD PhD MPH

This course is intended to give clinical ophthalmologists an improved understanding of the factors driving and influencing innovation in ophthalmology. Following a brief welcome, six 10-minute presentations will be given, covering: 1) Funding innovation; 2) An investor's view of innovating in the ophthalmic sector: winners, losers, lessons learned; 3) ForSight Labs: An experiment in Ophthalmic Innovation; 4) The role of physician innovators; 5) Innovating from private practice; and 6) Innovating from Academia. This will be followed by a 20-30 minute audience Q&A session with all participants. Participants should gain an improved understanding of the innovative process, including how to protect and advance their own innovations.

- 10:30 AM Welcome
Emmett T Cunningham Jr MD PhD MPH
- 10:35 AM Funding Innovation
*Gilbert H Kliman MD**
- 10:45 AM An Investor's View of Innovating in the Ophthalmic Sector: Winners, Losers, and Lessons Learned
*William Link PhD**
- 10:55 AM ForSight Labs: An Experiment in Ophthalmic Innovation
*Eugene De Juan Jr MD**
- 11:05 AM The Role of Physician Innovators
*Daniel M Schwartz MD**
- 11:15 AM Innovating from Private Practice
*Richard L Lindstrom MD**
- 11:25 AM Innovating from Academia
*Mark S Blumenkranz MD**
- 11:35 AM Panel Discussion/Q&A
- 12:00 PM End of Session

Detection of Glaucomatous Progression

Event No: SYM04 10:30 AM - 12:00 PM
Room: La Nouvelle Orleans C

Combined meeting with Prevent Blindness America (PBA)

Chair(s): Angelo P Tanna MD*, David S Friedman MD MPH PhD*

The symposium will address various aspects of glaucoma progression detection, including visual field progression, detection of progressive excavation of the optic disc using stereoscopic photographs, and detection of progressive atrophy of the retinal nerve fiber layer and optic disc using advanced imaging technologies. Additionally, detection of changes in total retinal thickness or retinal ganglion cell complex thickness of the macula as measured with spectral domain OCT will be reviewed. Finally, important concepts including rates of change and combined measures of structural and functional change will be addressed.

- 10:30 AM Introduction
*Angelo P Tanna MD**
- 10:32 AM Visual Fields Progression
Balwantray C Chauhan MD
- 10:41 AM Progression Detection With Optic Disc Photography
*Jody R Piltz-Seymour MD**
- 10:50 AM Structural Progression Detection With Spectral Domain OCT: The Retinal Nerve Fiber Layer and Optic Disc
*Joel S Schuman MD**

- 10:58 AM Structural Progression Detection With Spectral Domain OCT: The Macula
*Donald L Budenz MD MPH**
- 11:07 AM Combined Structure-Function Analysis
*Felipe A Medeiros MD**
- 11:16 AM Moving from Statistically Significant to Clinically Significant Progression
George A Cioffi MD
- 11:25 AM Conclusion
*David S Friedman MD MPH PhD**

ROBERT N SHAFFER LECTURE

- 11:29 AM Introduction of the Robert N Schaffer Lecturer
Steven M Litinsky MD
- 11:34 AM Robert N Schaffer Lecture: Glaucoma Changes—Reality Bites
*Joel S Schuman MD**
- 12:00 PM End of Session

Evidence Base for Vision Rehabilitation

Event No: SYM05 10:30 AM - 12:00 PM
Room: 342

Combined meeting with the Vision Rehabilitation Committee

Chair(s): Joseph L Fontenot MD, Thomas J O'Donnell MD

The ultimate goal of vision rehabilitation is to improve the quality of life of our patients, many of whom are seniors and may live for 20 or 30 years with vision loss due to age related eye disease. Effective and efficient interventions are required for the increasing number of patients who have vision loss. Critique of interventions assists the practitioner to enhance clinical rehabilitation practice. This symposium will review research design and outcomes used in vision rehabilitation research. Recently published systematic reviews will be presented.

- 10:30 AM Introduction
- 10:32 AM How to Measure and Interpret Outcomes of Goal-Directed Vision Rehabilitation
*Robert W Massof PhD***
- 10:44 AM Design and Evaluation of a Customized Reading Rehabilitation Program for Patients With AMD
Miguel J Maldonado MD PhD
- 10:56 AM Rehabilitating Visual Field Loss: What Should We Be Addressing, and How Should We Measure Success?
*Pradeep Y Ramulu MD PhD**
- 11:08 AM Preferred Practice Patterns for Vision Rehabilitation 2012
*Mary Lou Jackson MD**
- 11:20 AM Systematic Reviews of Rehabilitation Interventions I
Joseph L Fontenot MD
- 11:32 AM Systematic Reviews of Rehabilitation Interventions II
Deepthi M Reddy MD
- 11:44 AM Discussion
- 12:00 PM End of Session

The Great Debate: Retina

Event No: SYM06 10:45 AM - 12:00 PM
Room: The Great Hall

Chair(s): Peter K Kaiser MD*

This symposium will be structured as a lively, old-fashioned debate. Four groups of debaters will argue the pros and cons of controversial topics. Speakers will have the opportunity to present prepared statements and then will have a chance to rebut those of their opponents. Audience voting will be used to determine which speakers were most effective in stating their arguments.

- 10:45 AM Introduction
*Peter K Kaiser MD**

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest..

Sunday, Nov. 17 (cont.)

Avastin is Safe

- 10:50 AM Introduction of Question and Audience Voting
- 10:51 AM Pro
Daniel F Martin MD
- 10:54 AM Con
*Jason S Slakter MD**
- 10:57 AM Pro Rebuttal
Daniel F Martin MD
- 10:58 AM Con Rebuttal
*Jason S Slakter MD**
- 10:59 AM Audience Voting

The Best Anti-VEGF Treatment for AMD is...

- 11:00 AM Introduction of Question and Audience Voting
- 11:01 AM Ranibizumab
*Dante Pieramici MD**
- 11:04 AM Aflibercept
*Jeffrey S Heier MD**
- 11:07 AM Bevacizumab
*Philip J Rosenfeld MD PhD**
- 11:10 AM Pegaptanib
*Victor H Gonzalez MD**
- 11:13 AM Ranibizumab Rebuttal
*Dante Pieramici MD**
- 11:14 AM Aflibercept Rebuttal
*Jeffrey S Heier MD**
- 11:15 AM Bevacizumab Rebuttal
*Philip J Rosenfeld MD PhD**
- 11:16 AM Pegaptanib Rebuttal
*Victor H Gonzalez MD**
- 11:17 AM Audience Voting

The Best Anti-VEGF Treatment Regimen is...

- 11:18 AM Introduction of Question and Audience Voting
- 11:19 AM Fixed
*Darius M Moshfeghi MD***
- 11:22 AM PRN
*David S Boyer MD**
- 11:25 AM Treat and Extend
*K Bailey Freund MD**
- 11:28 AM Fixed Rebuttal
*Darius M Moshfeghi MD***
- 11:29 AM PRN Rebuttal
*David S Boyer MD**
- 11:30 AM Treat and Extend Rebuttal
*K Bailey Freund MD**
- 11:31 AM Audience Voting

All I Need to Manage Retina is an OCT

- 11:32 AM Introduction of Question and Audience Voting
- 11:33 AM Pro
*Carmen A Puliafito MD MBA**
- 11:36 AM Con
*Susan B Bressler MD**
- 11:39 AM Pro Rebuttal
*Carmen A Puliafito MD MBA**
- 11:40 AM Con Rebuttal
*Susan B Bressler MD**

- 11:41 AM Audience Voting
- 11:42 AM Conclusions
*Peter K Kaiser MD**
- 11:45 AM End of Session

Michael F Marmor MD Lecture in Ophthalmology and the Arts

Event No: SYM54 11:30 AM - 12:00 PM
Room: 255

*Chair(s): Michael F Marmor MD**

- 11:30 AM Introduction
*Michael F Marmor MD**
- 11:33 AM Degas, New Orleans, and "Eyes Greatly in Need of Care"
Richard Kendall, Curator-at-Large, Clark Art Institute
- 11:58 AM Conclusion
*Michael F Marmor MD**
- 12:00 PM End of Session

Extreme Vision: Science Fiction or Truth

Event No: SYM07 12:15 - 1:45 PM
Room: 255

Combined meeting with the Museum of Vision®

*Chair(s): Michael F Marmor MD**

This symposium will focus on exploring the truth (and the fiction) about what human vision can do and about efforts (wise or foolish) to make it do more. Topics will include the 'normal' limits of vision, ancient ideas of ocular power, visual abilities in science fiction, animal vision that exceeds ours, the vision of athletes, and the latest in real science to extend vision.

- 12:15 PM Welcome
*Michael F Marmor MD**
- 12:20 PM Extreme Vision: Ancient Times to Classic Literature
James G Ravin MD
- 12:30 PM Extreme Vision: Pulp Fiction and Superheroes
Jenny Benjamin
- 12:45 PM What Is 'Normal' Vision?
Norman B Medow MD FACS
- 12:55 PM Extraordinary Vision in Animals
Ivan R Schwab MD FACS
- 1:10 PM Military Research and Applications
*Robert W Enzenauer MD MPH**
- 1:20 PM Science Fiction Meets Real Science: Prosthetics
Joseph F Rizzo III MD
- 1:30 PM Did Ted Williams See the Seams on the Ball?
*Michael F Marmor MD**
- 1:40 PM Closing Remarks/Questions
*Michael F Marmor MD**
- 1:45 PM End of Session

Cataract Surgery: The Cutting Edge

Event No: SYM08 12:15 - 1:45 PM
Room: The Great Hall

*Chair(s): Robert H Osher MD**

Panelists: Douglas D Koch MD, Richard J Mackool MD*, Roger F Steinert MD*, David F Chang MD*, Richard B Packard MD*, Warren E Hill MD*, Ehud I Assia MD*, Richard L Lindstrom MD*, Edward J Holland MD*, Iqbal K Ahmed MD*, Michael E Snyder MD**

To stimulate a panel discussion, this symposium will present short videos of novel ideas, techniques, and devices from cataract surgeons around the world.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.
No asterisk indicates that the presenter has no financial interest.

Spotlight Sessions & Symposia

Sunday, Nov. 17 (cont.)

Expect controversy and spirited debate from the expert international panel. Guaranteed to keep you on the edge of your seats!

SO Seeing Patients Is What I Want to Do: Adjusting to the Challenge of Extending My Career in Ophthalmology

Event No: SYM25 12:45 - 1:45 PM
Room: 243

Combined meeting with the Committee on Aging and the Senior Ophthalmologist Committee

*Chair(s): Gwen K Sterns MD, Harry Zink MD**

As older ophthalmologists face reductions in reimbursement, computerization, and accountable care organizations, they are asking new questions: Are there alternatives to my present practice arrangement that would allow me to continue the practice of ophthalmology as I have known it? Can I successfully adopt the new skills needed, adapting to a different practice style with an emphasis on medical ophthalmology or vision rehabilitation? Are there resources for me to retrain and to maintain my knowledge skills? And can I achieve a healthy life balance? Options, opportunities, and alternatives will be discussed in this COA/SO joint symposium.

- 12:45 PM Introduction
*Harry Zink MD**
- 12:48 PM You Are a Valued Asset: The Role of the Senior Ophthalmologist
*Paul P Lee MD JD**
- 12:58 PM Maintaining the Machine: Sustaining Our Health for the Long Haul
*Andrew G Lee MD**
- 1:08 PM Continuing Education for the Senior Ophthalmologist: What Is Available?
*Louis B Cantor MD**
- 1:18 PM Adjusting to the Electronic Medical Record: Rebooting Your Practice
*Andrew P Doan MD PhD**
- 1:28 PM Panel Discussion: Specific Options
- 1:28 PM Low Vision
David Parke MD
- 1:28 PM Medical Ophthalmology
Michael W Brennan MD
- 1:28 PM Volunteer Services
*M Bruce Shields MD**
- 1:28 PM Teaching
Gwen K Sterns MD
- 1:42 PM Closing
*Harry Zink MD**
- 1:45 PM End of Session

EHR Big Data Drives Better Outcomes: The Power and Benefits of the IRIS™ Registry

Event No: SYM57 12:45 - 1:45 PM
Room: La Nouvelle Orleans C

Chair(s): Anne Louise Coleman MD PhD, William L Rich MD*

Physicians are facing increasing pressures to report quality measures and demonstrate value from several fronts. One is the increasing regulatory burden to comply with various reporting requirements, including the Physician Quality Reporting System (PQRS), Value-based Modifier (VBP), and Meaningful Use for electronic health record systems. The cumulative penalty for noncompliance with these requirements begins at 3.5 percent of Medicare payments and rises over time. Another is Maintenance of Certification which requires reviews of office

records. Another demand is to manage the population as a whole, paying attention to resource use and efficiency. This symposium will explore the vision of the IRIS Registry, how it can help ophthalmologists to comply with the changing regulatory landscape and enhance their ability to improve the outcomes of their patients, as well as showcase the ease of implementation, benefits and utility of data reports for individual members using the registry.

- 12:55 PM Alleviating Regulatory Burdens on Physicians
William L Rich MD
- 12:45 PM The Power of Big Data for Physicians
David May MD PhD
- 1:05 PM Ease of Implementation of IRIS
John M Haley OCS
- 1:15 PM Benefits of IRIS for the Subspecialist
*Timothy G Murray MD MBA**
- 1:25 PM Q&A
- 1:45 PM End of Session

Best of NANOS 2013: Featuring Best Papers from the North American Neuro-Ophthalmology Society

Event No: SYM56 2:00 - 3:00 PM
Room: 255

Chair(s): Jacqueline A Leavitt MD

Panelists: Rudrani Banik MD, Flora Levin MD, Roger E Turbin MD*

- 2:00 PM NORDIC Idiopathic Intracranial Hypertension Treatment Trial, study director—IIHTT study update
*Michael Wall MD**
- 2:10 PM Exploring the Temporal Evolution of Structural and Functional Changes after Acute Optic Neuritis
*Fiona E Costello MD**
- 2:20 PM A Phase I Open Label, Dose Escalation Trial Of QPI-1007 Delivered By A Single Intravitreal (IVT) Injection To Subjects With Low Visual Acuity And Acute NAION
*Bradley J Katz MD**
- 2:30 PM Enlargement of the Sella Turcica Partially Explains the Partially Empty Sella of Pseudotumor Cerebri
Sungeun Kyung MD
- 2:40 PM Acute Changes in Retinal Birefringence at Onset of NAION Reveals Axonal Injury Corresponding to Permanent Regional Visual Field Loss
*Mark J Kupersmith MD**
- 2:50 PM Subclinical Optic and Retinal Atrophy in Eyes with Papilledema Detected by OCT
Brian E Goldhagen MD

The Great Debate: Glaucoma

Event No: SYM09 2:00 - 3:15 PM
Room: The Great Hall

*Chair(s): Kuldev Singh MD MPH**

This symposium will be structured as a lively, old-fashioned debate. Five pairs of debaters will argue the pros and cons of controversial topics. Speakers will have the opportunity to present prepared statements and then will have a chance to rebut those of their opponents. Audience voting will be used to determine which speakers were most effective in stating their arguments.

- 2:00 PM Introduction
*Kuldev Singh MD MPH**
- Is IOP Variability a Proven Risk Factor for Glaucoma?**
- 2:04 PM Introduction of Question and Audience Voting
- 2:06 PM Yes
*Anne Louise Coleman MD PhD**

Sunday, Nov. 17 (cont.)

- 2:09 PM No
*Anders H Heijl MD PhD**
- 2:11 PM Yes Rebuttal
*Anne Louise Coleman MD PhD**
- 2:12 PM No Rebuttal
*Anders H Heijl MD PhD**
- 2:13 PM Audience Voting

Genetic Testing for Glaucoma is...

- 2:14 PM Introduction of Question and Audience Voting
- 2:16 PM Useful Today
*Janey Lee Wiggs MD PhD**
- 2:19 PM Not Ready for Prime Time
Wallace L M Alward MD
- 2:22 PM Useful Today Rebuttal
*Janey Lee Wiggs MD PhD**
- 2:23 PM Not Ready for Prime Time Rebuttal
Wallace L M Alward MD
- 2:24 PM Audience Voting

For Cataract and Glaucoma Controlled on Medication, I Prefer Cataract Surgery...

- 2:25 PM Introduction of Question and Audience Voting
- 2:27 PM Alone
*Steven L Mansberger MD**
- 2:30 PM Combined with an Adjunctive Glaucoma Procedure
*Thomas W Samuelson MD**
- 2:33 PM Alone Rebuttal
*Steven L Mansberger MD**
- 2:34 PM Combined with an Adjunctive Glaucoma Procedure Rebuttal
*Thomas W Samuelson MD**
- 2:35 PM Audience Voting

Has Treatment of Pre Perimetric Glaucoma Been Shown to Improve Glaucoma Outcomes?

- 2:36 PM Introduction of Question and Audience Voting
- 2:38 PM Yes
*Joel S Schuman MD**
- 2:41 PM No
*George L Spaeth MD FACS**
- 2:44 PM Yes Rebuttal
*Joel S Schuman MD**
- 2:45 PM No Rebuttal
*George L Spaeth MD FACS**
- 2:46 PM Audience Voting

For Acute Angle Closure Glaucoma Relieved by Laser Iridotomy with Persistent High IOP and Cataract, I Prefer Cataract Surgery...

- 2:47 PM Introduction of Question and Audience Voting
- 2:49 PM Alone
*Clement C Y Tham MBBS**
- 2:52 PM Combined with Trabeculectomy
*Douglas J Rhee MD**
- 2:55 PM Alone Rebuttal
*Clement C Y Tham MBBS**
- 2:56 PM Combined with Trabeculectomy Rebuttal
*Douglas J Rhee MD**
- 2:57 PM Audience Voting

- 2:58 PM Conclusions
*Kuldev Singh MD MPH**
- 3:00 PM End of Session

Innovations in Pediatric Eye Surgery

Event No: SYM10 2:00 - 3:30 PM
Room: La Nouvelle Orleans AB
Combined meeting with the American Association of Pediatric Ophthalmology and Strabismus (AAPOS)

*Chair(s): Stephen P Christiansen MD, Sharon F Freedman MD**

Ocular surgery in children is often more challenging than in their adult counterparts. In the short term, congenital malformations, unique responses to surgical maneuvers, small ocular size, a more robust inflammatory response, and many other unique characteristics must all be taken into consideration when planning surgery. In the longer term, biologic changes in the eye, refractive growth of the eye, alterations in CNS efference, and amblyopia may adversely impact long-term surgical success. It is not surprising, then, that newer surgical techniques are constantly being developed to overcome these challenges in hopes of improving both short- and long-term surgical outcomes in children. In this symposium, experts will discuss advances in surgical treatment for pediatric ocular disease.

- 2:00 PM Introduction
Stephen P Christiansen MD

Strabismus Surgery: Can We Improve Outcomes?

- 2:02 PM Minimally Invasive Surgery
Jon Peiter Saunte MD
- 2:08 PM Adjustable Sutures in Children
*David L Guyton MD**
- 2:14 PM New Drugs and Devices
Stephen P Christiansen MD
- 2:20 PM New Devices for Pediatric Glaucoma
*Sharon F Freedman MD**
- 2:30 PM Expanding the Micro-ophthalmic Orbit
Christopher B Chambers MD

Point—Counterpoint

- 2:40 PM Using Enzyme in Pediatric Vitreoretinal Surgery: Pro
*Michael T Trese MD**
- 2:50 PM Using Enzyme in Pediatric Vitreoretinal Surgery: Con
*Cynthia A Toth MD**

MARSHALL M PARKS LECTURE

- 3:00 PM Introduction of the Marshall M Parks Lecturer
Leon-Paul Noel MD
- 3:05 PM Marshall M Parks Lecture: Aphakia, Pseudophakia, and Polypseudophakia: Refractive Management of the Pediatric Lens
*M Edward Wilson Jr MD**
- 3:28 PM Presentation Ceremony
Leon-Paul Noel MD
- 3:30 PM End of Session

Scientific Advancements in Ophthalmic Plastics: Implications for the Practicing Ophthalmologist

Event No: SYM11 2:00 - 3:30 PM
Room: La Nouvelle Orleans C
Combined meeting with the American Society of Ophthalmic Plastic and Reconstructive Surgery (ASOPRS)

*Chair(s): Louise A Mawn MD**

This topic has implications regarding emerging treatment options in ophthalmology. These treatments and insights into eye disease will be the result of the ophthalmic scientists dedicated to learning more about the underlying mechanism

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Spotlight Sessions & Symposia

Sunday, Nov. 17 (cont.)

of ocular and periocular pathology. Cell signaling is a common thread throughout the laboratory discoveries of the seemingly disparate investigations focusing on eye cancer, orbital inflammation, thyroid disease, and extra-ocular muscle development.

- 2:00 PM Introduction
- 2:05 PM From Zebrafish to Ptosis: Why Signaling Impacts Time to Ptosis Repair
Alon Kahana MD PhD
- 2:17 PM Cytokines and Receptors in Idiopathic Orbital Inflammation
*Edward Wladis MD**
- 2:29 PM Epigenetics and Eye Disease
*Shannath Louise Merbs MD PhD**
- 2:41 PM Role of Insulin-like Growth Factor-1 in the Pathogenesis of Thyroid Eye Disease
*Raymond Douglas MD PhD**
- 2:53 PM Conclusion and Q&A

WENDELL L HUGHES LECTURE

- 2:58 PM Introduction of the Wendell L Hughes Lecturer
- 3:03 PM Wendell L Hughes Lecture: Orbital Foreign Bodies: Increased Incidence, Improved Analysis and Improved Management Through Technological Advances
*James C Fleming MD**
- 3:28 PM Presentation of Award
- 3:30 PM End of Session

Keratoconus: Past, Present, and Future

Event No: SYM12 2:00 - 3:30 PM
Room: 243

Combined meeting with the Contact Lens Association of Ophthalmologists (CLAO)

Chair(s): Deborah S Jacobs MD, Warren R Fagadau MD*, Michael H Goldstein MD**

This symposium will bring attendees up to date on keratoconus. Speakers will cover updated information on the natural history of keratoconus and advances in imaging and contact lenses over the last decade. Surgical outcomes of penetrating keratoplasty and innovations in penetrating and lamellar keratoplasty will be presented. Hot topics including genetics and corneal collagen crosslinking will be covered. The symposium concludes with the Whitney G Sampson MD lecture.

- 2:00 PM Introduction
*Deborah S Jacobs MD**
- 2:02 PM Past and Present: Perspectives on Natural History from the Collaborative Longitudinal Evaluation of Keratoconus Studies
*Michael W Belin MD**
- 2:10 PM Past and Present: Imaging and Diagnosis
*Stephen D Klyce PhD**
- 2:18 PM Present: Contact Lens for Rehabilitation
Peter R Kastl MD PhD
- 2:26 PM Present: Penetrating Keratoplasty Outcomes
*Sanjay V Patel MBBS**
- 2:34 PM Past, Present, and Future: Penetrating Keratoplasty
Sadeer B Hannush MD
- 2:42 PM Present and Future: Advances in Lamellar Keratoplasty
*Sheraz M Daya MD**
- 2:50 PM Present and Future: Corneal Collagen Crosslinking
*Penny Asbell MD FACS**

WHITNEY G SAMPSON LECTURE

- 2:58 PM Introduction of the Whitney G Sampson Lecturer
*Michael H Goldstein MD**
- 3:01 PM Whitney G Sampson Lecture: The Genetics of Keratoconus: Implications for Future Treatment
Yaron S Rabinowitz MD
- 3:26 PM Award Presentation
*Warren R Fagadau MD**
- 3:28 PM Concluding Remarks
*Deborah S Jacobs MD**
- 3:30 PM End of Session

YO 2013 Modern Technologies and Techniques for Young Ophthalmologists to Know

Event No: SYM55 3:00 - 4:30 PM
Room: 252

Combined meeting with the Young Ophthalmologist Committees of the Academy, Young Ophthalmologists from the European Society of Ophthalmology (SOE) and the Pan-American Association of Ophthalmology (PAAO)

*Chair(s): Lauren Patty Daskivich MD, Anthony P Khawaja MBBS, Sandra Belalcazar-Rey MD**

The joint session with the young ophthalmologist (YO) committees of the Academy, the European Society of Ophthalmology, and the Pan-American Association of Ophthalmology will include discussions of new techniques, approaches, or therapies that are applied internationally, but not yet universally practiced. Attendees will learn about clinical and surgical techniques that may be useful in their future practices. If applicable, appropriate disclosures will be made when discussing available but non-US approved technologies or techniques.

- 3:00 PM Welcome
*Lauren Patty Daskivich MD, Anthony P Khawaja MBBS, Sandra Belalcazar-Rey MD**
- 3:05 PM How are Femtosecond Lasers Going to Change Cataract Surgery?
Alexander C Day MBBCHIR
- 3:15 PM Q&A
Anthony P Khawaja MBBS
- 3:17 PM Artificial Vision With a Subretinal Implant
*Katarina Stingl MD**
- 3:27 PM Q&A
Anthony P Khawaja MBBS
- 3:29 PM Experience With the Eyesi in Colombia for Training and Re-training Ophthalmologists in Phaco
Carlos A Restrepo Pelaez MD
- 3:39 PM Q&A
*Sandra Belalcazar-Rey MD**
- 3:41 PM Multimodality Imaging of Macular Diseases
*Lihteh Wu MD**
- 3:51 PM Q&A
*Sandra Belalcazar-Rey MD**
- 3:53 PM The Present and Future of the Macular Disease Treatment
*Francisco J Rodriguez MD**
- 4:03 PM Q&A
*Sandra Belalcazar-Rey MD**
- 4:06 PM Adopting New Techniques in Surgery After Formal Training: Ethical Considerations
*Roberto Pineda II MD**
- 4:16 PM Q&A
Lauren Patty Daskivich MD
- 4:18 PM Innovations 101
Kenneth L Lu MD

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Sunday, Nov. 17 (cont.)

- 4:28 PM Q&A
Lauren Patty Daskivich MD
- 4:28 PM Closing Remarks
- 4:30 PM End of Session

Best of the Anterior Segment Specialty Meetings 2013

Event No: SYM14 3:45 - 5:00 PM
Room: La Nouvelle Orleans C

Best Papers from the Aapos, AGS, ASCRS, ASOPRS, Cornea Society, and ISRS Meetings

This symposium will feature 10 of the best papers from the major anterior segment specialty meetings of 2013. These papers will be in the major anterior segment specialty areas and are selected by the program committees of the respective societies from their annual specialty meetings.

- 3:45 PM Introduction
- 3:47 PM Combined Procedures in Fuchs Dystrophy and Cataract Surgery
*Brandon Ayres MD**
- 3:54 PM Lens Selection Challenges We Face in Regular Astigmatism: The Baylor Nomogram
*Mitchell P Weikert MD**
- 4:01 PM The Effects of Surgical Factors on Postoperative Astigmatism in Patients Enrolled in the Infant Aphakia Treatment Study (IATS)
*Palak B Wall MD***
- 4:08 PM Effect of Posterior Corneal Astigmatism on Refractive Outcomes After Cataract Surgery With Toric IOL Implantation
*D Rex Hamilton MD**
- 4:15 PM Decreased Postoperative Endophthalmitis Rate After Institution of Intracameral Antibiotics in a Northern California Eye Department
*Neal H Shorstein MD***
- 4:22 PM Reflections on the Mechanics of Upper Eyelid Movement: Lessons for the Ptosis Surgeon
*John W Shore MD**
- 4:29 PM A Comparison of Trabeculectomy Surgery Outcomes With Mitomycin-C Applied by Intra-Tenon Injection Versus Sponge Method
Michele C Lim MD
- 4:36 PM The Ocular Hypertension Treatment Study: Difference in the Effect of Long Term IOP Variability on the Risk of Developing POAG
*Mae O Gordon PhD***
- 4:43 PM Intralenticular Laser Treatment--When Will It Be Available Clinically?
*Ronald R Krueger MD**
- 4:50 PM Multifocal IOLs--How to Select the Ideal Patient?
*George Beiko MD**
- 4:57 PM Conclusion
- 5:00 PM End of Session

Spotlight on OCT

Event No: SPO1 3:45 - 5:15 PM
Room: The Great Hall

Chair(s): Joel S Schuman MD, Anne Louise Coleman MD PhD**

OCT imaging has become integral to clinical practice in ophthalmology. From refractive surgery to glaucoma to retinal disease, OCT imaging helps to guide our practice. OCT frequently provides a clear picture of the pathologies affecting our patients, and gives ophthalmologists objective, quantitative measures on which to base treatment. OCT continues to evolve rapidly. This Spotlight session reviews the current state-of-the-art in clinical OCT imaging and looks ahead towards what the future might have in store.

- 3:45 PM Introduction
*Joel S Schuman MD**

- 3:47 PM OCT Imaging — So What?
*Robert N Weinreb MD**
- 3:55 PM Anterior Segment OCT — The Anterior Chamber Angle
*Christopher Kai-shun Leung MD MBChB**
- 4:03 PM OCT Imaging in Glaucoma
*Gadi Wollstein MD**
- 4:11 PM Lessons from OCT Imaging of the Lamina Cribrosa
*Claude F Burgoyne MD**
- 4:19 PM Retinal OCT Imaging: Macular Degeneration
*Richard F Spaide MD**
- 4:27 PM Retinal OCT Imaging: Diabetic Retinopathy
*Jay S Duker MD**
- 4:35 PM Retinal OCT Imaging: The Pediatric Ophthalmology Story
*Cynthia A Toth MD**
- 4:43 PM Retinal OCT Imaging in the Cataract Patient
*Carmen A Puliafito MD MBA**
- 4:51 PM OCT Advances: the Next 5 Years
*James Fujimoto PhD**
- 4:59 PM Questions and Answers
- 5:15 PM End of Session

A Sticky Problem: Evaluation and Management of Chronic Socket Discharge

Event No: SYM15 3:45 - 5:15 PM
Room: 243

Combined meeting with the American Society of Ocularists (ASO)

Chair(s): Doss K Tannehill BCO BADO, Timothy Francis McDevitt MD

Nearly every patient who wears an ocular prosthesis will suffer from socket discharge. The causes of this condition vary from those that are self-limiting and require solely supportive measures to those that are multifactorial and will improve only with surgical intervention. Symposium speakers will address the unique challenges encountered with the long-term use of a custom ocular prosthesis. This knowledge will be for the comprehensive ophthalmologist as well as the oculoplastics subspecialist.

- 3:45 PM Introduction
- 3:47 PM Evaluation and Treatment of Eyelid and Lacrimal Disorders Causing Chronic Discharge
Constance L Fry MD
- 3:55 PM The Ocularist's Strategies for Treatment of the Chronically Discharging Socket
Jean G Thompson BCO
- 4:03 PM Evaluation and Management of Chronic Discharge Related to Coupling Devices
Jonathan W Kim MD
- 4:11 PM The Ocularist's Approach to Coupling Devices and Chronic Socket Discharge
Marie-France Clermont BCO
- 4:19 PM Types of Conjunctivitis Unique to the Chronically Discharging Socket
Mehryar Taban MD
- 4:27 PM 'Normal' Socket Discharge and Patient Interpretation of Chronic Socket Discharge
John Stolpe BCO
- 4:35 PM Patient Home Remedies for Chronic Socket Discharge: What Not to Do
Donald W Kluge BCO
- 4:43 PM Q&A

RUEDEMANN LECTURE

- 4:51 PM Introduction of the Ruedemann Lecturer

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest.

Spotlight Sessions & Symposia

Sunday, Nov. 17 (cont.)

- 4:53 PM Ruedemann Lecture: Socket Reconstruction: Trials and Tribulations
*Don Kikkawa MD**
- 5:13 PM Presentation of Award
- 5:15 PM End of Session

Mythbusters: Examining the Orthoptic and Surgical Management of the Most Puzzling Childhood Syndromes

Event No: SYM16 3:45 - 5:15 PM
Room: La Nouvelle Orleans AB

Combined meeting with the American Orthoptic Council and American Association of Certified Orthoptists (AACO)

Chair(s): A Melinda Rainey MD, Cheryl Lynn McCarus OSA CO COMT

The Internet has been an amazing boon for those seeking quick and easy access to information. However, much of its content is mostly unedited, and some of this information can leave parents and families of children afflicted with syndromes, including those with ocular pathology, confused as to how that pathology should be best treated. This symposium will discuss case examples that help define the currently preferred ocular treatments of several of the more common, controversial, and puzzling syndromes from an orthoptic and ophthalmic perspective. These include Down syndrome, cerebral palsy, craniofacial syndromes, treatment of high accommodative convergence-to-accommodation ratio esotropia in teens, and optic nerve hypoplasia. Some of the current controversial treatments will be examined in depth. This course will provide general ophthalmologists and pediatric ophthalmologists with practical information about current trends, controversies, and practices that will be useful when confronted with these questions.

- 3:45 PM Introduction
Cheryl Lynn McCarus OSA CO COMT
- 3:50 PM The Orthoptics of Down Syndrome
Emily Miyazaki CO
- 4:00 PM Ophthalmology in Cerebral Palsy: When and Why to Operate
Mary Louise Z Collins MD
- 4:10 PM Orthoptics in Craniofacial Syndromes
Bonita Schweinler CO COMT
- 4:20 PM Ophthalmology in Craniofacial Syndromes: When and Why to Operate
*Kanwal K Nischal MBBS**
- 4:30 PM Orthoptic Treatment of Teenagers With High Accommodative Convergence-to-Accommodation Ratios
Marla J Shainberg CO
- 4:40 PM Surgical Treatment of Teenagers With High Accommodative Convergence-to-Accommodation Ratios
Burton J Kushner MD
- 4:50 PM What We Know About Optic Nerve Hypoplasia
*Neil R Miller MD**
- 5:00 PM Conclusion and Q&A
A Melinda Rainey MD
- 5:15 PM End of Session

GO YO International Opportunities for Young Ophthalmologists

Event No: SYM13 4:15 - 5:15 PM
Room: New Orleans Theater C

Combined meeting with the YO International Subcommittee

Chair(s): Grace Sun MD, Brad H Feldman MD**

Today's residents and young ophthalmologists (YOs) must become tomorrow's leaders in the global fight against eye disease. This session will address the challenges of treating eye disease in underserved parts of the world and will identify the organizations working toward this goal and the opportunities available for resident and YO involvement. The session will also examine the unique challenges of incorporating volunteer service into one's career by sharing the experiences of those who have found ways to balance work abroad with family, clinical practice, and financial concerns at home. At the conclusion of the session, the attendee will have an understanding of the global burden of eye disease, the organizations and strategies employed to address this burden, the role residents and YOs play in this work, and the challenges of balancing domestic life with international service.

- 4:15 PM Overview on Ophthalmology and Global Health
*Grace Sun MD**
- 4:18 PM Integrating Global Health Into an Academic Career
R V Paul Chan MD
- 4:28 PM YO Opportunities With the Himalayan Cataract Project
Matthew S Oliva MD
- 4:38 PM So You Want to Go Overseas? Things to Know Before You Go
*David S Friedman MD MPH PhD**
- 4:48 PM The Resident's Perspective on Global Health Work
Michael D Tibbetts MD
- 4:58 PM Q&A
- 5:13 PM Closing Remarks
- 5:15 PM End of Session

Monday, Nov. 18

Advances in Keratoplasty: Where We Are in 2013

Event No: SYM20 8:15 - 10:15 AM
Room: La Nouvelle Orleans C

Combined meeting with the Cornea Society

Chair(s): William Barry Lee MD, James P McCulley MD FACS FRCOphth**

We have seen a variety of advances in keratoplasty for the surgical treatment of corneal blindness in all age groups, young to elderly. Understanding both keratoplasty trends and the adoption of new techniques, including lamellar surgery, artificial corneal transplants, and stem cell transplants, and new devices, such as implementation of femtosecond laser technology, is crucial for ophthalmology in the 21st century. This symposium will feature surgical management strategies for diverse forms of corneal blindness. The symposium will conclude with the Castroviejo Lecture by Dr. Edward Holland, discussing advances in limbal stem cell disease.

- 8:15 AM Introduction
*William Barry Lee MD**
- 8:17 AM Keratoplasty Trends in the United States
Woodford S Van Meter MD FACS
- 8:27 AM Management of the Failed Graft: Counterpoint—Keratoprosthesis Is Better
*Victor L Perez MD**
- 8:37 AM Endothelial Keratoplasty: What the Future Holds
*Francis W Price Jr MD**

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- 8:47 AM Advances in Deep Anterior Lamellar Keratoplasty: Don't Burst the Bubble
*Rajesh Fogla MD FRCS**
- 8:57 AM Advances in Femtosecond-Assisted Keratoplasty: Is It Worthwhile?
*Marjan Farid MD**
- 9:07 AM Therapeutic Keratoplasty: Tips for Success
*Clara C Chan MD**
- 9:17 AM Management of the Failed Graft: Repeat Tissue Transplantation Is Better
*Deepinder K Dhaliwal MD**
- 9:27 AM Update on Pediatric Keratoplasty: Success or Distress?
Gerald W Zaidman MD FACS

CASTR OVIEJO LECTURE

- 9:37 AM Introduction of the Castroviejo Lecturer
*James P McCulley MD FACS FRCOphth**
- 9:39 AM Castroviejo Lecture: The Evolution of Lamellar Keratoplasty
*Edward J Holland MD**
- 10:11 AM Conclusion
*William Barry Lee MD**
- 10:15 AM End of Session

Spotlight on Cataract Complications: M&M Rounds— Learning From My Mistakes

Event No: SPO2 8:15 AM - 12:15 PM
Room: The Great Hall

Chair(s): David F Chang MD, William J Fishkind MD FACS**

This case-based video symposium will focus on cataract surgical complications. Every cataract surgeon makes mistakes and suffers complications, but it is how and what we learn from them that makes us better ophthalmologists. Eighteen different cataract experts will present a video case where something went wrong and a complication occurred that taught them valuable lessons. Paired panelists will then comment on the cases and the 'teaching points'. The audience will weigh in using response pads. The symposium will conclude with the 9th annual Kelman Lecture.

- 8:15 AM Introduction
*David F Chang MD**
- 8:17 AM Panel
Robert J Cionni MD, Audrey R Talley-Rostov MD**
- 8:17 AM From Champagne to Lemonade
*Roger F Steinert MD**
- 8:28 AM Conundrum
*Stephen S Lane MD**
- 8:39 AM Panel
Ehud I Assia MD, Louis D Skip Nichamin MD**
- 8:39 AM Killing Me Softly
*Brock K Bakewell MD**
- 8:50 AM The Donnerfeld Snap Technique
*Eric D Donnerfeld MD**
- 9:01 AM Panel
Alan S Crandall MD, Bonnie A Henderson MD**
- 9:01 AM Open or Closed?
*Sonia H Yoo MD**
- 9:12 AM Complex Cases Gone Wild
*Iqbal K Ahmed MD**
- 9:23 AM Panel
Michael E Snyder MD, Walter J Stark MD**
- 9:23 AM Fool Me Twice, Shame on Me
*Richard S Hoffman MD**

- 9:34 AM Threading a Needle
*Terry Kim MD**
- 9:45 AM Panel
Steven H Dewey MD, Timothy G Murray MD MBA**
- 9:45 AM When Surgeons Need More Support
Thomas A Oetting MD
- 9:59 AM Blame the Horse
*Lisa B Arbisser MD**
- 10:07 AM Panel
Boris Malyugin MD PhD, Randall J Olson MD
- 10:07 AM The 100 Year Old Lens
*Kevin M Miller MD**
- 10:18 AM The Longest Day (Part 2)
*Amar Agarwal MD**
- 10:29 AM Panel
Thomas W Samuelson MD, Rudy Nuijts MD**
- 10:29 AM High Pressure Comes in Small Packages
*Douglas D Koch MD**
- 10:40 AM Don't Cry for Me Argentina
Geoffrey C Tabin MD
- 10:51 AM Panel
Nick Marmalis MD, R Bruce Wallace MD**
- 10:51 AM Unhappy Multifocal Patient — Unhappy Surgeon!
*Matteo Piovella MD**
- 11:02 AM A Haptic, a Haptic — My Kingdom for a Haptic
*Richard J Mackool MD**
- 11:13 AM Panel
Richard L Lindstrom MD, Kirk H Packo MD**
- 11:13 AM Chamber Shallowing Can be a Bloody Worry
*Brian C Little MD**
- 11:24 AM Pithing the Eye
*Robert H Osher MD**

CHARLES D KELMAN LECTURE

- 11:35 AM Introduction to the Kelman Lecture
*William J Fishkind MD FACS**
- 11:40 AM Charles D Kelman Lecture: 25 Years of the JCRS Consultation Section
*Samuel Masket MD**
- 12:15 PM End of Session

Quality Measures in Ophthalmology: The Future Landscape

Event No: SYM17 8:30 - 10:00 AM
Room: New Orleans Theater C

Combined meeting with the American Medical Association Ophthalmology Section Council (AMA)

Chair(s): Kevin Thomas Flaherty MD, Samuel Solish MD, Mathew W MacCumber MD PhD, S William Clark MD*

With the ongoing implementation of the Affordable Care Act, many changes to the U.S. health care system are under way. These changes are at the nexus of public policy, clinical care, and payment issues. In this symposium, experts in quality measures and payment will discuss the potential impact of these measures on patient outcomes, as well as the risks and opportunities for ophthalmology practices as these measures are linked by payers to financial incentives.

- 8:30 AM Introduction
- 8:32 AM Reporting on Quality and Cost: Consequences for Reimbursement
*Cynthia Mattox MD FACS**
- 8:42 AM Quality Measures and MOC
*Paul P Lee MD JD**

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Spotlight Sessions & Symposia

Monday, Nov. 18 (cont.)

- 8:52 AM A Quality and Outcomes Program in Massachusetts
Teresa C Chen MD
- 9:02 AM An Ophthalmic Clinical Registry: A Pathway to Improved Quality and Outcomes
William L Rich MD

PARKER HEATH LECTURE

- 9:12 AM Parker Heath Lecture: If We Are Serious About Value-based Payments, Redesign Performance Measures!
Frank Opelka MD FACS
- 9:32 AM Q&A
- 10:00 AM End of Session

Changing Paradigms in the Management of Venous Occlusive Disease

Event No: SYM18 8:30 - 10:00 AM
Room: La Nouvelle Orleans AB

Combined meeting with American Society of Retina Specialists (ASRS)

Chair(s): G Baker Hubbard MD

Multiple treatment modalities are available for patients with retinal vein occlusion (RVO), and decision making about the best treatment for any given patient has become more complex in recent years. This symposium will review the evolving treatment of RVO and the most recent data regarding emerging therapies. In addition, typical and atypical cases of RVO will be presented to a panel of experts for opinions about optimum regimens in various clinical scenarios. Topics to be covered will include management of branch RVO and central RVO, timing of intervention, combination therapy, tips on use of imaging modalities, and when to perform laboratory workup for systemic disease. The presentations will stress practical and useful information for clinicians caring for patients with RVO.

- 8:30 AM Introduction
G Baker Hubbard MD
- 8:32 AM Epidemiology of Retinal Vein Occlusion
*Ingrid U Scott MD MPH**
- 8:42 AM BRVO/CRVO: Overview of Surgical Treatments and When (if Ever) to Use Them
*Gary C Brown MD**
- 8:52 AM BRVO: Overview of Medical Treatments
*Julia A Haller MD**
- 9:02 AM CRVO: Overview of Medical Treatments
*Michael S Ip MD**
- 9:12 AM Systemic Treatment
*Justis P Ehlers MD**
- 9:22 AM Case Presentations/Panel Discussion
- 9:57 AM Summary and Closing Remarks
G Baker Hubbard MD
- 10:00 AM End of Session

SO Fitness for Duty: What's Age Have to Do With It?

Event No: SYM19 8:30 - 10:00 AM
Room: 243

Combined meeting with the Senior Ophthalmologist Committee (SO)

Chair(s): David Parke MD, M Bruce Shields MD, C P Wilkinson MD**

Aging and its physical and neuropsychological effects are well known in health care, and ophthalmologists are not exempt from these realities. Studies have demonstrated a statistical decline in physicians' quality of care linked to advanced age, and this has raised patient safety concerns in many quarters. And aging changes may be compounded by medical progress that has increased intellectual, technological, and practice demands upon all physicians. The im-

plications of older ophthalmologists continuing as essential elements of the physician workforce include the recognition that aging may affect both cognitive and physical capabilities of the Eye M.D. Although physician expertise can be maintained into later life, optimal performance may require modifications of practice habits. This symposium will include a discussion of the effects of aging changes, including mild cognitive impairment, upon physician capabilities and also the experiences of the Academy's Ethics Committee and the American Board of Ophthalmology in dealing with these issues.

- 8:30 AM Introduction
- 8:33 AM Mild Cognitive Impairment and Additional Aspects of Aging: Detection and Management
Charles A Cefalu MD
- 8:52 AM Q&A
- 9:02 AM Ethical Considerations Regarding the Performances of Aging Physicians
Charles M Zacks MD
- 9:21 AM Q&A
- 9:31 AM The American Board of Ophthalmologists' Experience Regarding Practice Performances of Aging Physicians
John G Clarkson MD
- 9:50 AM Q&A
- 10:00 AM End of Session

GO 2013 Global Forum: A Kaleidoscope of Volunteering in Developing Countries — Global Ophthalmology, Making a Difference

Event No: SYM21 8:30 - 11:00 AM
Room: 252

Combined meeting with the Academy's Global Education and Outreach Committee

Chair(s): Linda M Lawrence MD, Fernando Pena MD, David H Cherwek MD*, Timothy P Page MD*, Victoria M Sheffield**

A panel of international experts will discuss topics relevant to volunteers who are making a difference in developing countries by their participation in programs both at home and abroad. The symposium will include an opportunity for audience participation in a question-and-answer session with the panelists, as well as a tea-and-cookies break for informal interaction.

- 8:30 AM Welcome
Linda M Lawrence MD
- 8:35 AM Panel I: The Volunteer's Role in Primary Eye Care, Research, and NGO Liaisons Overseas
*Fernando Pena MD**
- 8:35 AM Integrating Primary Eye Care Into Primary Health Care: Early Detection, Ocular Safety Awareness, and How to Have Real Impact
Ivo Kocur MD
- 8:45 AM Contributing to Research Initiatives
Nathan G Congdon MD
- 8:55 AM Designing a Global Residency Experience: Weighing Resident and Host Expectations
*Brad H Feldman MD**
- 9:05 AM How to Coordinate With NGOs to Synergize Efforts
Suzanne Gilbert PhD MPH
- 9:15 AM Audience Questions & Answers
- 9:35 AM Panel II: The Volunteer's Role in Strengthening Global Ophthalmology From Home
*David H Cherwek MD**
- 9:35 AM What Has Been Achieved: Advocacy, Funding, and Investments in Eye Health
Gullapalli N Rao MD

Monday, Nov. 18 (cont.)

- 9:45 AM Advocacy and the Importance of Data in Influencing Decision Makers and Donors
Serge Resnikoff MD PhD
- 9:55 AM Strategies to Help Patients Accept Western Medicine
Kunle O Hassan MBBS
- 10:05 AM Audience Questions & Answers
- 10:25 AM Summary
*Timothy P Page MD**
- 10:30 AM Networking
- 11:00 AM End of Session

Best of the Posterior Segment Specialty Meetings 2013

Event No: SYM22 10:15 - 11:30 AM
Room: La Nouvelle Orleans AB

Best Papers from the AAOPOS, American Uveitis Society, ASOPRS, NANOS, ASRS, Macula Society, and Retina Society Meetings

This symposium will feature best papers focusing on the posterior segment from the major retina, neuro-ophthalmology, uveitis, oculoplastics, and pediatric ophthalmology specialty meetings of 2013.

- 10:15 AM Introduction
- 10:16 AM Management of Congenital Anophthalmia and Microphthalmia: The CHOP Experience
*James A Katowitz MD***
- 10:24 AM Length of Day During Early Gestation is an Independent Predictor of Risk for Severe Retinopathy of Prematurity
Michael B Yang MD
- 10:32 AM Comparison of Wide-Field Fluorescein Angiography and Nine-Field Montage Angiography in Uveitis
*Benjamin P Nicholson MD ***
- 10:40 AM Association Between Genetic Mutations and Clinical Outcomes in Uveal Melanoma
*J William Harbour MD**
- 10:48 AM Life Cycle of Pseudodrusen
*Richard F Spaide MD**
- 10:56 AM Retained Lens Fragments After Cataract Surgery: Outcomes of Same-day vs Later Para Plana Vitrectomy
Harry W Flynn Jr MD
- 11:04 AM 2013 Update on DRCR.net Topical Antibiotic Use and Endophthalmitis Rates With Intravitreal Drug Injections
*Abdhis R Bhavsar MD**
- 11:12 AM CFH and ARMS2 Genetic Polymorphisms Predict Response to Antioxidants and Zinc in Patients With Age-Related Macular Degeneration
*Carl C Awl MD**
- 11:20 AM Systemic Safety Profile of Intravitreal Ranibizumab in Wet AMD, RVO, and DME: A Meta-Analysis of 14 Phase II/III Clinical Trials
*Baruch D Kuppermann MD PhD**
- 11:28 AM Conclusion
- 11:30 AM End of Session

Teaching and Learning in Ophthalmology—"Give Me Something to Make Me a Better Teacher!" Faculty Development Modules

Event No: SYM23 10:15 - 11:45 AM
Room: 243

Combined meeting with the Association for University Professors of Ophthalmology (AUPO)

Chair(s): Andreas Lauer MD, Tara A Uhler MD*

Competency-based education is the rubric currently used to help prepare tomorrow's physicians to practice, learn and teach in an ever-changing clinical environment where patient safety, improved communication, effective clinical outcomes, and practice efficiency are prized. Through participation in selected modules offered in this symposium, participants will gain an increased understanding of competency-based education and gain an enhanced teaching skill set as ophthalmic educators. Attendees will have the opportunity to pick 2-3 of 7 possible modules to attend, and in which to participate. At the conclusion of the modules, all the participants gather in preparation for the Straatsma Lecture. Following the Straatsma Lecture, each module leader will briefly summarize the content of their module to the group and a final synthesis will conclude the symposium. Instructional faculty development is an area of great need in academic training programs as we incorporate the ACGME Milestones in ophthalmic education and meet the changes of the Next Accreditation System.

- 10:15 AM Introduction and Orientation
*Andreas Lauer MD**
 - 10:20 AM Module: Engaging Residents to Participate and Successfully Complete Research Projects
*Shahzad I Mian MD**
 - 10:20 AM Module: EQUIPP (Education, Quality Improvement, and Patient Care Projects) for Ophthalmology Training
Laura L Wayman MD
 - 10:20 AM Module: Mentoring in Ophthalmology Training: Then, Now, Tomorrow
Natalie Kerr MD
 - 10:20 AM Module: Just in Time—Electronic vs. Interpersonal Learning
Thomas A Oetting MD
 - 10:20 AM Module: The Aces in Promoting Professionalism in Training
Richard A Harper MD
 - 10:20 AM Module: iLearn: An Educational Experiment in Teaching Lifelong Learning
*Timothy W Olsen MD**
 - 10:20 AM Module: The ART of Giving Structured Feedback and the PEARLS for Building Relationships
Douglas R Fredrick MD
 - 11:09 AM Confluence
- #### STRAATSMA LECTURE
- 11:12 AM Introduction of the Straatsma Lecturer
 - 11:17 AM Straatsma Lecture: Motivation and Engagement—When Perfect is Good Enough
*Andreas Lauer MD***
 - 11:37 AM Presentation of the Straatsma Award
 - 11:38 AM Synthesis and Conclusion
 - 11:45 AM End of Session

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest.

Monday, Nov. 18 (cont.)

The Affordable Care Act and Health Care Reform in 2013: Pearls and Potential Perils

Event No: SYM24 10:15 - 11:45 AM

Room: New Orleans Theater C

Combined meeting with the National Medical Association (NMA)

*Chair(s): Robert A Copeland MD, Everton L Arrindell MD**

The Affordable Care Act was signed into law on March 23, 2010, and was found constitutional by the Supreme Court by a 5-4 decision on June 28, 2012. The implementation of this law's timeline for rollout is imminent and on schedule. Some 30 million poor and marginalized American citizens will receive insurance and preventive care. Recent analysis reports that there will be a physician shortage of 90,000 at the end of the decade and 130,000 by 2025. In this symposium we will discuss the law, the impact on physician shortages, and the changing payment methods. Additionally we will look at innovative ways to treat our patients and be more productive.

- 10:15 AM Introductions and Welcome
Robert A Copeland MD
- 10:17 AM What Does the Affordable Care Act Mean for Ophthalmologists?
William L Rich MD
- 10:25 AM How Will Graduate Medical Education Be Paid for Under the Affordable Care Act?
Leonard Marquez
- 10:33 AM Does the Affordable Care Act Address Workforce Issues in Ophthalmology for the Baby Boomers and the Y Generation?
Keith D Carter MD FACS
- 10:41 AM How Will the Affordable Care Act Affect Ongoing and Future Ophthalmic Research?
*Randall J Olson MD***
- 10:49 AM Eye Health Disparities: How Does the Affordable Care Act Ameliorate the Problem?
M Roy Wilson MD
- 10:57 AM Implications of Bundled Payment Systems in Health Care Reimbursement Reform
*Michael X Repka MD MBA**
- 11:05 AM What Are the Tools Needed to Be Successful and Thrive in the Affordable Care Act Era?
*Paul P Lee MD JD**
- 11:13 AM What Is the Future for Ophthalmology Under the Affordable Care Act?
John G Clarkson MD
- 11:21 AM Q&A and Panel Discussion
- 11:43 AM Closing Remarks
*Everton L Arrindell MD**

Blast Eye Injuries: Lessons Learned from Boston, West, Texas, Iraq, and Afghanistan

Event No: SYM52 10:45 - 11:45 AM

Room: La Nouvelle Orleans C

Chair(s): Jorge G Arroyo MD, Mary Gilbert Lawrence MD MPH, Robert A Mazzoli MD

This presentation brings attendees together with nationally recognized medical experts on blast eye injuries, who will share lessons learned from the Boston Marathon bombing; the catastrophic explosion of the fertilizer plant in West, TX; Operation Enduring Freedom; and Operation Iraqi Freedom. Ocular injuries from explosions represent special cases due to the not yet well-understood physics of blasts, physiological differences between blast eye injuries and concussive eye injuries, and the emergency or combat conditions under which blast eye injuries

are treated. The panelists will provide their perspectives on emergency response in urban, rural, and combat settings; discuss the physics behind blasts injuries (pressure wave, shrapnel wave, translocation and heat wave); and provide take-home points to best prepare the ophthalmologist for the next mass casualty event. The session will include a question and answer session at conclusion.

- 10:45 AM Introduction
Mary Gilbert Lawrence MD MPH
- 10:46 AM The Physics of Blasts and the Physiology of Ocular Blast Injuries
Allen B Thach MD
- 10:51 AM Blast Injuries in the Urban Canyon (Boston Marathon)
Yoshihiro Yonekawa MD, Dean Elliott MD, Jorge G Arroyo MD*
- 11:06 AM Blast Exposure in Rural Areas (Plant Explosion)
Henry Hacker MD
- 11:16 AM Combat Blast Eye Injuries: The Military Experience
*Raymond I Cho MD***
- 11:26 AM Closing Statement and Lessons Learned
Robert A Mazzoli MD
- 11:31 AM Panel Discussion
*Peter B Veldman MD, Matthew F Gardiner MD, Ankoor S Shah MD**
- 11:45 AM End of Session

Ergonomics: Preventing Work-Related Injury in the Ophthalmologist

Event No: SYM26 12:15 - 1:45 PM

Room: 255

Combined meeting with the Women in Ophthalmology (WIO)

Chair(s): Susan M MacDonald MD, Kimberly Cockerham MD FACS**

'Physician heal thyself.' During ophthalmologists' daily routine, they will put their bodies into prolonged stretches or compressions to examine patient's eyes and perform surgical procedures. These non-neutral postures and awkward positions put ophthalmologists at risk of developing acute and chronic work-related musculoskeletal disorders. Understanding the risks and identifying modifications in the day's routine can create safer habits. Developing an ergonomically safe work environment and exercise routine is an important step in protecting ophthalmologists' body and future.

- 12:15 PM Introduction
*Susan M MacDonald MD**
- 12:20 PM Definitions and Incidence, With Special Emphasis on Increased Risk in Females
*Jeffrey L Marx MD**
- 12:30 PM Q&A
- 12:35 PM Ideal Posture, Ideal Form
Renee Ostertag MD
- 12:45 PM Protecting Yourself in the Operating Room
Ashish Nimbarte PhD
- 12:55 PM Modifying Your Postural Habits: Identifying Opportunities to Improve the Ergonomics of Your Clinic Environment
*Keith Hugh Baratz MD**
- 1:05 PM Q&A
- 1:10 PM Panel Discussion: Exercises/Stretching to Reduce Risk
Jennifer A Sivak-Callcott MD, Renee Ostertag MD
- 1:20 PM Employer Responsibility and Disability
Martin Wand MD
- 1:30 PM Q&A
- 1:35 PM Closing Remarks
*Kimberly Cockerham MD FACS**
- 1:45 PM End of Session

Monday, Nov. 18 (cont.)

EHR Stage 2 of Meaningful Use: What You Need to Do to Qualify for Payment

Event No: SYM27 12:45 - 1:45 PM

Room: New Orleans Theater C

Combined meeting with the Committee on Medical Information Technology (CMIT)

*Chair(s): Michael F Chiang MD**

The Medicare and Medicaid EHR Incentive Programs provide incentive payments to eligible professionals and hospitals as they adopt, implement, upgrade, or demonstrate meaningful use of certified EHR technology. Eligible professionals can receive up to \$44,000 through the Medicare EHR Incentive Program and up to \$63,750 through the Medicaid EHR Incentive Program. Beginning in 2015, Medicare eligible professionals who do not successfully demonstrate meaningful use will be subject to a negative payment adjustment, which could go up to as much as -5% in 2019. Significant changes have also been made to the definition of certified EHR technology, which can affect the choice of EHRs and EHR modules. To help ophthalmologists qualify for Meaningful Use incentives, this symposia will address the timeline, updates, and criteria for Stage 2.

- 12:45 PM Timeline, Payment Adjustments, and Hardship Exemptions for Meaningful Use
*Michael X Repka MD MBA**
- 12:55 PM Federal Perspective on Stage 2 of Meaningful Use: Benefits for Practitioners and Future Vision
- 1:05 PM Stage 2 Meaningful Use: What Changes Are Most Relevant for Your Practice?
Michael V Boland MD PhD
- 1:15 PM Beyond Stage 2: What Do Ophthalmologists Need?
*Michael F Chiang MD**
- 1:25 PM Q&A and Panel Discussion
- 1:45 PM End of Session

Management of Corneal Edema, Opacification, and Ectasia in the 21st Century: Diagnostic and Treatment Strategies From the New Preferred Practice Pattern® Guideline

Event No: SYM28 12:45 - 1:45 PM

Room: 215

Combined meeting with the Preferred Practice Patterns Committee (PPPC)

Chair(s): Robert S Feder MD

Corneal edema, opacification, and ectasia are the focus of a new Preferred Practice Pattern (PPP) guideline. The authors—PPP Cornea & External Disease committee members—will use the evidence-based recommendations from this PPP to provide the comprehensive ophthalmologist with a good understanding of how the latest diagnostic equipment and surgical techniques can provide the best care for an affected patient. The utility of advanced corneal topography instrumentation and anterior segment OCT will be discussed. The emphasis will be on teaching the comprehensive eye physician the basic indications and techniques, as well as the advantages and disadvantages of Descemet-stripping endothelial keratoplasty, deep anterior lamellar keratoplasty, anterior lamellar surgery, intrastromal ring segment insertion, and collagen crosslinking. Through didactic lecture and case presentation, the goal is to provide the attendee with pearls and take-home points that can be used in clinical practice. A free CD-ROM containing all 20 PPP titles and Summary Benchmarks will be distributed to attendees.

- 12:45 PM What Is the PPP?
Stephen D McLeod MD
- 12:48 PM How Does the Corneal Specialist Manage Corneal Opacification?
*Francis S Mah MD**

- 1:03 PM Corneal Edema Management in the 21st Century
Woodford S Van Meter MD FACS
- 1:18 PM A Modern Evaluation and Treatment Algorithm for Corneal Ectasia
*Audrey R Talley-Rostov MD**
- 1:33 PM Panel Q&A
- 1:45 PM End of Session

Why Take the Risk? How to Create an Effective Risk Management Strategy With Patient Education and Informed Consent Documents

Event No: SYM29 12:45 - 1:45 PM

Room: 224

Combined meeting with the Patient Education Committee and the Ophthalmic Mutual Insurance Company (OMIC)

Chair(s): Philip R Rizzuto MD FACS

Through analysis of specific medicolegal cases and a survey of OMIC defense counsel, learn how to minimize your risk against malpractice lawsuits with the effective use of ophthalmic patient education and informed consent tools.

- 12:45 PM Introduction
Philip R Rizzuto MD FACS
- 12:50 PM A Medico-legal Case Presentation
Devin A Harrison MD
- 1:05 PM Discussion of OMIC Defense Counsel Survey Results and Points
*John W Shore MD**
- 1:20 PM Academy and OMIC Resources for Education and Informed Consent
Philip R Rizzuto MD FACS
- 1:35 PM Conclusion and Q&A
- 1:45 PM End of Session

Advances in Glaucoma: Medical and Surgical Therapy

Event No: SYM30 2:00 - 3:30 PM

Room: La Nouvelle Orleans C

Combined meeting with the Association for Research in Vision and Ophthalmology (ARVO)

Chair(s): Rohit Varma MD MPH, Dimitri T Azar MD**

This session will emphasize current and controversial issues in glaucoma that are relevant to both the comprehensive ophthalmologist and the glaucoma specialist. A translational and scientific-based approach will be used to discuss advances in the diagnosis and management of glaucoma. Topics to be presented include the following: imaging and functional assessment in diagnosing early glaucomatous damage and progression; IOP monitoring in glaucoma; practice patterns in the medical treatment of glaucoma; efficacy and side effects of novel and traditional topical ocular hypotensive therapy; surgical management of glaucoma, including novel minimally invasive procedures, traditional trabeculectomy and drainage devices, and future long-term drug delivery and neuroregenerative therapies.

- 2:00 PM Who Should I Treat?
*Jeffrey M Liebmann MD**
- 2:09 PM What's New in Drug Treatment? New Drugs, Combination Drops, Preservative-Free Drops
*Anne Louise Coleman MD PhD**
- 2:18 PM Drug Treatment: Is There an Alternative to Drops?
*Mark S Humayun MD PhD**
- 2:27 PM Selective Laser Trabeculoplasty: Is It Better Than Argon Laser Trabeculoplasty? Is It Repeatable?
*Ahmad A Aref MD**
- 2:36 PM Have Tubes Won the Trabeculectomy vs. Tube Battle?
*Dale K Heuer MD**

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest.

Spotlight Sessions & Symposia

Monday, Nov. 18 (cont.)

- 2:45 PM Minimally Invasive Glaucoma Surgery: Improving Drainage Through the Schlemm Canal
*Thomas W Samuelson MD**
- 2:54 PM Minimally Invasive Glaucoma Surgery: Improving Subconjunctival Drainage and Creating Suprachoroidal Drainage
*Richard A Lewis MD**
- 3:03 PM Novel Glaucoma Surgeries: Case Presentations
*Iqbal K Ahmed MD**
- 3:12 PM Neuroprotection or Neuroregeneration in Glaucoma: Tired Hype or Potential Reality?
*Neeru Gupta MD PhD**
- 3:21 PM Panel Discussion: Putting It All Together
*Robert N Weinreb MD**
- 3:30 PM End of Session

New Drug or New Delivery System? The Way Forward in Combating Infectious and Inflammatory Diseases

Event No: SYM31 2:00 - 3:30 PM
Room: 243

Combined meeting with the Ocular Microbiology and Immunology Group (OMIG)

Chair(s): Prashant Garg MD, Bennie H Jeng MD*

Infectious and inflammatory ocular diseases pose several challenges. Important among these are the development of antimicrobial resistance and toxicity. The traditional approach to overcoming these challenges is to develop new and more potent molecules. However, since the time of penicillin this approach has failed, with several of these antibiotics, including fluoroquinolones, losing potency within a few years of development. Several alternative approaches have been explored recently, including those that improve drug delivery to the site of action. This approach not only prevents development of drug resistance, but also reduces toxicity. During this symposium we will be discussing some of these approaches that are in various phases of development and may be ready for use in clinical practice in the near future.

- 2:00 PM Biological Agents in the Management of Ocular Inflammation: A Case-based Update
*Nisha Acharya MD**
- 2:10 PM Q&A
- 2:13 PM Corneal Transplant Rejection: Is There a Role for Biologic Agents?
*Victor L Perez MD**
- 2:23 PM Q&A
- 2:26 PM Intraocular Implants as a Potential Approach to Reduce Postoperative Inflammation and Infection
*Debra A Goldstein MD**
- 2:36 PM Q&A
- 2:39 PM Intraocular Implants for Posterior Segment Inflammation: Current Status and the Way Forward
*Sunil K Srivastava MD**
- 2:49 PM Q&A
- 2:52 PM Application of Nano-technology for Ocular Inflammation and Infections
*William R Freeman MD**
- 3:02 PM Q&A
- 3:05 PM Antimicrobial Peptides (AMPs) and Infections: Will They Replace Conventional Antibiotic Therapy for Treatment of Infectious Diseases?
*Terrence P O'Brien MD**
- 3:15 PM Q&A
- 3:18 PM Current Strategies for Management of MRSA
*Francis S Mah MD**

- 3:28 PM Q&A
- 3:30 PM End of Session

Advanced Retinal Imaging and Its Impact on Therapeutic Strategies

Event No: SYM32 2:00 - 3:30 PM
Room: La Nouvelle Orleans AB

Combined meeting with The Retina Society

Chair(s): Charles C Barr MD FACS, Mark W Johnson MD**

Treatment options for various retina diseases currently involve both medical and surgical approaches. In the past, management of different retinal diseases required the practitioner to use clinical skills to determine the severity and extent of clinical pathology. In this symposium, speakers will discuss currently used and newer imaging techniques, including digital photography, fluorescein angiography, OCT, and ultrasound, and their impact on how we now manage retinal disease. They will focus on not only the visual and anatomic benefits to the patient but also the impact of these newer imaging techniques on treatment strategies. Understanding the paradigm shift that has taken place in retinal imaging will be of value to both vitreoretinal specialists and comprehensive ophthalmologists.

- 2:00 PM Trends in the Interface Between Digital Images and the Electronic Medical Record
James P Bolling MD
- 2:08 PM Ultrasound in the Time of OCT
*Yale L Fisher MD**
- 2:16 PM Spectral Domain OCT Correlates of Visual Acuity: Practical Applications
*Glenn J Jaffe MD**
- 2:24 PM Imaging of Neovascular Subtypes in AMD: Implications for Treatment
*K Bailey Freund MD**
- 2:32 PM Non-invasive Choroidal Imaging
*Brian C Leonard MD**
- 2:40 PM Enhanced Depth Imaging OCT of Ocular Tumors: Key Features to Recognize
Carol L Shields MD
- 2:48 PM Imaging in Retina Vein Obstruction
*David Brown MD FACS**
- 2:56 PM OCT and the Management of Vitreoretinal Disease
*Cynthia A Toth MD**
- 3:04 PM Ultra-wide-field Angiography in Diabetic Retinopathy
*Szilard Kiss MD**
- 3:12 PM The RetCam, Telemedicine, and ROP
*Graham E Quinn MD**
- 3:20 PM Overview: The New Paradigm of Retinal Imaging
*Charles C Barr MD FACS**
- 3:28 PM Conclusion
- 3:30 PM End of Session

The Management of Glaucoma in the Cataract Patient

Event No: SYM33 2:00 - 4:00 PM
Room: The Great Hall

Combined meeting with the American Society of Cataract and Refractive Surgery (ASCRS)

Chair(s): Edward J Holland MD, Stephen S Lane MD**

This collaborative symposium utilizes cases in a debate style format to address the management of clinical scenarios involving patients with glaucoma that would be seen by both comprehensive ophthalmologists and glaucoma specialists alike. Traditional approaches and surgery along with newer technologies will be discussed. Several discussions regarding the optimization of the refractive status of patients with glaucoma surgery will provide current and detailed in-

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formation to help the practitioner obtain better results. Furthermore, platform presentations on the potential uses of femtosecond laser assisted cataract surgery, small pupil management, and narrow angles will bring you up to date on these hot topics.

- 2:00 PM Welcome
*Edward J Holland MD**
- 2:01 PM Introduction
Thomas W Samuelson MD, Douglas J Rhee MD**
- 2:03 PM Presentation of Case #1: Mild Glaucoma With Cataract and Mildly Elevated IOP
*Thomas W Samuelson MD**
- 2:03 PM My Approach: Cataract Alone
*James C Tsai MD MBA**
- 2:08 PM My Approach: Cataract and Angle Surgery
Thomas D Patrianakos DO
- 2:13 PM My Approach: Cataract and ECP
*Malik Y Kahook MD**
- 2:18 PM Judges Panel Comments
- 2:23 PM ARS Voting
- 2:25 PM Presentation of Case #2: Advanced Glaucoma With Cataract and Very High IOP; Patient Needs Filter, What Do You Add?
*Douglas J Rhee MD**
- 2:28 PM My Approach: iStent
*Iqbal K Ahmed MD**
- 2:33 PM My Approach: Trabectome
*Sameh Mosaed MD**
- 2:38 PM My Approach: Trabeculectomy
*Joseph Caprioli MD FACS**
- 2:43 PM Judges Panel Comments
- 2:48 PM ARS Voting
- 2:50 PM Presentation of Case #3: Bleb-induced Astigmatism and Now Develops a Cataract
*Thomas W Samuelson MD**
- 2:53 PM My Approach: Cataract With Monofocal IOL
*Steven Gedde MD**
- 2:58 PM My Approach: Cataract With Toric IOL
*Steven D Vold MD**
- 3:03 PM My Approach: Cataract With AK/LRI Cuts
*Barbara A Smit MD PhD**
- 3:08 PM Judges Panel Comments
- 3:13 PM ARS Voting
- 3:15 PM Potential Role of Femtosecond Laser for Cataract Extraction in PXF and Traumatic Cataract
*Eric D Donnenfeld MD**
- 3:22 PM Managing the Small Pupil and Flomax Iris
*Reay Brown MD**
- 3:29 PM Narrow Angle Glaucoma: Role of LPI and/or Phaco
*Richard A Lewis MD**
- 3:36 PM Panel Discussion
*Douglas J Rhee MD**
- 4:00 PM End of Session

Reading With Low Vision: Rehabilitation and Neuroplasticity

Event No: SYM34 3:45 - 4:45 PM
Room: 243

Combined meeting with the Vision Rehabilitation Committee

Chair(s): Mary Lou Jackson MD, Lylas G Mogk MD**

Seniors who develop age-related eye disease and adults who develop other neurological disorders are often surprised and extremely disappointed to discover that they cannot read with ease. We know that reading involves both visual and cognitive function, and insult to either system can impact reading performance. Reading is the most common goal that individuals with vision loss bring to vision rehabilitation. The ability to read is a key part of maintaining independence and healthy aging. The ultimate goal of reading rehabilitation is to improve the quality of life of our patients, many of whom are seniors who may live for 20 or 30 years with vision loss due to age-related eye disease. Fortunately, patients with central scotomas can effectively "rewire" the system, so that they can use an eccentric locus for fixation in place of the blind macula. They can improve their visual acuity and their reading in this way despite a lack of improvement in their macular disease. This symposium will focus on reading and reading rehabilitation, bringing together clinicians and scientists from the areas of neurology, ophthalmology, visual science, and neuroimaging.

- 3:45 PM Introduction
*Mary Lou Jackson MD**
- 3:47 PM How Visual Function Impacts Reading
*Andrew G Lee MD**
- 3:58 PM Reading Impairments in Retinal Disease
Donald Calvin Fletcher MD
- 4:09 PM Reading Impairments in Neurological Disease
Dean M Cestari MD
- 4:20 PM Reading Rehabilitation: Approaches and Controversies
*Gale R Watson***
- 4:31 PM Reading Rehabilitation and Neuroplasticity: True or False?
*Janet S Sunness MD**
- 4:42 PM Conclusion
*Lylas G Mogk MD**
- 4:45 PM End of Session

How Do We Maintain Quality, Improve Efficiency, and Sustain the Physician-Patient Relationship?

Event No: SYM35 3:45 - 4:45 PM
Room: New Orleans Theater C

Combined meeting with the Committee on Practice Improvement

Chair(s): Joseph Caprioli MD FACS, Anne Louise Coleman MD PhD**

Amidst the increasing complexity of health care, payers are taking the driver's seat in demanding value for their health-care purchases. Ophthalmologists will be asked to measure quality more carefully, evaluate their processes more closely, and become more efficient. The Academy's Committee on Practice Improvement is developing activities to help members increase efficiency and enhance the quality of the care process. These shared learnings and best practices will help ophthalmologists to evaluate their own care processes and target improvement efforts, while sustaining the keystone of care, the physician-patient relationship. In this symposium, speakers will describe quality improvement initiatives and lessons learned. The need for effective communication and teamwork for quality patient care will be addressed, as well as keeping focus on the patient in a busy practice. Speakers will address practice efficiency through appropriate delegation of tasks by the ophthalmologist. All participants will receive a CD-ROM containing all of the Preferred Practice Patterns.

- 3:45 PM Introduction
Joseph Caprioli MD FACS, Anne Louise Coleman MD PhD**

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.
No asterisk indicates that the presenter has no financial interest.

Monday, Nov. 18 (cont.)

- 3:47 PM Quality Improvement in an Ophthalmic Academic Center
Robert M Levine MD
- 3:57 PM Practice Efficiency in the Real World and How the Academy Can Help Members
*Joseph Caprioli MD FACS**
- 4:07 PM Benchmarking Your Practice and Lessons Learned
*Steven V L Brown MD**
- 4:17 PM Data on the Use of Physician Extenders to Increase Practice Efficiency
David A Durfee MD
- 4:27 PM Panel Discussion and Q&A
- 4:45 PM End of Session

The Optical Biopsy: Ocular Imaging Modalities and Correlation With Histopathology

Event No: SYM36 3:45 - 5:15 PM
Room: La Nouvelle Orleans C

Combined meeting with the American Association of Ophthalmic Oncologists and Pathologists (AAOOP)

Chair(s): Nasreen A Syed MD, Debra J Shetlar MD

Most practicing ophthalmologists are using some form of ocular imaging in their practices today. Imaging modalities such as OCT and echography are used frequently to manage patients with conditions such as AMD and glaucoma. As the technology advances, these modalities are providing high-resolution images of many ocular structures. This symposium will review some of the newer imaging modalities, such as ultrahigh-resolution OCT, posterior segment spectral domain OCT (SD-OCT), anterior segment SD-OCT, contrast enhanced ultrasonography, and adaptive optics, and will correlate each imaging modality with its anatomic / histologic counterparts in order to educate the clinician in the structures being imaged and, ultimately, the interpretation and limitations of these imaging studies.

- 3:45 PM Introduction
Nasreen A Syed MD
- 3:46 PM Contrast-Enhanced Ultrasonography: Clinical and Histopathological Correlates
Hans E Grossniklaus MD
- 3:54 PM Adaptive Optics of the Retina: Clinical Correlates
Jacque L Duncan MD
- 4:02 PM Ultra-high-Resolution OCT in Corneal and Conjunctival Disease
Sander Dubovy MD
- 4:10 PM SD-OCT Imaging for Glaucoma: Clinical and Histopathologic Correlates
*Christopher A Girkin MD**
- 4:18 PM SD-OCT Imaging of the Macula: Clinical and Histopathologic Correlates
Alison H Skalet MD PhD
- 4:26 PM Photoacoustic In Vivo Retinal Imaging: Clinical and Histopathologic Correlates
Amani Fawzi MD

ZIMMERMAN LECTURE

- 4:34 PM Introduction of Zimmerman lecturer
*Ralph Eagle MD**
- 4:39 PM Zimmerman Lecture: Intraocular Tumors in Children and Adults—Passing the Torch
Carol L Shields MD
- 5:14 PM Presentation of Zimmerman Medal
Hans E Grossniklaus MD
- 5:15 PM End of Session

Advanced Applications of Femtosecond Lasers for Refractive Surgery

Event No: SYM37 3:45 - 5:15 PM
Room: La Nouvelle Orleans AB

Combined meeting with the International Society of Refractive Surgery (ISRS)

Chair(s): Renato Ambrosio Jr MD, George O Waring IV MD**

Femtosecond lasers emerged by the end of the last century as one of the most important innovations in anterior segment surgery. With rapid development and evolution, femtosecond lasers have revolutionized corneal and refractive surgery. Though LASIK flap creation is still the most common application, corneal channels, pockets, and incisions can also be achieved with an unprecedented accuracy and safety in a bladeless fashion. In addition, femtosecond-assisted cataract and crystalline lens applications hold great promise and may represent the future of IOL surgery. These new applications are introduced continuously, making it a true challenge for refractive surgeons to stay updated with this technology. Attendees will receive a comprehensive update on femtosecond lasers and will understand the benefits of such technology for both corneal and lens-based refractive procedures.

- 3:45 PM Introduction
*Renato Ambrosio Jr MD**
- 3:46 PM Overview
*Perry S Binder MD**
- 3:49 PM Corneal Wound Healing After Femtosecond Laser Surgery
*Steven E Wilson MD**
- 3:56 PM LASIK
*Steven C Schallhorn MD**
- 4:03 PM Intracorneal Ring Segments
Mauro S Campos MD
- 4:10 PM Pocket
*Minoru Tomita MD PhD**
- 4:17 PM Intracor®
*Mike P Holzer MD**
- 4:24 PM Corneal Transplant
*Luciene B Sousa MD***
- 4:31 PM Accommodation
*Ronald R Krueger MD**
- 4:38 PM Cataract
*George O Waring IV MD**
- 4:45 PM The Market of Femtosecond Lasers: Can We Afford It?
*Richard L Lindstrom MD**

BARRAQUER LECTURE

- 4:52 PM Introduction of the Barraquer Lecture
- 4:57 PM Barraquer Lecture: Wound Healing and Biomechanical Changes After Wavefront-guided and Q-based Keratorefractive Surgery: Theoretical and Practical Applications
*Dimitri T Azar MD**
- 5:12 PM Presentation of the Award
- 5:14 PM Conclusion
- 5:15 PM End of Session

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest..

Tuesday, Nov. 19

Management of Vitreoretinal Interface Diseases

Event No: SYM38 8:30 - 10:00 AM

Room: La Nouvelle Orleans C

Combined meeting with the European Latin America Retina Specialist Society (Eurolam)

Chair(s): Stanley Chang MD, Gisbert W Richard MD*, Borja F Corcostegui MD**

Using intraoperative videotapes and case presentations, a panel of internationally recognized experts will demonstrate their approaches to various types of disease involving the vitreoretinal interface, including macular hole, macular pucker, traumatic macular hole, diabetic tractional macular edema, myopic macular hole, and others.

- 8:30 AM Anti-VEGF Therapy and Geographic Atrophy
*Ursula M Schmidt-Erfurth MD**
- 8:38 AM Surgical Techniques for Special Cases
*Marcio B Nehemy MD**
- 8:46 AM Myopic Macular Schisis and Hole
*Borja F Corcostegui MD**
- 8:54 AM Internal Limiting Membrane Management in Surgery for Idiopathic Macular Hole
Federico A Graue-Wiechers MD
- 9:02 AM Enzymatic Management of Abnormalities of the Vitreomacular Interface
*George A Williams MD**
- 9:10 AM Tractional Diabetic Macular Edema
*Francesco M Bandello MD**
- 9:18 AM Controversies in the Treatment of the Traumatic Macular Hole
*David E Pelayes MD**
- 9:26 AM Vitreomacular Interface in the Post radiation Maculopathy
Arun D Singh MD
- 9:34 AM Vitrectomy for Myopic Foveoschisis: Is It Better Without Tamponade?
*Yannick Le Mer MD**
- 9:42 AM Discussion
- 10:00 AM End of Session

SO YO So You Want to Be a Leader in Ophthalmology?

Event No: SYM39 8:30 - 10:00 AM

Room: 243

Combined meeting with the Young Ophthalmologist (YO) and Senior Ophthalmologist (SO) Committees

Chair(s): Susan H Day MD, H Dunbar Hoskins Jr MD FACS, Robert F Melendez MD MBA, Purnima S Patel MD*

The number of vacancies for leadership positions in the rapidly evolving field of health care is growing and will continue to do so. This symposium will identify key leadership positions in ophthalmology: department chair, residency program director, state and national leadership positions, as well as practice- and hospital-based leadership roles. Furthermore, the various etiologies for these deficiencies will be discussed. The need for leadership roles to ensure the persistent vitality of the field of ophthalmology will be emphasized. More importantly, the panel of speakers will comment on mechanisms by which a continued foundation of strong leadership can be sustained, with a particular focus on methods for young ophthalmologists to begin developing, fostering, and sharpening the leadership skills required to fill these positions. The speakers will be young ophthalmologists who occupy current leadership roles and experienced ophthalmologists who have been in these positions for many years. This will be a joint symposium

of the Young Ophthalmologist (YO) Committee and the Senior Ophthalmologist (SO) Committee.

- 8:30 AM Introduction
*H Dunbar Hoskins Jr MD FACS**
- 8:35 AM Why Are Leaders Necessary?
Susan H Day MD
- 8:40 AM Defining the Ideal Characteristics of a Leader
*Julia A Haller MD**
- 8:47 AM Leadership Styles
*Morton F Goldberg MD FACS**

Pathway to Leadership Panel: Personal Perspectives

- 8:55 AM Employed Leadership
Keith D Carter MD FACS
- 9:03 AM Volunteer Leadership
Thomas A Oetting MD
- 9:12 AM Leadership at the State Level
Linda M Tsai MD
- 9:19 AM Leadership Across Medicine
*Dimitri T Azar MD**
- 9:27 AM International Leadership Development Program
Michael W Brennan MD
- 9:35 AM Specific Resources Available for Future Leaders
Ruth D Williams MD
- 9:42 AM Q&A
- 9:57 AM Closing Remarks
*H Dunbar Hoskins Jr MD FACS**
- 10:00 AM End of Session

A Multidisciplinary Approach to Emerging Therapies in Neuro-Ophthalmology

Event No: SYM40 8:30 - 10:30 AM

Room: La Nouvelle Orleans AB

Combined meeting with the North American Neuro-Ophthalmology Society (NANOS)

Chair(s): Madhu R Agarwal MD, Matthew Dean Kay MD

The spectrum of diseases and findings seen by ophthalmologists are often manifestations of significant systemic disease. This symposium provides an overview of several diseases and describes emerging methods of treatments for patients suffering from them. Topics include optic neuritis, thyroid eye disease, giant cell arteritis, pseudotumor cerebri, pituitary tumors, aneurysmal third nerve palsy, diabetic mononeuropathy, and metastatic breast cancer. The care of these complex patients requires a multidisciplinary approach. Attendees will be better informed about novel medical and surgical approaches to systemic diseases and will be better able to coordinate care of these patients among the different medical specialties.

- 8:30 AM Welcome
Madhu R Agarwal MD
- 8:32 AM Optic Neuritis Case: Fingolimod (Gilenya)
*Fiona E Costello MD**
- 8:41 AM Proptosis/TED Case: Rituximab (Rituxan)
Todd A Goodlick MD
- 8:50 AM Giant Cell Arteritis Case: IV Methylprednisolone (Solumedrol)
*Mark L Moster MD**
- 8:59 AM Pseudotumor Cerebri Case: Bariatric Surgery (Gastric Bypass/Lap-Band)
*Rudrani Banik MD**
- 9:08 AM Pituitary Tumor: Endoscopic Neurosurgery
Steven A Newman MD
- 9:17 AM Aneurysmal Third Nerve Palsy: Glue/Coils
*Mark J Kupersmith MD**

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest.

Spotlight Sessions & Symposia

Tuesday, Nov. 19 (cont.)

- 9:26 AM Diabetic Sixth Nerve Palsy: Exenatide (Byetta)
Susan M Pepin MD
- 9:35 AM Breast Cancer Metastasis to Orbit: Trastuzumab, Lapatinib (Herceptin, Tykerb)
Marie D Acierno MD
- 9:44 AM Conclusion
Matthew Dean Kay MD

WILLIAM F HOYT LECTURE

- 9:46 AM Introduction of the William F Hoyt Lecturer
- 9:51 AM William F Hoyt Lecture: Neuro-Ophthalmology in Review: Around the Brain with 50 Fellows
*Nancy J Newman MD**
- 10:16 AM Presentation of Award
- 10:30 AM End of Session

Anterior Segment Reconstruction

Event No: SYM41 10:15 - 11:45 AM
Room: 243

Combined meeting with the American Society of Ocular Trauma (ASOT)

*Chair(s): G Philip Matthews MD PhD, Ronald Peter Danis MD**

This year's symposium will include a detailed discussion on anterior segment reconstruction. The program will focus on primary surgical decisions and complex secondary surgical management. Special consideration will be given to the treatment approach to traumatic cataract and the role of the iris prosthesis. Finally, the seventh Helen Keller Lecture will be presented.

- 10:15 AM Introduction
G Philip Matthews MD PhD
- 10:17 AM Timing and Wound Closure Strategies
*M Bowes Hamill MD**
- 10:27 AM What Else to Consider?
Jose Dalma MD
- 10:37 AM Diagnostic Work-up
*Mark I Rosenblatt MD PhD**
- 10:47 AM Timing of Surgical Intervention
Gregorio F Gabela MD
- 10:57 AM Traumatic Cataract: What, When, and How
Ferenc P Kuhn MD PhD
- 11:07 AM The Role of the Iris Prosthesis
*Michael E Snyder MD**

HELEN KELLER LECTURE

- 11:17 AM Introduction of the Helen Keller Lecture
Ferenc P Kuhn MD PhD
- 11:19 AM Helen Keller Lecture: "Pole to Pole" Approach in Severe Ocular Trauma: Focus on the "Middle Earth"—Iris Reconstruction and Beyond
Cesare Forlini MD
- 11:44 AM Presentation of Award
Ferenc P Kuhn MD PhD
- 11:45 AM End of Session

Late Breakers Symposium

Event No: SYM42 10:15 - 11:45 AM
Room: La Nouvelle Orleans C

Topics will cover new technology and therapies as well as important topics and controversies that have come up within the last six months in the field of ophthalmology.

- 10:15 AM Introduction
Maria M Aaron MD
- 10:16 AM Ten Year Results of the Cornea Donor Study
*Edward J Holland MD**
- 10:26 AM Posterior Corneal Astigmatism and the Revised Toric IOL Recommendations
*Mitchell P Weikert MD**
- 10:36 AM Plaque Screening Recommendations
*Michael F Marmor MD**
- 10:46 AM Cataract Extraction for Angle Closure Glaucoma
*Christopher Kai-shun Leung MD MBChB**
- 10:56 AM FDA Approval of the iStent
*Steven D Vold MD**
- 11:06 AM Orbital Lymphoproliferative Disease Spectrum, Pathologic Variation, Implication and Treatment
J Douglas Cameron MD
- 11:16 AM OCT Evaluation of Papilledema: Pilot Studies and Baseline Characteristics of Participants in the Idiopathic Intracranial Hypertension Treatment Trial
*Mark J Kupersmith MD**
- 11:26 AM Results of AREDS2
Emily Y Chew MD
- 11:36 AM FDA Approval of the Argus II
*Mark S Humayun MD PhD**
- 11:46 AM End of Session

Grand Rounds: Cases and Experts From Across the Nation

Event No: SYM43 10:45 AM - 12:00 PM
Room: La Nouvelle Orleans AB

*Chair(s): Nicholas J Volpe MD**

Panelists: Alfredo A Sadun MD PhD, Lee M Jampol MD*, Alexander J Brucker MD*, Raymond S Douglas MD PhD**

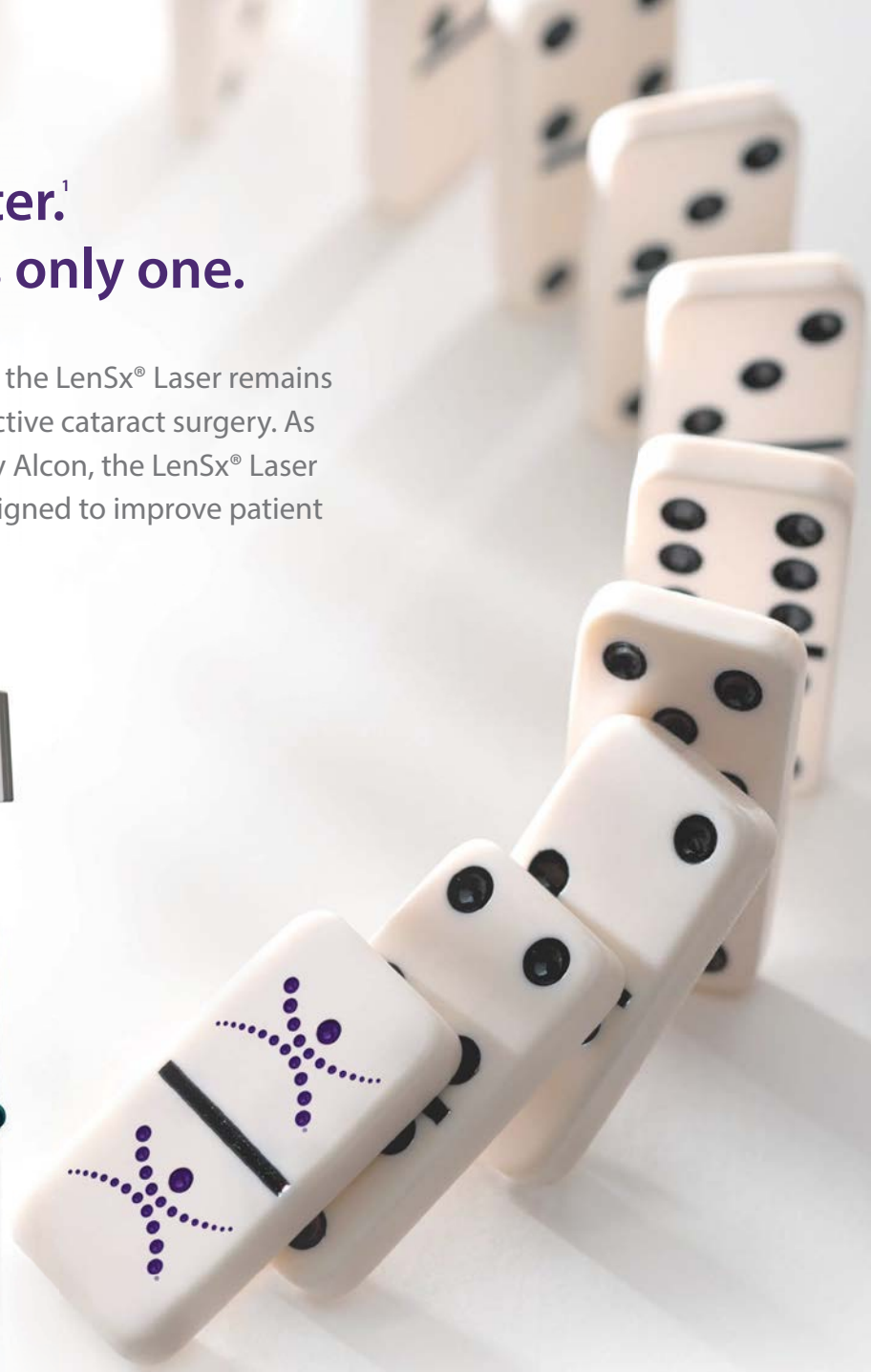
Real residents present real cases from real department grand rounds. Residents chosen from different academic programs will present cases to a panel of experts followed by Q&A and discussion by the panel.

- 10:45 AM Introduction and Welcome Remarks
Nicholas J Volpe MD
- 10:47 AM Chronic Uveitis With Hypopyon
Maria E Lim MD
- 10:58 AM Another Case of Diplopia: Exhausting but Not Painful
Kimberly M Hsu MD
- 11:09 AM 33-Year-Old With Transient Vision Loss
Denise S Kim MD
- 11:20 AM Why Won't This Eye Swelling Resolve
*Meraf A Wolle MD***
- 11:31 AM Deep Knee in the Nerve
*Paula E Pecan MD***
- 11:43 AM Retinal Tear With a Twist
Vaidehi S Dedania MD
- 11:55 AM Closing Remarks
Nicholas J Volpe MD
- 12:00 PM End of Session

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- Designed for maximum procedural flexibility and ease of patient flow and transfer
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VERION™

IMAGE GUIDED SYSTEM

IMPORTANT SAFETY INFORMATION

CAUTION: United States Federal Law restricts this device to sale and use by or on the order of a physician or licensed eye care practitioner.

INDICATION: The LenSx® Laser is indicated for use in patients undergoing cataract surgery for removal of the crystalline lens. Intended uses in cataract surgery include anterior capsulotomy, phacofragmentation, and the creation of single plane and multi-plane arc cuts/incisions in the cornea, each of which may be performed either individually or consecutively during the same procedure.

RESTRICTIONS:

- Patients must be able to lie flat and motionless in a supine position.
- Patient must be able to understand and give an informed consent.
- Patients must be able to tolerate local or topical anesthesia.
- Patients with elevated IOP should use topical steroids only under close medical supervision.

Contraindications:

- Corneal disease that precludes applanation of the cornea or transmission of laser light at 1030 nm wavelength
- Descemetocoele with impending corneal rupture
- Presence of blood or other material in the anterior chamber
- Poorly dilating pupil, such that the iris is not peripheral to the intended diameter for the capsulotomy
- Conditions which would cause inadequate clearance between the intended capsulotomy depth and the endothelium (applicable to capsulotomy only)
- Previous corneal incisions that might provide a potential space into which the gas produced by the procedure can escape
- Corneal thickness requirements that are beyond the range of the system
- Corneal opacity that would interfere with the laser beam
- Hypotony or the presence of a corneal implant
- Residual, recurrent, active ocular or eyelid disease, including any corneal abnormality (for example, recurrent corneal erosion, severe basement membrane disease)
- History of lens or zonular instability
- Any contraindication to cataract or keratoplasty
- This device is not intended for use in pediatric surgery.

WARNINGS: The LenSx® Laser System should only be operated by a physician trained in its use. The LenSx® Laser delivery system employs one sterile disposable LenSx® Laser Patient Interface consisting of an applanation lens and suction ring. The Patient Interface is intended for single use only. The disposables used in conjunction with ALCON® instrument products constitute a complete surgical system. Use of disposables other than those manufactured by Alcon may affect system performance and create potential hazards.

The physician should base patient selection criteria on professional experience, published literature, and educational courses. Adult patients should be scheduled to undergo cataract extraction.

PRECAUTIONS:

- Do not use cell phones or pagers of any kind in the same room as the LenSx® Laser.
- Discard used Patient Interfaces as medical waste.

AES/COMPLICATIONS:

- Capsulotomy, phacofragmentation, or cut or incision decentration
- Incomplete or interrupted capsulotomy, fragmentation, or corneal incision procedure
- Capsular tear
- Corneal abrasion or defect
- Pain
- Infection
- Bleeding
- Damage to intraocular structures
- Anterior chamber fluid leakage, anterior chamber collapse
- Elevated pressure to the eye

ATTENTION: Refer to the LenSx® Laser Operator's Manual for a complete listing of indications, warnings and precautions.

IMPORTANT SAFETY INFORMATION FOR THE VERION™ REFERENCE UNIT AND VERION™ DIGITAL MARKER

CAUTION: Federal (USA) law restricts this device to sale by, or on the order of, a physician.

INTENDED USES: The VERION™ Reference Unit is a preoperative measurement device that captures and utilizes a high-resolution reference image of a patient's eye in order to determine the radii and corneal curvature of steep and flat axes, limbal position and diameter, pupil position and diameter, and corneal reflex position. In addition, the VERION™ Reference Unit provides preoperative surgical planning functions that utilize the reference image and preoperative measurements to assist with planning cataract surgical procedures, including the number and location of incisions and the appropriate intraocular lens using existing formulas. The VERION™ Reference Unit also supports the export of the high-resolution reference image, preoperative measurement data, and surgical plans for use with the VERION™ Digital Marker and other compatible devices through the use of a USB memory stick.

The VERION™ Digital Marker links to compatible surgical microscopes to display concurrently the reference and microscope images, allowing the surgeon to account for lateral and rotational eye movements. In addition, the planned capsulorhexis position and radius, IOL positioning, and implantation axis from the VERION™ Reference Unit surgical plan can be overlaid on a computer screen or the physician's microscope view.

CONTRAINDICATIONS: The following conditions may affect the accuracy of surgical plans prepared with the VERION™ Reference Unit: a pseudophakic eye, eye fixation problems, a non-intact cornea, or an irregular cornea. In addition, patients should refrain from wearing contact lenses during the reference measurement as this may interfere with the accuracy of the measurements.

Only trained personnel familiar with the process of IOL power calculation and astigmatism correction planning should use the VERION™ Reference Unit. Poor quality or inadequate biometer measurements will affect the accuracy of surgical plans prepared with the VERION™ Reference Unit.

The following contraindications may affect the proper functioning of the VERION™ Digital Marker: changes in a patient's eye between preoperative measurement and surgery, an irregular elliptical limbus (e.g., due to eye fixation during surgery, and bleeding or bloated conjunctiva due to anesthesia). In addition, the use of eye drops that constrict sclera vessels before or during surgery should be avoided.

WARNINGS: Only properly trained personnel should operate the VERION™ Reference Unit and VERION™ Digital Marker.

Only use the provided medical power supplies and data communication cable. The power supplies for the VERION™ Reference Unit and the VERION™ Digital Marker must be uninterrupted. Do not use these devices in combination with an extension cord. Do not cover any of the component devices while turned on.

Only use a VERION™ USB stick to transfer data. The VERION™ USB stick should only be connected to the VERION™ Reference Unit, the VERION™ Digital Marker, and other compatible devices. Do not disconnect the VERION™ USB stick from the VERION™ Reference Unit during shutdown of the system.

The VERION™ Reference Unit uses infrared light. Unless necessary, medical personnel and patients should avoid direct eye exposure to the emitted or reflected beam.

PRECAUTIONS: To ensure the accuracy of VERION™ Reference Unit measurements, device calibration and the reference measurement should be conducted in dimmed ambient light conditions. Only use the VERION™ Digital Marker in conjunction with compatible surgical microscopes.

ATTENTION: Refer to the user manuals for the VERION™ Reference Unit and the VERION™ Digital Marker for a complete description of proper use and maintenance of these devices, as well as a complete list of contraindications, warnings and precautions.

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Original Papers

Sunday – Tuesday, Nov. 17 - 19

A panel discussion, with time for audience questions, will follow each paper presentation. At the end of each session, the panel will select the best paper from that session.

Selection Committee

The Annual Meeting Program Committee selected all Original Papers. See page 33 for committee details.

Cataract

Sunday, Nov. 17

10:30 AM - 12:15 PM

Room: 243

Moderator: Mitchell P Weikert MD*

Panel: William J Fishkind MD FACS*, Nicole R Fram MD*, R Bruce Wallace MD*

PA001

10:30 AM

NEW First 5th-Generation Formula: The Hoffer H-5

Presenting Author: Kenneth J Hoffer MD FACS*

Purpose: To improve the accuracy of fourth generation formulas such as the Holladay 2 and Hoffer H so as to consider other patient factors in predicting the effective lens position. **Methods:** A world literature search was done on the biometric measurements of human eyes in large series. The data were collated and analyzed to produce average values for different populations based on race and gender. **Results:** The values calculated were used to replace those in the Holladay 2 and Hoffer H formulas to individualize the calculation for the specific patient based on their race and gender. MedAE of prediction was 0.36 D in series of 90 mixed race and gender eyes. **Conclusion:** The Hoffer H-5 formula uses the structure of the Hoffer H formula and takes into account the demographic specifics of the individual patient based on race and gender.

10:37 AM

Panel discussion of previous paper

PA002

10:42 AM

NEW Ultrasound Biomicroscopy of Lens/IOL Position Before and After Cataract Surgery

Presenting Author: Peter D Fedor MD*

Purpose: To evaluate the position of the ciliary body (CB) and the lens/IOL in myopic and hyperopic patients before and after cataract surgery using ultrasound biomicroscopy (UBM) and Lenstar interferometry. **Methods:** Quantel UBM of 20 eyes was analyzed, including the axial position of the plane of CB apex (CBD-ciliary body depth) before and after cataract surgery. The measurements of lens/IOL position were compared to Lenstar interferometry. **Results:** The pre- and postoperative CBD in myopic patients was 4.85 mm and 4.96 mm; and in hyperopic patients, 4.22 mm and 4.61 mm, respectively. CB apex shifted posteriorly 0.39 mm with cataract surgery in hyperopic patients, as compared to the 0.11-mm axial shift in myopic eyes. **Conclusion:** UBM revealed larger posterior axial shift of apex of the ciliary body after cataract surgery in hyperopic eyes than in myopic eyes.

10:49 AM

Panel discussion of previous paper

PA003

10:54 AM

NEW Prevalence of Corneal Astigmatism, Changes With Age, and Fellow Eye Correlations in Patients Undergoing Cataract Surgery

Presenting Author: Douglas A M Lyall MBChB

Co-Author(s): Jia Ng MBChB, Sathish Srinivasan MBBS*

Purpose: To establish the prevalence, age-related changes, and fellow-eye correlation of corneal astigmatism in a cataract surgery population. **Methods:** Prospective study. Keratometric data, obtained with the IOLMaster of 2970 eyes of 1550 patients undergoing cataract surgery, was analyzed. **Results:**

Mean astigmatism was 1.05 D. 19.7% of eyes had astigmatism > 1.5 D. A positive increase in against-the-rule astigmatism (ATR) was found with age ($p = .004$). There was a strong fellow-eye correlation of astigmatism magnitude ($P < .001$). 22.5% of patients with astigmatism > 2.5 D in one eye had a similar magnitude in the fellow eye. **Conclusion:** Patients with high corneal astigmatism in one eye are more likely to have similar significant levels in the fellow eye. ATR increases with age, and this may need consideration when planning for toric IOL.

11:01 AM

Panel discussion of previous paper

PA004

11:06 AM

NEW Toric IOL Selection and Positioning With and Without Intraoperative Aberrometry

Presenting Author: Kathryn Masselam Hatch MD*

Co-Author(s): Jonathan H Talamo MD*, Emily C Woodcock

Purpose: To determine the value of intraoperative aberrometry in cases of toric IOL implantation. **Methods:** Retrospective analysis of personal results for toric IOL implantation with intraoperative aberrometry (aberrometry group) and without it (control group). **Results:** Mean preop keratometry was 1.87 D \pm 0.76 D in the aberrometry group and 1.79 D \pm 0.75 D in the control group. The mean postoperative refractive astigmatism was 0.48 D \pm 0.48 D in the aberrometry group vs. 0.68 D \pm 0.42 D in the control group. Postoperative refractive astigmatism was \leq 0.50 D in 78% of eyes in the aberrometry group vs. only 35% of control eyes. **Conclusion:** The reduction of refractive astigmatism to 0.50 D or less with a toric IOL is more than twice as likely when implantation is aided by intraoperative aberrometry.

11:13 AM

Panel discussion of previous paper

PA005

11:18 AM

NEW IOL Selection Based on OCT for Cataracts Following Laser Vision Correction

Presenting Author: Alex Harris

Co-Author(s): Robert W Weisenthal MD, Mark V White MD

Purpose: To compare OCT-based IOL selection to 4 modalities used in post-laser vision correction (LVC) cataract patients. **Methods:** Retrospective review of 29 post-LVC cataract cases. Prediction error was based on postoperative manifest refraction for selections using OCT, Orbscan, American Society of Cataract and Refractive Surgery (ASCRS), clinical history (CH), and Haigis-L. Mean arithmetic error (ME), mean absolute error (MAE), and error distributions (ED) were compared. **Results:** ME using OCT was -0.26 D; ASCRS, -0.26; CH, -0.37; Orbscan, -0.42; Haigis-L, -0.50. MAE using OCT was 0.60; ASCRS, 0.65; CH, 1.10; Orbscan, 0.67; Haigis-L, 0.68. ($P > .05$). **Conclusion:** Although unable to show superiority, it was demonstrated that IOL selections based on OCT have similar predictive utility as leading alternative methods without the need to rely on historical patient data.

11:25 AM

Panel discussion of previous paper

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

PA006

11:30 AM

NEW Implantation of Secondary or Piggyback IOLs Guided by Intraoperative Aberrometry

Presenting Author: William Wiley MD*

Co-Author(s): Shamik Bafna MD*

Purpose: To determine the utility of intraoperative wavefront aberrometry in the selection of secondary or piggyback IOLs in cases of high refractive error or high residual error after primary IOL implantation. **Methods:** Intraoperative wavefront aberrometry (ORA System, WaveTec Vision) was used in 14 consecutive cases (8 hyperopic; 6 myopic) of piggyback IOL implantation (placed in the sulcus). **Results:** Eleven procedures were planned piggyback IOLs due to high refractive error. Three were post-refractive surgery eyes that underwent unplanned piggyback IOL surgery due to higher-than-expected residual error. Mean prediction error was 0.39 ± 0.26 D. **Conclusion:** Intraoperative aberrometry can help guide the selection and placement of primary and secondary IOLs in a piggyback formation.

11:37 AM

Panel discussion of previous paper

PA007

11:42 AM

NEW Comparison of Postoperative Refraction With Intraoperative Refraction Measured by an Intraoperative Wavefront Aberrometer During Cataract Surgery

Presenting Author: Ming X Wang MD PhD*

Co-Author(s): Bryce D Brown OD, Megan Lee Blemker OD

Purpose: To assess the predictability of refraction and cylinder using an intraoperative wavefront aberrometer, by comparing intraoperative and postoperative measurements. **Methods:** In a series of 134 eyes that underwent cataract extraction, the differences between intraoperative refraction and cylinder and that obtained at 1 month and 3 months postoperatively, defined as the settling factor (SF), were measured. Results were also calculated for 3 different groups: all eyes, virgin eyes, and postrefractive eyes. **Results:** The average SE SF of all eyes was 0.27 ± 0.88 D at 1 month and 0.29 ± 0.89 D at 3 months. The average cylinder magnitude SF for all eyes was 0.70 ± 0.51 D at 1 month and 0.72 ± 0.49 D at 3 months. **Conclusion:** The ORA intraoperative wavefront system provides a good prediction for postoperative refraction and cylinder.

11:49 AM

Panel discussion of previous paper

PA008

11:54 AM

NEW IOL Calculations in Post-Laser Vision Correction Eyes Undergoing Cataract Surgery Using Multiple Methods

Presenting Author: Samuel Masket MD*

Co-Author(s): Nicole R Fram MD*

Purpose: To compare predicted outcomes in post-laser vision correction (LVC) eyes undergoing cataract surgery using Haigis-L, OCT-based formula, intraoperative aberrometry (ORA), and Masket formula. **Methods:** Patients with previous LVC undergoing cataract surgery were reviewed. IOLMaster 500 was used to measure axial length, keratometry, and anterior chamber depth. Haigis-L, OCT based- formula, ORA, and Masket formula were compared. Two-week postoperative BCVA was recorded. Mean absolute refraction errors (MAEs) were compared for all methods. **Results:** Twenty-six eyes with previous LVC undergoing cataract surgery were evaluated. Range of LVC was +4.21

D to -7.25 D. The MAE was 0.57 for Haigis-L, 0.41 for OCT-based, 0.43 for ORA, and 0.49 for Masket. **Conclusion:** Newer methods such as OCT-based IOL formula and ORA show promising results in post-LVC IOL calculations.

12:01 PM

Panel discussion of previous paper

PA009

12:06 PM

NEW OCT vs. Leading Published Methods for Post-Laser Vision Correction IOL Selection

Presenting Author: Alex Harris

Co-Author(s): Robert W Weisenthal MD, Mark V White MD

Purpose: To compare OCT-based IOL selection to popular modalities used in post-laser vision correction (LVC) cataract patients. **Methods:** Retrospective review of 29 cataract cases. Prediction error for OCT-based IOL selection based on postoperative manifest refraction. Mean arithmetic error (ME), mean absolute error (MAE), and error distributions (ED) compared to the top 5 accurate methods published in a larger study ($n = 173$). **Results:** Best ME achieved with Shammas, -0.10 ± 1.02 D; OCT, -0.26 ± 0.73 D. Best MAE achieved with Masket, 0.59 ± 0.67 D; OCT, 0.60 ± 0.48 D. Best ED for -1 to 0 D was OCT (58.6%); ± 0.5 D was Masket with Hoffer-Q (58.8%); ± 1 D was OCT (86.2%) ($P > .05$). **Conclusion:** Although unable to show superiority, the OCT-based method was found comparable to leading

12:13 PM

Panel discussion of previous paper

Sunday, Nov. 17

3:30 - 5:10 PM

Room: 255

Moderator: Steven H Dewey MD*

Panel: Panel: George Beiko MD*, James A Davison MD*, Samuel Masket MD*

PA015

3:30 PM

NEW Localized Opacification of Hydrophilic Acrylic IOLs After Procedures Using Intracameral Injection of Air/Gas

Presenting Author: Liliana Werner MD PhD*

Co-Author(s): Nick Mamalis MD*

Purpose: To describe clinicopathological findings in cases of IOL opacification after procedures involving intracameral injections of air/gas. **Methods:** Five hydrophilic acrylic IOLs (4 designs) were explanted 2-9 months after Descemet-stripping endothelial keratoplasty (DSEK) / Descemet-stripping automated endothelial keratoplasty (DSAEK) because of a localized central optic opacification associated with significant decrease in visual acuity. The lenses underwent pathological and histochemical evaluation. **Results:** Granular deposits were densely distributed in a round pattern within the margins of the capsulorrhexis or the pupil, on the anterior surface / subsurface of the IOLs. Granules stained positive for calcium. **Conclusion:** Surgeons should be aware of possible localized calcification following DSEK/DSAEK procedures in pseudophakic patients with hydrophilic acrylic IOLs.

3:37 PM

Panel discussion of previous paper

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

PA016

3:42 PM

NEW Sutured Scleral-Fixated IOL vs. Glued Intrac scleral Haptic-Fixated IOL: Randomized Comparative Study

Presenting Author: Mayank Bansal

Co-Author(s): Rajesh Sinha, Namrata Sharma MD MBBS, Tanuj Dada MD, Radhika Tandon MD, Jeewan S Titiyal MD

Purpose: To compare clinical outcomes between sutured scleral and glued intrac scleral haptic fixated IOLs. **Methods:** Forty aphakic eyes were randomized into 2 groups of 20 each. Preoperative and postoperative UCVA, BCVA, IOP, specular count, keratometry, central macular thickness (CMT), IOL tilt, and pseudophakodonesis on ultrasound biomicroscopy were recorded. Surgery was performed by a single surgeon. **Results:** Mean postoperative UCVA and BCVA was more in the glued group ($P < .05$). Mean endothelial cell loss, CMT, and IOL tilt in the sutured and glued groups were $11.49 \pm 4.23\%$ and $8.95 \pm 4.17\%$ ($P = .08$); 250.95 ± 23.98 , and 225.85 ± 21.13 microns ($P = .009$); $2.23^\circ \pm 0.98^\circ$ and $1.78^\circ \pm 0.97^\circ$ ($P = .38$), respectively. Vision CMT had an inverse correlation ($P = .01$). Pseudophakodonesis and macular edema were more in the sutured group. **Conclusion:** Glued haptic fixated IOL had more stable fixation, better visual outcome, and fewer complications.

3:49 PM

Panel discussion of previous paper

PA017

3:54 PM

NEW Capsular Bag Opacification With a New Silicone Oil-Filled Accommodating IOL

Presenting Author: Nick Mamalis MD*

Co-Author(s): Liliana Werner MD PhD*, Anne Floyd, Erica Liu MD, Shannon Stallings MD

Purpose: To evaluate biocompatibility and capsular bag opacification (PCO) of a new accommodating IOL with large haptic elements filled with silicone oil to change the optic shape to allow accommodation. **Methods:** Implantation of the study IOL in rabbit eyes compared to a control IOL and evaluation weekly with slitlamp followed by histopathological evaluation. **Results:** PCO scores at 6 weeks were 0.5 ± 0.31 in the study group and 3.0 ± 0.89 in the control, with no anterior capsular opacification in the study group. Miyake-Apple gross posterior view showed virtually no central PCO in the study group compared to the control. Histopathology confirmed the relatively clean capsules in the study group. **Conclusion:** The study IOL haptic elements maintain an open, expanded capsular bag, which appears to prevent capsular bag opacification.

4:01 PM

Panel discussion of previous paper

PA018

4:06 PM

NEW Improving Refraction With the Light Adjustable Lens: Three-Year Experience

Presenting Author: Tobias H Neuhaun MD

Purpose: Assessment of the efficacy and stability of the light adjustable lens (LAL). **Methods:** The LAL was implanted in 65 eyes scheduled for cataract surgery, of which 24 had previous LASIK, keratoconus, or lack of a reliable IOL-Master measurement. Outcomes included uncorrected distance visual acuity (UDVA), uncorrected near visual acuity (UNVA), and refraction. **Results:** Mean SE was $-1.75 D \pm 4.52 D$ preoperatively and $-0.56 D$ at 2 years. Two years postop, 94% were within $\pm 0.5 D$ of the intended refraction, 100% of patients had a UDVA of 20/32 or better, and 100% of patients achieved a UNVA of J8

or better. There were no differences between virgin and complicated eyes. **Conclusion:** The LAL delivers very good visual results in both complicated and virgin eyes of cataract surgery patients.

4:13 PM

Panel discussion of previous paper

PA019

4:18 PM

NEW Comparison of Morphologic Features of Clear Corneal Incisions Created With the Femtosecond Cataract Laser vs. the Manual Keratome Using Anterior Segment OCT

Presenting Author: Dilraj Singh Grewal MBBS

Co-Author(s): Agnieszka Kielian, Surendra Basti MBBS*

Purpose: To compare the morphology of clear corneal incisions (CCI) created during cataract surgery with a femtosecond laser (FS) (Catalys, Optimedica) vs. a 2.65-mm steel keratome using OCT (Spectralis; Heidelberg). **Methods:** Using Image J software, CCI morphology on OCT was analyzed 1 month following surgery in 20 FS eyes and 15 age-matched keratome (K) eyes. CCI length, endothelial gaping (EG), endothelial misalignment (EM), and Descemet membrane detachment (DMD) were compared. **Results:** Mean CCI length was 2.01 ± 0.076 vs. 2.05 ± 0.23 mm ($P = .38$), EG was 0.136 ± 0.03 vs. 0.198 ± 0.09 mm ($P = .01$), and EM was 0.04 ± 0.03 vs. 0.075 ± 0.06 mm ($P = .032$) in the FS and K groups, respectively. Zero of 20 FS eyes had a DMD, compared to 3/15 K eyes ($P = .037$). **Conclusion:** CCI created using FS had significantly lower EG, EM, and DMD.

4:25 PM

Panel discussion of previous paper

PA020

4:30 PM

NEW Visual Acuity and Predictability in Femtosecond Laser Cataract Surgery With Intraoperative Aberrometry

Presenting Author: Bret L Fisher MD*

Purpose: To determine the impact of intraoperative aberrometry on visual acuity and predictability in femtosecond laser cataract surgery. **Methods:** A retrospective comparison of 114 eyes undergoing LenSx laser cataract surgery with IOL implantation with and without ORA (Optiwave Refractive Analysis) intraoperative aberrometry. **Results:** Uncorrected visual acuity was 20/20 or better postop in 33% of the ORA group and in 23% of the non-ORA group, and 20/25 or better in 61% of the ORA group vs. 51% of the non-ORA group. Mean absolute prediction error was $0.32 D \pm 0.28 D$ in the ORA group (82% of eyes within 0.5 D of predicted refraction) and $0.44 D \pm 0.42 D$ in the non-ORA group (76% of eyes within 0.5 D). **Conclusion:** Initial analysis suggests that intraoperative aberrometry can improve results with femtosecond laser cataract surgery.

4:37 PM

Panel discussion of previous paper

PA021

4:42 PM

NEW Toward the Elimination of Ultrasound With Femtosecond Laser Cataract Surgery

Presenting Author: Burkhard Dick MD*

Co-Author(s): Tim Schultz MD*, Ina Conrad-Hengerer MD

Purpose: To compare the effect of femtosecond laser cataract surgery on effective phacoemulsification time (EPT) with various fragmentation patterns. **Methods:** EPT was assessed laser cataract pretreatment (Catalys; Sunny-

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vale, Calif., USA). A comparison of manual ($n = 750$) and laser ($n = 750$) was conducted. Preoperative nuclear opacity was determined by 1 surgeon. Both groups underwent phacoemulsification using pulsed ultrasound energy. **Results:** Ultrasound reduction was seen across all grades of cataract. 100% elimination of ultrasound was observed in grade 2, 98% reduction in grade 3, and 94% reduction in grade 4. **Conclusion:** The use of the femtosecond laser system to pretreat the nucleus led to > 99% reduction in EPT.

4:49 PM

Panel discussion of previous paper

PA022

4:54 PM

NEW The Extraordinary Patient Value and Financial Value to Society Conferred by Cataract Surgery

Presenting Author: *Melissa M Brown MD MBA**Co-Author(s): *Gary C Brown MD*, Brandon G Busbee MD**

Purpose: To show the comparative-effectiveness, cost-effectiveness, and macroeconomics associated with U.S. cataract surgery. **Methods:** Cost-utility analysis with patient utilities, 2012 US dollars, and societal costs. A cost comparison from prior years is included. **Results:** Unilateral cataract surgery confers a 20.8% quality-of-life gain; and bilateral surgery, a 36.2% gain. The societal \$/QALY is -\$74,759. A 1-year cohort of cataract surgery patients nets \$123.7 billion to society over 13 years, a 4,567% financial return on investment. The 2012 direct medical cost is \$2,653, 34% less than in 2000 and 85% less than in 1985. The surgeon fee is 10.1% that in 1985. **Conclusion:** Cataract surgery gives great patient value, is very cost-effective, and returns large financial resources to society.

5:01 PM

Panel discussion of previous paper

Cornea, External Disease

Monday, Nov. 18

2:00 - 4:45 PM

Room: 271

Moderator: *Bennie H Jeng MD*Panel: *Anat Galor MD*, Sanjay V Patel MBBS**

PA038

2:00 PM

NEW Reducing Complications in Descemet Membrane Endothelial Keratoplasty Using Prestripped Tissue, Yoeruek Tap Technique, and SF₆ Gas

Presenting Author: *Mark A Terry MD**Co-Author(s): *Michael D Straike MD*, Julia C Talajic MD, Cor Van Zyl MBChB, Peter B Veldman MD*

Purpose: To report dramatically improved results in Descemet membrane endothelial keratoplasty (DMEK) using SF₆ gas and prestripped tissue. **Methods:** Prospective study of DMEK in our first 15 consecutive Fuchs dystrophy cases using prestripped tissue, Yoeruek tap technique, and SF₆ (20% concentration) for tissue support. **Results:** There were no primary graft failures, no pupillary blocks, and no case required a rebubble postoperatively. All corneas are clear with excellent vision. Surgical time was less than Descemet-stripping automated endothelial keratoplasty. **Conclusion:** The use of SF₆ gas for prolonged tissue support has dramatically reduced the rebubble rate in DMEK, with no acute toxic effect, pupillary block, or primary graft failure. Adoption of DMEK by surgeons can be enhanced by this easier and safer standardized technique.

2:07 PM

Panel discussion of previous paper

PA039

2:12 PM

NEW The Impact of Donor Characteristics on 2-Year Descemet-Stripping Endothelial Keratoplasty Outcomes

Presenting Author: *Nadia Hesham MD*Co-Author(s): *Robert L Schultze MD*, Robert A Eden MD**

Purpose: To determine relationship between donor cornea tissue characteristics and 2-year endothelial cell mortality (ECM) after Descemet-stripping endothelial keratoplasty (DSEK). **Methods:** Retrospective chart review of 149 eyes with 1-year follow-up and 103 eyes with 2-year follow-up who underwent DSEK. Statistical analysis was performed using multiple linear regression and stepwise regression. **Results:** Donor death to use and donor age were statistically significant predictors of ECM at 1 year and 2 years, respectively. **Conclusion:** Shorter death to use and younger donor age may be predictive of lower ECM after DSEK.

2:19 PM

Panel discussion of previous paper

PA040

2:24 PM

NEW Predictive value of OCT in Graft Attachment After Descemet Membrane Endothelial Keratoplasty

Presenting Author: *Ru-Yin Yeh*Co-Author(s): *Vasilios S Liarakos MD, Isabel Dapena, Gerrit RJ Melles MD PhD**

Purpose: To assess the predictive value of early anterior segment OCT (AS-OCT) on graft adherence after Descemet membrane endothelial keratoplasty (DMEK). **Methods:** In 87 eyes, AS-OCT was performed 1 hour, 1 week, and 1, 3, and 6 months after DMEK. For each exam, detachments were graded as 'none', $\leq 1/3$, $> 1/3$, or 'complete'. No rebubbings were performed. **Results:** One hour AS-OCT was most accurate at predicting 6-month graft adherence status. Attached grafts or $\leq 1/3$ detached at 1 hour remained stable or improved in 73% at 1/3, and in 90% at 6 months. Detachments of $> 1/3$ at 1 hour showed persistent detachment. **Conclusion:** The 1-hour AS-OCT showed best predictive value on 6-month graft adherence. A combination of the 1-hour and 1-week AS-OCT may facilitate decision making for surgical reintervention.

2:31 PM

Panel discussion of previous paper

PA041

2:36 PM

NEW Causes of Incomplete Visual Rehabilitation after Descemet Membrane Endothelial Keratoplasty

Presenting Author: *Isabel Dapena MD PhD*Co-Author(s): *Ru-Yin Yeh, Vasilios S Liarakos MD, Gerrit RJ Melles MD PhD**

Purpose: To determine the causes of incomplete visual rehabilitation after DMEK. **Methods:** 200 consecutive DMEK surgeries were retrospectively reviewed for visual discomfort or unexpected subnormal visual acuity at 6 months after DMEK. **Results:** A total of 69 eyes (38%) presented with incomplete visual rehabilitation, further categorized as 'primarily patient-related' in 40/69 (58%), 'primarily graft-related' in 21/69 (30%), and a combination of 'patient/graft-related' in 8/69 (12%). Unrecognized pre-existing ocular pathology, corneal irregularities / scarring, and (partial) graft detachment were

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the main causes of incomplete visual rehabilitation. **Conclusion:** Incomplete visual rehabilitation after DMEK may virtually always be explained by concomitant ocular pathology or evident graft failure.

2:43 PM

Panel discussion of previous paper

PA042

2:48 PM

NEW Midterm Results on Visual Acuity and Endothelial Cell Density After Descemet Membrane Endothelial Keratoplasty

Presenting Author: *Kyros Moutsouris MD*

Co-Author(s): *Lisanne Ham PhD, Marina Rodriguez Calvo De Mora MD, Gerrit RJ Melles MD PhD**

Purpose: To report the visual outcome and endothelial cell density (ECD) up to 6 years after Descemet membrane endothelial keratoplasty (DMEK). **Methods:** In 300 consecutive eyes, DMEK was performed for endothelial dysfunction. BCVA and ECD were documented before and after DMEK at 1, 3, 6, and 12 months and annually up to 6 years. **Results:** A BCVA of $\geq 20/40$ was reached by 97.4% of eyes within the first 6 months after DMEK, and 79% reached $\geq 20/25$, which remained stable up to 6 years. At 6 months after DMEK, a 35% decrease in ECD was found, followed by an annual decrease of 8.6%. **Conclusion:** DMEK provides a fast and often complete visual recovery up to 6 years after surgery. The decrease in ECD compares to earlier endothelial keratoplasty techniques.

2:55 PM

Panel discussion of previous paper

PA043

3:00 PM

NEW Prospective, Randomized Comparison of Topical Prednisolone Acetate 1% vs. Fluorometholone After Endothelial Keratoplasty

Presenting Author: *Marianne O Price PhD**

Co-Author(s): *Francis W Price Jr MD*, Matthew T Feng MD, Yuri F McKee MD, Friedrich E Kruse MD, Bachmann Björn MD, Theofilos Tourtas MD*

Purpose: To compare efficacy and side effects of prednisolone vs. fluorometholone after Descemet membrane endothelial keratoplasty (DMEK). **Methods:** Subjects used prednisolone 4 times a day for 1 month and then were randomized to stay on it or switch to fluorometholone, dosing 4 times a day for 2 months, 3 times a day for 1 month, twice a day for 1 month, and once a day to 1 year. **Results:** 325 DMEK cases were randomized. Rejection episode rate was $< 1\%$ in both groups ($P = .49$). The prednisolone group had a 3-fold higher rate of clinically significant IOP elevation ($P = .017$). **Conclusion:** The rate of rejection episodes after DMEK was $< 1\%$ with either prednisolone or fluorometholone; IOP elevation was a greater concern with prednisolone.

3:07 PM

Panel discussion of previous paper

PA044

3:12 PM

NEW Multicenter Trial on Descemet Membrane Endothelial Keratoplasty: First Case Series of 18 Surgeons

Presenting Author: *Vasilios S Liarakos MD*

Co-Author(s): *Claire Monnereau, Isabel Dapena, Gerrit RJ Melles MD PhD**

Purpose: To document the clinical outcome of standardized 'no-touch' Descemet membrane endothelial keratoplasty (DMEK) and its complications during surgeons' learning curve. **Methods:** Eighteen surgeons in 11 different

countries performed DMEK for endothelial dysfunction in 431 eyes. Endothelial cell density (ECD), BCVA, and complications were documented. **Results:** Eighty-two percent of eyes reached a BCVA of $\geq 20/40$; 44%, of $\geq 20/25$; and 19%, of $\geq 20/20$. Average decrease in ECD was 47% at 6 months postoperative. The main postoperative complication was (partial) graft detachment (35%). **Conclusion:** DMEK proved feasible as a new technique. The learning curve may be shortened by using organ-cultured donor tissue and possibly by outsourcing DMEK graft preparation.

3:19 PM

Panel discussion of previous paper

Moderator: *Shahzad I Mian MD**

Panel: *Natalie A Afshari MD, Jessica B Ciralsky MD*, Kenneth R Kenyon MD*

PA045

3:30 PM

NEW Evaluation of Epi-on Corneal Collagen Crosslinking at 6 Months and 1 Year Follow-up in Patients Diagnosed With Keratoconus

Presenting Author: *William B Trattler MD**

Co-Author(s): *Roy Scott Rubinfeld MD*, Rosane Oliveira Correa MD, Gabriela Perez***

Purpose: To determine the efficacy of transepithelial corneal collagen crosslinking (CXL) in keratoconic eyes. **Methods:** Keratoconic eyes that underwent transepithelial CXL with slitlamp confirmation of adequate corneal riboflavin loading were analyzed. UCVA, best spectacle-corrected visual acuity (BSCVA), and K-max measurements were taken and evaluated against preop measurements at both 6 months follow-up and 1-year follow-up post-CXL. **Results:** A total number of 390.229 eyes had a follow-up visit at 6 months. 49.7% and 46.6% of eyes achieved an improvement of 1 or more lines in UCVA and BSCVA, respectively. change in K-max was -0.94 D at 6 months follow-up. Ninety-nine eyes had a follow-up visit at 1 year. 57.6% and 49.4% of eyes achieved an improvement of 1 or more lines in UCVA and BSCVA, respectively. **Conclusion:** In this study, transepithelial CXL appears to be both safe and effective.

3:37 PM

Panel discussion of previous paper

PA046

3:42 PM

NEW Comparison of In Vivo Delivery Methods of Riboflavin for Corneal Collagen Crosslinking

Presenting Author: *Pierre R Fournie MD*

Co-Author(s): *Myriam Cassagne, Vincent José Soler MD*, Anne Galinier MD, Jose G Cunha-Vaz MD PhD*, Joaquim N Murta MD PhD**, Francois Malecaze MD***

Purpose: To compare 3 delivery methods of riboflavin for corneal collagen crosslinking using in vivo fluorophotometry. **Methods:** Corneal riboflavin fluorescence was measured by fluorophotometry in 30 eyes of 30 patients after standard with disepithelialization ($n = 10$), transepithelial with bioenhancers ($n = 10$), and iontophoretic ($n = 10$) delivery of riboflavin. **Results:** Corneal riboflavin concentrations were, respectively, 339 ± 247 ng/ml, 1124 ± 451 ng/ml ($P < .05$), and 3250 ± 662 ng/ml ($P < .05$) after transepithelial, iontophoretic, and standard delivery of riboflavin. **Conclusion:** In vivo corneal riboflavin concentrations were, respectively, almost 3 and 10 times greater with standard compared to iontophoretic and transepithelial delivery methods of riboflavin.

3:49 PM

Panel discussion of previous paper

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

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PA047

3:54 PM

NEW Boston Type 1 Keratoprosthesis Removal

Presenting Author: Divya Srikumaran MD

Co-Author(s): James Aquavella MD*, Sadeer B Hannush MD, Robert L Schultze MD*, Anthony J Aldave MD*, Esen K Akpek MD*

Purpose: To determine the indications for and outcomes after Boston type 1 keratoprosthesis (KPro) removal. **Methods:** Multicenter, retrospective review. **Results:** 143 adult eyes received KPro surgery between January 2003 and December 2006. Thirty-five eyes required removal of the device between 6 weeks to 5 years following implantation. The most common indication for removal was a sterile corneal melt (51%), followed by infection (17%). Fifty-four percent of the eyes underwent repeat KPro, 40% of the eyes received a donor corneal graft, and 6% required enucleation. Seventy-nine percent of the eyes (15/19) retained the repeat KPro over a mean of 27 months. A third of these (5/15) maintained their best ever postoperative acuity at last follow-up. **Conclusion:** The most common indication for KPro removal is a sterile corneal melt. A repeat KPro can be considered in select eyes.

4:01 PM

Panel discussion of previous paper

PA048

4:06 PM

NEW Outcome of Intraoperative Descemet Membrane Perforation in Deep Lamellar Keratoplasty

Presenting Author: Ali A AlRajhi MD

Co-Author(s): Mosa AlHarby MD

Purpose: To evaluate outcome of deep lamellar keratoplasty (DLKP) cases with intraoperative Descemet membrane (DM) perforation. **Methods:** Forty cases (17 done by fellows) of 613 DLKP, age range 14-36 years, had DM perforation (28 were peripheral and 7 were central) during air injection (12.5%), lamellar dissection (60%), suturing (25%, 70% done by fellows) and other (2.5%). **Results:** Management included injection of air (25), SF₆ (6), C₃F₈ (3), gluing / suturing (1 each) or nothing (4). DM attached in 38, with visual acuity \geq 20/40 in 90% of cases, and 9 developed high IOP, with fixed dilated pupil (5). **Conclusion:** Effective management of perforated DM can have good outcome in DLKP with increased complication frequency during suturing among fellows.

4:13 PM

Panel discussion of previous paper

PA049

4:18 PM

NEW Does Fuchs Endothelial Dystrophy Exist?

Presenting Author: Martin Dirisamer MD

Co-Author(s): Ru-Yin Yeh, Gerrit RJ Melles MD PhD*

Purpose: To define the role of recipient endothelium in re-endothelialization of the host stroma after Descemet membrane endothelial transferal (DMET), a 'free-floating' Descemet-graft in the host anterior chamber after descemetorhexis. **Methods:** Twelve eyes, 7 with Fuchs endothelial dystrophy (FED), 5 with bullous keratopathy (BK), were observed for up to 6 months postoperative. **Results:** Eyes operated on for FED showed corneal clearance at 6 months postoperative, whereas BK eyes showed no improvement. **Conclusion:** If corneal clearance after DMET relates with the underlying pathology, this would indicate that in FED, the remaining rim of host endothelium is involved in re-endothelialization. If so, the endothelium is not dystrophic and Fuchs endothelial "dystrophy" may be a misnomer.

4:25 PM

Panel discussion of previous paper

PA050

4:30 PM

NEW Keratoconus in Patients With Fuchs Endothelial Dystrophy Unmasked by Descemet Membrane Endothelial Keratoplasty

Presenting Author: Michael D Straiko MD*

Co-Author(s): Cor Van Zyl MBChB, David Lee Davis-Boozer MPH*, Julia C Talajic MD

Purpose: To investigate the prevalence of comorbid keratoconus and Fuchs endothelial dystrophy (FED). **Methods:** Fifty patients with FED who had successful Descemet membrane endothelial keratoplasty (DMEK) surgery were identified. Postop Pentacam images were analyzed for characteristic stigmata of keratoconus. **Results:** Localized steepening, posterior corneal changes, and pachymetric changes consistent with the diagnosis of keratoconus or form fruste keratoconus were found in 64% of patients. These findings were confirmed with the Belin / Ambrosio software on the Pentacam HR. **Conclusion:** DMEK restores the native corneal anatomy and pachymetry and reveals that many patients with FED have keratoconus as well. This finding was masked by their preoperative edema. Keratoconus and FED occur together much more frequently than previously reported.

4:37 PM

Panel discussion of previous paper

Glaucoma

Tuesday, Nov. 19

8:30 - 11:30 AM

Room: 255

Moderator: Julia Agapov DO*

Panel: Husam Ansari MD PhD*, Shan C Lin MD*

PA065

8:30 AM

NEW Two-Year Results of a Schlemm Canal Scaffold for IOP Reduction in Primary Open-Angle Glaucoma

Presenting Author: Thomas W Samuelson MD*

Co-Author(s): Clemens Vass MD*, Marina A Ramirez MD**, Manfred Tetz MD**, Norbert Pfeiffer MD*, Gabor Bernd Scharioth MD*, Swaantje Grisanti MD*

Purpose: To evaluate the ability of a dilating scaffold placed in the Schlim canal to lower IOP in mild to moderate primary open-angle glaucoma (POAG). **Methods:** Subjects diagnosed with open-angle glaucoma with visual field mean deviation \geq -12 dB were recruited from 6 centers in a prospective, international study. Follow-up was conducted through 2 years postoperatively. **Results:** In 40 treated subjects, mean (\pm SD) IOP and medication use were reduced from 21.6 ± 4.4 on 1.7 ± 1.4 medications at baseline to 18.3 ± 4.2 mmHg on 0.4 ± 1.0 at 2 years (both IOP and medications $P < .05$). **Conclusion:** A Schlim canal scaffold may offer a continuous, durable alternative to medical therapy for IOP reduction.

8:37 AM

Panel discussion of previous paper

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PA066

8:42 AM

NEW Comparison of Combined Cataract Surgery With iStent vs. Trabectome*Presenting Author: Michelle Khan**Co-Author(s): Hady Saheb MD*, Paul J Harasymowycz MD*, Arvind Neelakantan MD*, Zachary D Vest MD, Ronald Leigh Fellman MD OCS*, Iqbal K Ahmed MD**

Purpose: To compare the IOP and medication reduction of iStent and Trabectome when combined with cataract surgery in patients with open-angle glaucoma. **Methods:** Forty-nine patients who underwent combined phaco and 2 iStents (Group *i*) and 52 patients with combined phaco and Trabectome (Group *t*) with 12-month follow-up were included. **Results:** A significant decrease in both IOP and medication use occurred in both groups. Postoperative IOP ($P = .008$) and medication use ($P < .01$) were significantly lower in Group *i* than in Group *t*. Thirty-nine percent of patients in Group *i* and 14% in Group *t* had an IOP < 18 on no medications at 12 months ($P = .03$). **Conclusion:** This study shows a greater reduction in both IOP and medication use in Group *i* than in Group *t*.

8:49 AM

Panel discussion of previous paper

PA067

8:54 AM

NEW A Novel Stainless Steel Spiral Intracanalicular Device for Schlemm Canal Dilatation to Treat Open-Angle Glaucoma*Presenting Author: Vinod Kumar MD PhD**Co-Author(s): Galina Dushina, Elena Bozhok, Galina Dushina*

Purpose: To evaluate the efficacy of a novel intracanalicular device (ICD) in decreasing IOP in patients with open-angle glaucoma (OAG). **Methods:** Between October 2012 and December 2012, 10 eyes (10 patients) with OAG had implantation of ICD into the Schlemm canal (SC). Follow-up was 3 months. Efficacy measures were IOP changes, complication rate, and additional medication. **Results:** Complete success was achieved in 70% of cases; partial, in 30% of cases. Mean IOP decrease was 10.6 mmHg (44.1%; $P < .05$). Decrease in mean number of medications was 2.2 (88%; $P < .05$). **Conclusion:** In eyes with OAG, ICD decreases IOP significantly by keeping the SC opened.

9:01 AM

Panel discussion of previous paper

PA068

9:06 AM

NEW 360° Gonioscopy-Assisted Transluminal Trabeculotomy: A Novel, Ab Interno Method for Circumferential Opening of the Schlemm Canal*Presenting Author: Davinder S Grover MD***Co-Author(s): David G Godfrey MD*, Ronald Leigh Fellman MD OCS*, Oluwatosin U Smith MD**

Purpose: To describe the results of a conjunctival-sparing ab interno 360-degree trabeculotomy. **Methods:** A retrospective chart review of 176 consecutive cases with > 3 months follow-up. **Results:** The average age was 64.3 years. The mean pre- and postoperative IOP and glaucoma medications were 24.7 mmHg and 3.0, respectively, reduced to 14 mmHg on 1.1 medications, at a mean follow-up of 5.8 months (range: 3-14). The cumulative proportion of failing with a preoperative IOP ≥ 18 mmHg was 10.0% and 19.1% at 6 and 12 months, respectively. The cumulative percent requiring glaucoma reoperation

at 6 and 12 months was 5.1% and 8.2%, respectively. **Conclusion:** Preliminary GATT results show excellent safety and efficacy in treating open-angle glaucomas, including eyes with prior failed glaucoma surgery.

9:13 AM

Panel discussion of previous paper

PA069

9:18 AM

NEW Outcomes of Open-Angle Glaucoma Treated by Canaloplasty: Two-Year Interim Results*Presenting Author: Angela N Baldwin MD**Co-Author(s): Jacob W Brubaker MD, Steven R Sarkisian MD*, Mahmoud A Khaimi MD*, Kai Ding PhD, John David Stephens*

Purpose: To evaluate 2-year canaloplasty efficacy to treat open-angle glaucoma (OAG). **Methods:** This retrospective study comprised OAG patients treated with canaloplasty. Primary outcome measures were IOP and glaucoma medication use. **Results:** At 2 years all 177 eyes had a mean IOP of $17.0 \text{ mmHg} \pm 5.0$ (SD) and mean glaucoma medication use of 0.47 ± 0.72 (baseline values $22.3 \text{ mmHg} \pm 6.3$ and 1.8 ± 1.0 medications). At 1 month, eyes had a mean IOP of $15.1 \text{ mmHg} \pm 6.4$ and mean medication use of 0.12 ± 0.4 . At 1 year, eyes had a mean IOP of $16.3 \text{ mmHg} \pm 4.8$ and mean medication use of 0.46 ± 0.7 . IOP and medications were statistically significantly decreased at all postop time points vs. baseline ($P < .001$ both). **Conclusion:** Canaloplasty effectively reduces IOP and glaucoma medication use in patients with OAG.

9:25 AM

Panel discussion of previous paper

PA070

9:30 AM

NEW Ultrasonic Circular Cyclo-coagulation in Patients With Primary Open-Angle Glaucoma: A Multicenter Clinical Trial*Presenting Author: Florent Aptel MD PhD***Co-Author(s): Philippe Denis MD*, Jean-Francois Rouland MD*, Yves Lachkar**, Jean-Paul Renard MD, Eric Sellem MD*, Christophe Baudouin MD PhD, Alain M Bron MD**

Purpose: To evaluate the efficacy and safety of the ultrasonic circular cyclo-coagulation (UC3). **Methods:** Forty-two eyes with primary open-angle glaucoma (POAG) were insonified. The 6 transducers of the probe were activated; 18 patients (Group 1) were treated with a 4-second exposure time, and 24 patients (Group 2) with a 6-second exposure time. Primary outcome was surgical success (IOP reduction $\geq 20\%$) at the last follow-up visit. **Results:** IOP was significantly reduced in both groups, from a mean value of 29.4 ± 4.7 mmHg in Group 1 and 29.1 ± 7.8 mmHg in Group 2 to 17.0 ± 4.2 mmHg in Group 1 and 17.9 ± 4.1 mmHg in Group 2 at last follow-up. Success rates were 60% in Group 1 and 72% in Group 2. No major complications occurred. **Conclusion:** UC3 seems to be an effective and well-tolerated method to reduce IOP in patients with POAG.

9:37 AM

Panel discussion of previous paper

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

PA071

9:42 AM

NEW Simultaneous Use of Amniotic Membrane and Mitomycin C in Trabeculectomy for Primary Glaucoma: A Pilot Study

Presenting Author: Kirti Jaisingh MBBS

Co-Author(s): Prolima Thacker MBBS**, Sonal Dangda MS, Usha Yadava MD MBBS, Monika Kapoor MBBS

Purpose: To study the role of amniotic membrane transplantation (AMT) as an additional modulator in primary mitomycin C (MMC)-augmented trabeculectomy. **Methods:** Twenty adult primary glaucoma eyes were divided into 2 groups: 1 had trabeculectomy with MMC and the second had AMT in addition. IOP and blebs were assessed (Indiana Bleb Appearance Grading Scale) monthly for 6 months. **Results:** Difference among eyes achieving complete success (IOP < 16 mmHg on no medication), qualified success (IOP < 16 mmHg with 1 medication), or failure (need for more than 1 medication, surgical intervention) was not statistically significant between the 2 groups; $P = 0.13, 0.27, 0.15$. AMT blebs had better extent (E3), $P = .03$ and height (H2 and H3), $P = .03$, on first day but comparable at 6 months. **Conclusion:** AMT improved early bleb morphology, requiring fewer needlings and predicting better IOP outcome.

9:49 AM

Panel discussion of previous paper

Moderator: Mark B Sherwood MD*

Panel: Barbara A Smythe MD**, Nathan M Radcliffe MD*

PA072

10:00 AM

NEW Pilot Study of OCT Angiography of Optic Disc Perfusion in Glaucoma

Presenting Author: David Huang MD PhD*

Co-Author(s): Yali Jia PhD*, Xiaogang Wang, John C Morrison MD, James Fujimoto PhD*, Joachim Hornegger PhD

Purpose: To detect optic disc perfusion changes in glaucoma using OCT angiography. **Methods:** One eye of each subject was scanned by a high-speed 1050-nm wavelength swept-source OCT. The split-spectrum amplitude-decorrelation angiography algorithm was used to compute 3-D optic disc angiography. A disc flow index was computed from 4 registered scans. **Results:** Eleven early glaucoma patients and 24 normal subjects were compared. Disc flow index was reduced by 25% in the glaucoma group ($P = .003$). Sensitivity and specificity were both 100% using an optimized cutoff. The flow index was highly correlated with visual field pattern standard deviation ($R^2 = 0.767, P = .001$). **Conclusion:** OCT disc angiography may be a useful new modality for glaucoma evaluation.

10:07 AM

Panel discussion of previous paper

PA073

10:12 AM

NEW Continuous Nyctohemeral IOP Pattern Discriminates Between Healthy Subjects and Glaucoma Patients

Presenting Author: Rene Goedkoop MD*

Co-Author(s): Jeanette Lindell*, Sonja C Simon-Zoula**, Kaweh Mansouri MD*, Yossi S Tal PhD MA

Background: The 24-hour IOP pattern may contain disease-specific information. **Methods:** IOP patterns recorded with a contact lens sensor (Sensimed; Switzerland) were pooled to investigate the capability of discriminating between subjects with ($n = 183$) and without ($n = 82$) glaucoma. **Results:** Of the 13 parameters derived from smoothed IOP patterns, 10 were statistically sig-

nificantly different between the two groups, with area under the curve ranging from 0.65 to 0.69 and sum of sensitivity and specificity ranging between 1.31 and 1.35. **Conclusion:** Parameters derived from continuous 24-hour IOP patterns may distinguish between healthy and glaucoma subjects, independent of absolute tonometry values.

10:19 AM

Panel discussion of previous paper

PA074

10:24 AM

NEW Risk Factors for Functional and Structural Progression in Preperimetric Open-Angle Glaucoma

Presenting Author: Ko Eun Kim MD

Co-Author(s): Jin Wook Jeoung MD, Dong Myung Kim MD, Ki Ho Park MD*, Young Kook Kim MD, Seok Hwan Kim MD

Purpose: To determine risk factors for the progression in preperimetric open-angle glaucoma (P-POAG). **Methods:** 137 patients with P-POAG were included. All patients had series of stereo disc photography, red-free photography, frequency doubling technology (FDT) perimetry, and standard automated perimetry, and they were evaluated for detecting progression. **Results:** Glaucoma progression was detected in 76 eyes. Between progressors and nonprogressors, significantly different factors were cold hands/feet ($P = .019$), disc hemorrhage ($P = .037$), and FDT abnormality ($P = .007$). FDT abnormality ($P < .001$) and disc hemorrhage ($P = .037$) were significantly associated with progression in P-POAG. **Conclusion:** Disc hemorrhage and FDT abnormality were significant risk factors for the glaucoma progression in P-POAG.

10:31 AM

Panel discussion of previous paper

PA075

10:36 AM

NEW Comparison of Online Perimetry and Humphrey Visual Field in Patients With Glaucoma

Presenting Author: Jing Hou MD PhD

Co-Author(s): Sean Ku Wang, Jeremy D Keenan MD MPH, Brian Chon, Nita Subramanian DOMS MBBS, Tsontcho Ianchulev MD*, Robert L Stamper MD*, Robert T Chang MD*, Ying Han MD PhD

Purpose: To compare a new online perimetry (Peristat) with Humphrey visual field (HVF) for patients with glaucoma. **Methods:** All subjects performed 24-2 SITA-standard HVF and Peristat. **Results:** Fifty-nine glaucoma patients (78 eyes) and 15 controls (15 eyes) obtained reliable HVF and Peristat. Cohen's kappas between the two tests for mild, moderate, and severe glaucoma were 0.30, 0.75, and 0.86, respectively. The sensitivity and specificity of Peristat to identify glaucomatous eyes were 82.4% and 93.3% for moderate glaucoma, and 92.9% and 93.3% for severe glaucoma, respectively. **Conclusion:** The Web-based Peristat has a good to very good agreement with HVF to identify eyes with moderate and severe glaucoma, has high sensitivity and specificity to identify eyes with moderate to severe glaucoma, and could be a good glaucoma-screening tool.

10:43 AM

Panel discussion of previous paper

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

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PA076

10:48 AM

NEW Comparative-Effectiveness and Cost-Effectiveness of Glaucoma Therapy

Presenting Author: Gary C Brown MD*

Co-Author(s): Joshua D Stein MD MS*, Melissa M Brown MD MBA*, George L Spaeth MD FACS*, Richard Wilson MD

Purpose: To show the preference-based comparative / cost-effectiveness of glaucoma therapy since recent Agency for Healthcare Research and Quality (AHRQ) Comparative Effectiveness Reviews questioned glaucoma screening and therapy. **Methods:** Cost-utility analysis using patient utilities, 2012 US real dollars, direct medical costs expended, and societal costs saved. **Results:** Glaucoma therapy with timolol confers a mean 19% quality-of-life gain. The societal \$/quality-adjusted life year (QALY) is -\$183,631 and third party insurer \$/QALY is \$3,151. Therapy costs \$7500 but has a net 21-year return-on-investment (ROI) of over \$440,000 to patients and society, a 21-year 5,827 financial ROI, or 22.5% annual ROI. **Conclusion:** A widely applicable glaucoma therapy model demonstrates great patient value vs. interventions across medicine, is very cost-effective, and has a considerable financial ROI to society.

10:55 AM

Panel discussion of previous paper

PA077

11:00 AM

NEW Intraoperative IOP Changes During Victus Femtosecond Laser-Assisted Cataract Operation in Chinese Eyes

Presenting Author: Nafees Begum Baig MBBS FRCS

Co-Author(s): George P M Cheng MD, Clement C Y Tham MBBS*, Kelvin Kam Lung Chong MD, Vishal Jhanji MBBS

Purpose: To demonstrate IOP changes during femtosecond laser-assisted cataract surgery (FLACS) using Victus in Chinese eyes. **Methods:** Tono-Pen is used to measure IOP preoperatively, during suction-on and suction-off. **Results:** Among 20 subjects, the mean age is 70.6 ± 7.2 . The mean IOPs preoperatively, during suction-on and suction-off, are 16.8 ± 3.5 mmHg (10-22), 42.4 ± 10.4 mmHg (24-55), and 14.0 ± 3.2 mmHg (9-20), respectively. The differences between preop IOP and suction-on as well as suction-on and suction-off are statistically significant ($P = 0.000$ and $P = .001$). The mean treatment time is 60 seconds. **Conclusion:** A rise in IOP during FLACS is statistically significant. Caution should be taken in ocular conditions that are vulnerable to IOP fluctuation.

11:07 AM

Panel discussion of previous paper

PA078

11:12 AM

NEW Patient Acceptance of an Alternative Model of Glaucoma Delivery

Presenting Author: Ravi Pandit

Co-Author(s): David S Friedman MD MPH PhD*, Michael V Boland MD PhD

Purpose: To characterize patient acceptance of a tele-ophthalmological approach to glaucoma diagnosis and management. **Methods:** Ninety adult glaucoma patients at the Wilmer Eye Institute were surveyed. **Results:** Fifty-five percent of patients reported a visit that yielded no change in management. Fifty-eight percent of patients favored this new model. Each additional visit per year decreased odds of acceptance by a factor of 0.5 ($P = .038$; 95% CI, 0.26-0.96). Indicating "avoiding unnecessary visits" as a potential benefit was associated with a 7.6-fold increase in the odds of acceptance ($P = .046$; 95% CI, 1.04-55.61). **Conclusion:** Glaucoma care delivery must become more ef-

ficient. Perceived convenience is the most important factor driving patient acceptance of a new model of care. Notably, age did not predict acceptance of this technology-driven model.

11:19 AM

Panel discussion of previous paper

Intraocular Inflammation, Uveitis

Sunday, Nov. 17

10:15 - 11:15 AM

Room: 255

Moderator: Janet Louise Davis MD*

Panel: Lucia Sobrin MD**, Jennifer E Thorne MD PhD*

PA010

10:15 AM

NEW Analysis of Anterior Chamber Inflammation by Spectral Domain OCT

Presenting Author: Careen Yen Lowder MD PhD*

Co-Author(s): Sumit Sharma MD, Kimberly Marie Baynes COA, Peter K Kaiser MD*, Sunil K Srivastava MD*

Purpose: To determine the feasibility of anterior segment spectral domain OCT (AS-OCT) to grade anterior chamber (AC) inflammation. **Methods:** Patients with active AC inflammation were prospectively examined and clinically graded using the Standardization of Uveitis Nomenclature criteria. AS-OCT images consisting of 3-D volume scans were obtained. Images were manually graded to evaluate for the presence of cells and correlated to clinical exam. **Results:** Eighty-three eyes were enrolled. The range of cells seen on each individual AS-OCT line scan was 0-20. Pearson correlation coefficient comparing the clinical exam to AS-OCT grading was 0.92 ($P < .0001$). **Conclusion:** AS-OCT is a useful tool to grade the degree of AC inflammation. Clinical exam grading strongly correlates with the number of cells seen on AS-OCT line scans.

10:22 AM

Panel discussion of previous paper

PA011

10:27 AM

NEW Wide-field Imaging Findings of Patients With Susac Syndrome

Presenting Author: Sunil K Srivastava MD*

Co-Author(s): Robert J Courtney MD, Kimberly Marie Baynes COA, Priyanka Kumar MD, Justis P Ehlers MD*, Careen Yen Lowder MD PhD*, Robert Martin Rennebohm MD

Purpose: This study evaluates ultrawide-field fluorescein angiography (FA) features in Susac syndrome and their relationship to systiic symptoms. **Methods:** Retrospective, observational, consecutive case series of patients referred to the Cleveland Clinic International Susac Clinic. All patients had complete eye and systiic exams with wide-field FA performed. **Results:** Thirteen patients were identified. Novel peripheral findings included fluorescein column segmentation, capillary nonperfusion, vessel wall leakage, and neovascularization. Ten of 10 eyes had vascular changes visible only with wide-field FA. Vascular leakage and column segmentation were associated with active neuro symptoms. **Conclusion:** Ultrawide-field FA demonstrates the pan-retinal nature of the vasculopathy in Susac. These findings often correlated with systiic symptoms.

10:34 AM

Panel discussion of previous paper

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

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PA012

10:39 AM

NEW Pattern of Uveitis in Behçet Disease in a Tertiary Center Over 25 Years: The Results of a Uveitis Survey Study Group

Presenting Author: J Fernando Arevalo MD FACS*

Co-Author(s): Ammar M Al Mahmood MD, Sulaiman M Alsulaiman MD, Abdul Aziz Al Rushood MD, Andrés Francisco Lasave MD, Yahya Ahmad Alzahrani, Hassan A Al-Dhibi MD

Purpose: To describe the pattern of uveitis in Behçet disease in a tertiary center over a 25-year period. **Methods:** Out of 888 consecutive uveitis patients (1409 eyes), 132 patients (232 eyes, 14.8%) with Behçet disease were retrospectively evaluated. **Results:** Panuveitis and posterior uveitis were the most common forms of presentation, affecting 104 (78.8%) and 13 (9.8%) patients, respectively. Retinal vasculitis was found in 61 eyes (26.3%), ischiic retinitis in 59 eyes (25.4%), and macular edia in 42 eyes (18.1%). 56.5% of patients maintained a visual acuity of 20/50 or better with immunosuppressive therapy and oral systiic corticosteroids. **Conclusion:** Behçet's uveitis affects predominantly young men. Bilateral panuveitis associated with retinal vasculitis was the most common ocular manifestation.

10:46 AM

Panel discussion of previous paper

PA013

10:51 AM

NEW Prevalence of Spondyloarthritis in Anterior Uveitis Patients: The SENTINEL Study Group

Presenting Author: Miguel Cordero Coma MD*

Co-Author(s): Xavier Juanola MD

Purpose: To determine the true prevalence of seronegative spondyloarthritis (SpA) among idiopathic anterior uveitis patients by using new diagnostic tools, such as magnetic resonance imaging (MRI), and new diagnostic criteria (Assessment of SpondyloArthritis international Society, ASAS). **Methods:** Prospective multicenter noncomparative cohort study. **Results:** A total of 231 patients from 29 tertiary referral centers with anterior uveitis and no previous diagnosis of any associated immune-mediated condition were included in the study. After an initial systiatic clinical evaluation protocol, 148 patients (64.6%) were newly diagnosed with a type of SpA based on ASAS criteria. **Conclusion:** These preliminary results show that in a large prospective cohort, almost 65% of patients with idiopathic anterior uveitis have an associated underlying SpA, which significantly increases previously reported incidence.

10:58 AM

Panel discussion of previous paper

PA014

11:03 AM

NEW In Vivo Analysis of Choroidal Changes in Multifocal Choroiditis

Presenting Author: Ramya N Swamy MD

Co-Author(s): Muneeswar G Nittala, Hossein Nazari Khanamiri, Srinivas R Satta MD*, Narsing A Rao MD

Purpose: To study in vivo characteristics of choroidal vasculature, volume, and thickness in multifocal choroiditis (MFC). **Methods:** Spectral domain OCT data were utilized to construct choroidal thickness and volume maps of 24 eyes from 14 patients with chronic MFC and 17 eyes of normal controls. **Results:** Average choroidal thickness in the MFC group was measured at 149.83 µm compared to 268.3 µm in controls ($P < .001$). Average choroidal volume was 5.39 µm³ in the MFC group and 7.51 µm³ in controls ($P < .001$). Analysis

of B-scans revealed loss of medium and large choroidal vessels. **Conclusion:** Chronic MFC is associated with thinning of choroid and loss of choroidal volume, with changes affecting the Sattler and Haller layers.

11:10 AM

Panel discussion of previous paper

Neuro-Ophthalmology

Sunday, Nov. 17

2:00 - 3:00 PM

Room: 255

SYM56

Best of NANOS 2013: Featuring Best Papers from the North American Neuro-Ophthalmology Society

Ocular Tumors and Pathology

Monday, Nov. 18

8:30 - 9:10 AM

Room: 255

Moderator: H Culver Boldt MD**

Panel: Amy Scheffler MD**, Arun D Singh MD

PA023

8:30 AM

NEW Overexpression of Nuclear Survivin and Androgen Receptor: Biomarker for Recurrence in Eyelid Sebaceous Gland Carcinoma

Presenting Author: Sneha Jay Shah MBBS MS

Co-Author(s): Kaustubh Bharat Mulay MBBS MD**, Valerie White MD

Purpose: To determine the expression of nuclear survivin and androgen receptor in eyelid sebaceous gland carcinoma (SGC) and to investigate their role as prognostic biomarkers for tumor recurrence. **Methods:** Histopathological specimens of all the patients diagnosed to have SGC from June 2000 to June 2012 were processed and stained with nuclear survivin and androgen receptor, and correlated with outcome. **Results:** There were 56 patients with a mean age of 57 years and an average follow-up of 33 months. Of 8 patients who had local tumor recurrence, nuclear survivin and androgen receptor scores were high in 100% (46% in controls, $P < .001$) and 88% (33% in controls, $P = .005$), respectively. **Conclusion:** Nuclear expression of survivin and androgen receptor have a high correlation with recurrence of eyelid SGC.

8:37 AM

Panel discussion of previous paper

PA024

8:42 AM

NEW Intravitreal Melphalan for Persistent or Recurrent Retinoblastoma Vitreous Seeds Provides Control With Minimal Complication

Presenting Author: Carol L Shields MD

Co-Author(s): Fairouz Puthiyapurayil Manjandavida MBBS, Swathi Kaliki MD, Rachel Schwendeman MA, Carlos G Bianciotto MD, Sara E Lally MD, Jerry A Shields MD

Purpose: To analyze intravitreal melphalan for viable vitreous seeds from retinoblastoma following systiic chiotherapy. **Methods:** Retrospective interventional case series. **Results:** The vitreous seeds occupied 35%-50% fundus

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($n = 6$) and 75%-100% fundus ($n = 5$). Intravitreal melphalan yielded vitreous seed control in 11 (100%) within 1 to 4 cycles, manifesting as disappearance or calcification of vitreous seeds. At mean 19 months follow-up, there was no tumor recurrence or extraocular tumor seeding. **Conclusion:** Intravitreal melphalan injection for vitreous seeds from retinoblastoma is effective for seed control with no tumor spread.

8:49 AM

Panel discussion of previous paper

PA025

8:54 AM

NEW Significance of Measuring Immune Mediators for Differentiating Malignant From Benign Pigmented Intraocular Tumors

Presenting Author: Yoshihiko Usui MD

Co-Author(s): Shunichiro Ueda MD, Yoko Okunuki MD, Takeshi Kezuka MD PhD, Hiroshi Goto MD

Purpose: To examine the usefulness of measuring immune mediators in aqueous humor samples (AH) to differentiate malignant from benign pigmented intraocular tumors. **Methods:** In 26 eyes (13 with benign pigmented tumor, 13 with malignant melanoma), IFN- γ , IL-1 β , IL-2, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12p70, VEGF, angiogenin, bFGF, Fas ligand, eotaxin, GM-CSF, RANTES, LT- α , Mig, IP-10, MIP-1 α , MIP-1 β , OSM, MCP-1, and TNF in AH were measured with a cytometric bead array. **Results:** AH levels of angiogenin and MCP-1 were significantly ($P < .05$) higher in eyes with malignant melanoma than in those with benign tumor. **Conclusion:** Measuring angiogenin and MCP-1 in AH is a useful adjunct in distinguishing malignant from benign intraocular tumors.

9:01 AM

Panel discussion of previous paper

Orbit, Lacrimal, Plastic Surgery

Monday, Nov. 18

9:10 - 10:00 AM

Room: 255

Moderator: Alon Kahana MD PhD

Panel: Flora Levin MD, Pete Setabutr MD

PA026

9:10 AM

NEW Are We There Yet? The Journey of Fluorine Deoxyglucose Positron Emission Tomography in the Staging of Ocular Adnexal Lymphoproliferative Disease

Presenting Author: James English BSMT MBBS

Co-Author(s): Timothy J Sullivan MBBS

Purpose: To further evaluate fluorine 18 deoxyglucose positron emission tomography (FDG PET) in the initial staging of ocular adnexal lymphoproliferative disease (OALD). **Methods:** Retrospective nonrandomized case series with review of clinical and imaging records including computed tomography (CT) and FDG PET (\pm PET/CT). **Results:** Thirty-four patients had FDG PET and CT scans at initial staging and were retrospectively reviewed. Of these, 17 (50%) had primary and 17 (50%) had secondary disease. Systemic disease was demonstrated by FDG PET (\pm CT) in 15 of 16 patients (94%) and 11 of 16 patients (69%) with CT. **Conclusion:** Our study suggests FDG-PET detects systemic disease more reliably than CT and significantly changes staging and treatment. FDG-PET remains an essential part of initial staging.

9:17 AM

Panel discussion of previous paper

PA027

9:22 AM

NEW The Effect of Preaponeurotic Fat Advancement in Levator Recession for the Treatment of Upper Lid Retraction in Asian Patients

Presenting Author: Juhyang Lee MD

Co-Author(s): Kyung In Woo MD, Yoon-Duck Kim MD

Purpose: To investigate the effectiveness of preaponeurotic fat advancement in levator recession for upper lid retraction in Asian patients. **Methods:** Forty-three patients (58 eyelids) who underwent levator recession surgery with ($n = 29$) or without ($n = 29$) the preaponeurotic fat advancement flap procedure were included. **Results:** There were no multiple lid creases in the fat advancement group, compared with 6 eyes (20.7%) without fat advancement. There were no differences between the two groups in achieving reliable eyelid lowering and eyelid symmetry (69.0% and 72.4%, respectively). **Conclusion:** Preaponeurotic fat advancement flap is an effective method to prevent unintended multiple lid creases and provide satisfactory cosmetic outcomes in levator recession.

9:29 AM

Panel discussion of previous paper

PA028

9:34 AM

NEW Managing Orbital Vascular Lesions in the Endovascular Operating Room

Presenting Author: Emmy Yuen-Mei Li FRCS MPH

Co-Author(s): Kwak-lai Yuen MBChB MRCS(ED), Kelvin Kam Lung Chong MD

Purpose: To describe hybrid procedure for orbital vascular lesions in endovascular operating room (EVOR). **Methods:** Interventional case series. **Results:** Six patients with orbital vascular lesions received one-stage direct puncture venogram, image-guided glue injection, and surgical resection in the EVOR equipped with biplane digital subtraction angiography machine. Indications of treatment include enlarging mass with disfiguring, pain, and visual impairment. Surgical resections were facilitated with reduced bleeding, and all patients have uneventful postoperative recovery. **Conclusion:** The one-stage hybrid approach by interventional radiologists and surgeons in the setting of EVOR appears to be safe and effective for orbital vascular lesions.

9:41 AM

Panel discussion of previous paper

PA029

9:46 AM

NEW Reduction of Thyroid-Stimulating Immunoglobulin After Orbital Fat Decompression in Patients With Graves Orbitopathy

Presenting Author: Jei Hun Jeon MD

Co-Author(s): Sun Young Jang MD, Tyler Hyung Taek Rim MD MBA, Eung Kweon Kim MD PhD, Jin S Yoon MD

Purpose: To investigate the change of thyroid-stimulating immunoglobulin (TSI) levels after orbital fat decompression in Graves orbitopathy patients. **Methods:** Retrospective, observational case series. Ophthalmic manifestations including NOSPECS, clinical activity score (CAS), and TSI level before and after the surgery were analyzed. **Results:** Data of 24 patients were eligible for analysis. Preoperative TSI levels significantly decreased after surgery. The decreased amount of TSI was significantly correlated with preoperative NOSPECS/CAS and with the change of NOSPECS/CAS after surgery. **Conclusion:** Removal of Graves orbital fat tissue, with its antigenic components, may

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result in the reduction of serum level of functional antibodies to TSH receptor, thus supporting the concept that continued antibody production depends on the persistence of autoantigen in the body.

9:53 AM

Panel discussion of previous paper

Pediatric Ophthalmology, Strabismus

Monday, Nov. 18

2:00 - 3:30 PM

Room: 255

*Moderator: Terri L Young MD**

Panel: Hilda Capo MD, Michael F Chiang MD, Michelle T Cabrera MD*

PA051

2:00 PM

NEW Pediatric Anterior Segment Pathology as Imaged by Intraoperative OCT

*Presenting Author: Bibiana J Reiser MD**

*Co-Author(s): Pho Nguyen MD, Daniel Sand MD, David Huang MD PhD**

Purpose: To evaluate high-resolution anterior segment OCT (AS-OCT) in examination and preoperative management of pediatric corneal opacities. **Methods:** Twenty eyes of 15 consecutive patients (ages 1 day to 11 years of age) with corneal opacities were enrolled and examined by an iVue unit mounted on an iStand. **Results:** Peters anomaly, sclerocornea, corneal staphyloma, hydrops, idiopathic congenital central corneal opacity, shield ulcer, trauma, microbial colonization, lipid keratopathy. Seven patients underwent surgical intervention based on AS-OCT imaging. **Conclusion:** Anterior segment OCT is an important noninvasive imaging modality in confirming the diagnosis and guiding surgical management of pediatric corneal opacities.

2:07 PM

Panel discussion of previous paper

PA052

2:12 PM

NEW Visual Acuity and Macular OCT Abnormalities in Children With History of Retinopathy of Prematurity

Presenting Author: Victor M Villegas MD

Co-Author(s): Kara M Cavuoto MD, Audina Berrocal MD, Craig A McKeown MD, Hilda Capo MD*

Purpose: To correlate visual acuity (VA) and macular OCT findings in retinopathy of prematurity (ROP) patients with normal macular funduscopy. **Methods:** Retrospective study of ROP children with OCT in past 2 years. Eyes were excluded if abnormal macular funduscopy or surgery. Eyes divided by VA into Group 1 if $\geq 20/40$, and Group 2 if $< 20/40$. **Results:** Forty-four patients (44 eyes) in Group 1, 29 in Group 2. Mean values in groups 1 vs. 2: age (years), 9.7 vs. 7.9, spherical equivalent (D), -5.6 vs. -10.2, gestational age (weeks), 24.9 vs. 25.3, central foveal thickness (micrometers), 313 vs. 299, and retention inner retinal layers, 62 vs. 67%. **Conclusion:** Patients with ROP frequently have abnormal foveal morphology by OCT, but this does not necessarily imply poor VA.

2:19 PM

Panel discussion of previous paper

PA053

2:24 PM

NEW A Cost-Effectiveness Comparison of Bevacizumab (Avastin) and Laser for Treatment of Retinopathy of Prematurity

Presenting Author: Michael J Geske MD

*Co-Author(s): Alejandra G de Alba-Campomanes MD**

Purpose: To evaluate the cost-effectiveness of bevacizumab (Avastin) and laser for the treatment of retinopathy of prematurity (ROP). **Methods:** A Markov model was created to estimate average cost per patient. Costs were obtained from the Centers for Medicare and Medicaid Services. Rates of recurrence, time to recurrence, and percentage of infants requiring retreatment were derived from the Bevacizumab Eliminates the Angiogenic Threat of ROP (BEAT-ROP) clinical trial. **Results:** Total estimated cost per patient for bevacizumab treatment was \$1102.13 for Zone I ROP and \$879.60 for Zone II ROP. Estimated costs for laser treatment averaged \$2241.18 for Zone I ROP and \$1749.46 for Zone II ROP. **Conclusion:** Bevacizumab is a cost-effective alternative to laser treatment for threshold ROP.

2:31 PM

Panel discussion of previous paper

PA054

2:36 PM

NEW Comparative Evaluation of Combined Trabeculotomy-Trabeculectomy vs. Combined Trabeculotomy-Trabeculectomy With Subconjunctival Implantation of Collagen Matrix Implant for Primary Congenital Glaucoma

Presenting Author: Nigar Hasanova-Makhmudova MD

Co-Author(s): Jamil V Hasanov MD

Purpose: To compare the outcomes of combined trabeculotomy-trabeculectomy (CTT) with those of CTT with subconjunctival collagen matrix implant (CMI) implantation in the treatment of primary congenital glaucoma (PCG). **Methods:** A total 20 eyes of 16 patients were involved. CTT was performed in 10 eyes (Group 1), and CTT with subconjunctival CMI (Ologen) implantation was performed in 10 eyes (Group 2). Pre- and postoperative IOP, corneal clarity and diameters, visual acuity, and complications were evaluated. **Results:** Mean preop IOP was 41.0 ± 8.68 in Group 1, 40.4 ± 6.87 in Group 2, which reduced to 16.3 ± 1.89 and 13.6 ± 2.01 , respectively. Eighty percent of cases in Group 1 and 100% of cases in Group 2 showed IOP < 18 mmHg at the end of 6 months ($P < .001$). **Conclusion:** The results of both groups were comparable, and both procedures can be taken up as primary procedures in case of PCG.

2:43 PM

Panel discussion of previous paper

PA055

2:48 PM

NEW Normative Visual Acuity Values in Preschool Children

Presenting Author: Suzanne A Turner MBBS

Co-Author(s): Cathy Williams FRCOPHTH MBBS PhD, John M Sparrow FRCOphth

Purpose: To establish the normative visual acuity values for preschool children and establish the minimum age at which monocular testing is possible. **Methods:** 1432 children were tested at 6-monthly intervals from the age of 12 months until the age of 43 months. Age-appropriate tests were used, and at each visit both binocular and monocular testing were attempted. **Results:** Visual acuity and testability improved with increasing age. Monocular testing was not possible at all in the majority aged less than 2.5 years. Monocular Kay

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picture values were possible in 62% of children aged 31 months. Monocular testing with a letter chart was possible in 53% of children aged 43 months.
Conclusion: Mass screening with a test sensitive and specific in detecting amblyopia is not feasible below about 4 years of age.

2:55 PM

Panel discussion of previous paper

PA056

3:00 PM

NEW A Randomized Trial Comparing Part-time Patching With Observation for Children With Intermittent Exotropia

Presenting Author: Brian G Mohny MD

Co-Author(s): Susan A Cotter MS OD, Danielle Long Chandler MSPH*, Jonathan M Holmes MD*

Purpose: To determine the effectiveness of part-time patching for treatment of intermittent exotropia (IXT) in children. **Methods:** 358 children ages 3 to < 11 years old with previously untreated IXT were randomly assigned to observation or 3 hours daily patching for 5 months. **Results:** Of 318 participants (89%) completing the 6-month primary outcome exam thus far, deterioration occurred in 6% (9 of 160) of the observation group and in 1% (1 of 158) of the patching group (difference = 5%, lower limit of one-sided exact 95% confidence interval = 1%). **Conclusion:** Deterioration of previously untreated childhood IXT over a 6-month period is uncommon. Compared with observation alone, the treatment effect of part-time patching is statistically significant but not clinically meaningful.

3:07 PM

Panel discussion of previous paper

PA057

3:12 PM

NEW Occurrence of Intracranial Disease Among 40 Children With Acute Acquired Comitant Esotropia

Presenting Author: Helena B Hesgaard MD

Co-Author(s): Troels Vinding

Purpose: To discriminate between acute acquired comitant esotropia (AACE) with and without intracranial pathology and to determine risk factors for intracranial pathology and reclassify AACE accordingly. **Methods:** We reviewed medical records of 40 children referred with AACE during 2000-2012. **Results:** Six causes of AACE were identified. Intracranial pathology was present in 10% of the children. Eleven risk factors for intracranial pathology were identified. The children with intracranial disease exhibited 4 or more of these risk factors. **Conclusion:** We propose a reclassification of AACE: AACE with intracranial disease and AACE without intracranial disease. Furthermore, we suggest neuroimaging in children with AACE, when neurologic signs or at least 4 risk factors are observed.

3:19 PM

Panel discussion of previous paper

Refractive Surgery

Monday, Nov. 18

10:15 AM - 12:00 PM

Room: 255

Moderator: Sonia H Yoo MD*

Panel: Karl G Stonecipher MD*, John Allan Vukich MD*, Elizabeth Yeu MD*

PA030

10:15 AM

NEW Brain Plasticity Overcomes Presbyopia: Persistence Over Time

Presenting Author: Uri Polat PhD*

Co-Author(s): Oren Yehezkel PhD*, Anna Sterkin PhD**, Maria Lev MS**, Tova Ma-Naim MD

Purpose: In presbyopia, uncorrected near visual acuity (UCNVA) results in blurred images and progresses with age. We showed that perceptual training on PC and mobile devices improved the UCNVA by ~2.5 ETDRS lines and enabled glasses-free reading without optical changes. Here we tested the persistence of these training gains. **Methods:** Sixty presbyopes were trained at 40 cm for 15-30 min/session, 3 times/week. **Results:** The improvement of the UCNVA continued for 6.22 years (average: 2.45 years), despite the natural deterioration of ~0.5 D and 2 ETDRS lines expected during this time. **Conclusion:** Perceptual training produces an effective solution that overcomes the continuous effect of natural deterioration of vision in presbyopia by enhancing image processing in the brain.

10:22 AM

Panel discussion of previous paper

PA031

10:27 AM

NEW Preliminary 1-Year Results of LASIK vs. Contact Lens Patient Satisfaction Survey

Presenting Author: Francis W Price Jr MD*

Co-Author(s): Marianne O Price PhD*

Purpose: To compare patient satisfaction with LASIK and contact lenses. **Methods:** In this prospective study patients were surveyed at baseline (before surgery for those in the LASIK group) and 1 year later to assess visual satisfaction and probis. **Results:** Twenty-one centers enrolled 1085 LASIK patients and 738 successful contact lens wearers. Median age was 34 years (range: 18-60), and median spherical equivalent was -3.5 D (range: -11 to +4). The LASIK group reported improved night vision ($P = .0006$) and increased feelings of dryness at 1 year ($P = .016$), whereas contact lenses wearers reported no significant changes in those measures. **Conclusion:** LASIK significantly improved night vision but increased dryness at 1 year.

10:34 AM

Panel discussion of previous paper

PA032

10:39 AM

NEW Rapid Vision Recovery Beyond 20/20: Improving the Speed of Visual Recovery After PRK and LASIK

Presenting Author: Daniel S Durrie MD*

Co-Author(s): Stephen G Slade MD FACS*

Purpose: To evaluate visual recovery immediately after LASIK or PRK. **Methods:** Prospective trial of 199 eyes (103 patients) treated for myopia and astigmatism, evaluated at 30 minutes and 1, 2, 4, and 24 hours after surgery. Variables included different combinations of 5 lasers and the novel use of an

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ocular shield after PRK and LASIK to accelerate recovery. **Results:** Binocular 20/20 vision or better was reached within 4 hours in 99% of patients. The ocular shield significantly improved recovery. **Conclusion:** The speed of visual recovery after modern excimer surgery is rapid. Techniques achieving 20/20 vision within minutes are within reach.

10:46 AM

Panel discussion of previous paper

PA033

10:51 AM

NEW Clinical Outcomes of Posterior Chamber Phakic IOL Implantation With Central Hole: One-Year Follow-up

Presenting Author: Erik L Mertens MD FRACOPHTH*

Purpose: The purpose of this study was to assess the visual outcomes at 1 year on patients who received the Visian Implantable Collamer Lens V4C model. **Methods:** Seventy-five eyes underwent implantation of a myopic or toric implantable collamer lens (V4C model, Staar Surgical, Inc.). The new design shows a central hole that allows a more natural aqueous flow, eliminating the need to perform Nd:YAG iridotomy or peripheral iridectomy. **Results:** At 1 year the mean efficacy and safety index were 1.06 ± 0.11 and 1.07 ± 0.11 , respectively. The mean UCVA and BCVA were 20/20 or better in 97.3% and 98.6% of eyes, respectively. 97.3% and 100% of eyes were within ± 0.5 D and ± 1.0 D of the expected correction. **Conclusion:** The results of the present study support the good outcomes of this design.

10:58 AM

Panel discussion of previous paper

PA034

11:03 AM

NEW Comparison of Epithelium-off and Transepithelial Corneal Collagen Crosslinking for Treatment of Keratoconus

Presenting Author: Mohammed Iqbal Hafez Ahmed Sleem MD

Purpose: To compare the efficiency of epithelium-off corneal crosslinking (CXL) and transepithelial crosslinking (TE-CXL) in keratoconus (KC) patients. **Methods:** Visual acuity, simulated keratometry, corneal topography, and pachymetry were evaluated at baseline and 1, 3, and 6 months. Fifteen KC patients were treated with TE-CXL, and 20 KC patients were treated with epithelium-off CXL. **Results:** In the epithelium-off CXL group a significant improvement at Month 12 was present for K-max (-1.11 D, $P = .01$), K-min (-3.2 D, $P = .001$), mean K (-1.47 D, $P = .01$). In the TE-CXL group a significant improvement at Month 12 was present for K-max (-1.14 D, $P = .02$), K-min (-2.04 D, $P = .01$), mean K (-1.63 D, $P = .01$), and surface asymmetry index (-0.86 D, $P = .001$). **Conclusion:** In KC patients, TE-CXL was less painful and provided similar effectiveness and fewer complications than epithelium-off CXL.

11:10 AM

Panel discussion of previous paper

PA035

11:15 AM

NEW Femtosecond Laser Intrastromal Astigmatic Keratotomy

Presenting Author: William W Culbertson MD*

Co-Author(s): Sonia H Yoo MD*, Vasilios F Diakonis MD

Purpose: To determine the efficacy and safety of using an OCT-guided femtosecond laser to perform intrastromal astigmatic keratotomy to reduce naturally occurring astigmatism. **Methods:** The Optimedica Catalys femtosecond cataract laser was employed to create paired intrastromal astigmatic keratotomies at a 7.0-mm optic zone, with an arc length of 70° at 80% of corneal depth in

corneas with between 0.50 D and 2.0 D of naturally occurring regular corneal astigmatism. **Results:** In the 20 eyes studied, corneal astigmatism was reduced by an average of 0.70 D (range: 0.2-0.9 D). There were no significant complications. **Conclusion:** A clinical femtosecond cataract laser may be employed to safely reduce low amounts of naturally occurring corneal astigmatism to an optically insignificant level.

11:22 AM

Panel discussion of previous paper

PA036

11:27 AM

NEW Corneal Inlay Implantation for the Treatment of Presbyopia: Over 10,000 Cases

Presenting Author: Minoru Tomita MD PhD*

Co-Author(s): Satoshi Yukawa MD, Toru Nakamura MD

Purpose: To evaluate outcomes of corneal inlay implantation for the treatment of ametropic and post-LASIK presbyopes. **Methods:** A corneal inlay was implanted monocularly in over 10,000 patients either with simultaneous LASIK (CLK) or in pocket interface below prior LASIK flap for post-LASIK patients (PLK). Uncorrected distance and near visual acuities (UDVA/UNVA) were evaluated. **Results:** Mean UDVA and UNVA gained 8 lines to 20/20 and 3 lines gain to J2 for the CLK group, and lost 1 line to 20/20 and gained 3 lines to J2 for the PLK group at 1 year. **Conclusion:** Implantation of a corneal inlay is an effective treatment option for ametropic and post-LASIK presbyopes.

11:34 AM

Panel discussion of previous paper

PA037

11:39 AM

NEW Outcome of Same Day Topographic-Guided PRK and Corneal Crosslinkage in Patients With Subclinical Keratoconus

Presenting Author: Talal A Althomali MD

Purpose: To compare outcomes of same-day topographic-guided PRK with those of corneal crosslinkage in patients with forme fruste keratoconus (FFKC). **Method:** Forty eyes with FFKC were treated with topographic-guided PRK and same-day corneal collagen crosslinkage with riboflavin. **Results:** Median preoperative spherical equivalent (SE) refraction was -2.25 D. At 1 year follow-up, SE was statistically significantly reduced to -0.25 D. BCVA was 0.60. Median postoperative UCVA was 0.90. Median steepest K reading preop was 46.25 D, and it was 43.62 D at final follow-up visit. **Conclusion:** Same-day topographic-guided PRK and corneal crosslinkage is a safe treatment, offering good vision in subclinical cases of keratoconus.

11:46 AM

Panel discussion of previous paper

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Retina, Vitreous

Monday, Nov. 18

3:45 - 5:15 PM

Room: 255

Moderator: Srinivas R Sadda MD*

Panel: Neil M Bressler MD*, Pravin U Dugel MD*, William F Mieler MD*

PA058

3:45 PM

NEW Interim Results of a Phase 1 Clinical Study Evaluating the Safety and Clinical Response of Human Umbilical Tissue-Derived Cells Administered Subretinally in Subjects with Geographic Atrophy

Presenting Author: Michael A Samuel MD*

Co-Author(s): Tom S Chang MD, Allen C Ho MD*

Purpose: Phase 1/2a, multicenter, randomized, single dose, dose escalation, fellow-eye controlled study evaluating the safety and clinical response of a single subretinal administration of CNTO 2476 in subjects with visual acuity impairment associated with geographic atrophy (GA) secondary to AMD. **Methods:** Nineteen subjects with advanced GA secondary to dry AMD have been enrolled in the Phase 1 study. Subjects were assessed for adverse events, clinical examinations, and clinical laboratory tests. **Results:** Clinical response at 6 months, 38% (6/16) of treated eyes achieved at least a 3-line improvement in BCVA, and 50% (8/16) of treated eyes achieved at least a 2-line improvement. **Conclusion:** Subretinal administration of CNTO 2476 may result in favorable clinical response in some subjects with vision loss from GA.

3:52 PM

Panel discussion of previous paper

PA059

3:57 PM

NEW Intravitreal VEGF Levels in Proliferative Vascular Retinopathies Strongly Correlate With the Extent of Capillary Nonperfusion Noted on Wide-angle Angiography

Presenting Author: K V Chalam MD PhD

Co-Author(s): Shailesh K Gupta MD**

Purpose: To report the correlation between intravitreal VEGF levels in proliferative vascular retinopathies (PR) and compare this to the degree of capillary nonperfusion (CNP) noted on wide-angle angiogram (WFA). **Methods:** In this retrospective study, in patients with PR ($N = 34$), WFA was performed and ratio of CNP was estimated. Cohort consisted of PDR ($n = 20$), RVO ($n = 10$), and sickle cell retinopathy ($n = 4$). VEGF levels obtained during surgery were measured with Luminex assay. **Results:** VEGF levels ranged from 182 to 1047. Degree of CNP ranged from 22% to 89% and correlated strongly ($r = 0.89$) with VEGF levels. **Conclusion:** Degree of capillary nonperfusion noted on WFA is a good predictor of intravitreal VEGF levels and may help in modulating anti-VEGF therapy in proliferative vascular retinopathies.

4:04 PM

Panel discussion of previous paper

PA060

4:09 PM

NEW Safety and Performance Results of the Argus II Retinal Prosthesis System 3 Years Following Implant

Presenting Author: Allen C Ho MD*

Co-Author(s): Mark S Humayun MD PhD*, Lyndon daCruz FRANZO FRCOPHTH*, Gislain Dagnelie PhD*, Paulo E Stanga MD*, David G Birch PhD*, Jacque L Duncan MD, Jose A Sahel MD*

Purpose: The Argus II System is being studied in an ongoing clinical trial to determine its safety and probable benefit. **Methods:** Subjects had bare light perception or worse vision due to retinitis pigmentosa before implant. Adverse events were monitored throughout. Visual function, functional vision, and well-being were assessed. **Results:** As of December 1, 2012, 30 subjects have been implanted at 10 centers (over 125 patient-years of follow-up). Performance was better with the System than with off in both visual function and functional vision tasks. **Conclusion:** This is the largest study of a visual prosthesis to date. The results confirm previous reports on the reliability, safety, and probable benefit of the Argus II. Commercial approval in the United States was granted by the FDA in 2013.

4:16 PM

Panel discussion of previous paper

PA061

4:21 PM

NEW The Natural History of Diabetic Retinopathy Is Modified by Long-term Treatment With Intravitreal Ranibizumab

Presenting Author: Michael S Ip MD*

Co-Author(s): Amitha Domalpally MBBS, Jason S Ehrlich MD*

Purpose: To analyze the long-term effect of ranibizumab (RBZ) on diabetic retinopathy (DR) severity. **Methods:** Exploratory analysis of ≥ 2 and ≥ 3 -step change on the ETDRS severity scale in study eyes ($N = 707$) in the RISE and RIDE trials of monthly RBZ (0.3 or 0.5 mg) vs. sham eyes crossing over to 0.5 mg at the end of 2 years. Cox regression identified baseline predictors for DR worsening. **Results:** More RBZ-treated eyes showed improvement in DR severity vs. eyes in the sham/0.5-mg group at Month 36. Baseline capillary loss was associated with DR worsening in eyes treated with 0.3- or 0.5-mg RBZ. **Conclusion:** RBZ can reverse the progression of DR. Delayed intervention of RBZ may limit its therapeutic effect. Progression to neovascularization in eyes undergoing monthly ranibizumab can occur infrequently and may be related to macular nonperfusion.

4:28 PM

Panel discussion of previous paper

PA062

4:33 PM

NEW Residual Edema Evaluation with 0.5-mg and 2.0-mg Ranibizumab Formulations: The REEF Study

Presenting Author: Dilsher S Dhoot MD*

Co-Author(s): Dante Pieramici MD*, Ma'an A Nasir MD, Alessandro A Castellarin MD*, Robert F See MD, Stephen S Couvillion MD**, Nathan C Steinle MD*, Melvin D Rabena MD*, Robert L Avery MD*

Purpose: To compare 0.5-mg and 2.0-mg ranibizumab (RZ) in patients with persistent diabetic macular edema (DME) previously treated with bevacizumab (BV). **Methods:** Forty-three patients received 3 monthly injections of 0.5-mg RZ. At Month 3, patients with persistent DME received 3 monthly injections of 2.0-mg RZ. **Results:** Visual acuity (VA) improved by +6.4 letters at 3 months and by +8.8 letters at 6 months. Central subfield thickness (CST) decreased by $-114 \mu\text{m}$ at 3 months and $-165 \mu\text{m}$ at 6 months. Prior to enrollment, 29/43

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patients (67.4%) showed < 10% reduction in CST following monthly BV. After 3 monthly 0.5-mg RZ, 22/29 (75.9%) showed > 10% reduction in CST. Six patients showed < 10% reduction in CST after monthly BV and 0.5-mg RZ (x3). In these patients, 3/6 showed > 10% reduction in CST after 3 monthly 2.0-mg RZ. **Conclusion:** DME patients that show a partial or nonresponse to BV may improve following RZ therapy.

4:40 PM

Panel discussion of previous paper

PA063

4:45 PM

NEW Long-term Outcomes in Patients With Retinal Vein Occlusion Treated With Ranibizumab: The RETAIN Study

Presenting Author: Peter A Campochiaro MD*

Co-Author(s): Raafay Sophie MD, Joel A Pearlman MD*, David Brown MD FACS*, David S Boyer MD*, Jeffrey S Heier MD*, Dennis M Marcus MD*, Leonard Feiner MD*, Arun Patel MD

Purpose: To determine long-term outcomes of ranibizumab (RBZ)-treated retinal vein occlusion (RVO) patients. **Methods:** Patients completing the Lucentis for Retinal Vein Occlusion (HORIZON) RVO trial were seen every month for 1 year and at least every 3 months for a second year and treated with RBZ for intraretinal fluid. **Results:** Mean BCVA 48 months after entry into the BRAVO or CRUISE studies (Ranibizumab for Branch/Central Retinal Vein Occlusion) was 74.1 (improvement $\Delta = 18$) in all 28 BRVO patients, 75.6 ($\Delta = 19$) in 18 that stabilized, and 71.5 ($\Delta = 17$) in 10 patients still requiring injections; mean BCVA was 64 ($\Delta = 15$) in all 26 CRVO patients, 73.2 ($\Delta = 26$) in 13 that stabilized, and 56.8 ($\Delta = 9$) in the other 13. **Conclusion:** Within 4 years of starting RBZ, 75% of BRVO and 50% of CRVO patients no longer needed injections. Patients with BRVO who still required injections had an excellent visual outcome, while those with CRVO did less well but still had mean improvement of 2 lines.

4:52 PM

Panel discussion of previous paper

PA064

4:57 PM

NEW Fundus Autofluorescence Patterns in Central Serous Chorioretinopathy

Presenting Author: Seung Young Yu MD

Co-Author(s): Ji-Ho Yang MD, Hyung Woo Kwak MD PhD

Purpose: To investigate the patterns and frequency of fundus autofluorescence (FAF) abnormalities in patients with central serous chorioretinopathy (CSC) and evaluate correlation with spectral domain OCT (SD-OCT) findings and BCVA. **Methods:** Cross-sectional observational study, in which 127 eyes of 119 patients with CSC underwent fundus photography, FAF imaging, fluorescein angiography, indocyanine green angiography, and SD-OCT. **Results:** Alterations in FAF were classified into 5 patterns: blocked, mottled, hyper, hyper/hypo, and descending tract in order by the length of duration of symptom ($P = 0.000$). The visual acuity was the best in the blocked AF group ($P = .045$). Intact inner/outer segment junction on SD-OCT were most common in the blocked AF group ($P = 0.000$). **Conclusion:** The FAF abnormalities in CSC showed multiple distinct patterns and seem to correlate with duration of symptom and BCVA.

5:04 PM

Panel discussion of previous paper

Tuesday, Nov. 19

10:00 AM - 12:00 PM

Room: 271

Moderator: John T Thompson MD*

Panel: Julia A Haller MD*, Baruch D Kuppermann MD PhD*, Phillip J Rosenfeld MD PhD*

PA079

10:00 AM

NEW Pilot Study of OCT Angiography in Neovascular AMD

Presenting Author: Steven T Bailey MD

Co-Author(s): Yali Jia PhD*, Christina J Flaxel MD, James Fujimoto PhD*, David Huang MD PhD*, Joachim Hornegger PhD

Purpose: To detect choroidal neovascularization (CNV) in AMD patients using OCT angiography. **Methods:** Eyes with neovascular AMD were scanned by a high-speed 1050-nm wavelength swept-source OCT. The split-spectrum amplitude-decorrelation angiography algorithm was used to compute 3-D macular angiography. En face angiograms of the outer retinal, inner retinal, and choroid layers were created by maximum flow projection. **Results:** Eight eyes were scanned. En face outer retinal angiograms revealed CNV in patterns that agreed with the fluorescein angiograms. CNV size and flow index were measured, and vascular patterns could be demonstrated. **Conclusion:** This is the first demonstration of OCT angiography to detect CNV.

10:07 AM

Panel discussion of previous paper

PA080

10:12 AM

NEW Integrin Peptide Therapy: The First Human Wet AMD Experience

Presenting Author: David S Boyer MD*

Co-Author(s): Peter A Campochiaro MD*, Jeffrey S Heier MD*, Julia Ann Kornfield PhD**, Baruch D Kuppermann MD PhD*, Hugo Quiroz-Mercado MD*, Shulamit Schwartz MD*, Vicken H Karageozian MD*, Hampar L Karageozian MBA MS PHARMD, Lisa Karageozian*, John Park*, Marc Kirshbaum JD*, Peter K Kaiser MD*

Purpose: ALG-1001 inhibits integrin receptors and arrests neovascularization mediated by $\alpha v \beta 3$, $\alpha v \beta 5$ and $\alpha 5 \beta 1$ integrin sites. The study objective was to evaluate the dose ranging safety and efficacy of ALG-1001 in humans with wet AMD. **Methods:** Fifteen wet AMD subjects received 3 monthly injections of 2.0-mg or 3.2-mg ALG-1001 in monotherapy with 4 months off treatment follow-up. **Results:** There were no serious adverse effects reported. In the 3.2-mg group, the mean improvement in ETDRS BCVA was +8 letters at Day 120 (60 days off all treatment), with a mean reduction in OCT central macular thickness of 30% at study day 150 (90 days off all treatment). **Conclusion:** ALG-1001 in monotherapy was very well tolerated and produced a clinically significant biologic effect in the 3.2-mg group with improvements in BCVA and lesion regression lasting at least 3 months off treatment.

10:19 AM

Panel discussion of previous paper

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest.

PA081

10:24 AM

NEW Phase 1 Two-Year Device Safety and Explantation Experience With an Intravitreal Ranibizumab Sustained Delivery Implant*Presenting Author: Carl C Awl MD***Co-Author(s): Guna Laganovska MD, Signe R Erickson PhD*, Eugene De Juan Jr MD**

Purpose: To assess ongoing tolerability of a drug delivery implant. **Methods:** Twenty patients received a refillable implant and were treated for 12 months. At 12 months, 6 patients underwent surgical removal of the device. The remaining 14 patients continued to receive ophthalmic examinations for up to 24 months. **Results:** Excision of 6 devices revealed the presence of a thin fibrous capsule over the extrascleral portion of the implant. Following removal of this layer, the device was removed without enlargement of the original incision. The removed device showed no signs of tissue involvement. Ocular examinations revealed integrity of the device and surrounding tissue in 14/14 patients. **Conclusion:** Ophthalmic observations indicate ongoing device tolerability and continued visibility of the refill target.

10:31 AM

Panel discussion of previous paper

PA082

10:36 AM

NEW Ranibizumab vs. Bevacizumab for Neovascular AMD: One-Year Results From the GEFAL Randomized Trial*Presenting Author: Laurent Kodjikian MD PhD***Co-Author(s): Eric H Souied MD PhD*, Francine Behar-Cohen**, Laure Huot, Gilles Aulagner PHARM D PhD**, Martine Mauget-Faysse MD*, Gerard Mimoun MD***

Purpose: To demonstrate the noninferiority in terms of clinical efficacy of bevacizumab vs. ranibizumab intravitreal injections for the treatment of subfoveal neovascular AMD. **Methods:** Groupe d'Evaluation Français Avastin vs. Lucentis (GEFAL) is a noninferiority head-to-head double-masked randomized multicenter French clinical trial. The primary outcome was the change in visual acuity at 1 year. **Results:** 501 patients have been included. Statistical analyses are ongoing. As the results about efficacy and safety have not been publicly disclosed yet, they will be presented in their entirety at the 2013 Annual Meeting. **Conclusion:** The GEFAL trial is a reliable double-masked study that respects the dosing set out in the IEA marketing authorization. GEFAL data will enhance the data currently available from head-to-head studies.

10:43 AM

Panel discussion of previous paper

PA083

10:48 AM

NEW Comparison of Systemic Pharmacokinetics Following Anti-VEGF Intravitreal Injections of Ranibizumab, Bevacizumab, and Aflibercept*Presenting Author: Robert L Avery MD***Co-Author(s): Alessandro A Castellarin MD*, Nathan C Steinle MD*, Dilsher S Dhoot MD*, Dante Pieramici MD*, Robert F See MD, Stephen S Couvillion MD**, Ma'an A Nasir MD, Melvin D Rabena MD*, Kha N Le PhD*, Jennifer Visich PhD***

Purpose: To compare the systemic pharmacokinetics (PK) of intravitreal (IVT) bevacizumab (BEV), ranibizumab (RBZ), and aflibercept (AFB). **Methods:** Forty-five neovascular AMD patients received 3 monthly IVT injections of RBZ 0.5 mg, BEV 1.25 mg, or AFB 2.0 mg. ELISA assays measured serum anti-VEGF

levels after the first and third doses. **Results:** The molar ratio of BEV to RBZ for median C_{max} and AUC_{0-t} was ~13- and 24-fold, respectively. Serum BEV levels prior to the third dose were 2-fold higher than the BEV IC_{50} , whereas serum RBZ levels were 40-fold lower than the RBZ IC_{50} . Complete PK of the 3 anti-VEGF agents will be presented. **Conclusion:** Monthly IVT BEV results in meaningful systemic exposure and may provide a rationale for the differences in systemic serious adverse events observed in comparative studies.

10:55 AM

Panel discussion of previous paper

PA084

11:00 AM

NEW Early vs. Delayed 15-Letter Gainers With Ranibizumab Treatment in Year 1 of the HARBOR Study*Presenting Author: Glenn L Stoller MD***Co-Author(s): Gregg T Kokame MD*, Richard Dreyer MD**, Howard Shapiro PhD**

Purpose: To examine patterns of visual and anatomic response over time to ranibizumab (RBZ) 0.5 mg or 2.0 mg administered monthly or as needed after 3 monthly loading doses in patients with subfoveal wet AMD. **Methods:** All patients from the High-Dose Ranibizumab for AMD Study (HARBOR) were evaluated ($N = 1097$). Patients were characterized as early ($n = 266$) or delayed ($n = 135$) ≥ 15 -letter gainers based on changes in BCVA from baseline. **Results:** Approximately 25% and 14% of patients were early and delayed gainers, respectively. Roughly 82% of early gainers maintained their ≥ 15 letter gain at Month 12. There was no significant difference in the anatomic response between early and delayed gainers. **Conclusion:** A subset of patients who are not early gainers at Month 3 can achieve 3-line gains at Month 12 with continued RBZ treatment. The gradual functional recovery was not due to a delayed anatomic response.

11:07 AM

Panel discussion of previous paper

PA085

11:12 AM

NEW HARBOR 2-Year Results Support Less Frequent Dosing in Patients With Wet Age-Related Macular Degeneration*Presenting Author: Brad J Baker MD***Co-Author(s): Zhengrong Li*, Phillip C Lai MD**

Purpose: To evaluate if p.r.n. treatment with ranibizumab (RBZ) can maintain vision gained in Year 1 of the HARBOR (High-Dose Ranibizumab for AMD) study, and provide similar visual acuity gains as monthly dosing over 2 years, with comparable safety. **Methods:** Patients aged ≥ 50 years with subfoveal wet AMD ($N = 1097$) were randomized to receive RBZ 0.5 mg or 2.0 mg monthly or p.r.n. after 3 monthly loading doses. **Results:** For patients in the 0.5-mg p.r.n. group who completed Year 2 ($n = 237$), the average injection frequency was 9.9 weeks after 3 loading doses, and 93% of patients did not require monthly dosing. Mean BCVA gains at Year 2 were 7.9, 6.7, and 9.7 letters in patients receiving injections, on average, every 1 month, 1-2 months, or > 2 months, respectively. **Conclusion:** An individualized treatment approach with RBZ 0.5 mg may be appropriate for most patients with wet AMD.

11:19 AM

Panel discussion of previous paper

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PA086

11:24 AM

NEW Identification of Clinically Relevant Parameters in OCT Over 2 Years in the VIEW2 Trial
*Presenting Author: Ursula M Schmidt-Erfurth MD**
*Co-Author(s): Christian Simader**, Sebastian M Waldstein MD, Michael Kundi MD PhD*, Todd A Katz MD**

Purpose: To evaluate correlation of OCT and BCVA data in the VEGF Trap-Eye: Investigation of Efficacy and Safety in Wet AMD Study (VIEW2). **Methods:** OCT analysis of 1202 patients treated with ranibizumab or aflibercept in a fixed (Week 0-52) and subsequent capped p.r.n. (Week 52-96) regimen. **Results:** At baseline (BL), 64% of eyes had intraretinal cysts (IRC), 80% had pigment epithelial detachment (PED), and 84% had subretinal fluid (SRF). BL IRCs were associated with lower initial BCVA ($P < .0001$). After 3 monthly doses, at Week 12, approximately 75% of SRF, 70% of IRC, and 25% of PED had resolved. At 96 weeks, BL-SRF-only achieved best outcomes (+12 letters). BL-IRC+PED performed worst (+6 letters). Capped p.r.n. regimen introduced BCVA loss associated with occurrence of new IRC. **Conclusion:** IRC is the most important parameter for vision loss, especially in p.r.n. regimens, and may reflect irreversible retinal degeneration.

11:31 AM

Panel discussion of previous paper

PA087

11:36 AM

NEW Effect of Early, Persistent Macular Fluid on Visual Acuity in Wet AMD: Subgroup Analyses of the VIEW 1, VIEW 2 Studies
*Presenting Author: Peter K Kaiser MD**
Co-Author(s): Jason S Slakter MD, Jeffrey S Heier MD*, Glenn J Jaffe MD*, Philip J Rosenfeld MD PhD**

Purpose: To determine if anti-VEGF drug and dosing influenced visual acuity (VA) during the week 16-52 interval in eyes with early persistent fluid at weeks 0-12. **Methods:** Analyses of 1759 patients after 3 monthly injections: ranibizumab 0.5 mg every 4 weeks (Rq4), intravitreal aflibercept (IAI) 2 mg every 4 weeks (2q4), and IAI 2 mg every 8 weeks (2q8). **Results:** Eyes with persistent fluid were 19% (2q4), 21% (2q8), and 29% (Rq4). In these eyes, VA improved from baseline during the week 16-52 interval. VA was better in 2q4 compared to 2q8 ($P = .002$) and Rq4 ($P = .033$), and did not differ in 2q8 and Rq4 ($P = .19$). Overall mean VA letter gain was 11.7 (2q4), 6.7 (2q8), and 8.4 (Rq4). **Conclusion:** For a subgroup of patients with early persistent fluid during all first 4 visits, IAI 2q4 may provide additional clinical benefit over 2q8 and Rq4.

11:43 AM

Panel discussion of previous paper

PA088

11:48 AM

NEW Anti-VEGF Effect in Eyes With Retinal Pigment Epithelium Elevation in the VIEW 1 and VIEW 2 Studies of Wet AMD Patients
*Presenting Author: Chirag P Shah MD**
Co-Author(s): Glenn J Jaffe MD, Peter K Kaiser MD*, Jason S Slakter MD*, Jeffrey S Heier MD*, Giovanni Staurengi MD*, Tien Yin Wong MBBS*, Andrew A Chang MBBS**

Purpose: To compare treatment effect of intravitreal aflibercept injection (IAI) and ranibizumab on retinal pigment epithelial (RPE) elevation. **Methods:** Incidences of flattening of RPE elevation were evaluated in 1349 patients with baseline (BL) RPE elevation: 435 [ranibizumab 0.5 mg every 4 weeks (Rq4)], 460 [IAI 2 mg every 4 weeks (2q4)], 455 [IAI 2 mg every 8 weeks (2q8)]. **Results:** Cumulative incidences of flattening of RPE elevation at Week 52 were significantly higher with IAI (2q4: 59.6%; 2q8: 52.6%) vs. Rq4 (45.7%). Over the 52 weeks of follow-up, IAI2q4 and IAI2q8 were 1.50 (95% CI, 1.25-1.81) and 1.23 (1.01-1.49) times more likely than Rq4 to have flattening of RPE elevation. **Conclusion:** IAI2q8 and IAI2q4 were 23%-50% more effective than Rq4 in flattening RPE elevation.

11:55 AM

Panel discussion of previous paper

Scientific Posters



Saturday — Tuesday, Nov. 16 - 19

Hall C

There will be two sessions of scientific posters.

Session One	Saturday, Nov. 16	9:00 AM – 5:00 PM
	Sunday, Nov. 17	7:30 AM – 5:00 PM

Session One Presenters will be at their displays on Sunday, Nov. 17 from 12:30 PM - 2:00 PM.

Session Two	Monday, Nov. 18	7:30 AM – 5:00 PM
	Tuesday, Nov. 19	7:30 AM – 3:00 PM

Session Two Presenters will be at their displays on Monday, Nov. 18 from 12:30 PM - 2:00 PM.

Posters indicated by a 🏆 received the highest grades by the Annual Meeting Program Committee and have been designated as Best Posters.

Onsite Poster Tours

📍 The “Meeting Point” near Scientific Posters Online/Videos on Demand in Hall C, Booth 100

Subject	Tour Leaders
Sunday, Nov. 17, 12:30-1:30 PM	
Cataract	Y Ralph Chu MD*, Luther Fry MD*
Cornea, External Disease	Penny A Asbell MD FACS*, Kenneth R Kenyon MD**
Glaucoma	Paul F Palmberg MD PhD*, Jody R Piltz-Seymour MD*
Pediatric Ophthalmology, Strabismus	Laura B Enyedi MD*, Terri L Young MD*
Retina, Vitreous	K Bailey Freund MD*, Marco A Zarbin MD PhD FACS*
Monday, Nov. 18, 12:30-1:30 PM	
Cataract	Gary P Condon MD*, David E Silverstone MD
Cornea, External Disease	Jayne S Weiss MD*, James J Reidy MD*
Glaucoma	Peter Andreas Netland MD PhD*, Robert L Stamper MD*
Pediatric Ophthalmology, Strabismus	Judith E Gurland MD, Sasapin G Prakalapakorn MD**
Retina, Vitreous	Judy E Kim MD, David Sarraf MD*

Scientific Posters Online

Hall C, Booth 100

View scientific posters at your convenience at the Scientific Posters Online computer terminals. This service is also available through the Mobile Meeting Guide, www.aao.org/mobile, or on the Academy's website, www.aao.org/meeting-resources. After Dec. 1, view Scientific Posters online: www.aao.org/aao-archives.

Cataract

SESSION ONE

Scientific Poster 1

Clinical Results and Rotation Stability of Toric IOLs: Alcon AcrySof Toric IOL, Abbott Tecnis Toric IOL, and Bausch + Lomb enVista Toric IOL

Presenting Author: Mariana S Cardoso MD

Co-Author(s): Joana Pires MD, Sergio G Monteiro MD**, Rita Matos, Manuel S Mariano MD**

Purpose: To compare the efficacy and rotation stability of 3 IOLs: the Alcon AcrySof Toric, the Abbott Tecnis Toric, and the Bausch + Lomb enVista Toric IOLs. **Methods:** This prospective study enrolled 60 eyes with corneal astigmatism > 1.00 D, which underwent uncomplicated phacoemulsification with toric IOL implantation: 20 eyes with an Alcon AcrySof, 20 eyes with an Abbott Tecnis, and 20 eyes with a Bausch + Lomb enVista toric IOLs. Rotational stability and UCVA were measured at 1 day and 1, 3, and 6 months after surgery. **Results:** Preliminary results showed an high success rate in terms of UCVA, with residual postoperative astigmatism and a mean toric IOL axis rotation < 5°. **Conclusion:** All toric IOLs were effective in reducing preexisting corneal astigmatism, with no significant differences being found between them.

Scientific Poster 2

Postoperative Spherical Equivalents for Toric Lenses

Presenting Author: David K Wang

Co-Author(s): Robert H Osher MD*

Purpose: To determine the postoperative refractive spherical equivalents for eyes undergoing toric lens implantation. **Methods:** This retrospective chart review collected the 3 weeks postoperative refraction in 256 patients undergoing microcoaxial phacoemulsification with AcrySof (Alcon) toric IOL implantation from September 2009 to December 2012 and stratified by toric lens models. **Results:** The 3-week postoperative refraction had a spherical equivalent of 0.5 D or less in 83 eyes (87.3%) for T3 lenses, 70 eyes (86.4%) with T4 lenses, 66 eyes (92.8%) with T5 lenses, and 15 eyes (100%) with T6-9 lenses (T6: 8 eyes, T7: 2 eyes, T8: 1 eye, T9: 3 eyes); 228 eyes (89%) overall. **Conclusion:** With thorough diagnostic testing and careful surgical technique toric IOL implantation can help patients with astigmatism achieve minimal residual refraction.

Scientific Poster 3

Objective Reduction of Cylinder During Toric IOL Implantation Guided by Intraoperative Wavefront Aberrometry

Presenting Author: William Wiley MD*

Co-Author(s): Shamik Bafna MD*

Purpose: To evaluate the objective reduction of cylinder in eyes implanted with toric IOLs guided by intraoperative aberrometry. **Methods:** Retrospective analysis of 250 consecutive cases. Cylinder power and axis were determined by aphakic intraoperative aberrometry and confirmed with pseudophakic measurements, then compared to postop manifest refraction. **Results:** In preliminary results (first 194 eyes), mean preop corneal cylinder was 1.92 D. Intraoperative mean aphakic cylinder was 1.74 ± 0.78 D. Final mean pseudophakic intraoperative cylinder was 0.50 ± 0.42 D. Mean postoperative manifest cylinder was 0.45 D. **Conclusion:** Intraoperative aberrometry-guided toric IOL selection, placement, and positioning objectively reduces cylinder.

Scientific Poster 4

Clinical Characteristics of Retained Lens Fragments in the Anterior Segment After Routine Phacoemulsification

Presenting Author: Manuj Kapur MD

Co-Author(s): Diana Chao MD, Alexander S Davis MD, Emma K Loucks MD*

Purpose: To study clinical characteristics and outcomes of patients with retained nuclear fragments (RNF) in the anterior segment (AS). **Methods:** Retrospective chart review of 13 patients with RNF. Patient characteristics, intraoperative features, and clinical courses were compared. **Results:** Ten patients had at least the following: long axial length (AL), steep keratometry readings, or deep anterior chamber (AC). Five had intraoperative floppy

iris syndrome (IFIS). All had AC inflammation on exam. Twelve were diagnosed via slitlamp exam and 1 by dilated gonioscopy; 12 required surgical removal of RNF, and 1 responded to topical steroids. **Conclusion:** RNF in the AS were associated with long AL, steep keratometry, deep AC, and IFIS. Standard and dilated gonioscopy may be useful in diagnosing RNF in the AS.

Scientific Poster 5

Refractive Error After Cataract Surgery: How to Resolve It? IOL Exchange, Piggyback or LASIK

Presenting Author: Pilar Casas de Llera MD

Co-Author(s): Roberto Fernandez Buenaga, Jorge L Alio MD PhD*, Laura PinillaCortes, Rafael I Barraquer Compte MD*

Purpose: To evaluate the efficacy, predictability, and safety of IOL explantation, piggyback, and LASIK to correct residual refractive error following cataract surgery. **Methods:** Retrospective study that comprised 65 eyes. Group 1 (IOL explantation: 17 eyes), Group 2 (piggyback: 20 eyes), and Group 3 (LASIK: 28 eyes) were compared. **Results:** Group 3 had a reduction in spherical equivalence and refractive cylinder in comparison with Group 1 ($P < .001$) and also a significantly reduced cylinder in comparison with Group 2 ($P = .002$). In the efficacy index, significant differences were found between Groups 1 and 3 ($P = .004$) and Groups 2 and 3 ($P = .003$), favoring group 3. The highest predictability was achieved in Group 3. **Conclusion:** Group 3 (LASIK) had the best refractive outcomes, efficacy, and predictability.

Scientific Poster 6

Outcomes of the Posterior Chamber IOL Intrasclear Haptic Fixation (Glued IOL) Technique in a U.S. Referral Practice

Presenting Author: Yuri F McKee MD

Co-Author(s): Francis W Price Jr MD*, Marianne O Price PhD*

Purpose: To evaluate adoption of the intrasclear haptic posterior chamber IOL (PC-IOL) fixation technique. **Methods:** A retrospective review of the first 25 cases of this technique at a single center evaluated safety and efficacy with an emphasis on complications and outcomes. **Results:** Over a 4-month period, 25 PC-IOLs were successfully placed with intrasclear haptic fixation by 2 experienced surgeons. No IOL dislocated, decentered, or was unstable. Self-resolving hypotony occurred in 6 eyes. The reasons for PC-IOL scleral fixation were aphakia (32%), dislocated IOL with lens reposition (28%), and problematic IOL with lens exchange (40%). Two cases involved the successful placement of iris prostheses. **Conclusion:** This technique is effective and safe in treating a variety of IOL complications, aphakia, and aniridia in the absence of capsular support.

Scientific Poster 7

Unique Case of Toric IOL Repositioning in a Post-Radial Keratotomy Eye

Presenting Author: Jonathan D Solomon MD

A 53-year-old male with history of radial keratotomy underwent cataract surgery with toric IOL elsewhere 10 months prior to presenting for possible IOL rotation. Keratometry measured 5.3 D of oblique astigmatism, while elevation-based tomography demonstrated 3.8 D of against-the-rule cylinder. Based on all preop measurements, an AcrySof SNGAT8 was placed at the steep axis according to vector analysis. Postoperatively, BCVA was 20/50. The ORA system showed that the patient had 4.0 D of astigmatism in the pseudophakic refraction, as a result of higher order aberration, including contributions from the posterior cornea surface. Guided by ORA, the IOL was repositioned. After repositioning, refractive cylinder was 0.73 D, BCVA was 20/25, and patient satisfaction was greatly improved.

Scientific Poster 8

Evaluating Fragmentation Patterns by the Effective Phacoemulsification Time and Power in Laser Cataract Surgeries

Presenting Author: Minoru Tomita MD PhD*

Co-Author(s): Mariko Mita MD

Purpose: To compare the effects of lens fragmentation patterns by the effective phacoemulsification time (EPT) and power in laser cataract surgery. **Methods:** Using the Catalys, 71 eyes underwent laser cataract surgery. Either the Quadrant or the Complete pattern was used for fragmentation. For each cutting pattern, the EPT and power were evaluated. **Results:** The EPT for the Quadrant and Complete groups was 29.47 and 16.31 seconds,

and the mean phaco power was 8.07% and 4.77%, respectively. **Conclusion:** By using the smaller (Complete) fragmentation pattern with Catalys, the EPT and power were reduced significantly.

Scientific Poster 9

Femtosecond Laser vs. Conventional Phaco Surgery: A Case Control Study

Presenting Author: Jeffrey C Chan MBCHB

Co-Author(s): John So-Min Chang MD*, Dorothy Shu P Fan MD, Agnes Tse MD, Alvin K H Kwok MD FRCS PhD, Kenneth K W Li MBCHB, Walton W Li MD, Siu-Ping Hui MD

Purpose: To compare the clinical outcome and the intraoperative complications between femtosecond laser cataract surgery (FLCS) and conventional phaco surgery (CPS). **Methods:** The outcome of the first 101 cases of FLCS performed at a tertiary eye center were compared with 100 cases of CPS performed during the same period. **Results:** No significant differences were found between the 2 groups in radial anterior capsular tear (4.4% vs. 0%), posterior capsular tear (1.1% vs. 0%), and loose zonules (1.1% vs. 5%). Two cases of significant anterior capsular phimosis in the FLCS group required surgical intervention. No difference in visual outcome was observed. **Conclusion:** Our initial experience with FLCS is favorable, but the most common complication encountered in FLCS remains radial anterior capsular tear.

Scientific Poster 10

Single-center, Contralateral Evaluation of Femtosecond Laser Cataract Surgery Compared With Manual Cataract Surgery

Presenting Author: Mike P Holzer MD*

Co-Author(s): Florian Niklas Auerbach MD, Anna Fitting MS*, Ramin Khoramnia MD*, Florian T A Kretz MD*, Tanja M Rabsilber MD*, Gerd U Auffarth MD*

Purpose: To present a study on IOL overlap, effective lens position, and refractive outcomes using femtosecond laser vs. a manual approach. **Methods:** In this contralateral, comparative, randomized, prospective study, 30 patients underwent capsulotomy and lens fragmentation with a femtosecond laser in one eye (Victus, Bausch + Lomb Technolas); the manual technique was used in the fellow eye. Six-month follow-up data include functional results, flare, biometry, endothelial cell count, and IOL photos. **Results:** Initial results find the femtosecond laser produces centered and precise capsulotomies. So far, results are comparable to manual surgery. Further data will be presented. **Conclusion:** Results indicate femtosecond laser cataract surgery technique to be safe, effective, and precise.

Scientific Poster 11

Femtosecond Laser-Assisted Cataract Surgery and IOP Elevation on the First Postoperative Day

Presenting Author: Joshua Kim MD*

Co-Author(s): William L Soscia MD**, William J Lahners MD*, David W Shoemaker MD*, John P Fezza MD*

Purpose: It is known that leakage of lens material can cause trabecular meshwork outflow obstruction. The aim of this study is to investigate the incidence of IOP elevation after femtosecond laser-assisted cataract surgery on the first postoperative day (POD1). **Methods:** This retrospective review comprised 148 eyes that underwent femtosecond laser-assisted cataract surgery (Lensar) between July and December 2012. Elevated IOP was defined as ≥ 25 mmHg. **Results:** The incidence of IOP elevation ≥ 25 mmHg was 8.2% (15/148). This was not statistically different from conventional phacoemulsification, at 7.5% (3/40) ($P = .22$). **Conclusion:** The incidence of IOP elevation on POD1 in femtosecond laser-assisted cataract surgery was no different than that in conventional phacoemulsification.

Scientific Poster 12

Refractive Outcomes With a Monofocal IOL and Intraoperative Aberrometry-Guided Power Calculation

Presenting Author: Denise M Visco MD

Purpose: To assess the utility of intraoperative aberrometry in improving refractive outcomes with a commonly implanted monofocal IOL. **Methods:** In 140 eyes implanted with AcrySof SN60WF IOLs, the Optiwave Refractive Analysis intraoperative aberrometry system was used to determine IOL power selection and compared to results in 106 eyes in which preoperative biometry alone was used to select IOL power. All eyes were targeted for plano. **Results:** Nearly 80% of the group utilizing intraoperative aberrometry was within

0.5 D of the predicted refraction, compared to 59% of the biometry-only group. **Conclusion:** The addition of intraoperative aberrometry to preoperative biometry improves the accuracy of monofocal IOL power selection by approximately 20%.

Scientific Poster 13

Novel Concept of a Blue Light Filtering IOL With Light-Adaptive Transmission and Evaluation of its Cytoprotective Effects Regarding Light-Induced Oxidative Stress and Growth Factor Expression in Human Retinal Pigment Epithelial Cells

Presenting Author: Marcus Kernt MD*

Co-Author(s): Aljoscha S Neubauer MD*, Christos Haritoglou MD*, Anselm Kampik MD, Hartwig Becker

Purpose: To introduce the concept of a blue light filtering IOL with light-adaptive transmission (TA-IOL) and in vitro compare its cytoprotective effects to a UV-absorbing IOL. **Methods:** An IOL with central blue light filtering zone, surrounding the transition zone and clear periphery, was designed. Retinal pigment epithelial cells were exposed to white light and either the TA-IOL or a UV-absorbing IOL was placed in the light beam. Cellular viability, ROS, and VEGF expression were evaluated. **Results:** Under bright light, the TA-IOL achieved a greater reduction in light-induced effects on viability, ROS, and VEGF expression, compared to the UV-absorbing IOL. **Conclusion:** A TA-IOL may help to reduce potential negative influences of blue light-filtering IOLs on vision quality under low light conditions and may protect better against light-induced retinal damage.

Scientific Poster 14

Properties of the Lens Material in a New, 1-Piece, Foldable, Hydrophobic Acrylic IOL

Presenting Author: Mark Packer MD*

Purpose: To describe the physical properties and clinical benefits of the lens material in a new hydrophobic acrylic IOL (enVista, Bausch + Lomb). **Methods:** Nanoindentation experiments compared the surface hardness and elastic modulus of 4 hydrophobic IOLs. **Results:** Displacement after load was 6- to 10-fold less with the Xact IOL (containing the same lens material as the enVista IOL) compared with AcrySof, Hoya, and Sensor IOLs. Surface modulus was ≥ 6 -fold greater with the Xact IOL than the other IOLs. Surface hardness was > 20 times greater with the Xact IOL than the other IOLs. **Conclusion:** The lens material in the enVista IOL is glistening-free and has an exceptionally hard surface, making the lens durable and resistant to scratching during lens insertion and unfolding.

Scientific Poster 15

Safety and Visual Outcomes in Cataract Patients Implanted With a Glistening-Free Hydrophobic Acrylic IOL

Presenting Author: Mark Packer MD*

Purpose: To evaluate safety and visual outcomes associated with implantation of the enVista (Bausch + Lomb) model MX60 1-piece hydrophobic acrylic IOL during cataract surgery. **Methods:** Prospective, randomized, multicenter (6 sites) clinical study. Patients underwent cataract extraction by small-incision phacoemulsification and implantation of the IOL. **Results:** Safety and effectiveness data for the lens were superior to historical controls data in the FDA grids. At postoperative Day 150 (± 30 days), 118 patients (100%) achieved BCVA $\geq 20/40$ compared with 96.7% of historical controls. Incidence of posterior capsule opacification was low. No glistenings developed. **Conclusion:** Safety and visual outcomes with the enVista MX60 IOL were excellent.

Scientific Poster 16

Visual Performance of a New Segmented Asymmetric Multifocal IOL

Presenting Author: Sunil Shah MD*

Purpose: To evaluate the visual performance of patients implanted with a new bi-aspheric, +3-D nonblended segment, multifocal IOL. **Methods:** Eleven patients (18 eyes) with cataracts were bilaterally implanted with the lens, and visual acuity (VA), contrast sensitivity, defocus curves, and halometry were assessed 3 months postsurgery. **Results:** Residual refractive error was 0.01 ± 0.47 D (89% within ± 0.5 D). Uncorrected distance VA was 0.11 ± 0.17 logMAR; 78% of eyes could read $\leq J3$. Contrast sensitivity was good (1.67 ± 0.07 log-units), and defocus showed a 1.5-2.5 D near-addition. Halometry showed < 1 degree of

debilitating light scatter, with an asymmetric profile reflecting the location of the IOL segment. **Conclusion:** This new aspheric, segmented IOL provides a good visual outcome at distance and near, with minimal dysphotopsia.

Scientific Poster 17

★ Grooved and Nongrooved Clear Corneal Incisions in Phacoemulsification: Permeability Study

Presenting Author: Victor Dias Bergamasco MD

Co-Author(s): Victor Andrigheti Coronado Antunes Sr, Jose Ricardo A Reggi MD**, Richard Y Hida MD

Purpose: To detect the inflow of trypan blue through grooved and nongrooved sutureless self-sealing clear corneal incisions at the end of phacoemulsification. **Methods:** Prospective masked trial considered 52 eyes randomized into 3 groups (nongrooved incisions, grooved incisions, and control group). By the end of the phacoemulsification, trypan blue was instilled on the ocular surface. A sample of fluid from the anterior chamber was collected and analyzed with high-performance liquid chromatography to quantify the trypan blue concentration. **Results:** There was a statistically significant difference between nongrooved incisions and control groups ($P = .0448$). No significant difference was observed between grooved incision and control groups ($P = .1800$). **Conclusion:** There was no trypan blue detection in groups with grooved clear corneal main incision.

Scientific Poster 18

The Secular Changes in the Strength of Sutures Used in IOL Scleral Fixation

Presenting Author: Tsukasa Hanemoto MD

Co-Author(s): Hiroyuki Matsushima MD PhD, Tadahiko Kozawa MD PhD**

Purpose: To describe secular strength changes of the sutures used in IOL scleral fixation. **Methods:** Nylon, polypropylenes (PP), and polyvinylidene (PVDF) were prepared for each of the different suture materials. They were immersed into 75°C saline for 115 days in vitro, which means the equivalent to 5 years hydrolyzation in the eye. Then the hydrolyzed sutures with knot were pulled until they cut off. Suture toughness was analyzed as integrating the power and elongated suture. **Results:** Nylon was the weakest among the materials subjected to 5 years of hydrolyzation, while PP and PVDF had almost the same strength. **Conclusion:** PP and PVDF may be suitable for the use of IOL scleral fixation of at least 5 years.

Scientific Poster 19

★ Accuracy of Predicted Refractive Outcomes in Combined Macula and Cataract Surgery and Cataract Surgery Alone: A Comparative Study

Presenting Author: Amilia Schrier MD

Co-Author(s): Elona Gavazi MD, Winston Lee MA, Aakriti Garg, Jessica Kerns, Emily Sarah Smith, Stanley Chang MD*

Purpose: To compare the accuracy of predicted refraction in combined phacoemulsification and vitrectomy for macular pucker or hole to that of predicted refraction in phacoemulsification alone. **Methods:** Retrospective chart review of 230 consecutive eyes operated within 8 years: 95 controls that underwent phacoemulsification and 135 study eyes that underwent phacoemulsification / vitrectomy. Acceptable refractive outcomes: within ± 0.50 D of predicted refraction. **Results:** The mean difference in predicted vs. outcome refraction in controls was 0.05 ± 0.62 (range: -1.50 to 1.60); in the study group it was -0.13 ± 0.54 (range: -1.5 to 1.75). The difference in means is 0.18 [0.05 - (-0.13)]. Confidence interval, -0.02, 0.33; $P < .001$. **Conclusion:** The combined surgery yields refractive results as reliable and predictable as those of phacoemulsification alone.

Scientific Poster 20

Retrodot-Opaque-Area and Visual Function

Presenting Author: Hiroshi Sasaki MD

Co-Author(s): Norihiro Mita BSMT, Natsuko Hatsusaka BSMT**, Eri Shibuya**, Mai Sasaki, Kazuyuki Sasaki, Eri Kubo MD PhD

Purpose: To correlate retrodot-opaque-area (RDOa), best corrected visual acuity (BCVA), refractive error, and higher-order aberration (HOA). **Methods:** In 74 eyes with retrodot opacity (70.3 ± 6.5 years) but no other opacity \geq grade 1 (WHO), RDOa, crystalline lens power (LP), ocular and internal total HOA, coma, and spherical aberration in 4-mm and 6-mm diameter pupils were correlated. **Results:** As RDOa increased, BCVA deteriorated ($P < .01$), LP decreased ($P < .05$), and spherical equivalent showed myopic shift ($P < .01$). RDOa correlated

with internal total HOA (4 mm, $P < .01$; 6 mm, $P < .01$), coma aberration (4 mm, $P < .05$; 6 mm, $P < .01$), and negative spherical aberration (4 mm, $P < .01$; 6 mm, $P < .01$). **Conclusion:** RDOa affects BCVA, myopic shift, and negative spherical aberration.

Scientific Poster 21

Dexamethasone-Loaded Punctum Plug for Treatment of Ocular Inflammation and Pain After Cataract Surgery

Presenting Author: Tom R Walters MD*

Purpose: To evaluate the safety and efficacy of a dexamethasone-loaded punctum plug (OTX-DP) for treatment of ocular inflammation and pain after cataract surgery. **Methods:** Fifty-nine subjects (59 eyes) were randomized 1:1 to receive OTX-DP or a vehicle control (nondrug-loaded punctum plug) after cataract surgery. Subjects were evaluated at postoperative Days 1, 4, 8, 11, 14, and 30. **Results:** Ninety-eight percent and 92% retention of the punctum plugs was achieved at Day 14 and Day 30, respectively. Forty-seven percent of subjects were placed on rescue medications when an increase in cell flare or pain was noted. No long-term IOP spikes occurred in either treatment group. **Conclusion:** Initial results demonstrate OTX-DP is safe and effective for treatment of ocular inflammation and pain in subjects who underwent cataract surgery.

Scientific Poster 22

Efficacy Comparison of Single Subtenon 20-mg Triamcinolone Injection With Dexamethasone 0.1% Eye Drop in Controlling Intraocular Inflammation After Phacoemulsification

Presenting Author: Pitipol Choopong MD

Co-Author(s): Nattaporn Tesavibul MD, Nuttawut Rodanan MD

Purpose: To quantitatively compare efficacy of subtenon 20-mg triamcinolone injection with dexamethasone 0.1% eye drop in controlling intraocular inflammation after phacoemulsification. **Methods:** In this controlled trial, a total of 29 patients were randomly treated with a single subtenon 20-mg triamcinolone injection (15 patients) or dexamethasone 0.1% eye drop 4 times daily for 1 month (14 patients) after an uneventful phacoemulsification. The patients were examined at postoperative Days 1, 7, 14, 28, and 90. The main outcomes were anterior chamber inflammatory (ACI) score and laser flare/cell meter. **Results:** No significant differences were observed in ACI score ($P > .58$) and laser flare ($P > .16$) at any visit. **Conclusion:** A single subtenon 20-mg triamcinolone injection is clinically equivalent to dexamethasone eye drop.

Scientific Poster 23

Identification of Possible Factors That Affect the Anterior Surface Flora During Anterior Segment Surgery

Presenting Author: Chryssa Terzidou MD

Co-Author(s): Georgios Dalianis MD, Stamatina Golegou MD, Ioulia Koubi MD**

Purpose: To investigate the possible factors that affect the microbial load at the beginning and the end of anterior segment surgery. **Methods:** Prospective study including 98 patients, subjected to anterior segment surgeries by a single surgeon. Two samples from the anterior surface were taken for cultivation: one at the beginning of the surgery and the second at the end, after the incision's hydration with cefuroxime solution 1%. Different parameters were evaluated. **Results:** Out of 98 samples taken at the beginning of the surgery, 35 (35.7%) were found positive, while all 98 samples at the end of the surgery were negative (100%). Positive samples reduced from 44.9% to 13.8% when increased quantity of 10% betadine was used. **Conclusion:** Preoperative antisepsis proved safer when increased quantity of betadine solution was used.

Scientific Poster 24

Accommodative-Disaccommodative IOL With Zonular Capture Haptics

Presenting Author: Paul Beer MD*

Co-Author(s): Paul L Kaufman MD*, Gregg Heatley MD, Mary Ann Croft MS*, Jared McDonald**

Purpose: To demonstrate the range of axial shift and accommodative amplitude of accommodative-disaccommodative IOLs (AD-IOLs) using zonular capture haptics (ZCH). **Methods:** Prototypical AD-IOLs were implanted into surgically unilid eyes of Rhesus monkeys. After an interoperative period of capsular fibrosis, the capsular bag was sectioned radially. Accommodation was induced pharmacologically. The range of axial shift and amplitude of

accommodation were recorded. **Results:** The first prototype with Prolene ZCH showed a 0.54-mm axial shift in response to 0.59-mm change in diameter of the capsular bag. This resulted in 4 D of accommodation, measured by a Hartinger refractor. Results for a second prototype with metallic ZCH are pending. **Conclusion:** ZCH-based AD-IOLs demonstrated effective axial shift and accommodation.

Scientific Poster 25

Effect of Distance Refractive Error on Intermediate Vision With the Tecnis Multifocal IOL

Presenting Author: Jehanya Jegatheeswaran

Co-Author(s): Alan Kosaric MD**, Narendra Armogan MD, David B Yan MD*

Purpose: To determine effect of refractive outcome on near, intermediate, and distance vision with the Tecnis multifocal IOL. **Methods:** Eyes were divided into 2 groups by spherical equivalent distance refraction: Group A = -0.25 D to -1.0 D ($n = 18$), Group B = -0.13 D to +0.63 D ($n = 16$). Uncorrected visual acuity (VA) was measured at 40 cm, 63 cm, 1 m, and 6 m. **Results:** Mean refraction was -0.5 ± 0.1 D in Group A and $+0.1 \pm 0.2$ D in Group B. No difference was found in logMAR VA between Groups A and B at 6 m (0.09 ± 0.10 vs. 0.12 ± 0.09 , $P = \text{NS}$), 63 cm (0.33 ± 0.14 vs. 0.34 ± 0.17 , $P = \text{NS}$), or 40 cm (0.11 ± 0.12 vs. 0.16 ± 0.12 , $P = \text{NS}$); at 1 m, Group A had superior intermediate VA (0.24 ± 0.15 vs. 0.44 ± 0.13 , $P = .0003$). **Conclusion:** Mild myopia improves multifocal IOL intermediate vision without affecting distance or near vision.

Scientific Poster 26

Method Development for Assessing Clear Corneal Wound Integrity

Presenting Author: Michael B Raizman MD*

Co-Author(s): John A Hovanesian MD*, Samuel Masket MD*

Purpose: To develop a quantitative method to simulate increases in IOP resulting from patient manipulation following cataract surgery. **Methods:** A calibrated force gauge (CFG) was developed to apply quantifiable forces to the eye ($n = 30$), and tested in healthy eyes to match IOP fluctuations in the literature. Stromally hydrated (Study 2) ($n = 30$) and sutured CCl's (Study 3) ($n = 21$) were challenged for leaks using this method. **Results:** Using 1.0-oz force, the CFG raised IOP to 43.4 mmHg, or 25.9 mmHg from baseline, consistent with light and firm digital forces on the eye (27 and 58 mmHg). Using this method, 66.7% of wounds leaked in Study 2, and 23.7% leaked in Study 3. **Conclusion:** 1.0 oz. of force appears to be a clinically relevant assessment of wound leaks resulting from patient manipulation.

Scientific Poster 27

Multicenter Evaluation of Wound Leakage From Sutured Clear Corneal Cataract Incisions

Presenting Author: John A Hovanesian MD*

Co-Author(s): William Flynn MD*, Michael J Endl MD*

Purpose: To evaluate wound leakage in sutured clear corneal incisions (CCIs) following cataract surgery. **Methods:** In this prospective multicenter clinical study, a calibrated force gauge (CFG) was used intraoperatively to apply up to 1 ounce of external force to assess wound leakage of CCIs that were closed using 10-0 nylon sutures. During follow-up, a Seidel test was performed without use of the CFG at 1, 3, 7, and 28 days post-procedure. **Results:** 204 eyes were enrolled at 23 U.S. centers. The intraoperative leak rate using up to 1 oz of force was 30%. Two of the 183 eyes (1%) evaluated for 28 days had a leak 7 days after surgery. **Conclusion:** CCIs are susceptible to leakage even after closure with suture when subject to external forces representative of eye touching or rubbing.

Scientific Poster 28

Comparison of 2 Combined Cohesive and Dispersive Ophthalmic Viscoelastic Devices During Cataract Surgery

Presenting Author: Mike P Holzer MD*

Co-Author(s): Florian Niklas Auerbach MD, Ramin Khoramnia MD*, Florian T A Kretz MD*, Tanja M Rabsilber MD*, Gerd U Auffarth MD*

Purpose: To compare two combined cohesive and dispersive ophthalmic viscoelastic devices during cataract surgery. **Methods:** One eye of 54 patients was randomized to receive either Twinvisc (Carl Zeiss Meditec) or DuoVisc (Alcon) intraoperatively. Follow-up examinations were performed up to 3 months postoperatively. **Results:** Median IOP 6 hours after surgery was 21 mmHg in both groups, and values ≥ 30 mmHg have been found in 7.7%

(Twinvisc) and in 17.9% (DuoVisc) of eyes, respectively. A median endothelial cell count loss of 4% was seen in both groups 3 months postoperatively ($P > .05$). **Conclusion:** The Twinvisc application was as secure as DuoVisc during cataract surgery.

Scientific Poster 29

Two Phase 3 Trials of OMS302 in Irrigation Solution for Maintenance of Mydriasis in IOL Replacement

Presenting Author: Steve Whitaker MD*

Co-Author(s): Alan S Crandall MD*, Gregory Demopoulos MD*, Edmund Ng PhD*

Purpose: Two trials evaluated OMS302 (phenylephrine/ketorolac) for maintenance of intraoperative mydriasis as a primary endpoint. **Methods:** Each prospective, randomized, double-masked trial enrolled > 400 subjects, all receiving standard preoperative mydriatic and anesthetic agents. OMS302 was administered intracamerally in standard irrigation solution. **Results:** OMS302 maintained pupil diameter throughout the procedure, while the placebo group showed progressive constriction ($P < .00001$). Fewer OMS302-treated than placebo-treated patients experienced (1) ≥ 2.5 -mm pupillary constriction, representing $\sim 50\%$ decrease in the operative field ($\leq 3\%$ vs. $> 27\%$; $P < .001$), and (2) ≤ 6 -mm pupil diameter ($\leq 10\%$ vs. $\geq 46\%$; $P < .0001$). **Conclusion:** OMS302 significantly maintained mydriasis and prevented miosis during IOL replacement.

Scientific Poster 30

Fibrin Glue-Assisted Intrasccleral Fixation of Posterior Chamber IOLs in Children

Presenting Author: Rajesh Sinha

Co-Author(s): Himanshu Shekhar, Sudarshan K Khokhar MBBS

Purpose: To evaluate outcomes of intrasccleral haptic fixation of posterior chamber IOL (PC-IOL) with fibrin glue in children with aphakia. **Methods:** Retrospective analysis of 23 eyes of 15 children. Outcome measures included visual outcome, endothelial changes, and intraoperative and postoperative complications. **Results:** Mean age was 7.35 ± 2.41 years. Mean preoperative and postoperative BCVA was $0.40 \log\text{MAR} \pm 0.36$ and $0.18 \log\text{MAR} \pm 0.12$, respectively ($P < .001$). No significant change in endothelial cell density occurred ($P = .23$). No postoperative retinal detachment, IOL dislocation, endophthalmitis, or glaucoma was noted during follow-up. **Conclusion:** Fibrin glue-assisted intrasccleral fixation of PC-IOL is a safe and effective method to manage aphakia with inadequate capsular support in children.

Scientific Poster 31

Randomized Controlled Study of an Ocular Sealant to Prevent Wound Leak After Cataract Surgery

Presenting Author: Terry Kim MD*

Co-Author(s): Farrell Tyson II MD*, Jeffrey H Levenson MD

Purpose: To evaluate an ocular sealant for preventing incisional leakage from clear corneal incisions (CCIs) within the first 7 days of cataract surgery. **Methods:** 488 eyes were treated in a prospective, randomized, parallel arm, controlled multicenter trial. Subjects with a demonstrated wound leak were treated with an ocular sealant or suture and evaluated for 28 days post procedure. A Seidel test was performed intraoperatively and at 1, 3, 7, and 28 days. **Results:** The ocular sealant was superior for preventing wound leaks compared to suture ($P < .0001$). No safety issues were raised. **Conclusion:** The ocular sealant is safe and effective for intraoperative management of CCIs with a wound leak and for prevention of postoperative fluid egress following cataract surgery.

SESSION TWO

Scientific Poster 256

Clinical Evaluation of a New Aspheric, Hydrophobic-Acrylic, 1-Piece Toric IOL

Presenting Author: Farrell Tyson II MD*

Co-Author(s): Kevin Lee Waltz MD*, Donald Nixon MD*, Kristen Featherstone MS*, Sanjeev Kasthurirangan PhD*, Pamela J Smith MS*

Purpose: To evaluate a new toric IOL. **Methods:** Two-arm study: randomized control arm (RCA) compared eyes with planned preop Kcyl of 0.75-1.50 D corneal astigmatism (CA) implanted with ZCT150 toric IOL or ZCB00 standard IOL; open-label arm (OLA) compared eyes with ≥ 1.50 D CA to target values. **Results:** Greater mean percent reduction in cylinder ($P < .0001$) for ZCT150 ($74.53\% \pm 72.25$) than ZCB00 eyes ($31.61\% \pm 78.73$) in RCA; >

Session One is Saturday and Sunday, Nov. 16 & 17. Session Two is Monday and Tuesday, Nov. 18 & 19. Refer to page 156 for poster presentation and tour schedule.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

25% target in OLA (76.27 ± 33.09, $P < .0001$). RCA: 43.6% (44/101) of ZCT150 and 23.7% (22/93) of ZCB00 eyes had uncorrected distance visual acuity (UCDVA) ≥ 20/20 ($P = .0026$). OLA: 38.0% (27/71) had ≥ 20/20 compared to 6% target ($P < .0001$). Mean absolute change in axis between visits for toric eyes pooled < 3°. **Conclusion:** The ZCT toric IOL achieved decreased ocular astigmatism and improved UCDVA, with great rotational stability.

Scientific Poster 257

Prevalence of Anterior and Posterior Astigmatism Patterns and Their Influence in the Amount of Total Corneal Astigmatism by Ray Tracing

Presenting Author: Carlos G Arce Arce MD*

Co-Author(s): Sathish Srinivasan MBBS*

Purpose: To study the anterior, posterior, and total corneal astigmatism (TCA) by ray tracing. **Methods:** Value and axis of simulated keratometry (SimK), posterior axial and TCA cylinders were studied in 438 eyes with Galilei. **Results:** Anterior/posterior cylinder was parallel (1) with-the-rule (WTR): 69.4%, (2) WTR: 4.8%, (3) oblique: 3.9%, and crossed (4) against-the-rule (ATR)/WTR: 12.8%, (5) WTR/ATR: 0%, (6) oblique: 0.2%, (7) WTR/oblique: 1.4%, (8) ATR/oblique: 4.6% (9) oblique/ATR: 2.5%, (10) oblique/ATR: 0.5%. More frequent at all ages was type 1. Types 4 and 8 increased with age. TCA was larger than anterior cylinder in types 1 (94%) and 3 (88%) and smaller in types 2 (71%), 8 (75%), and 4, 6, 7, and 10 (100%). **Conclusion:** TCA tends to be larger than anterior cylinder if both had parallel axes and smaller if they were crossed. We propose to calculate toric IOLs using TCA and SimK average instead of anterior cylinder and fudge factors.

Scientific Poster 258

Postoperative Herpetic Endophthalmitis: A Case Report

Presenting Author: Ya-Yun Yang MD

Co-Author(s): Yuan-Chieh Lee MD*

We report a herpetic endophthalmitis following cataract surgery. A 65-year-old man underwent uneventful phacoemulsification. Vision improved in the early postoperative days. However, visual loss with an anterior chamber reaction of +++ and a ++ vitreous cell were noted in the fourth week. Repeated intravitreal injection of vancomycin and ceftriaxone, pars plana vitrectomy and Intraocular lens (IOL) with whole bag removal were performed sequentially for months but in vain. Bacterial, mycobacterial and fungal culture of the IOL with bag demonstrated negative findings. Pathological examination revealed no pathogen but lots of mononuclear cells and several multinuclear giant cells. Serology exam revealed positive HSV IgM and IgG. The intraocular inflammation resolved soon after changing antibiotics into oral valacyclovir.

Scientific Poster 259

Outcomes of Patch Grafts in Patients With *Burkholderia cepacia* Tunnel Infection Following Cataract Surgery Due to Contaminated Topical Anesthetic Drops

Presenting Author: Pravin Vaddavalli MD

Co-Author(s): Virender S Sangwan MBBS, Swapna Reddy Motukupally, Muralidhar Ramappa MBBS, Prashant Garg MD*

Purpose: To report the manifestations and outcomes of cataract surgical site wound infection due to contaminated topical proparacaine drops. **Methods:** Clinical, microbiology, genetic, and histology data from patients were collected prospectively. **Results:** Twenty-two patients presenting with tunnel infiltrates following phacoemulsification under topical anesthesia underwent a patch graft. Therapeutic success was achieved in 14 patients. Multidrug resistant *Burkholderia cepacia* was isolated from all patients and from an unopened bottle of proparacaine drops. **Conclusion:** Contamination of topical drops used during cataract surgery could result in corneal tunnel infections. *Burkholderia cepacia* is a tenacious organism and may not respond to medical therapy even with antibiotics it is sensitive to.

Scientific Poster 260

Comparison of Capsular Breakage Using Dull vs. Sharp Phacoemulsification Needles

Presenting Author: Brian Zaugg MD

Co-Author(s): Jeff H Pettet MD*

Purpose: To compare the level at which capsular bag breakage occurs using dull vs. sharp phacoemulsification (phaco) tips at increasing levels of vacuum and phaco. **Methods:**

Eighteen paired fresh cadaver eyes from 9 subjects were randomized to either the dull or sharp arm. The posterior capsule was exposed with usual techniques for cataract extraction. The capsule was then aspirated with increasing levels of vacuum and then phaco until breach occurred. Other settings on the phaco machine were equal in the two arms. **Results:** The capsular bag did not break at any level of vacuum alone with either tip. The dull tip caused breach of the capsule at higher levels of phaco (41.11%) compared to the sharp tip (23.33%); $P = .015$. **Conclusion:** The capsular bag is more resistant to breakage using a dull phaco tip than using a sharp tip.

Scientific Poster 261

Comparison of Surgical Outcomes of Trypan Blue Staining in Mature, Traumatic, Corneal Opacity-Associated, and Uncomplicated Cataracts: Results of the Ophthalmic Surgical Outcomes Data Project

Presenting Author: Nakul Shekhawat

Co-Author(s): Elizabeth F Baze MD, Mary K Daly MD, David E Vollman MD MBA*, Amy Chomsky MD, Mary Gilbert Lawrence MD MPH

Purpose: To assess association of trypan blue (TB) use and cataract complications. **Methods:** Retrospective review of outcomes in TB vs. non-TB cases. **Results:** Posterior capsular (PC) tear rates in mature ($n = 168$) vs. normal ($n = 4619$) cataracts were higher when TB was not used ($P < .05$). With TB use, mature cataracts had similar rates to normal cataracts ($P = .127$). Among mature cataracts, TB cases had less retained lens material ($P < .05$) and no increase in capsular damage ($P = .248$), vitreous prolapse ($P = .893$), conversion to large incision surgery ($P = .711$), or change in final IOL location ($P = .929$). Traumatic ($n = 33$) and corneal opacity-associated ($n = 80$) cataracts had similar TB risk profiles. **Conclusion:** TB use in complex cataracts is not associated with an increase in adverse events and may protect against PC rupture in mature cataracts.

Scientific Poster 262

The U.S. Army Teaching Small-Incision Cataract Surgery in West Africa: A Success Story

Presenting Author: Darrel K Carlton MD

Co-Author(s): Jean W Diallo MD, William R Wilson MD**, Brett A Nelson MD, Samantha B Rodgers MD**, Kevin Michael Czarkowski

Purpose: To report recent U.S. Army success in training a West African ophthalmologist as a manual small incision cataract surgery (SICS) surgeon and as a surgical mentor. **Methods:** N/A **Results:** An ophthalmologist from the Burkina Faso Army was trained by the U.S. Army at his facility, performing 25 SICS cases. Over the next 6 months he went on to perform over 200 SICS cases on his own. He then took part in a mission to Mauritania, performing 40 of the 108 total cases and serving as a primary surgical mentor. **Conclusion:** This training model may be used to improve adoption of SICS in the developing world, thereby improving patient outcomes and reducing cataract blindness. Future missions should focus primarily on training local surgical resources.

Scientific Poster 263

Intraindividual Anterior Capsule Healing in Standard and Laser Cataract Surgery

Presenting Author: Tim Schultz MD*

Co-Author(s): Ina Conrad-Hengerer MD, Burkhard Dick MD*

Purpose: To evaluate differences in capsular bag shrinkage between laser cataract surgery (LCS) and standard procedure. **Methods:** A prospective randomized intraindividual trial on 53 patients (106 eyes) was conducted to compare capsular bag diameter (CBD) between standard and laser cataract surgery (Catalys; Sunnyvale, Calif., USA). Capsular measuring ring was implanted in all eyes following anterior capsulotomy of 5 mm. CBD was measured postoperatively. **Results:** Intraoperatively CBD was 10.5 mm in both groups. Median CBD at Week 8: laser 9.8 mm / standard 9.5 mm ($P < .0005$); at Week 12: laser 9.8 mm / standard 9.4 mm ($P < .0005$). **Conclusion:** Significantly reduced capsular bag shrinkage up to 12 weeks postoperatively was observed compared to the standard procedure.

Scientific Poster 264

Therapeutic Laser-Assisted Cataract Surgery With Corneal Opacity From Graft-Host Junction Status-Post Penetrating Keratoplasty and Scleral Patch Graft

Presenting Author: Kathryn Masselam Hatch MD*

Co-Author(s): Jonathan H Talamo MD*

Purpose: To determine advantages/limitations of laser-assisted cataract surgery in challenging cases. **Methods:** A post-penetrating keratoplasty patient with corneal opacity and a scleral patch graft was treated with laser-assisted cataract surgery (Catalys; Sunnyvale, Calif., USA). The patient was docked with a liquid patient interface, and all ocular surfaces were mapped. Capsulotomy and lens fragmentation were also performed. **Results:** The case was completed with no complications. The nonapplanating liquid interface was sufficiently gentle to enable docking. 3-D OCT was used to map all ocular surfaces. Lens fragmentation improved ease of cataract removal. **Conclusion:** Therapeutic laser-assisted cataract surgery with a liquid interface in challenging cases is safe and simplifies lens removal.

Scientific Poster 265

Capsulotomy Centration: OCT-Scanned Capsule vs. Pupil-Guided

Presenting Author: Shamik Bafna MD*

Co-Author(s): William Wiley MD*

Purpose: To compare capsulotomy centering techniques of OCT-guided scanned capsule vs. pupil centration created by a femtosecond laser. **Methods:** Retrospective analysis of 50 consecutive femtosecond-assisted cataract surgeries. Both scanned capsule centration and pupil centration techniques were computed to display potential rhexis positions and capsule-optic overlap. **Results:** In scanned capsule eyes, 79% were more nasal and 66% were more vertical. Scanned capsule showed better capsule-optic overlap in 78% eyes. Twenty-five percent of the pupil-centered and 0% of the scanned capsule eyes had incomplete capsule optic coverage. **Conclusion:** Scanned capsule-guided femtosecond laser-created capsulotomy centration allows more complete and symmetric capsule optic-overlap.

Scientific Poster 266

Hydrophobic vs. Hydrophilic IOL: Effect on Posterior Capsule Opacification

Presenting Author: Keissy Sousa De Oliveira MD

Co-Author(s): Olga Marina Berens, Joao G Rosendo MD**, Paula Eduarda Bompastor Ramos, Augusto Candeias MD

Purpose: To determine the effect of IOL material posterior capsule opacification rate at 6, 12, and 18 months. **Methods:** Forty-three eyes with cataract were prospectively randomized to receive a hydrophobic acrylic or hydrophilic acrylic square-edge single-piece IOL by the same surgeon. Posterior capsule opacification was assessed in miosis and mydriasis. **Results:** Eighteen hydrophobic and 25 hydrophilic IOLs showed a mean visual acuity of 0.93 vs. 0.86 ($P < .05$) 6 months after surgery; 0.85 vs. 0.69 ($P < .05$) 18 months after surgery. Twenty-five percent of hydrophilic IOLs required an Nd:YAG capsulotomy 12 months following surgery ($P = .031$); 40% of hydrophilic IOLs required a capsulotomy vs. 12.5% of hydrophobic IOLs ($P = .067$) 18 months after. **Conclusion:** Hydrophobic IOLs had superior visual acuity results and less Nd:YAG laser capsulotomy than hydrophilic IOLs.

Scientific Poster 267

Visual Outcomes and Patient Satisfaction After Implantation of a Trifocal IOL

Presenting Author: Luis Izquierdo Jr MD

Co-Author(s): Maria A Henriquez MD, Mauricio Rodriguez Sr

Purpose: To analyze visual outcomes after cataract surgery with trifocal IOL implantation. **Methods:** Thirty eyes of 15 patients (age 55-80 years) were included in this prospective study. All subjects underwent a bilateral cataract surgery with implantation of the new trifocal FineVision IOL (Physiol; Belgium). Distance (4 m), intermediate (70 cm), and near (40 cm) visual acuities (VA), defocus curve, and refractive outcomes were evaluated at 3 months. **Results:** Mean uncorrected distance VA was 0.00 logMAR, mean uncorrected intermediate and near VA were 0.35 and 0.30 logMAR, respectively. Mean defocus at -3.00 D was 0.03 logMAR. **Conclusion:** The trifocal FineVision IOL is able to restore successfully distance, intermediate, and near visual acuity after cataract surgery.

Scientific Poster 268

One-Year Clinical Results and Quality of Vision After Implantation of a Preloaded Trifocal IOL

Presenting Author: Barbara Kusa MD

Co-Author(s): Matteo Piovella MD*

Purpose: To evaluate visual and optical performances of cataract eyes after phacoemulsification and trifocal IOL (AT LISA tri 839MP) implantation. **Methods:** Twenty cataract eyes received a preloaded trifocal IOL (AT LISA tri839MP). Follow-up examinations were performed up to 180 days after surgery. **Results:** Preoperative distance UCVA was 0.60 ± 0.30 logMAR. At 6 months, distance UCVA was 0.01 ± 0.02 logMAR, monocular near vision was 20/25, and binocular near vision was 20/18. Monocular intermediate vision was 20/33.75, binocular intermediate vision was 20/20.5. **Conclusion:** AT LISA tri 839MP provided satisfactory distance and near as well as intermediate visual acuity. This lens also improved quality of vision through remarkable diffraction efficiency while maintaining contrast sensitivity.

Scientific Poster 269

Hydrogel Ocular Bandages to Protect and Increase Watertight Properties of Corneal Incisions After Cataract Surgery

Presenting Author: Barbara Kusa MD

Co-Author(s): Matteo Piovella MD*

Purpose: To evaluate liquid hydrogel ocular bandages for clear corneal cataract surgical incisions. **Methods:** At the end of cataract surgery, we applied either OcuSeal liquid bandage (247 eyes) or ReSure Adherent Ocular Bandage (52 eyes) to reinforce closure of clear corneal incisions. OcuSeal is made of a synthetic dextrin hydrogel. Resure is made of a polyethylene glycol-based hydrogel. **Results:** During the immediate postoperative period, all patients reported ocular comfort. Resure remained over the wound for at least 24 hours in 52 patients (100%), while OcuSeal disappeared within 12 hours. **Conclusion:** Liquid bandage applied at the end of cataract surgery may enhance wound closure and improve postoperative comfort. After refilling with BSS, these bandages increase anterior chamber stability by improving watertight properties.

Scientific Poster 270

American Society of Cataract and Refractive Surgery / European Society of Cataract and Refractive Surgeons Survey on Foldable IOLs Requiring Explantation or Secondary Intervention: 2012 Update

Presenting Author: Nick Mamalis MD*

Co-Author(s): Anne Floyd, Erica Liu MD, Shannon Stallings MD

Purpose: American Society of Cataract and Refractive Surgery / European Society of Cataract and Refractive Surgeons survey regarding explantation of foldable IOLs. **Methods:** Type of IOL, materials, and complications requiring explantation were evaluated. **Results:** Dislocation/decentration was the most common complication associated with 1-piece and 3-piece acrylic IOLs, as well as 3-piece silicone IOLs. The most common reason for explantation of multifocal lenses was glare/optical aberrations. Toric IOLs were removed due to incorrect lens power. **Conclusion:** The most common complications with foldable IOLs were dislocation / decentration, glare/optical aberrations, and incorrect IOL power.

Scientific Poster 271

Optimization of the A Constant for the SRK/T Formula

Presenting Author: John C Merriam MD FACS

Co-Author(s): Eva Nong, Lei Zheng MD

Purpose: To optimize the A constant in the SRK/T formula using axial length (AL) and average preoperative keratometry (Kavg) and to improve the accuracy of predicted refraction. **Methods:** Using the postoperative manifest refraction from 635 eyes that underwent AcrySof SN60WF IOL implantation, we calculated the precise A constant for the postoperative spherical equivalent refraction. To optimize the A constant, we used linear, quadratic, and categorical (based on AL groups) regression models to relate the precise A constants to AL and Kavg. **Results:** Compared to the manufacturer's A constant, the regression models decreased postoperative hyperopia and reduced predicted mean absolute error from 0.50 D to 0.25 D ($P < .001$). **Conclusion:** Optimizing A constants based on the AL and Kavg in the SRK/T formula improves refractive outcomes.

Scientific Poster 272

Vitreous Hyper-reflective Dots in OCT After Uneventful Phacoemulsification Cataract Surgery

Presenting Author: Choul Yong Park MD

Co-Author(s): Jonghyun Oh MD, Roy S Chuck MD PhD*

Purpose: To report the significance of vitreous hyper-reflective dots (VHDs) after phacoemulsification surgery. **Methods:** Medical records of 156 eyes of 120 patients who underwent phacoemulsification surgery were reviewed. Spectral domain OCT was performed preoperatively and postoperatively at 1 month. The number of VHDs was counted in 5 OCT images of high-definition 5-line raster scan. Central subfield retinal thickness (CRT) and the development of cystoid macular edema (CME) 1 month after the surgery were assessed. **Results:** 31.3% of eyes had 3 or more VHDs (5.1 ± 2.27 ; range: 3 to 13). In eyes with 3 or more VHDs, CRT increased more (by $15.7 \pm 4.75 \mu\text{m}$; $P = .001$), and CME developed more often (in 30.6% vs. 6.3%, $P < .001$) than in eyes with 2 or fewer VHDs. **Conclusion:** The number of VHDs was associated with an increase in CRT and the development of CME.

Scientific Poster 273

★ The Importance of Ambidexterity in Simulated Anterior Segment Surgery

Presenting Author: Sundeep Singh Uppal

Co-Author(s): Vikas Sharma MBBS

Purpose: To determine whether greater nondominant hand surgical proficiency is associated with better 2-handed surgical outcomes. **Methods:** The EYESi surgical simulator was used to measure surgical performance in 14 residents using their dominant/nondominant hands, and on a bimanual task. **Results:** Surgical performance was better in the dominant than the nondominant hand (mean score: 71.1 vs. 64.4; $P = .034$). There was no statistically significant difference between dominant hand and bimanual performance (mean score: 71.1 vs. 74.6; $P = .156$), though bimanual performance was better than the use of non-dominant hand (mean score: 74.6 vs. 64.4; $P = .002$). **Conclusion:** Two-handed surgical outcomes are directly related to dominant hand surgical performance and less so to the nondominant hand.

Scientific Poster 274

The Effect of Pseudoexfoliation on Intraoperative Procedures and Cataract Surgery Complications: Results of the Ophthalmic Surgical Outcomes Data Project

Presenting Author: Tulay Cakiner-Egilmez NP

Co-Author(s): Mary K Daly MD, Amy Chomsky MD, David E Vollman MD MBA*, Elizabeth F Baze MD, Mary Gilbert Lawrence MD MPH

Purpose: To analyze whether pseudoexfoliation (PXF) was associated with increased rates of complications of cataract surgery. **Methods:** 4923 cataract surgery cases were included in the study. Outcomes analyzed included small pupil, pseudoexfoliation, pupillary expansion devices, and intraoperative complications. P -values were calculated using Fisher exact test. **Results:** Small pupils and the use of pupillary expansion devices and capsular tension rings were significantly higher in the PXF group than in the control group ($P < .0001$; $P < .0001$, and $P = .0002$, respectively). **Conclusion:** Operative events were not statistically significant in PXF and control groups, suggesting a protective effect of pupillary expansion devices in patients with PXF against intraoperative complications.

Scientific Poster 275

Correlation Between Objective and Subjective Measurements of Light Scattering and Light Distortion in Normal and Pseudophakic Eyes

Presenting Author: Jose Manuel Borges MD PhD

Co-Author(s): Helena Neves OD, Sofia Cláudia Peixoto-de-Matos MS, Jose Manuel Gonzalez-Meijome Sr*

Purpose: To correlate the index of light distortion surrounding an intense source of light measured with an experimental device with the ocular scattering index measured with a commercially available device in pseudophakic patients with monofocal IOL. **Methods:** Sixty-five cataractous patients (age 69 ± 7 years) implanted with monofocal IOL. Three measures of light distortion were conducted in the tested eye (always monocularly). Overall ocular scattering index was evaluated with the Optical Quality Analysis System (OOAS).

Results: Intraocular light distortion measured with the OOAS was significantly correlated with light distortion ($r = 0.511$; $P > .001$). **Conclusion:** A significant part of the perception of light distortion can be explained by the scattering index in pseudophakic patients.

Scientific Poster 276

Long-term Evaluation of Posterior Capsule Opacification After Implantation of a Single-Piece Hydrophobic Acrylic IOL

Presenting Author: Abhay Raghukant Vasavada MBBS FRCS*

Co-Author(s): Mamidipudi Praveen DO**, Shetal Raj MD

Purpose: To evaluate long-term impact of AcrySof SNG6AT IOL implantation on development of posterior capsule opacification (PCO) up to 5 years. **Methods:** This was a prospective evaluation of 390 eyes for PCO and analyzed influence of anterior capsule (total and part-on) cover on IOL optic by evaluation of posterior capsule opacification (EPCO). **Results:** A significant increase in PCO was noticed up to 3 years ($P < .001$); no significant development was found between 3 and 5 years. Increase in PCO was more in the part-on group ($P < .001$). **Conclusion:** PCO stabilized between 3 and 5 years. Less PCO was found with total-on cover of the anterior capsule on the IOL optic.

Scientific Poster 277

Safety and Effectiveness of Cyclosporine A 0.05% Emulsion After Cataract Surgery for Ocular Surface Problems and Corneal Sensation

Presenting Author: Samer Hamada MD

Co-Author(s): Tara Moore V PhD, Madonna Al Dreihy MD, Anas A Anbari MD, Sunil Shah MD*

Purpose: To assess efficacy and safety of cyclosporine-A (CsA) 0.05% ophthalmic emulsion after cataract surgery to improve ocular surface and corneal sensation. **Methods:** Patients were randomized to have topical CsA or polyvinyl alcohol (PVA) drops. Subjective and objective assessments were performed preoperatively, 1 week, and 1 month after surgery: osmolality, tear breakup time, Schirmer's type-I, ocular surface staining, corneal sensitivity, and ocular surface disease index. **Results:** None of the 60 eyes lost any best spectacle-corrected visual acuity. All results improved after CsA drops compared to PVA drops at 1 month following surgery ($P < .05$). CsA eyes tended to have higher recovery of corneal sensation. **Conclusion:** CsA is effective and safe in management of ocular surface problems after cataract surgery. CsA allows faster recovery of corneal sensation.

Scientific Poster 278

Endophthalmitis Rates After Cataract Surgery With Subconjunctival Antibiotic Prophylaxis: A Review of 43,127 Eyes

Presenting Author: Suzanne A Turner MBBS

Co-Author(s): Robert Johnston MBBS FRCOphth**

Purpose: To establish the rate of endophthalmitis after cataract surgery for a single unit using subconjunctival antibiotics exclusively. **Methods:** Evaluation of 43,127 consecutive cataract operations in a UK district general hospital. Several audit cycles were carried out, and the overall rate of endophthalmitis was calculated. **Results:** There was a 0.046% rate of endophthalmitis during the study period. **Conclusion:** The rate of endophthalmitis is comparable in our unit to that in the group treated with intracameral cefuroxime in the landmark European Society of Cataract and Refractive Surgeons study (0.073%). We feel further direct comparison in the form of a randomized controlled trial is needed to ascertain whether intracameral antibiotics confer any additional advantage in comparison to subconjunctival.

Scientific Poster 279

Evaluation of an Aberration Corrected, Pure Diffractive Multifocal IOL (MIOL) as a Toric and Nontoric Version

Presenting Author: Florian T A Kretz MD*

Co-Author(s): Anna Fitting MS*, Verena Friederich, Sarah Pramschiefer, Il-Joo Limberger MD**, Gerd U Auffarth MD*

Purpose: Comparison of a toric and a nontoric full diffractive, multifocal IOL (M-IOL). **Methods:** For cataract surgery either a M-IOL (ZMB00, AMO; USA) in patients with a corneal astigmatism of less than 1 D or a toric M-IOL (ZMT--, AMO; USA) in patients with an

astigmatism over 1 D was implanted. Subjective refraction and visual acuity (VA; near in 30 cm and distance) were evaluated. **Results:** Uncorrected distance VA was 0.1 in both M-IOL groups, with an uncorrected near VA of 0.2 in the toric and 0.1 in the nontoric M-IOL group (logMAR). **Conclusion:** The aberration-corrected, diffractive multifocal IOL with and without astigmatism correction showed good refractive results for near and distance visual acuity.

Scientific Poster 280

A Prospective, Randomized, Multicentered Clinical Trial of the Trulign Toric Presbyopia-Correcting IOL

Presenting Author: Jay Stuart Pepose MD PhD*

Purpose: To assess safety and effectiveness of Trulign toric presbyopia-correcting IOL. **Methods:** Prospective, randomized trial. **Results:** Trulign Toric IOL showed 85.5% reduction in cylinder, greater reduction in cylinder of 1.25 D toric vs. spherical control, rotational stability of < 2 degrees, 96.9% \pm 5 degrees rotation, and improvement in uncorrected distance visual acuity vs. spherical control. Mean UCVA was 20/25 distance, 20/22 intermediate, and 20/40 near. **Conclusion:** Trulign toric IOL reduces the effects of preoperative corneal astigmatism while preserving excellent intermediate and functional near.

Scientific Poster 281

Study of Accuracy of Manual Toric Reference Marking Using Cionnis Toric Marker

Presenting Author: Sourabh D Patwardhan MD

Co-Author(s): Nidhi Sourabh Patwardhan DOMS MD**

Purpose: To evaluate the accuracy of manual reference toric marking on slitlamp. **Methods:** 164 eyes of 164 patients were enrolled in the study. Patients were asked to sit upright and to fix on a distant object. Under topical anesthesia marking was done with Cionni toric marker with gentian violet color. Patients were then examined on the slitlamp. Accuracy of the marking was confirmed by slit beam with baseline axis at 180° by other observer. Any deviation was measured by rotating the axis of the slit. **Results:** The average axis-marking error was 3.37 \pm 2.24° with manual marking. Twelve percent of patients had marking error of more than 5°. **Conclusion:** In 88% of eyes, manual toric reference marking was within 5 degrees. But 12% of eyes had error of more than 5 degrees. Alternative methods should be explored for improving accuracy of marking.

Scientific Poster 282

Accuracy of Manual Continuous Curvilinear Capsulorrhexis Using Patwardhan Capsulorrhexis Marker

Presenting Author: Sourabh D Patwardhan MD

Co-Author(s): Nidhi Sourabh Patwardhan DOMS MD**

Purpose: To measure and compare sizing and positioning parameters of manual continuous curvilinear capsulorrhexis (CCC) using Patwardhan capsulorrhexis marker with manual CCC without using marker. **Methods:** In Group 1 ($n = 35$), manual CCC was done without using marker. In Group 2 ($n = 36$), manual CCC was done assisted by Patwardhan capsulorrhexis marker. CCC size of 4.75 mm was aimed. **Results:** Minimum overlap of optic in Groups 1 and 2 was 0.15 \pm 0.25 mm and 0.26 \pm 0.13 mm, respectively ($P = .02$). Maximum overlap in Groups 1 and 2 was 1.1 \pm 0.22 and 0.77 \pm 0.22 mm, respectively ($P < .001$). Overlap coefficient in Groups 1 and 2 was 0.18 \pm 0.24 and 0.36 \pm 0.21 ($P = .001$), respectively. **Conclusion:** Manual CCC assisted by Patwardhan capsulorrhexis marker gives better centration and overlap than manual CCC without using marker.

Scientific Poster 283

Refractive Outcomes Using Intraoperative Aberrometry to Confirm Power Calculations in Multifocal IOL Surgery

Presenting Author: Maria Cirone Scott MD*

Purpose: To evaluate refractive outcomes following cataract surgery with implantation of Tecnis Multifocal IOLs (AMO) guided by intraoperative aberrometry with the ORA System (Optiwave Refractive Analysis, WaveTec Vision). **Methods:** A single surgeon performed cataract surgery on 131 eyes, using the ORA System to confirm or adjust IOL power calculations intraoperatively. **Results:** Of 131 eyes, 60% were within 0.25 D of predicted spherical equivalent and 89% were within 0.50 D. Without intraoperative aberrometry, only 83% of eyes would have been within 0.50 D. **Conclusion:** Intraoperative aberrometry-assisted power calculation closely predicts refractive outcome.

Scientific Poster 284

Effect of the Open Ring Guider for Continuous Curvilinear Capsulorrhexis

Presenting Author: Choun-ki Joo MD

Co-Author(s): Jeong-Ah Shin MD**, Hae-ri Yum MD, Yong Eun Lee MD, Changrae Rho MD

Purpose: To describe an open ring-shaped caliper for optimal size, shape, and centration of capsulorrhexis and to report its efficiency. **Methods:** Phacoemulsification candidates were included and divided into either the open ring guider caliper (ORGC) group or the manual group. Open ring guider was inserted for continuous curvilinear capsulorrhexis (CCC). Photoshop and ImageJ program were used for analysis of size, location, circularity, and deceleration of CCC during and after surgery. **Results:** Size of the CCC was larger in the ORGC group than in the manual group. CCC of the ORGC group was more regular. Deviation of the CCC was less in the ORGC group than in the manual group, and circularity was significantly better in the ORGC group than in the other group. **Conclusion:** ORGC helped surgeon to make uniform, well-centered, and circular CCC. There was no complication during our study.

Scientific Poster 285

"Haptic Lasso" Makes for Simplified Intrasclear Insertion of Haptics in Fixation of 3-Piece IOL

Presenting Author: Anala Maharaj

Co-Author(s): Gursmeet Sohanpal MBBS, Ryan R Ramoutar MBBS, Ronnie M Bhola MBBS, Nilesh Persad MBBS

Purpose: To describe a simple technique of intrasclear haptic fixation. **Methods:** A 25-gauge vitrectomy trocar (VT) was used to make scleral tunnels (ST) and left in situ; 8-0 vicryl was used to 'lasso' the haptic near the tip and the needle was passed through the VT. The haptic was introduced into the VT, the suture was used to pull the haptic into the VT, and the VT was slowly removed, leaving the haptic in the ST. **Results:** Twenty eyes of 20 patients were operated on with no complications in 6 to 9 months follow-up. **Conclusion:** This technique allows easier insertion of haptics into ST.

Scientific Poster 286

Accuracy of IOL Power Calculations Provided by Intraoperative Aberrometry With and Without Streaming Refractive Data

Presenting Author: Stephen S Lane MD*

Purpose: To compare global results of IOL power calculations provided by intraoperative aberrometry with and without the use of streaming refractive information. **Methods:** Retrospective review of the mean absolute value of the prediction error (MAVPE) obtained with ORA (Optiwave Refractive Analysis) intraoperative aberrometry ($n = 10,434$ eyes) and the first 300 cases performed with the same system with VeriEye streaming refractive information. **Results:** MAVPE in the ORA group was 0.33 D \pm 0.27 D, with 79% of eyes within 0.5 D of predicted postop outcome. MAVPE in the ORA with VeriEye group was 0.29 D \pm 0.20 D, with 84% of eyes within 0.5 D of predicted postop outcome. **Conclusion:** Early results demonstrate that streaming refractive information improves the accuracy of IOL power calculations.

Computers, Information Technology

SESSION TWO

Scientific Poster 287

Patient Satisfaction Within Online Reviews of Ophthalmologists Evaluated by Contextual Analysis

Presenting Author: Robert M Kinast MD

Co-Author(s): Gordon T Barker MS, Susan H Day MD, Steven L Mansberger MD*

Purpose: Doctor rating websites are a growing trend in ophthalmology, but little is known about the factors associated with positive and negative online reviews. **Methods:** We collected 595 ophthalmology online reviews and used contextual analysis to determine whether reviews were positive or negative, and whether they included comments regarding the physician (bedside manner, competence) or office factors (staff, wait time, access, environment, finances, location). **Results:** Physician factors were 54% of positive comments, but office factors were 73% of negative comments. Refractive surgeons had more reviews

($P < .007$) and higher scores ($P < .001$) than nonrefractive surgeons. **Conclusion:** Office factors are as important as patient-physician interactions in determining patient satisfaction and may damage a physician's online reputation.

Scientific Poster 288

★ A Novel Tele-ophthalmology Diagnostic Screening Protocol: Detecting Disease and Improving Eye Care Access

Presenting Author: April Y Maa MD

Co-Author(s): Centrael Tyson Evans MD, William Richard Delaune PhD, Purnima S Patel MD, Mary Gerard Lynch MD

Purpose: A prospective pilot study comparing a tele-eye screening protocol with a face-to-face exam. **Methods:** Fifty-two patients were evaluated with both the screening protocol and a face-to-face ophthalmic exam. Detection accuracy for common ocular conditions was measured. **Results:** The protocol had 92% agreement, 89% sensitivity, 94% specificity for normal eyes; 87% agreement with 64% sensitivity, 95% specificity for glaucoma; 96% agreement with 100% sensitivity, 96% specificity for AMD; 100% agreement, sensitivity, and specificity for surgical cataract. **Conclusion:** Initial data suggest that this remote tele-eye screening protocol has ability to detect ocular disease and warrants a larger study to confirm validity.

Scientific Poster 289

Validity and Acceptance of Color Vision Testing on Smartphones

Presenting Author: Omar K Ozgur MD

Co-Author(s): Rudrani Banik MD*

Purpose: To assess the validity of smartphone-based color vision testing (CVT) by comparing results using the Eye Handbook (EHB) color plate application to standard pseudoisochromatic Ishihara color plates (ICP). **Methods:** Prospective study of adults with acuity $\geq 20/60$ at 14 inches who underwent CVT under standardized illuminance with both modalities. A study group had congenital or acquired color deficit, while the control group had no known color deficit. **Results:** Eight-nine percent of patients had no difference between testing modalities, and 11% had a difference of 1 plate, performing better on EHB. Sixty-seven percent preferred EHB, 11% preferred ICP, and 22% had no preference. **Conclusion:** In our study, CVT results were similar between the EHB and ICP groups, though there was a patient preference for EHB testing.

Cornea, External Disease

SESSION ONE

Scientific Poster 33

Deep Anterior Lamellar Keratoplasty for Spheroidal Degeneration

Presenting Author: Ashish P Nagpal MBBS

Co-Author(s): Manish Nagpal MD*

Purpose: To evaluate visual outcomes, complications, and graft survival of patients undergoing deep anterior lamellar keratoplasty (DALK) to treat extensive spheroidal degeneration. **Methods:** In this retrospective, noncomparative study, 12 eyes that underwent DALK were included. Preoperative characteristics, intraoperative complications, postoperative acuity, complications, and subsequent operations were analyzed. **Results:** Mean follow-up was 44 ± 18 months. Six eyes had delayed epithelialization and required temporary tarsorrhaphy. Three eyes experienced an episode of stromal graft rejection. 8 eyes underwent subsequent cataract surgery. **Conclusion:** DALK in eyes with spheroidal degeneration is a safe and effective option that preserves host endothelium with favorable results. DALK in these eyes is associated with delayed epithelialization.

Scientific Poster 34

Progression of Fellow Eye in Cases of Asymmetric Ocular Cicatricial Pemphigoid: Is Treatment Always Necessary?

Presenting Author: Fiorella K Saponara MD

Co-Author(s): Anne S Steiner MD, Carolyn Y Shih MD MBA MPH, Ira J Udell MD

Purpose: To determine if fellow eyes invariably achieve the same disease stage as more affected eyes in asymmetric ocular cicatricial pemphigoid (OCP). **Methods:** Retrospective chart review of 20 OCP cases. Using Foster clinical staging, eyes were staged, and treatments and progression were analyzed. **Results:** Preliminary results show an average age of 82 and follow-up ranging from 2 to 20 years (average: 5.9). Sixty-five percent of all eyes progressed, 92% bilaterally. Thirty-five percent of patients had asymmetric presentation; 71% of these had stage III disease, and 29% had stage IV disease in the more affected eye. Forty-three percent of fellow eyes had stage I, 29% had stage II, and 29% had stage III. Twenty-nine percent of fellow eyes did not progress and were maintained on doxycycline alone. **Conclusion:** Although the majority of asymmetric OCP cases lead to progression, not all fellow eyes progress.

Scientific Poster 35

Is It OK to Do PRK in Keratoconus? Long-term Results

Presenting Author: Gustavo E Tamayo MD*

Purpose: Review 16 years of excimer laser ablation to restore vision in keratoconus. **Methods:** Retrospective review of eyes with keratoconus treated with PRK between 1995 and 2009. Ninety-five eyes completed the follow-up. Through the years, several techniques have been used. Contoured ablation pattern technique, 6 years; wavefront, when introduced; mitomycin C, since 2000. **Results:** Mean follow-up: 125 months (range: 49-160). Preoperative UCVA: 53.3%, CF; 40%, 20/200; 6.6%, 20/800. Postoperative UCVA: 67%, 20/25; 24.6%, 20/70; 8.3%, CF. Mean BCVA: 52%, 20/25; 33%, 20/30; 6%, 20/40; and 8.3%, CF. **Conclusion:** The use of surface ablation excimer in keratoconus can be safe and effective provided some guidelines are followed. The rate of corneal transplants after a long follow-up is normal and no larger than the disease natural course.

Scientific Poster 36

★ Computer-Aided Diagnosis of Keratoconus Based on Ultrasound Layered Pachymetric Map Analysis

Presenting Author: Ronald H Silverman PhD*

Co-Author(s): Raksha Urs PhD*, Timothy J Archer MS, Marine Gobbe PhD, Arindam RoyChoudhury PhD*, Dan Z Reinstein MD*

Purpose: To determine if ultrasound-based layered corneal pachymetric maps can independently differentiate normal from keratoconic (KC) corneas. **Methods:** We scanned 130 normal and 74 KC subjects with the Artemis-1 ultrasound arc-scan system. We performed computer-analysis of epithelial and stromal thickness maps on one eye per subject. Linear discriminant (LDA) and neural network (NN) analyses were then performed. **Results:** A 6-variable model provided complete separation of normal from KC corneas by LDA and NN. Validation analysis resulted in 99.2% specificity and 94.6% sensitivity by LDA and 99.5% specificity and 98.9% sensitivity by NN. **Conclusion:** Layered pachymetric maps offer an independent means for differentiation of normal from KC corneas. Detection of epithelial remodeling may provide an avenue toward early diagnosis.

Scientific Poster 37

Corneal Collagen Crosslinking Without Removing Corneal Epithelium

Presenting Author: Fook Chang Lam MBChB

Co-Author(s): Nashila Hirji, Samer Hamada MD, Damian Lake MBChB

Purpose: To assess the safety and efficacy of corneal collagen crosslinking in the treatment of progressive keratoconus using a technique where the corneal epithelium is physically disrupted but not removed. **Methods:** A retrospective analysis of the visual, refractive, and topographic outcomes of 147 consecutive patients with progressive keratoconus. **Results:** The mean K-max readings reduced by 0.4 D. 20.2% demonstrated continued progression at 1 year (ie, K-max increased by 1 D or more). 2.2% of eyes lost 2 or more lines of vision, 2.7% developed sterile infiltrates, and 0.9% developed a central corneal scar. **Conclusion:** This technique of crosslinking after the mechanical disruption of corneal epithelium is an efficacious way of stabilizing keratoconus. This method is safer than currently published epithelium-off techniques.

Scientific Poster 38

A Comparative Study of Collagen Crosslinking for Keratoconus in Thin vs. Thick Corneas

Presenting Author: Salina Teja MD

Co-Author(s): W Bruce Jackson MD FRCSC*, George Minstoulis FRCSC, Kashif Baig MD MBA*

Purpose: To compare the 1-year outcomes of collagen crosslinking (CXL) in keratoconus between thin and thick (< 400 µm vs. > 400 µm) corneas. **Methods:** Baseline and postoperative (up to 1 year) measures of keratometry, visual acuity, pachymetry, and refraction were compared between groups retrospectively ($n = 107$). A repeated measure regression was performed for each variable separately. **Results:** Preoperatively, the thin group had more severe keratoconus with all measures of disease ($P < .05$). At 1-year follow-up, the thin group showed no significant changes in any measures with a 30% failure rate, and the thick group showed significant reduction in K-max by 2.4 D ($P < .001$) with no failures. **Conclusion:** Our study shows that CXL halts progression of keratoconus in thin corneas; however, it does not cause significant regression of ectasia as seen in thick corneas.

Scientific Poster 39

Comparison of Fibrin Glue and Autologous Blood for Conjunctival Autograft Fixation in Pterygium Surgery

Presenting Author: Salina Teja MD

Co-Author(s): Sophie Boucher COMT, Kashif Baig MD MBA*

Purpose: To compare autologous blood (AB) and fibrin glue (FG) for conjunctival graft fixation in pterygium excision surgery. **Methods:** Data were collected up to 1 year postoperatively for 40 patients (20 AB, 20 FG), and outcomes were compared between groups. **Results:** There were no intraoperative complications, and the surgical costs differed due to cost of fibrin glue and extra time required with autologous blood. At 3 months postoperatively, 6 AB patients lost their graft compared to 0 FG patients, while 3 in each group had graft displacement. One FG patient had a recurrence, and 2 AB patients developed pyogenic granuloma. Visual acuity was stable. **Conclusion:** Our comparison of the efficacy and stability of conjunctival autografts between FG and AB will help to further establish the role of AB in pterygium surgery.

Scientific Poster 40

Bowman Layer Implantation: An Alternative to Penetrating / Deep Anterior Lamellar Keratoplasty for Advanced Keratoconus

Presenting Author: Jack S Parker MD

Co-Author(s): Korine van Dijk OD, Gerrit RJ Melles MD PhD*

Purpose: To evaluate the efficacy of Bowman layer implantation in reducing and stabilizing corneal ectasia in patients with advanced keratoconus (AKC). **Methods:** Ten eyes of 9 patients with AKC and contact lens intolerance, who were not candidates for UV-crosslinking, underwent midstromal implantation of an isolated Bowman membrane and were followed for a mean of 16 months. **Results:** Maximum corneal power decreased on average from 74.5 D (± 7.1 D) to 68.3 D (± 5.6 D) after surgery ($P = 0.00$). All surgeries were uncomplicated and uneventful, and contact lens tolerance was restored in all eyes. BCVA and pachymetry were not significantly affected ($P = .77$; $P = .11$). **Conclusion:** Bowman layer implantation may be safe and effective in treating ectasia in AKC.

Scientific Poster 41

High Fluence Iontophoretic Corneal Collagen Crosslinking: In Vivo OCT Imaging of Riboflavin Penetration

Presenting Author: Paolo Vinciguerra MD*

Co-Author(s): Miguel M Rechichi MD, Pietro Rosetta MD, Vincenzo Scarcia MD, Claudio Azzolini MD, Riccardo Vinciguerra MD

Purpose: To evaluate the effect of epi-off vs. iontophoresis (ION) on riboflavin penetration during collagen crosslinking (CXL) in vivo using HD-OCT. **Methods:** Twenty eyes undergoing CXL were acquired pre-, intra-, and postoperatively using HD-OCT. In 10 eyes, the standard epi-off protocol was used, whereas in 10 eyes riboflavin penetration was promoted by ION. **Results:** In the epi-off group, after 30 minutes a homogeneous hyper-reflective band was measured at a mean depth of 80 µm. In the ION group, a less homogeneous band with fading effect was measured at 200 µm. **Conclusion:** Intraoperative OCT could be an useful

aid to evaluate in vivo penetration of riboflavin in the stroma. The in vivo OCT results of the ION group showed a lower but deeper concentration of riboflavin in the stroma compared to the epi-off technique.

Scientific Poster 42

Infectious Keratitis in Mexico: Ten-Year Experience in Corneal Scrapes

Presenting Author: Enrique O Graue Hernandez MD

Co-Author(s): Alejandro Navas MD*, Julio Hernandez Camarena MD, Arturo J Ramirez-Miranda MD*

Purpose: To report the distribution, microbiologic trends, and antibiotic sensitivity of infectious keratitis in Mexico City. **Methods:** Retrospective study. Samples were obtained from corneas with diagnosis of infectious keratitis from January 2002 to December 2011. **Results:** 1638 corneal scrapings were taken. A pathogen was recovered in 38% of samples, with bacterial keratitis for 88%. The most common isolated pathogen was *Staphylococcus epidermidis*, and the most common Gram-negative was *Pseudomonas aeruginosa*, whose resistance to ceftazidime increased from 11.1% in the first 5 years to 88.9% for the last 5 years. **Conclusion:** The ceftazidime resistance of *P aeruginosa* increased during the 5 last years, suggesting that is not ideal for empiric treatment. Vancomycin resistance accounted for 9.9% of all Gram-positives, while 13.3% of all the bacterial isolates were resistant to quinolone.

Scientific Poster 43

Glaucoma in Herpetic Eye Diseases

Presenting Author: Sonal S Tuli MD

Co-Author(s): Delbert Benzenhafer, Anthony B Greer MD, Eric Calver Swanson, Trent M Talbot MD**, Anup A Kubal MD

Purpose: To evaluate the risk and outcomes of glaucoma in patients with herpetic eye disease. **Methods:** Retrospective review of 68 patients with herpes simplex and 52 patients with herpes zoster keratitis and keratouveitis. Patients were followed for up to 20 years following the onset of herpetic eye disease. **Results:** Glaucoma or ocular hypertension was noted in 22% of herpes simplex patients and 35% of zoster patients. This was highly statistically significant. Sixty percent of these patients in the herpes simplex group needed surgery, and 50% of those in the zoster group. **Conclusion:** Glaucoma is very prevalent in herpetic eye disease patients and follows a very aggressive course, with more than half of the patients needing surgical intervention. Patients with herpetic eye disease should be closely followed for development of glaucoma.

Scientific Poster 44

Polymerase Chain Reaction of Conjunctival Swab for the Diagnosis of Microsporidial Keratoconjunctivitis

Presenting Author: Yogesh Vamanrao Bhadange MD

Co-Author(s): Sujata Das MBBS, Praveen Kumar Balne, Batriti Shymliang Wallang DO, Savitri Sharma MD

Purpose: To evaluate the efficacy of polymerase chain reaction (PCR) of conjunctival swab in the diagnosis of microsporidial keratoconjunctivitis. **Methods:** Conjunctival swabs from 42 clinically diagnosed cases of microsporidial keratoconjunctivitis were collected from inferior fornix with the help of Rayon swabs. The swabs were immersed into phosphate buffer saline and subjected to microsporidial PCR. **Results:** PCR was positive in 33 patients. DNA sequencing and blast analysis identified the organisms to be *Vittaforma corneae* in 12 cases. The positivity of the PCR result was not related to the number of lesions and duration of symptoms. **Conclusion:** Collection of sample using conjunctival swab can be used as an alternative to corneal scraping in the diagnosis of microsporidial keratoconjunctivitis.

Scientific Poster 45

Newly Emerging Pathogens in Keratomycosis: A Study From India

Presenting Author: Anup K Ghosh PhD

Co-Author(s): Amit Gupta MBBS, Suruchi Gupta MBBS, Ritupama Bhattacharya**, Arunaloke Chakrabarti MD, Mangat R Dogra MBBS

Purpose: To study the newly emerging trend of keratomycosis at a tertiary hospital in India. **Methods:** Spectrum of fungal pathogen causing keratomycosis during 2005-2011 was evaluated; DNA-based technology was used for identification of newer pathogen. **Results:** Incidence was high (37.3%) during crop harvesting season, with male predominance (78.3%). Fungi could be isolated from 383 of 757 cases of keratomycosis (50.59%). As-

pergillus species were the most common 189 isolates (49.3%), followed by dematiaceous group, with 75 (19.5%). Ten isolates from keratitis and *Papulospora equi* causing human infection were isolated for the first time. **Conclusion:** Agriculture-related activity is the major risk factor; new species are emerging, and the dematiaceous group is a concern for keratomycosis.

Scientific Poster 46

Guidelines for the Use of Intracameral Amphotericin B in Recalcitrant Keratomycosis: Experience With a Large Case Series

Presenting Author: Amit Gupta MBBS

Co-Author(s): Suruchi Gupta MBBS, Manjari Tandon Sr MBBS MS**, Arunakle Chakrabarti MD, Pooja Bansal MBBS

Purpose: To report outcomes of early vs. delayed intervention using intracameral amphotericin B (ICAMB) in keratomycosis. **Methods:** Fifty eyes with nonresponding fungal keratitis: Group I (25 eyes) receiving ICAMB at 2 weeks and Group II (25 eyes) at 4 weeks. Time to heal, type of corneal opacity, and complications were noted. **Results:** In Group I vs. Group II, mean number of injections was 4.08 vs. 4.64, healing time was 18.06 vs. 36.68 days, maculoleucomatous opacity was present in 12 vs. 4 eyes, vascularized opacity in 9 vs. 17 eyes, cataract in 6 vs. 14 eyes, hyphema in 1 vs. 2 eyes, and corneal perforation in 0 vs. 10 eyes. **Conclusion:** Early intracameral amphotericin B significantly hastens resolution and reduces ocular morbidity in keratomycosis.

Scientific Poster 47

Comparison of Voriconazole and Natamycin Eye Drops in the Treatment of Fungal Keratitis

Presenting Author: Savitri Sharma MD

Co-Author(s): Sujata Das MBBS, Ajay S Virdi MBBS, Merle Fernandes MS, Srikant Kumar Sahu**, Prashant Garg MD*, Swapna Reddy Motukupally

Purpose: Randomized controlled trial to compare efficacy of 1% voriconazole (A) with 5% natamycin (B) eye drops in the treatment of fungal keratitis. **Methods:** Microscopy-proven 118 fungal keratitis patients were treated with either A (58) or B (60) as inpatients for 7 days and followed up for a mean duration of 35 days (7-400 days). Based on clinical response, patients were classified as healed / resolving / worsening / failure. **Results:** More patients on B (71%) healed / were resolving compared to A (55%). Initial infiltrate size and keratitis severity being comparable, final vision was better ($P = .037$) and infiltrate was smaller in the B group ($P = .024$). **Conclusion:** Compared to voriconazole, natamycin was more effective in the treatment of fungal keratitis.

Scientific Poster 48

Fusarium Keratitis in Brazil and the United States: Comparison of Laboratory Analysis and Clinical Outcomes

Presenting Author: Rafael A Oechsler MD

Co-Author(s): Ana Hofling-Lima MD MBA, Paulo José Martins Bispo MS, Michael R Feilmeier MD, Darlene Miller MPH, Tiago Massao Yamanaka, Juliana F Sartori MD**, Flavio Hirai MD, Maria Ceclia Zorat-Yu PhD, Eduardo C Alfonso MD*

Purpose: To compare genotyping, antifungal susceptibilities, and clinical outcomes from *Fusarium* keratitis in the United States and Brazil. **Methods:** Fifty-eight *Fusarium* spp isolates were obtained at the Bascom Palmer Eye Institute (Miami, Flor., USA), and 41 isolates at the Federal University of São Paulo (Brazil). All isolates were genotyped and submitted to antifungal susceptibility testing and the respective patients' records were reviewed. **Results:** *F. solani* was the main species identified by genotyping in Brazil (88% of isolates) and in United States (75%). Amphotericin B was the drug with the lowest MIC90 in both countries (2 µg/ml). Mean follow-up BCVA was 20/800 in Brazil and 20/90 in United States; therapeutic keratoplasties were necessary in 54% of patients in Brazil and in 14% in United States. **Conclusion:** *Fusarium* keratitis in Brazil had an overall worse clinical outcome than in the United States.

Scientific Poster 49

Comparison of Umbilical Cord Serum and Amniotic Membrane Transplantation in Acute Ocular Chemical Burns

Presenting Author: Namrata Sharma MD MBBS

Co-Author(s): Sri Vatsa Sehra, Rajesh Sinha, Jeevan S Titiyal MD, Thirumurthy Velpandian PhD, Radhika Tandon MD, Rasik B Vajpayee MD

Purpose: To compare efficacy of cord serum (CS) with amniotic membrane transplantation (AMT) in acute ocular chemical burns. **Methods:** Fifty-five eyes with grade III, IV, and V chemical burns within 3 weeks received medical therapy (MT; $n = 20$) or additional 20% CS; ($n = 17$) or AMT ($n = 18$) retrospectively. **Results:** Mean time to healing was 57.7 ± 29.3 , 27.4 ± 19 , 41.1 ± 28.9 days in MT, AMT, and CM, respectively ($P = .02$). Significant decrease in epithelial defect diameter was seen earlier in CS group ($P = .04$). Mean tear breakup time at 3 months was 8.6 ± 0.7 , 10.3 ± 1.1 , 9.4 ± 1.2 ($P = .02$), and mean Schirmer was 13.7 ± 1 , 16.9 ± 3 , 13.2 ± 1.5 mm in MT, CS, and AMT, respectively ($P = .01$). No difference was seen in visual outcomes, vascularization, and symblepharon. **Conclusion:** CS is a better alternative to AMT in moderate to severe ocular chemical burns as it avoids surgery in inflamed eyes.

Scientific Poster 50

Oral Mucosal Transplantation and "Wrap Around" Amniotic Membrane Transplantation in Ankyloblepharon due to Chronic Stevens-Johnson Syndrome

Presenting Author: Namrata Sharma MD MBBS

Co-Author(s): Tushar Agarwal MD, Rasik B Vajpayee MD

Purpose: To evaluate results of oral mucosal transplantation (OMT) and "wrap around" amniotic membrane transplantation (AMT) in ankyloblepharon due to chronic Stevens-Johnson syndrome (SJS). **Methods:** In this retrospective study, 22 eyes underwent OMT on both lids and AMT on cornea and bulbar conjunctiva. Edges of amniotic membrane were pulled from under the symblepharon ring over the tarsal conjunctiva and wrapped on the lids. **Results:** At 1 year, complete and partial anatomical success was seen in 81.8% (18/22) and 9.1% of eyes (2/22) and failure in 9.1% of eyes (2/22). Corrected distance visual acuity improved from hand motion close to face preoperatively to $> 6/60$ in 72.6% of eyes (16/22). **Conclusion:** In severe ankyloblepharon due to chronic SJS, OMT with "wrap around" AMT provides ambulatory visual acuity.

Scientific Poster 51

Conjunctival Autograft and Fibrin Glue for Primary Pterygium: Global Outcomes and Comparison Between Expert and Trainee Ophthalmologists

Presenting Author: Pedro Arriola-Villalobos MD

Co-Author(s): Pilar Cifuentes-Canorea MD, Jorge Peraza-Nieves Sr, David Diaz-Valle MD PhD*, Jose A Gegundez-Fernandez MD PhD*, Jose Manuel Benitez-del-Castillo

Purpose: To evaluate the outcomes of autoconjunctival graft attached with fibrin glue (FG) for primary pterygium, comparing expert and trainee ophthalmologists. **Methods:** A retrospective, comparative, nonrandomized, interventional study was carried out in 249 eyes (210 patients, mean age 47.19 ± 13.29 years) with primary pterygium that were subjected to surgery (conjunctival autograft fixed using FG) by expert (131 eyes) or trainee ophthalmologists (117 eyes). Mean follow-up was 7.73 months. **Results:** Recurrence rate was 7.7%, being 6.1% in the expert ophthalmologists group and 9.4% in the trainee group ($P = .33$). The reoperation rates were 1.2%, 0%, and 2.6% ($P = .104$), respectively. **Conclusion:** Autoconjunctival grafting and FG achieved good outcomes in primary pterygium surgery. The experience of the surgeon seems to influence success rates.

Scientific Poster 52

Environmental Factors and Dry Eye Syndrome: A Study Utilizing the National U.S. Veterans Affairs Administrative Database

Presenting Author: Anat Galor MD*

Co-Author(s): Hermes J Florez, Katherine Teresa McManus, David J Lee PhD, Naresh Kumar PhD, William J Feuer MS

Purpose: To evaluate the effect of environmental factors on dry eye syndrome (DES). **Methods:** Case-control study of patients seen in a Veterans Affairs (VA) eye clinic in the continental United States over a 5-year period. Cases carried a DES diagnosis and received

DES therapy. The main outcome measure was the effect of environmental conditions on the risk of having DES. **Results:** A total of 3.41 million patients were seen in a VA eye clinic; 606,708 had DES. Among all variables, air pollution (as measured by aerosol optical depth) was the most important risk factor, with an incidence rate ratio (IRR) of 1.4, P -value $< .0005$. Higher humidity (%) decreased that risk of DES (IRR 0.989, $P < .0005$). **Conclusion:** Increased air pollution and decreased humidity increase the risk of having DES.

Scientific Poster 53

Limbal Stem Cell Dysfunction From Superior Limbic Keratoconjunctivitis in Chronic Graft Versus Host Disease

Presenting Author: Kavitha R Sivaraman MD

Co-Author(s): Renu V Jivrajka MD, Ali R Djillilian MD

Purpose: To describe the presence of superior limbic keratoconjunctivitis (SLK) in patients with chronic graft versus host disease (cGVHD) leading to limbal stem cell dysfunction. **Methods:** Descriptive retrospective case series of 12 eyes of 6 patients with cGVHD with concomitant SLK and limbal stem cell dysfunction. **Results:** All 12 eyes showed evidence of both SLK and limbal stem cell dysfunction as evidenced by a combination of corneal pannus, superior corneal punctate rose Bengal staining, and/or loss of the palisades of Vogt. All eyes responded to initiation of aggressive lubrication with or without punctual cautery and topical cyclosporine. **Conclusion:** SLK may be a comorbid condition in patients with cGVHD-related dry eye and may secondarily lead to limbal stem cell dysfunction.

Scientific Poster 54

Efficacy of 2% Rebamipide Ophthalmic Suspension for the Treatment of Blink-Related Ocular Surface Disorders

Presenting Author: Norihiko Yokoi MD PhD*

Co-Author(s): Hiroaki Kato MD, Aoi Komuro MD PhD, Yukiko Sonomura, Shigeru Kinoshita MD*

Purpose: To evaluate the efficacy of 2% rebamipide ophthalmic suspension (ROS) for treating blink-related ocular surface disorders (BROSD). **Methods:** Twenty eyes of 20 patients with at least either filamentary keratitis (FK), superior limbic keratoconjunctivitis (SLK), or lid-wiper epitheliopathy (LWE) were evaluated before and at 1, 2, and 3 months after treatment with ROS in relation to visual analog scale of symptoms, tear meniscus radius, tear-film breakup time, FK and corneal staining (scored with fluorescein), and conjunctival staining, SLK, and LWE (all using lissamine green). **Results:** By 3 months, significant improvement was seen in FK, SLK, and LWE ($P < .01$), and foreign body sensation, eye pain, and opening difficulty ($P < .05$). **Conclusion:** ROS is effective for treating BROSD.

Scientific Poster 55

Outcomes of Autologous Serum Tear Use for Corneal Neuropathy-Induced Severe Light Sensitivity

Presenting Author: Shruti Aggarwal MBBS

Co-Author(s): Ahmad Kheirkhah MD, Clara M Colon, Emma Sue Brown, Pedram Hamrah MD*, Bernardo Menelau Cavalcanti MD

Purpose: To evaluate the use of autologous serum tears (AST) treatment for severe light sensitivity in patients with corneal neuropathy. **Methods:** Sixteen cases with no ocular surface disease suffering from severe light sensitivity were treated with AST 8 times/day. Changes in severity of symptoms (0-10) and sub-basal corneal nerve density and morphology by in vivo confocal microscopy (IVCM) were evaluated and compared to 16 age-matched controls. **Results:** Light sensitivity improved from 8.8 ± 1.1 at baseline to 1.6 ± 1.7 ($P < .05$) with ATS. Baseline IVCM showed significantly decreased density and altered nerve morphology compared to controls (all $P < .001$). After mean of 3.6 months of AST, all nerve parameters improved significantly ($P < .05$). **Conclusion:** AST-induced nerve regeneration may lead to improved patient-reported light sensitivity.

Scientific Poster 56

Should the Schirmer Score Remain a Gold Standard for Diagnosis of Ocular Graft Versus Host Disease?

Presenting Author: Hasanain T Shikari MD*

Co-Author(s): Ujwala Saboo MBBS, Francisco Amparo MD*, Reza Dana MD MSc MPH*

Purpose: To evaluate the reliability of the Schirmer score in establishing a diagnosis of ocular graft versus host disease (oGVHD). **Methods:** Retrospective review of 100 patients with oGVHD. **Results:** Current NIH criteria for oGVHD diagnosis exclude patients with a mean Schirmer score ≥ 10 . Our data demonstrate that Schirmer scores moderately correlate with corneal fluorescein staining (CFS) ($R = -0.4$, $P < .001$) and symptoms (OSDI) (R

$= -0.4$, $P < .01$). Fifteen percent of patients with oGVHD presented with mean Schirmer scores ≥ 10 , but significantly higher CFS (2 ± 0.3) than patients with Schirmer scores 6-10 (1 ± 0.2 , $P = .03$). **Conclusion:** Schirmer scores vary significantly and may falsely exclude patients with oGVHD.

Scientific Poster 57

The Pterygium Conjunctiva Autograft's Adieu to Second Site Harvest

Presenting Author: Jasdeep S Sandhu DOMS MCHO

Co-Author(s): Arun Verma MBBS**

Purpose: To report the outcomes and safety of single-site surgery using pterygium conjunctiva autograft. **Methods:** Prospective case series of 83 consecutive surgeries for primary pterygium. The pterygium conjunctiva was dissected from the underlying fibrovascular component, which was excised at the base. The thin clear free autograft was applied on bare sclera after 90° rotation and without sutures or glue. **Results:** Mean follow-up: 14.4 ± 3.2 months, assessing complications, recurrence, and aesthetics. There was graft dislodgement in 3 eyes (3.6%), granuloma formation in 3 eyes (3.6%), graft edema in 2 eyes (2.4%), recurrence in 1 eye (1.2%). Seventy-four patients (89.1%) expressed satisfaction with cosmesis. **Conclusion:** This single-site technique can be useful in preserving extralesional conjunctiva.

Scientific Poster 58

A Comparative Analysis of 3 Methods of Graft Fixation Techniques in Conjunctival Autografting for Pterygium Surgery

Presenting Author: Santanu Mitra MBBS

Purpose: To compare the outcomes of 3 different methods of conjunctival graft fixation in pterygium surgery. **Methods:** Comparative, nonrandomized, interventional case series. 237 nasal pterygium in 3 groups: Group A ($n = 57$): graft fixation with sutures; Group B ($n = 94$): with fibrin glue; and Group C ($n = 86$): with oozing blood. Mean surgical time, postoperative subjective symptoms, and recurrence rate were compared. Minimum follow-up: 6 months. **Results:** Surgical time and postoperative symptoms were least with Group A. Recurrence was significantly higher with sutures ($P < .05$). In Group C, 1 eye had early graft loss, but otherwise had similar results as with glue. **Conclusion:** Using patient's oozing blood for graft fixation gives all benefits of synthetic glue and avoids postoperative suture-related problems.

Scientific Poster 59

Alcaftadine 0.25% vs. Olopatadine 0.2% in Prevention of Ocular Itching Due to Allergic Conjunctivitis in a Conjunctival Allergen Challenge Model

Presenting Author: Eugene B McLaurin MD FACS

Co-Author(s): Nicholas P Marsico MD, Joseph B Ciolino MD, Julia M Williams*, David Hollander MD*

Purpose: To evaluate q.d. dosed ocular antiallergics. **Methods:** A 3-arm (alcaftadine 0.25%, olopatadine 0.2%, placebo) study utilizing the Conjunctival Allergen Challenge (CAC) model. The primary efficacy measure was subject-evaluated ocular itching 16 hours following dosing at 3 minutes following challenge. **Results:** 157 enrolled subjects. At 16 hours after dosing, both actives exhibited significantly lower mean ocular itching than did placebo ($P < .001$). At 3 minutes following CAC, alcaftadine achieved significantly lower mean itching ($P = .008$) and a greater proportion of patients with mean itch scores < 1 ($P = .040$) and $= 0$ ($P = .042$) than did olopatadine. **Conclusion:** Both actives were effective at 16 hours following challenge compared to placebo. Alcaftadine demonstrated greater efficacy compared to olopatadine measured in a CAC model.

Scientific Poster 60

Femto-Assisted Corneal Tattoo

Presenting Author: Keith A Walter MD*

Purpose: Demonstration of the benefit of femto-assisted corneal tattoo for iris defects and/or aniridia. **Methods:** Retrospective review of 10 cases of femtosecond laser-assisted corneal tattoo. The femtosecond laser (FS200, Alcon) was used to make a lamellar pocket in the cornea stroma at approximately 250 microns deep, using the Intacs ring software and/or a modified LASIK flap software. Appropriate titanium dioxide pigment was inserted into the lamellar pocket after blunt dissection. A bandage contact lens was placed after the procedure. **Results:** Complete resolution of glare / photophobia symptoms was achieved

Session One is Saturday and Sunday, Nov. 16 & 17. Session Two is Monday and Tuesday, Nov. 18 & 19. Refer to page 156 for poster presentation and tour schedule.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

in all cases. Procedure time and pain were drastically reduced in all cases compared to traditional corneal tattoo. **Conclusion:** Femto-assisted corneal tattoo is a safe and efficient method for resolution of iris defects.

Scientific Poster 61

Relationship Between the Corneal Guttae and Quality of Vision in Patients With Mild Fuchs Endothelial Corneal Dystrophy

Presenting Author: Shinya Watanabe MD

Co-Author(s): Yoshinori Oie MD PhD*, Hisataka Fujimoto MD PHD, Takeshi Soma MD*, Shizuka Koh MD*, Motokazu Tsujikawa**, Naoyuki Maeda MD*, Kohji Nishida MD

Purpose: To investigate whether the severity of corneal guttae affects the quality of vision (QOV) in patients with Fuchs endothelial corneal dystrophy (FECD). **Methods:** For the 12 FECD eyes without edema, the area ratio of corneal guttae at the central cornea, corrected distance visual acuity (CDVA), letter contrast sensitivity (LCS), and straylight were measured. **Results:** Multivariate stepwise logistic regression analysis showed that the area ratio of corneal guttae significantly correlated with CDVA, LCS, and straylight ($P = .006$, $.02$, and $.006$, respectively). **Conclusion:** The corneal guttae deteriorates the QOV in eyes with FECD.

Scientific Poster 62

Femtosecond Laser-Assisted Penetrating Keratoplasty: Analysis of Outcomes and Comparison of Incision Morphology

Presenting Author: Joshua C Teichman MD

Co-Author(s): Stephanie A Low MD, Raneen Shehadeh Mashor MD, Neera Singal MD, Allan Slomovic MD*, David S Rootman MD*

Purpose: To investigate femtosecond laser-assisted penetrating keratoplasty and compare incision morphologies. **Methods:** Retrospective data analysis of patients who had femtosecond laser-assisted penetrating keratoplasty. Descriptive and inferential statistical analyses were performed. **Results:** Forty-five eyes of 43 patients were included. UCVA was 1.3 preoperatively and improved to 0.48 postoperatively ($P < .0001$). Median follow-up was 23 months. There was a statistically significant difference in postoperative UCVA between zig-zag and top-hat morphology ($P = .008$) and between zig-zag and mushroom morphology ($P = .026$), with zig-zag having better postoperative UCVA. **Conclusion:** There was statistically significantly better UCVA in those who had zig-zag incision morphology as compared with top-hat or mushroom.

Scientific Poster 63

★ Visual Acuity Outcomes of the Boston Keratoprosthesis Type 1: Multicenter Study Results

Presenting Author: Christopher J Rudnisky MD*

Co-Author(s): Michael W Belin MD*, Joseph B Ciolino MD

Purpose: To report the visual outcomes of the Boston KPro Type 1. **Methods:** Forms reporting case parameters were prospectively collected and analyzed. Snellen acuity was converted to logMAR values; eyes with LP or NLP vision were recorded as categorical variables. **Results:** 300 eyes of 300 patients were included. Mean follow-up time was 17.1 months. Visual acuity was 1.78 logMAR units (20/1205) preoperatively and improved significantly ($P < .0001$) to a mean final value of 0.89 (20/150). The mean time to 20/200 acuity was 1 month, and ~75% retained that level for 4 years. Multivariate analysis demonstrated 3 independent predictors of final visual outcome: chemical injury ($P = .0017$), aniridia ($P = .04$), and AMD ($P < .0001$). **Conclusion:** Keratoprostheses are an effective and stable option for severe surface disease.

Scientific Poster 64

Femtosecond Laser Zigzag Keratoplasty: Suture Out Results

Presenting Author: Matthew W Wade MD

Co-Author(s): Roger F Steinert MD*, Sumit Garg MD*, Marjan Farid MD*

Purpose: To report visual and astigmatism outcomes in patients who underwent zig-zag femtosecond laser-enabled keratoplasty (FLEK) with subsequent full suture removal. **Methods:** Retrospective study evaluating uncorrected and corrected visual acuity (UDVA, CDVA) and manifest (Mrx cyl) and topographical (Topo cyl) astigmatism. Eighty-three eyes with good visual potential ($\geq 20/30$) underwent full suture removal. **Results:** Full suture removal

occurred on average 1.2 years (SD 0.7) after FLEK. The pre- vs. post-suture removal values were significant only for CDVA (showing improvement): UDVA from logMar 0.74 (0.45) to 0.68 (0.45) ($P = .687$), CDVA from 0.28 (0.22) to 0.23 (0.19) ($P = .024$), Mrx cyl from 3.57 (1.83) to 3.48 (2.12) ($P = .906$), and Topo cyl from 5.33 (3.83) to 5.71 (5.41) ($P = .547$). **Conclusion:** The zig-zag FLEK incision results in good vision and astigmatism after suture removal.

Scientific Poster 65

Influence of Descemet-Stripping Automated Endothelial Keratoplasty Graft Diameter on Endothelial Cell Loss in Non-Fuchs Bullous Keratopathy

Presenting Author: Anshu Arundhati MD

Co-Author(s): Marianne O Price PhD*, Donald Tan MD FRCS FRCOphth*, Jodhbir S Mehta FRCS FRCOPHTH*, Francis W Price Jr MD*

Purpose: To correlate graft diameter and endothelial cell (EC) loss in Descemet-stripping automated endothelial keratoplasty (DSAEK) for non-Fuchs bullous keratopathy at Singapore National Eye Centre, Singapore, and Price Vision Group, United States. **Methods:** Retrospective case series of 374 eyes with EC loss data and at least 6 months follow-up. **Results:** EC loss at 6 months and 2 years was 35% and 44% for 8-mm grafts, 34% and 40% for 8.5-mm grafts, 25% and 23% for 8.75-mm grafts, and 29% and 37% for 9.0-mm grafts, respectively. Multivariate analysis showed that at 1- and 2-year follow-up, respectively, graft diameter ($P = .04$ and $.03$), site ($P < .0001$ and $.002$), and prior glaucoma surgery ($P = .05$ and $.02$) had a significant influence on EC loss (R^2 , 0.10). **Conclusion:** Although a trend toward higher cell loss was noted with smaller graft diameters, the size of the effect was limited.

Scientific Poster 66

Graft Survival After Descemet-Stripping Automated Endothelial Keratoplasty in Eyes with Previous Glaucoma Surgery

Presenting Author: Cristina Bovone MD

Co-Author(s): Elena Albe MD, Stefano DeAngelis MD, Paolo Santorum MD, Massimo Busin MD*

Purpose: To evaluate the long-term survival of donor endothelium Descemet-stripping automated endothelial keratoplasty (DSAEK) in eyes with previous glaucoma surgery. **Methods:** Endothelial cell loss and survival probability (Kaplan-Meier) were evaluated every 6 months up to 3 years after DSAEK, in 78 eyes with previous trabeculectomy ($n = 56$) or shunt ($n = 22$). **Results:** Endothelial cell loss was significantly ($P = .03$) higher at 6 and 12 months in eyes with prior shunt surgery. Graft failure occurred in 26% of post-trabeculectomy eyes and in 23% of post-shunt eyes. **Conclusion:** DSAEK graft survival in eyes with previous glaucoma surgery is reduced substantially.

Scientific Poster 67

★ Refractive Stability After Descemet Membrane Endothelial Keratoplasty

Presenting Author: Marina Rodriguez Calvo De Mora MD

Co-Author(s): Lisanne Ham PhD, Gerrit RJ Melles MD PhD*

Purpose: To determine refractive change and stability at 2 years after Descemet membrane endothelial keratoplasty (DMEK). **Methods:** From 149 DMEK eyes with complete follow-up data up to 2 years, complete subjective refractive and Pentacam data were obtained. **Results:** A mean hyperopic shift in spherical equivalent of about +0.4 D, and a mean change in refractive cylinder of ± -0.3 D were found at 3 months postoperatively. After that, no significant change was observed up to 2 years. Pentacam showed a mean decrease in true net power of ± 1 D. **Conclusion:** DMEK may give a minimal refractive change and stabilization thereof at 3 months. Refraction remained stable up to 2 years after DMEK. The hyperopic shift may result from stromal deswelling.

Scientific Poster 68

Clinical Characteristics of IOL Opacification After Posterior Endothelial Keratoplasty Procedures

Presenting Author: Valery Bersudsky MD

Co-Author(s): Shimon Rumelt MD MPA

Purpose: To report the characteristics of opacification of IOLs in eyes after posterior endothelial keratoplasty (EK) procedures. **Methods:** Clinical data of all cases with opacification of IOLs after EK procedures (Descemet-stripping automated EK, non-Descemet-stripping

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automated EK, and Descemet membrane endothelial EK) were collected. **Results:** Seven out of 70 eyes (10%) had opacification of the IOL after EK. The only associated factors were hydrophilic lenses (17% vs. 0%, $P = .037$) and multiple air injections into the anterior chamber (mean \pm SD: 2.0 ± 1.0 vs. 1.17 ± 0.52 , $P = .003$). **Conclusion:** IOL opacification is frequently associated with EK. The process of opacification may be mediated by IOL interface properties.

Scientific Poster 69

★ Periodic Endothelial Cell Loss in Descemet-Stripping Endothelial Keratoplasty in 550 Consecutive Cases Over the Last 5 Years

Presenting Author: Samar K Basak MD DNB MBBS*

Purpose: To evaluate the periodical endothelial cell loss (ECL) in Descemet-stripping endothelial keratoplasty (DSEK) in a large series. **Methods:** Prospective, noncomparative interventional case series. 550 consecutive cases of DSEK performed by single surgeon by forceps insertion technique were evaluated. Preoperative donor cell density was > 2400 cells/mm² in all cases. ECL was analyzed after 3 months and then yearly for 5 years. **Results:** After 3 months, median ECL was 17.9%. It was 37.4% (416 eyes), 40.2% (303), 44.6% (237), 48.8% (107), and 55.2% (69) after 1 year and 2, 3, 4, and 5 years, respectively. Secondary graft failure occurred in 38 eyes (6.2%) during this period. **Conclusion:** Maximum endothelial cell loss following DSEK happens at the first year, and then it is gradual over the years.

Scientific Poster 70

In Vitro Antimicrobial Efficacy of Riboflavin/UVA Irradiation Combination (365 nm) Against Bacterial, Fungal, and Protozoal Isolates

Presenting Author: Pravin Vaddavalli MD

Co-Author(s): Swapna Reddy Motukupally, Alok Sati MS, Prashant Garg MD*

Purpose: To assess the effect of ultraviolet A irradiation with riboflavin against various microorganisms in an in vitro model. **Methods:** Fifty-one isolates comprising MRSA (12), multiple drug resistant *Pseudomonas aeruginosa* (MDR-PA) (22), *Nocardia* (3), *Fusarium* (3), *Aspergillus flavus* (3), *Curvularia* (3), UID (3), and *Acanthamoeba* (3) were tested. **Results:** On exposure to UVA + riboflavin, all MRSA, 15/22 MRD-PA, and all *Nocardia* isolates showed significant inhibition of growth. None of the fungal or *Acanthamoeba* isolates tested showed any inhibition. **Conclusion:** Combined riboflavin/UVA treatment seems to significantly inhibit in vitro growth of bacterial isolates and *Nocardia* but had no effect on fungi or *Acanthamoeba*.

Scientific Poster 71

Bacterial Killing Rate After Corneal Collagen Crosslinking In Vitro

Presenting Author: David Tabibian MD

Co-Author(s): Florence Hoogewoud

Purpose: We investigated the antimicrobial efficacy of corneal crosslinking (CXL) in vitro using different treatment modalities. **Methods:** Solutions containing 0.1% riboflavin and 106 of either MRSA or *Pseudomonas aeruginosa* were irradiated using different time and power settings, but providing the same total energy (5.4 mJ). Controls without riboflavin and with riboflavin but without irradiation were performed. **Results:** All power settings reduced the number of bacteria by 2 log(10) units. No significant differences were detected between the 3 protocols. **Conclusion:** CXL is an efficient bactericidal method in vitro, and the antimicrobial efficacy was comparable using the 3 protocols tested, suggesting that treatment duration might be reduced considerably in the future.

SESSION TWO

Scientific Poster 290

In Vivo Confocal Microscopy Morphological Comparison Between Different Laser-Assisted Lamellar Keratoplasty Procedures for Keratoconus

Presenting Author: Romina Fasciani MD

Co-Author(s): Luigi Mosca MD, Leopoldo Spadea MD, Aalice Caristia, Antonio Agresta MD, Emilio Balestrazzi MD

Purpose: In vivo confocal microscopy (IVCM) evaluation in patients with keratoconus who underwent corneal lamellar ablation for transplantation (CLAT), femtosecond anterior lamellar keratoplasty (FALK), and femtosecond deep anterior lamellar keratoplasty (Femto-DALK). **Methods:** Thirty eyes underwent CLAT; 18, FALK; and 17, Femto-DALK. A morphological tissues evaluation and a pachymetry study were obtained at 2 and 12 months. **Results:** Reduction of interface thickness and light-scattering intensity was demonstrated. Dark striae were inversely proportional to stromal bed thickness and symmetry, and decreased in follow-up. **Conclusion:** Using excimer laser we obtained less scarring reaction and inflammation. Interface quality was inversely proportional to compression of residual stromal bed. IVCM is useful to investigate morphological results between techniques.

Scientific Poster 291

Refractive and Visual Outcomes in Penetrating Keratoplasty vs. Deep Anterior Lamellar Keratoplasty in Keratoconus

Presenting Author: Mohammad Javadi MD

Co-Author(s): Sepehr Feizi, Fatemeh Javadi

Purpose: To compare the visual and refractive outcomes after penetrating keratoplasty (PK) with those after deep anterior lamellar keratoplasty (DALK) in patients with keratoconus. **Methods:** In this retrospective study, conventional PK and big-bubble DALK between 1994 and 2011 were evaluated, and postoperative refractive outcomes were compared. **Results:** 448 eyes received PK, and 241 eyes underwent DALK. Mean follow-up period was 66.5 ± 47.9 months. Final BCVA was comparable between the study groups ($P = .18$). Astigmatism after PK was significantly higher than after DALK ($P = .04$). However, DALK yielded a steeper graft ($P = .01$). **Conclusion:** Graft astigmatism is lower after DALK compared to PK; however, DALK yielded steeper keratometry and significantly myopic shift compared to PK.

Scientific Poster 292

★ Penetrating Keratoplasty and/or Descemet-Stripping Endothelial Keratoplasty in Children With Congenital Hereditary Endothelial Dystrophy: Two Decades of Our Experience

Presenting Author: Muralidhar Ramappa MBBS

Co-Author(s): Sunita Chaurasia MD, Pravin Vaddavalli MD, Ashik Mohamed MBBS

Purpose: To determine the functional success of penetrating keratoplasty (PK) and Descemet-stripping endothelial keratoplasty (DSEK) in children with congenital hereditary endothelial dystrophy (CHED). **Methods:** Retrospective case series of 260 eyes of 130 children with CHED who underwent PK (246 eyes) and DSEK (14 eyes) between 1989 and 2012. **Results:** Median age at surgery was 8 years (interquartile range [IQR]: 4-14), M:F = 89:41; all cases of CHED underwent PK or DSEK. 89.91% had clear graft, with a median follow-up of 26 months (IQR: 13-36). Median BCVA improved from 2.00 (IQR: 2.00-3.00) preoperatively to 0.90 (IQR: 0.48-2.00) at last follow-up visit ($P < .0001$). Complications include graft rejection (18.22%), graft infection (18.3%), graft failure (11.91%), and graft host dehiscence (5.91%). **Conclusion:** PK/DSEK seems to offer better graft outcomes and visual prognosis in children with CHED, even in the presence of nystagmus.

Scientific Poster 293

Trends in In Vitro Antibiotic Susceptibility for *Pseudomonas* Species Corneal Infection at a Tertiary Eye Care Center in South India

Presenting Author: Muralidhar Ramappa MBBS

Co-Author(s): Muralidhar Ramappa MBBS, Prashant Garg MD*, Savitri Sharma MD, Harsha BL Rao MD*

Purpose: To report the changing trends in in-vitro susceptibility of *Pseudomonas*. **Methods:** 1618 cases of *Ps* keratitis between 1991 and 2012. Susceptibility was tested against multiple antibiotics by Kirby-Bauer disc diffusion. **Results:** Ciprofloxacin, gentamicin susceptibility declined in recent years, OR: 0.90 (95% CI, 0.88-0.93) and 0.96 (95% CI, 0.93-0.98), respectively, compared to the 1980s and late 1990s. Moxifloxacin OR, 1.55 (95% CI, 1.38-1.74), ofloxacin OR, 1.12 (95% CI, 1.05-1.19; $P < .0001$), piperacillin OR, 1.35 (95% CI, 1.03-1.78; $P < 0.030$), and tobramycin OR, 1.08 (95% CI, 1.00-1.16; $P = 0.048$), have shown increase in their susceptibility. **Conclusion:** Moxifloxacin, ofloxacin, amikacin, and tobramycin remain a first choice against *Ps*. Piperacillin and ticarcillin reserved for multiresistant *Ps* keratitis. Trends warrant continuous surveillance.

Scientific Poster 294

One-Year Results of Accelerated Corneal Crosslinking Procedure Applied to Keratoconus Patients

Presenting Author: Ahmet Demirok MD

Co-Author(s): Haci Ugur Celik, Engin Bilge Ozgurhan BSB, Alper Agca, Burcu Guleryuz BSB, Ilker Kadir Cankaya MD, Omer Faruk Yilmaz MD*

Purpose: To evaluate the 1-year results of accelerated corneal crosslinking (CXL) procedure in keratoconus patients. **Methods:** This prospective study was performed with 50 of 50 patients (30 M, 20 F, 10 to 40 years). In January 2012, patients received accelerated CXL treatment with Avedro XXL (Boston, USA) and were followed up for 12 months. Main outcome measures were BCVA, maximum K-values (Kmax), and endothelial cell count. **Results:** Preoperative and postoperative 12-month Kmax values were 57.6 ± 6.6 and 56.8 ± 6.4 , BCVAs were 0.49 ± 0.36 (logMAR) and 0.48 ± 0.40 , and endothelial cell counts were 2404.4 ± 12.3 and 2403.5 ± 18.03 , respectively. **Conclusion:** Accelerated CXL appears to be a safe procedure in keratoconus patients.

Scientific Poster 295

Outcomes of Accelerated Corneal Collagen Crosslinking With Riboflavin Compared to Conventional Collagen Crosslinking

Presenting Author: Himanshu P Matalia MBBS

Co-Author(s): Ashwini Ranganath, Sharon D'Souza MBBS, Rohit Shetty MD MBBS

Purpose: To compare safety and effectiveness of accelerated (A-CXL) with those of conventional (CXL) corneal crosslinking. **Methods:** CXL ($n = 42$) and A-CXL ($n = 40$) were studied for BCVA, simulated keratometry (SimK), corneal stromal haze (Pentacam), and endothelial cell count up to 6 months. **Results:** BCVA and SimK remained stable in both groups up to 6 months. Corneal haze increased at 1 month, with greater haze in CXL, 40.21 (95% CI, $35.1-45.3$), than in ACXL, 39.43 (95% CI, $35.8-43.0$). At 6 months, haze returned to preoperative levels in A-CXL but remained higher in CXL. No endothelial cell changes were noted in A-CXL. **Conclusion:** A-CXL appears to be a safe and effective procedure. Postoperative corneal haze is less with A-CXL than CXL.

Scientific Poster 296

Comparison of Topographic and Tomographic Metrics for the Distinction Between Eyes With Keratoconus and Normal Eyes

Presenting Author: Jens Buehren MD*

Co-Author(s): Karl Hempel, Thomas Kohnen MD*

Purpose: To compare the ability of wavefront, keratometric, and pachymetric metrics to detect keratoconus (KC). **Methods:** Twenty-nine eyes with early KC and 97 normal eyes were examined with the Pentacam. The area under the receiver operating characteristics curve (Az ROC) was computed for Zernike coefficients from the anterior and posterior corneal surface and keratometric, elevation, and pachymetric indices. **Results:** Discriminant functions from anterior and posterior Zernike coefficients yielded the maximum Az ROC (0.998) followed by C3-1 (0.963), and the ARTmax pachymetry metric (0.955). Among eleva-

tion data the discriminant function Df reached an AzROC of 0.944. The highest keratometric index was the keratoconus index K1 (0.928). **Conclusion:** The Zernike method yielded excellent results for the detection of early KC with the Pentacam.

Scientific Poster 297

A Systematic Review of Safety and Efficacy of Epithelium Removal and Transepithelial Corneal Collagen Crosslinking for Keratoconus

Presenting Author: Zaid Shalchi MBBS

Co-Author(s): Mayank A Navaty MD

Purpose: To review the safety and efficacy of epithelium removal (ER) and transepithelial (TE) corneal collagen crosslinking (CXL) for keratoconus. **Methods:** We used Medline to identify all ER and TE CXL studies performed on minimum groups of 20 eyes with at least 12 months follow-up. **Results:** Thirty-one ER (2049 eyes) and 4 TE (185 eyes) studies were included. Unlike the TE groups, all ER studies showed improvement in corrected distance visual acuity (CDVA) ($P = .01$), maximum keratometry (Kmax) ($P = .01$), and myopic spherical equivalent refraction ($P = .04$). ER studies reported haze, scar formation, and loss of CDVA in up to 12.7%, 9.5%, and 18.9%, respectively. Haze occurred in up to 4% of TE patients without any other adverse event. **Conclusion:** ER has greater efficacy than TE CXL for treating keratoconus but shows higher adverse events.

Scientific Poster 298

Epithelial Mapping in Partial Topography-Guided Ablation Combined With Corneal Crosslinking (Athens Protocol) in Keratoconus

Presenting Author: George Asimellis PhD*

Co-Author(s): A John Kanellopoulos MD*

Purpose: To assess efficacy, safety, and reproducibility of epithelial mapping (EM) with anterior segment OCT (aOCT) after Athens Protocol (AP) for keratoconus (KC). **Methods:** With 6-18 months follow-up, we studied the EM with aOCT in 165 untreated KC cases (Group A) and 165 treated with AP (Group B). We also studied corrected distance visual acuity, refraction, keratometry, and topometric indices. **Results:** Mean thickness, Group A: 55.65 ± 1.22 μm ; Group B: 40.60 ± 1.22 μm . Thickness variability, Group A: $\pm 9.80 \pm 0.41$ μm , and Group B: $\pm 5.37 \pm 0.40$ μm . All differences were statistically different ($P < .0002$). **Conclusion:** EM with aOCT reveals thinning and less variability following AP for KCN.

Scientific Poster 299

Pulsed Accelerated Crosslinking for Keratoconus: OCT Imaging and Medium-term Clinical Results

Presenting Author: Miguel M Rechichi MD

Co-Author(s): Alessandro Meduri MD**

Purpose: To evaluate morphological and clinical effects of epi-off pulsed accelerated corneal collagen crosslinking (PA-CXL) in a small group of patients affected by keratoconus. **Methods:** Twenty eyes of 20 patients underwent PA-CXL. Fellow eye was considered as control. Irradiation protocol was 30 Mw/cm² for all the eyes. Ten eyes had pulsed CXL ratio of 2:1 (2 seconds on, 1 off); 10 eyes had 1:1. Follow-up was 6 months. **Results:** There was significant stabilization of keratometry, improvement in BCVA, and high-order aberration. No complications were reported. HD-OCT images showed an even corneal stromal hyper-reflective about 280 micron depth in all eyes. In untreated eyes there was a trend toward worsening. **Conclusion:** Both protocol of PA-CXL appeared to produce corneal morphological changes and halt keratoconus progression in the short-term period.

Scientific Poster 300

The Increase in Biomechanical Stiffness in Corneal Collagen Crosslinking Is Oxygen Dependent

Presenting Author: Arthur Hammer MD

Co-Author(s): Olivier Richoz MD*, David Tabibian MD, Zisis Gatziooufas MD PHD, Farhad Hafezi MD PhD*

Purpose: Recently, corneal collagen crosslinking (CXL) devices have implemented increased UV-A fluence. Oxygen diffusion might become a limiting factor in high-fluence treatment. Here, we investigated the potential oxygen-dependency of CXL. **Methods:** We crosslinked 2 groups ($n = 16$ each) of fresh porcine corneas with a fluence of 9 mW/cm² for 10 minutes in two different environments, one containing 21% of oxygen and the other containing less than 1% of oxygen. **Results:** We observed a statistically significant difference

($P = .004$) in the increase in biomechanical stiffness measured between the normal oxygen environment and the low-oxygen-environment group. **Conclusion:** The biomechanical effect of CXL seems to be an oxygen-dependent process, raising concerns about the efficiency of high-fluence CXL and probably also about epithelium-on procedures.

Scientific Poster 301

The Influence of Preoperative Examination Data on the Outcome of Corneal Collagen Crosslinking

Presenting Author: Riccardo Vinciguerra MD

Co-Author(s): Emanuela Morengi PHD, Paolo Vinciguerra MD*

Purpose: To evaluate the influence of preoperative curvature and minimum pachymetry in the outcome of standard epi-off corneal collagen crosslinking (CXL). **Methods:** Patients evaluated were divided into 3 groups basing on the preop corneal curvature (below 45 D, between 45 and 50 D, and more than 50 D) and pachymetry (below 400 μm , between 400 and 450 μm , and more than 450 μm). **Results:** This long-term analysis included 400 of 301 patients. The comparison between curvature subgroups indicated the subgroup > 50 D as the best responder ($P < .05$). Comparative analysis based on pachymetry showed a better reaction to CXL in the subgroup < 400 μm ($P < .05$). **Conclusion:** Outcomes stratified by pachymetry and curvature indicated better functional and morphological results in the population with a preop pachymetry < 400 μm and a curvature of > 50 D.

Scientific Poster 302

Experimental Study of Iontophoretic Delivery of Riboflavin in Corneal Collagen Crosslinking

Presenting Author: Pierre R Fournie MD

Co-Author(s): Myriam Cassagne, Vincent José Soler MD*, Camille Laurent MD**, Anne Galinier MD, Stéphane D Galiacy PHD, François Maleceze MD**

Purpose: To evaluate iontophoretic delivery of riboflavin for corneal collagen crosslinking (CXL). **Methods:** 108 eyes from New Zealand rabbits were investigated using high-performance liquid chromatography and second harmonic generation imaging to compare corneal riboflavin concentration and stromal modifications after CXL using iontophoretic (I-CXL) vs. conventional (C-CXL) delivery of riboflavin. **Results:** Corneal concentrations of riboflavin were 936.2 ± 312.5 ng/ml after iontophoresis and 1708 ± 908.3 ng/ml after conventional delivery ($P < .05$). Collagen fibers were more strongly interlinked, with a higher lamellar organization, in the anterior stroma 14 days after I-CXL or C-CXL as compared to controls. **Conclusion:** I-CXL is a promising alternative method for riboflavin delivery.

Scientific Poster 303

An Unusual Pathogen in the Armamentarium of Keratitis: *Corynebacterium*

Presenting Author: Sujata Das MBBS

Co-Author(s): Aalladas Venkat Ssubba Rao DO MBBS**, Savitri Sharma MD

Purpose: To report the clinical and microbiological profile of corynebacterial keratitis. **Methods:** Retrospective analysis of medical records of 25 patients (June 2009-December 2012) with significant pure growth of *Corynebacterium* spp. from corneal scrapings. **Results:** The mean age of patients was 47 ± 22 years. Ocular trauma as a predisposing factor was found in 8 patients. Surgical intervention was required in 11 patients (44%). In vitro susceptibility (Kirby Bauer disc diffusion method) results of *Corynebacterium* spp. to vancomycin (86.9%), cefazolin (86.9%), chloramphenicol (56.5%), ofloxacin (77.3%), and gatifloxacin (60.8%) was variable. **Conclusion:** Trauma is a major risk factor in corynebacterial keratitis. *Corynebacteria* can cause severe corneal infection requiring surgical intervention.

Scientific Poster 304

Microbial Keratitis

Presenting Author: Daniel Sand MD

Co-Author(s): Rosemary She MD, Hugo Y Hsu MD*

Purpose: To evaluate the spectrum and antibiotic susceptibility panel of infectious keratitis at a major tertiary-care referral eye center in Southern California. **Methods:** Retrospective review of infectious keratitis cases from 7/1/08 to 12/31/12. **Results:** 598 cases were identified. 290 cases were cultured. 188 (65%) had a positive yield, and 44 cases (23%) were polymicrobial. 246 organisms were identified, of which 45 were unique. Coagulase-negative staphylococci was the most commonly identified Gram-positive and *Pseudomonas* was the most commonly identified Gram-negative organism. Thirty-four percent of all isolates were resistant to fluoroquinolones, and 11% were resistant to gentamicin. Thirty-

seven percent of *Staphylococcus aureus* were MRSA. **Conclusion:** Our series revealed that Gram-positive bacteria were the most common pathogen in infectious keratitis, with 66% of all pathogens being sensitive to fluoroquinolones.

Scientific Poster 305

Evaluation of Ultraviolet A/Riboflavin Antimicrobials and Combined Treatment: Effect on Various Ocular Pathogens

Presenting Author: Verinder S Nirankari MD

Co-Author(s): Jagdish Chander MD, Ashok Sharma MD

Purpose: To evaluate effectiveness of ultraviolet A/riboflavin (UVA/R), antimicrobial agents (AM), and combined treatment on various ocular pathogens. **Methods:** Four groups of organisms were tested: (1) methicillin-sensitive *Staphylococcus aureus* (SA), (2) *Streptococcus pneumoniae* (SP), (3) *Pseudomonas aeruginosa* (PA), and (4) *Candida albicans* (CA). All groups were tested 12 times with UVA/R, AM, or combination treatment. Growth inhibition zone (GIZ) was measured. **Results:** GIZ values showed consistent combination therapy to be superior to UVA/R or AB alone in testing against SA, SP, and PA ($P < .05$) in all groups. There was no effect of all treatments against CA. **Conclusion:** Combined UVA/R / antimicrobial treatment was more effective against SA/SP and PA, but all treatments were ineffective against CA.

Scientific Poster 306

Biofilm Forming Ability of Bacterial Strains Isolated From the Surface of Implanted Boston Type 1 Keratoprosthesis

Presenting Author: Maria S Cortina MD

Co-Author(s): Assraa Hassan Jassim Jaboori, Sonal Gandhi, Sapna Tibrewal, Sarmad H Jassim MBChB

Purpose: To determine the biofilm forming capability of bacterial isolates in patients with implanted Boston type 1 keratoprosthesis (KPro). **Methods:** Twenty-four eyes were included. Conjunctival and KPro surface cultures were obtained. Isolates were tested for biofilm-producing capability with microplate adherence and polymerase chain reaction for ica and atle genes. **Results:** Twenty eyes showed positive growth of coagulase negative staphylococci (CNS) sensitive to vancomycin. Nine eyes showed positive growth from the KPro surface, and of these, 7 tested positive for biofilm formation. Five out the 7 were on vancomycin prophylaxis. **Conclusion:** Most CNS isolated demonstrated ability to form biofilm, which may enhance their pathogenic potential and survival ability despite vancomycin prophylaxis in patients with implanted KPros.

Scientific Poster 307

Association Between Susceptibility Testing and Clinical Outcomes in Fungal Keratitis

Presenting Author: Catherine Q Sun*

Co-Author(s): Lalitha Prajna MD, N Venkatesh Prajna MD**, Jeena MARIA Mascarenhas MS, Tiruvengada Krishnan, Rajaraman Revathi MD, Dr Meenakshi Ravindran, Anita Raghavan MD FRCS, Kieran Sunanda OBrien, Stephen D McLeod MD, Michael E Zegans MD*, Nisha Acharya MD*, Thomas M Lietman MD**

Purpose: To assess the association between minimum inhibitory concentration (MIC) and clinical outcomes. **Methods:** The Mycotic Ulcer Treatment Trial I (MUTT I) was a 323-patient randomized, double-masked clinical trial comparing topical natamycin and voriconazole for the treatment of fungal keratitis. Main outcomes included visual acuity, infiltrate/scar size, corneal perforation, and time to re-epithelialization. **Results:** Of the 221 isolates with MIC values, *Fusarium* and *Aspergillus* species were the most common organisms. A higher MIC to natamycin was associated with larger 3-month infiltrate/scar size (0.29 mm, 95% CI, 0.15-0.43, $P < .001$) and increased likelihood of perforation (OR 2.41, 95% CI, 1.46-3.97, $P = .001$). **Conclusion:** A higher MIC to natamycin was associated with worse outcomes in filamentous fungal keratitis.

Scientific Poster 308

Superior or Inferior: Comparing Donor Graft Site in Pterygium Surgery

Presenting Author: Sabita Katoch MBBS MD

Co-Author(s): Debasish Bhattacharya MBBS

Purpose: To compare results of inferotemporal (IT) conjunctival grafts with conventional superotemporal (ST) grafts in pterygium surgery. **Methods:** Group A had 466 cases with ST grafts, and Group B had 456 cases with IT grafts done by 2 different surgeons. Follow-up

ranged from 4 to 48 months. **Results:** Recurrence rates were 3.58% in Group A and 3.07% in Group B, with comparable cosmesis and no statistical difference in mean surgical time between the groups. **Conclusion:** IT grafts have comparable outcomes to ST grafts. In patients where superior conjunctiva is scarred or has to be preserved, they are a viable alternative.

Scientific Poster 309

Meibomian Gland Dysfunction in Aqueous-Deficient Dry Eyes With Sjögren Syndrome

Presenting Author: Shizuka Koh MD*

Co-Author(s): Reiko Arita MD PhD*, Rika Shirakawa MD, Tohru Sakimoto MD PHD, Naoyuki Morishige**, Takashi Suzuki MD PHD, Kohji Nishida MD, Motoko Kawashima MD PHD

Purpose: To study meibomian gland (MG) changes in aqueous-deficient dry eyes (ADDEs) with Sjögren syndrome (SS). **Methods:** In 100 ADDEs (63 with SS; 37 with non-SS), non-contact meibography showed MG dropout of the entire upper/lower lids. Ocular symptoms (0-14), lid margin abnormality (0-3), and MG dropout (0-6) were evaluated and scored. **Results:** The SS group had significant ($P = .002$) ocular dryness compared with the non-SS group. The non-SS group (2.8 ± 1.4) had significantly ($P = .006$) higher MG dropout than the SS group (2.0 ± 1.7). Ocular symptoms and lid margin abnormality did not differ significantly. No reported tendency for severe MG dropout was seen in SS compared with non-SS. **Conclusion:** In ADDE with SS, MG dropout is less than in ADDE with non-SS.

Scientific Poster 310

Observation of Meibomian Gland in Patients With Limbal Stem Cell Deficiency Using Noncontact Meibography

Presenting Author: Yoshinori Oie MD PhD*

Co-Author(s): Shizuka Koh MD*, Hisataka Fujimoto MD PHD, Takeshi Soma MD*, Motokazu Tsujikawa**, Naoyuki Maeda MD*, Kohji Nishida MD

Purpose: To observe meibomian gland in patients with limbal stem cell deficiency using noncontact meibography. **Methods:** Thirty-six eyes of 22 patients with limbal stem-cell deficiency (LSCD group) and 31 eyes of 31 normal cases (control group) were included. Grading of meibomian gland morphologic changes (meiboscore) was assessed with non-contact meibography. The severity of ocular involvement was graded using Sotozono's grading system in LSCD group. **Results:** Meiboscore in the LSCD group (4.9 ± 1.2) was significantly higher than that in the control group (1.7 ± 1.5) ($P = .001$). Meiboscore was positively correlated with the severity of ocular involvement in the LSCD group ($r = 0.39$, $P = .019$). **Conclusion:** The severity of LSCD is associated with a decrease in the number of functional meibomian glands.

Scientific Poster 311

Incidence of Pyogenic Granuloma Formation Following EagleVision Plug1 Insertion

Presenting Author: Joshua H Hou MD

Co-Author(s): Siri Mayakshi Hiremath, Aisha S Traish MD**, Maria S Cortina MD

Purpose: To evaluate the incidence of pyogenic granuloma formation following insertion of EagleVision 1-size-fits-all Plug1 punctal plugs. **Methods:** Retrospective review. Patients who underwent punctal occlusion with Plug1 plugs from June 2012 to March 2013 were identified and evaluated for subsequent punctal granuloma formation. Associated lot numbers were identified, and scanning electron microscopy (SEM) was performed to compare plugs from different lots. **Results:** Punctal granuloma formation was noted in 7.5% of identified cases (8/107) following Plug1 insertion. Granulomas occurred more frequently with lot #77308 plugs (10.4%). SEM showed no difference between plugs from different lots. **Conclusion:** Lot #77308 plugs, and Plug1 plugs overall, may have a high incidence of granuloma formation. Surface roughness on SEM is unlikely the cause.

Scientific Poster 312

Long-term (4 Years) Effects of a Thermal Pulsation System Treatment on Meibomian Gland Function and Dry Eye Symptoms

Presenting Author: Jack Volker Greiner DO PhD*

Purpose: To determine long-term effects of LipiFlow thermal pulsation system (TPS) treatment on dry eye patients with meibomian gland dysfunction (MGD). **Methods:** Meibomian gland scores (MGS), tear breakup time (TBTU), Ocular Surface Disease Index (OSDI), and

Standard Patient Evaluation for Eye Dryness (SPEED) questionnaires were measured in 17 patients at baseline (BL), 1 month, and 1-4 years post-TPS treatment. **Results:** MGS increased from BL (4.5 ± 3.6) to 1 month (10.8 ± 4.5 ; $P < .001$) and at 3 years (17.2 ± 5.4 ; $P < .001$), persisting unchanged at 4 years. SPEED decreased from BL (13.7 ± 4.3) to 1 month (7.4 ± 5.6 ; $P < .001$) and at 3 years (10.6 ± 6.8 ; $P < .05$), remaining unchanged at 4 years. TBTU and OSDI returned to BL values at 1 and 2 years, respectively. **Conclusion:** A single TPS treatment of MGD patients improves MGS and SPEED scores for up to 4 years, surpassing all current MGD treatments.

Scientific Poster 313

Amniotic Membrane Transplantation in Severe Ocular Chemical Burns: Does It Work?

Presenting Author: Hamidreza Hasani MD

Co-Author(s): Alireza Baradaran-Rafii MD, Roghiyeh Shamsoddinmotlagh MD

Purpose: To evaluate the effect of amniotic membrane transplantation (AMT) in the management of acute grade III and IV ocular chemical burns. **Methods:** Patients randomly received conventional medical therapy (15 eyes) vs. combined medical therapy and AMT (15 eyes). **Results:** Thirty eyes of 28 patients with a mean age of 25 ± 6.8 years were enrolled. Corneal epithelial defect healed within 74.41 ± 48.07 days in the AMT group vs. 99.67 ± 36.8 days in controls ($P = .163$). Perilimbal ischemia improved in 76.41 ± 42.8 days in the AMT group vs. 89.16 ± 44.6 days in the control group ($P = .482$). Mean final visual acuity was $0.02 \log\text{MAR}$ vs. $-0.07 \log\text{MAR}$ in the AMT and control groups, respectively ($P = .6$). **Conclusion:** Compared to conventional medical therapy, combined AMT does not improve perilimbal ischemia, accelerate corneal epithelialization, decrease corneal vascularization, or improve visual acuity.

Scientific Poster 314

Outcome of Autologous Serum Tears With Concurrent Anti-inflammatory Treatment in Ocular Surface Disease

Presenting Author: Ahmad Kheirkhah MD

Co-Author(s): Andrea C Cruzat MD, Shruti Aggarwal MBBS, Candice Williams, Monique Trinidad, Reza Dana MD MSc MPH*, Pedram Hamrah MD*, Bernardo Menelau Cavalcanti MD

Purpose: To evaluate effects of anti-inflammatory treatment (AIT) on corneal nerve regeneration in cases with ocular surface disease (OSD) using autologous serum tears (AST). **Methods:** OSD patients received AST (6-8 times/day) with none to minimal (≤ 1 time/day) topical steroids (Group 1, $n = 27$), or q.i.d. dose followed by a 6-12 weeks taper (Group 2, $n = 28$). Sub-basal corneal nerve density was assessed by in vivo confocal microscopy retrospectively at baseline and final follow-up (at least 3 months), and compared to 52 age-matched controls. **Results:** Patients with OSD had lower corneal nerve density compared to controls ($P = .01$). After AST treatment, corneal nerve density increased by 41% in Group 2, but by 4% in Group 1 ($P = .02$). **Conclusion:** Concurrent AIT may be necessary for successful regeneration of corneal nerves after treatment with AST in OSD.

Scientific Poster 315

The Use of Eye-Platelet Rich Plasma in the Treatment of Ocular Surface Disorders

Presenting Author: Pilar Casas de Llera MD

Co-Author(s): Jorge L Alio MD PhD*, Alejandra Rodriguez MS, Elias Eskandari PHARMD**

Purpose: The objective of this work is to show the use of blood-derived product known as eye platelet-rich plasma (E-PRP) in ophthalmology and outline its current clinical applications. **Methods:** 1237 preparations of autologous E-PRP were used to treat patients with different ocular surface disorders in different formulations (eyedrops, clot, or fibrin membrane). **Results:** Patients were suffering from dry eye (65%), ulcers (15%), ocular surface syndrome (9%), ocular perforations (4%), and another diagnosis (6%). The results were different for each patient, but about 88.3% of the patients improved in different degrees after using E-PRP. **Conclusion:** The use of E-PRP was found to be a safe and effective therapeutic tool to enhance epithelial wound healing in ocular surface disorders.

Scientific Poster 316

Determining the Excimer Laser Ablation Rate in the Crosslinked Cornea

Presenting Author: Olivier Richoz MD*

Co-Author(s): Samuel Arba Mosquera*, Thomas Magnago**, Farhad Hafezi MD PhD*

Purpose: Currently, the ablation rate per pulse in a crosslinked cornea is unknown. **Methods:** The excimer ablation rate of porcine corneas was analyzed using optical coherence pachymetry. Conditions: (1) normal cornea, with 5 consecutive ablations of 50 μ m each, (2) normal cornea, previously soaked with riboflavin 0.1%, crosslinked (18 mW/cm²), and subjected to 5 consecutive ablations of 50 μ m each, (3) normal cornea, previously soaked with riboflavin 0.1%, crosslinked (3 mW/cm²), with 5 consecutive ablations of 50 μ m each. **Results:** The following ablation rates were obtained: No CXL, 18 mW/cm², 3 mW/cm², 1X50, 60, 53, 48, 2X50, 56, 44, 39. **Conclusion:** CXL seems to decrease the ablation rate of the cornea, and this decrease seems to be more pronounced in a low-fluence CXL.

Scientific Poster 317

Corneal Hypoesthesia but Normal Sub-basal Nerve Densities Following Trigeminal Neuralgia Surgery

Presenting Author: Virinder Kaur Dhillon MBBS MRCOPHTH MRSCED(OPHTH)

Co-Author(s): Mouhamed Ali Al-Aqaba MD, Surajit Basu FRCS(ED) MBBS MD*, Harminder S Dua MD MBBS PhD**

Purpose: We aimed to evaluate the effects of ganglionic / preganglionic intraoperative damage to the trigeminal nerve (V1) following trigeminal neuralgia surgery by studying corneal sensation (CS) and sub-basal nerve density (ND). **Methods:** Twenty-one patients; 10 with microvascular decompression surgery (Group 1) and 11 with balloon compression (Group 2), were recruited. Postoperative CS was measured using Cochet-Bonnet esthesiometry and ND using in vivo confocal microscopy. **Results:** Patients in Group 2 (but not Group 1) had significantly reduced CS on their operated sides ($P = .001$) without significant difference in ND on both sides ($P = .98$). **Conclusion:** This suggests the trigeminal ganglion has neurotrophic factors capable of sustaining distal axons. This function is preserved in preganglionic and incomplete ganglionic damage.

Scientific Poster 318

Long-term Visual Outcomes of Boston Type 1 Keratoprosthesis (KPro) Through a Time Series Analysis

Presenting Author: Luca Zatreanu MD

Co-Author(s): James Aquavella MD*

Purpose: To evaluate long-term outcomes on visual acuity (VA) after KPro. **Methods:** Retrospective chart review of KPros performed at a single institution from December 2003 to March 2007. Time series effects on VA of key factors were analyzed through event study regression analyses. **Results:** Seventy-five eyes with mean follow-up of 3.7 years. KPro was associated with 0.74 logMAR improvement from baseline VA. Postop glaucoma did not deteriorate vision (+0.19 VA), yet patients requiring postop glaucoma surgery did not do well (-0.68 VA). KPro removal was associated with decreased VA, yet KPro removal in the setting of KPro melt was associated with improved VA. **Conclusion:** KPro improves vision in the long term. Postop complications do not always worsen vision. Additional surgical procedures primarily do not improve VA.

Scientific Poster 319

Effect of Glaucoma Tube Position on Corneal Thickness and Endothelial Cell Density

Presenting Author: Euna B Koo MD

Co-Author(s): Jing Hou MD PhD, Ying Han MD PhD, Jeremy D Keenan MD MPH, Robert L Stamper MD*, Bennie H Jeng MD

Purpose: To investigate changes in corneal thickness and endothelial cell density (ECD) after glaucoma tube implantation. **Methods:** Twenty-eight eyes with superotemporal (ST) tubes were evaluated at the University of California, San Francisco, at 45 ± 40.4 months postop. ST, central, and inferonasal (IN) ECD and pachymetry were obtained. Angle of the tube from the cornea was obtained with anterior segment OCT. Linear regression analyses were used to assess the effect of tube position on the cornea. **Results:** ST ECD was lower than central ($P = .0001$) and IN ECD ($P = .003$). ST and IN cornea were thicker than central cornea ($P < .0001$). For each degree in angle away from the cornea, there were 21.6 more ST cells, though this difference was insignificant ($P = .20$). **Conclusion:** Tube shunts cause significant local endothelial cell loss. These cells may be better preserved with tubes angled further away from the cornea.

Scientific Poster 320

Management of Failed Penetrating Keratoplasty: A New OCT-Based Protocol

Presenting Author: Jatin Naresh Ashar MD

Co-Author(s): Anurag Mathur MBBS

Purpose: To evaluate OCT-based protocol for management of failed penetrating keratoplasty (PK). **Method:** Fifty-five failed PKs were subjected to anterior segment OCT. 440 graft host junctions (GHJ) were analyzed for anterior/posterior malapposition: gape, step, ledge, protrusion/hill/tag, ACD, synechiae, and stromal hyper-reflectivity (SH). **Result:** Minimal/no SH (18) due to scarring allowed Descemet-stripping endothelial keratoplasty (DSEK), cases with SH needed PK. Smooth posterior GHJ (12); larger/same sized PK (5)/DSEK (7); anterior malapposition (12); repeat PK, posterior malapposition (36); larger PK (25); smaller DSEK (11); > 180 degree synechiae (5); additional glaucoma surgery; lower ACD – glaucoma valve placement/available space for DSEK. **Conclusion:** OCT-based protocol for failed PK improves planning for repeat PK/DSEK.

Scientific Poster 321

Trends in Eye Bank Corneal Tissue Utilization: 1991-2011

Presenting Author: Patricia A Ple-Plakon MD

Co-Author(s): Yan He MD**, Roni M Shtein MD*, Maria A Woodward MD, Shahzad I Mian MD*

Purpose: To analyze characteristics of donor corneal tissue distributed by Midwest Eye Bank. **Methods:** Retrospective review of donor records between 1991 and 2011. Cause of death, death-to-preservation interval, death-to-surgery interval, endothelial assessment, and tissue utilization were analyzed. **Results:** 115,491 corneas from 60,183 donors were evaluated, of which 71,878 (62.84%) were transplanted, with a mean donor age of 55.5 years. The distribution of tissue increased 2.81 times, with 55.34% of the increase due to Descemet-stripping automated endothelial keratoplasty. Endothelial cell counts increased from 2331 mm² to 2714 mm². The most common causes of donor death were cardiovascular disease (38%), cancer (22%), and trauma (9%). **Conclusion:** Evaluation of the data provides valuable information in correlation to corneal transplantation and eye bank improvements.

Scientific Poster 322

What Happens to the Corneal Transplant Endothelium After Surgery?

Presenting Author: Luiz F Regis-Pacheco MD

Co-Author(s): Perry S Binder MD*

Purpose: To examine transplant donor/host junction to determine endothelial fate. **Methods:** Dissecting microscopic and scanning electron microscopy studies were performed on clear transplant specimens obtained 1 month to 20 years after keratoplasty. Primary keratoplasty indications: keratoconus (10), Fuchs endothelial dystrophy (8), bullous keratopathy (5), other (5); 11 cases had no clinical data. **Results:** We performed morphologic analyses in 12 of 39 eyes. Wounds were of 4 basic shapes. Cells migrated from the center of the donor across the wounds toward the host; the cells spread out, enlarged, and were ultimately lost in the host. **Conclusion:** Donor cells migrate from higher to lower density across the wounds. Wound configuration, donor and recipient endothelial health, and probable cell-to-cell contact inhibition are involved.

Scientific Poster 323

Long-term Outcome of Large Keratoplasty "à Chaud" for Interface Infection After Descemet-Stripping Automated Endothelial Keratoplasty

Presenting Author: Cataldo Russo

Co-Author(s): Silvana A Madi MD, Benedetta Filipovic, Stefano DeAngelis MD, Massimo Busin MD*

Purpose: To evaluate the outcome of penetrating keratoplasty (PK) performed for post-DSEK-stripping automated endothelial keratoplasty (DSAEK) infection. **Methods:** Visual outcome and complications were evaluated after a 9-mm PK performed "à chaud" in 6 post-DSAEK eyes with interface infection resistant to antibiotics; recipient cornea and DSAEK graft were removed en bloc and submitted for cultural and histologic examination. **Results:** Fungi were identified in 4 cases; bacteria, in 2. With an average follow-up of 29.5 ± 19.9 months, no recurrence of infection was seen; 4 of 6 grafts were clear, with vision $\leq 20/25$. **Conclusion:** Large PK "à chaud" eliminates post-DSAEK interface infection.

Scientific Poster 324

Modified Descemet-Stripping Automated Endothelial Keratoplasty to Reduce Cataract Formation in Phakic Eyes

Presenting Author: Elena Albe MD

Co-Author(s): Stefano DeAngelis MD, Paolo Santorum MD, Vincenzo Scorgia MD, Massimo Busin MD*

Purpose: To evaluate a modified Descemet-stripping automated endothelial keratoplasty (DSAEK) performed in phakic eyes, aimed at reducing the incidence of postoperative cataract. **Methods:** Lens clarity was evaluated up to 4 years in 62 post-DSAEK (graft delivery through clear cornea tunnel with Busin glide) phakic eyes assigned to Group 1 (incisions at 3 and 9 o'clock, $n=33$) or Group 2 (incisions at 2 and 10 o'clock, $n=30$). **Results:** Surgically induced cataract developed in 7 eyes of Group 1 and no eyes of Group 2 ($P<.001$). **Conclusion:** Modifying the incision site eliminates the risk of early cataract in phakic post-DSAEK eyes.

Scientific Poster 325

Outcomes of Eye Bank-Prepared Descemet Membrane Endothelial Keratoplasty Tissue

Presenting Author: Shahzad I Mian MD*

Co-Author(s): Michael S Titus, Maria A Woodward MD

Purpose: To evaluate initial outcomes of eye bank-prepared tissue for Descemet membrane endothelial keratoplasty (DMEK) at one eye bank. **Methods:** Twenty-nine donor corneas were prepared for DMEK using manual dissection. Endothelial cell density (ECD) was evaluated. Successful outcome was defined as an intact 9-mm DM, measurable ECD, or slitlamp evaluation of ECD. **Results:** Overall success rate was 82% increasing to 85.7% in the second half of the group (14 eyes). Mean ECD before and after preparation was 2537 ± 384 and 2633 ± 452 cells/mm², respectively. Donor age, death to processing, and ECD did not correlate with successful outcome ($r_{pb} = 0.11, -0.24, 0.09$, respectively). **Conclusion:** DMEK tissue can be successfully prepared at an eye bank. A learning curve is associated with improvement. Further studies are needed to evaluate predictive factors for success.

Scientific Poster 326

Sulfur Hexafluoride (SF6) in Descemet Membrane Endothelial Keratoplasty: A Safe, Effective Method to Reduce the Rebubble Rate in the Surgical Learning Curve

Presenting Author: Mark Greiner MD

Co-Author(s): Anna S Kitzmann MD, Matthew S Ward MD, Jordan J Rixen MD, Michael D Wagoner MD, Kenneth M Goins MD

Purpose: To report short-term complications after Descemet membrane endothelial keratoplasty (DMEK) with intraoperative use of SF6 20% air-gas tamponade. **Methods:** Retrospective review of 13 consecutive eyes with Fuchs dystrophy or posterior polymorphous dystrophy that underwent DMEK with the same technique using SF6 20%. Minimum follow-up was 1 month after surgery to ensure bubble dissipation. Incidence of graft edge lift, rebubble procedure, pupillary block, IOP ≥ 30 mmHg, and primary graft failure (PGF) were tracked. **Results:** Edge lifts were noted in 3 eyes (23.1%). No eyes required a rebubble procedure or had IOP ≥ 30 mmHg. No cases of pupillary block or PGF occurred. **Conclusion:** Use of SF6 20% in DMEK is a safe and effective method to reduce the rebubble rate in the surgical learning curve.

Scientific Poster 327

Overview of Ocular Complications in Patients With Electrical Burns: An Analysis of 102 Cases Across a 7-Year Period

Purpose: Herein, we retrospectively analyzed records of patients with electrical injuries to summarize the ophthalmic characteristics and visual symptoms. **Methods:** We collected the medical records of patients; then ophthalmic, systemic, and demographic factors associated with electrical burns were identified. **Results:** There were 53 eyes (29 patients) with ophthalmic complication. Corneal epithelial erosion was the most common ocular electrical injury and the primary reason for subjective visual symptoms. Electrical burns affecting head and neck were significantly related to subjective symptoms of visual disturbances. **Conclusion:** Earlier involvement of ophthalmologists in the case of any patient who has suffered a facial burn is advisable. Appropriate management is helpful to prevent complications and alleviate visual symptoms.

Canceled

Electronic Health Records

SESSION TWO

Scientific Poster 328

Adapting Electronic Medical Records Tools to Improve Retinopathy of Prematurity Tracking Systems and Coordination of Care

Presenting Author: Alejandra G de Alba-Campomanes MD*

Co-Author(s): Peter Churgin MD

Purpose: To describe how electronic medical record (EMR) tools can be utilized to create an integrated care system for ROP that increases efficiency and minimizes lapses in care. **Methods:** An institution-wide EMR system (EPIC; Madison, Wisc., USA) was implemented in 2012. We adapted existing tools and designed new applications to implement a system appropriate to the challenges of ROP management. **Results:** These include (1) automatic list generation, (2) "do not change appointment" message, (3) automatic alert generation after missed exams, (4) reports, and (5) educational material for parents in discharge documentation. **Conclusion:** Non context-specific EMRs may be capable of adapting to practice-specific challenges. EMRs may be able to improve quality and increase the efficiency and safety of ROP screening programs.

Scientific Poster 329

★ Making Clinical Guidelines Computer Actionable

Presenting Author: Ravi Pandit

Co-Author(s): Michael V Boland MD PhD

Purpose: To evaluate whether the American Academy of Ophthalmology Preferred Practice Pattern (PPP) for primary angle-closure glaucoma (PACG) can be adapted for use in an electronic health record (EHR). **Methods:** All graded recommendations in the PACG PPP were extracted and graded as to whether they could be represented in an EHR. Each recommendation was then mapped to the General Eye Exam (GEE) Clinical Document Architecture (CDA) standard. **Results:** Twenty-nine recommendations were analyzed. Of those, 28 could be mapped to the GEE CDA. A total of 77 mappings were required (mean: 2.6 modules, range: 1-6). However, 31% of recommendations were vague and would require revision to be fully computer-actionable. **Conclusion:** The PPP can be mapped to the GEE CDA, but doing so is complex, and a complete implementation would require that the CDA be written with EHRs in mind.

Ethics

SESSION TWO

Scientific Poster 330

Truth-Telling and Non-organic Vision Loss

Presenting Author: George R Wandling MD

Co-Author(s): Lara Wandling MD**, Michael S Lee MD*

Purpose: We sought to examine neuro-ophthalmologists' perspectives regarding diagnosis and the management of non-organic vision loss (NOVL) for adults and children with the goal of promoting discussion of the ethical implications for clinical practice. **Methods:** 500 neuro-ophthalmologists were surveyed with multiple choice treatment options for clinical scenarios of NOVL. **Results:** Disclosure of a NOVL diagnosis was not favored in adults and children without a perceived secondary gain. In contrast, disclosure was favored in adults with a perceived secondary gain. **Conclusion:** Ophthalmologists adapt their disclosure of a diagnosis to their patients, which imposes some limits on truth-telling. The best method for communicating the diagnosis of NOVL will need to balance ethical considerations with therapeutic benefit.

General Medical Care

SESSION ONE

Scientific Poster 73

The Impact of a Teleretinal Screening Program on Patient Care and Medical Center Resources

Presenting Author: Joel Chasan MD

Co-Author(s): William Richard Delaune PhD, April Y Maa MD, Mary Gerard Lynch MD

Purpose: To evaluate the impact of teleretinal screening on patient care and resources. **Methods:** Clinical charts were reviewed for a 2-year period after patient referral from a teleretinal screening program. **Results:** 1935 patients underwent primary care-based diabetic teleretinal screening; 24% of patients were referred for an exam. Reasons for referral were diabetic retinopathy (43.2%), nerve (30.8%), lens/media (19.1%), macular degeneration (12.9%), and diabetic macular edema (5.6%). Percent agreement was above 90%; total sensitivity was 73.6%. Diabetic macular edema resulted in the largest resource burden (visits and relative value units). **Conclusion:** Teleretinal screening is accurate and sensitive, allowing for timely, sight-saving treatment. Resource utilization ratios may help predict resource burden of implementing this technology.

Scientific Poster 74

Emergency Room Ocular Diagnostic Study III

Presenting Author: Daniel Ofori

Co-Author(s): Paul O Phelps MD, Richard M Ahuja MD

Purpose: To assess the pattern and accuracy of ocular disease diagnoses and management in the emergency department (ED) in a U.S. Level 1 Trauma Center. **Methods:** Prospective study of patients presenting to the ED with ocular complaints from 01/2013 to 04/2013. Demographic, diagnostic, and management data were gathered. Only patients referred to the eye clinic and evaluated by an ophthalmologist were included in the study. Diagnoses were divided into vision-threatening cases (VTC) and non-VTC. **Results:** 256 collected, 247 analyzed. Most common diagnosis categories were retina-vitreous, trauma, and inflammation / infection. 52% correct ED diagnosis, 43% appropriate ED treatment; 45% VTC, and 55% non-VTC. Correct diagnosis was less common in non-VTC (49%) than in VTC (53%). **Conclusion:** This suggests a need for improved ED physician exposure to current ophthalmic practice guidelines.

Glaucoma

SESSION ONE

Scientific Poster 76

International Pilot Survey of Childhood Glaucoma

Presenting Author: Elena Bitrian MD

Co-Author(s): Maria Papadopoulos MBBS, Sharon F Freedman MD*, Allen Dale Beck MD*, James D Brandt MD*, Peng T Khaw MD PhD, Alana Grajewski MD*

Purpose: To create an international database, the International Pilot Survey of Childhood Glaucoma (IPSO CG), to collect information on pediatric glaucoma. **Methods:** An Internet accessed database was designed to collect information on pediatric patients with glaucoma, preserving confidentiality. Demographics, IOP, visual acuity, medical and surgical management, and complications were included. The patients fulfill the Childhood Glaucoma Research Network (CGRN) definition of glaucoma. **Results:** This registry allows us to determine the types of childhood glaucoma managed at major centers, notice different approaches of care, create guidelines, design clinical trials, and improve the delivery of care. **Conclusion:** The IPSO CG is a tool and initiative aimed at improving quality of care in childhood glaucoma.

Scientific Poster 77

Pseudoexfoliation Syndrome at a Singapore Eye Clinic

Presenting Author: Jason K Lee MBBS

Co-Author(s): Su Ling Ho MBBCh

Purpose: To study the demographics of pseudoexfoliation syndrome (PXF) in a Singapore hospital eye outpatient clinic. **Methods:** Patients aged 40 and above who were seen by a single ophthalmologist over a period of 37 months were included in the study. **Results:** Of the 3294 patients, 89 patients (2.7%) were found to have PXF. There was a significant

association between PXF and race ($P < .001$), where there was a higher prevalence of PXF in Indians and lower prevalence of PXF in Chinese. No significant gender predisposition for PXF was noted. More males had pseudoexfoliative glaucoma (PXFG) compared to females ($P = .001$). There was no association between race and PXFG. **Conclusion:** PXF is not an infrequent encounter among elderly Singapore eye clinic patients, being more common in Indians and less common among Chinese.

Scientific Poster 78

Distribution of IOP, Central Corneal Thickness, and Vertical Cup-to-Disc Ratio in a Healthy Iranian Population: The Yazd Eye Study

Presenting Author: Mohammad Pakravan MD

Co-Author(s): Mohammad Javadi MD, Shahin Yazdani MD, Elham Ghahari**

Purpose: To determine the distribution of IOP, central corneal thickness (CCT), and vertical cup-to-disc ratio (VCDR) in a healthy Iranian population. **Methods:** In this cross-sectional epidemiologic study, eligible adults aged 40 to 80 years were selected using cluster random sampling. **Results:** 2262 eyes from 1159 subjects were evaluated. Mean values for IOP, CCT, and VCDR were 14.2 ± 2.5 mmHg, 543 ± 35 μ m and 0.32 ± 0.14 , respectively. Multiple regression analysis showed a significant correlation between IOP and age, CCT, diabetes mellitus, spherical equivalent refractive error, and smoking. **Conclusion:** The distribution of IOP, CCT, and VCDR in this Iranian population was different from most other studies.

Scientific Poster 79

Prevalence and Associated Factors of Glaucoma in Rural Central India: The Central India Eye and Medical Study

Presenting Author: Jost B Jonas MD*

Co-Author(s): Arshia Matin MD**, Krishna Bhojwani MD**, Maithili Ved Kulkarni DOMS, Anshu Khare DOMS MD**, Shubhra Agarwal MBBS*, Prabhat Nangia MBBS*, Karishma BHate MBBS*, Purna Nangia MBBS*, Songhomitra Panda-Jonas MD, Ajit Sinha MD**, Vinay Nangia FRCOPHTH FRCS MBBS*

Purpose: To assess glaucoma prevalence in rural Central India. **Methods:** The population-based Central India Eye and Medical Study included 4711 subjects (aged 30+ years). **Results:** Glaucoma was detected in 122 subjects (2.67%). In multivariate analysis, glaucoma was ($P < .05$) associated with older age, lower body mass index, lower blood hemoglobin concentration, higher IOP, disc hemorrhages, myopic retinopathy, lower education level, longer axial length, smaller retinal nerve fiber layer cross section area, higher vertical cup/disc ratios, and narrower anterior chamber angle. Ratio of open-angle glaucoma to angle-closure glaucoma was 7.7:1. **Conclusion:** Glaucoma prevalence in remote rural Central India is comparable to that in other regions. The described risk factors may be of clinical interest.

Scientific Poster 80

Pseudoexfoliation: Normative Data and Associations — The Central India Eye and Medical Study

Presenting Author: Jost B Jonas MD*

Co-Author(s): Arshia Matin MD**, Krishna Bhojwani MD**, Anshu Khare DOMS MD**, Shubhra Agarwal MBBS*, Karishma BHate MBBS*, Ajit Sinha MD**, Vinay Nangia FRCOPHTH FRCS MBBS*

Purpose: To assess the prevalence of pseudoexfoliation (PEX) in rural Central India. **Methods:** The population-based study included 4711 individuals. **Results:** PEX was detected in 69 subjects ($1.49 \pm 0.18\%$). In multivariate analysis, PEX was ($P < .05$) associated with older age, lower body mass index, and higher diastolic blood pressure. PEX was not associated with retinal nerve fiber layer cross section area ($P = .76$), presence of open-angle glaucoma ($P = .15$), or any other major disorder. **Conclusion:** In rural Central India, PEX prevalence ($1.49 \pm 0.18\%$) was associated with age, body mass index, and blood pressure but not with refractive error, any ocular biometric parameter, nuclear cataract, early AMD and retinal vein occlusion, diabetes mellitus, smoking, or dyslipidemia.

Session One is Saturday and Sunday, Nov. 16 & 17. Session Two is Monday and Tuesday, Nov. 18 & 19. Refer to page 156 for poster presentation and tour schedule.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

Scientific Poster 81

Evaluation of the Age-Related Speed of Anterior Chamber Reduction by 3-D Scheimpflug Camera in Japanese Normal Subjects

Presenting Author: Yoko Ikeda MD

Co-Author(s): Kazuhiko Mori MD*, Mario Ueno MD*, Haruna Yoshikawa MD, Yuko Maruyama MD, Shigeru Kinoshita MD*

Purpose: To evaluate age-related speed of anterior chamber reduction in normal Japanese subjects. **Methods:** We enrolled 1323 normal volunteers with bilateral phakic eyes (853 females/470 males, mean age: 55.0 ± 14.2 years; range: 20-79 years), and in whom both eyes could be examined by 3-D Scheimpflug camera. Each sex was divided into 12 groups (5-year age range each), and the respective mean scores of anterior chamber depth (ACD), anterior chamber volume (ACV), and anterior chamber angle (ACA) were plotted, and reduction slopes were calculated. **Results:** The reduction slope of ACD, ACV, ACA was -0.1 cm/year, -7.7 mm³/year, -1.1 °/year (males), and -0.1 cm/year, -9.6 mm³/year, -1.3 °/year (females), respectively. **Conclusion:** Age-related speed of anterior chamber reduction was faster in females than in males.

Scientific Poster 82

A Hierarchical Cluster Analysis of Progression Pattern in Open-Angle Glaucoma Patient With Medical Treatment

Presenting Author: Hyoungwon Bae MD

Co-Author(s): Seungsoo Rho MD, Hyesun Lee, Naeun Lee**, Samin Hong MD PhD, Gong Je Seong MD**, Yoo Kyung Song**, Kyung Rim Sung MD PhD, Chan Y Kim MD

Purpose: To classify open-angle glaucoma (OAG) by the pattern of progression and find the characteristics of progression by comparing between clusters. **Methods:** Ninety-five OAG patients who have undergone visual field (VF) tests for ≥ 5 years were retrospectively analyzed. We classified medically treated OAG into subgroups by using a hierarchical cluster analysis and compared other parameters between clusters. **Results:** Two clusters were made. Between the 2 clusters, there was no difference in age, gender, IOP, CCT, or axial length. However, Cluster 2 included more high-tension glaucoma (HTG) ($P = .035$) and had a greater number of antiglaucoma eyedrops ($P = .001$) than Cluster 1. **Conclusion:** OAG was divided into fast and slow progression groups. In the fast group, the portion of HTG was bigger and the number of antiglaucoma medications was greater than in the slow group.

Scientific Poster 83

Importance of Family Screening in Primary Angle-Closure Glaucoma

Presenting Author: Srinivasan Kavitha MD

Co-Author(s): Rengaraj Venkatesh MBBS, Pradeep Y Ramulu MD PhD*, Krishnamurthy Palaniswamy

Purpose: To assess and compare risk of angle closure among siblings of individuals with open angles (OA), primary angle closure suspects (PACS), and either primary angle closure or primary angle-closure glaucoma (PAC/PACG). **Methods:** We evaluated 304 sibling pairs, including 81 with OA, 146 with PACS, and 77 with PAC/PACG. Complete ophthalmic evaluation, including refraction, biometry, applanation tonometry, gonioscopy, and anterior segment OCT, was done. Gonioscopy was done by masked grader and classified into different categories. **Results:** Angle closure (AC) was prevalent in 3.7% of OA siblings, 35.6% of PACS siblings, and 36.4% of PAC/PACG siblings. **Conclusion:** Siblings of angle closure have a greater than 1 in 3 risk of angle closure in at least one eye. The frequency of PAC/PACG was higher among PAC/PACG siblings.

Scientific Poster 84

Longitudinal Evaluation of Frequency Doubling Technology Perimetry for Prediction of Progression in Glaucoma

Presenting Author: Daniel Meira Freitas MD PhD*

Co-Author(s): Andrew Tatham, Renato Lisboa MD, Robert N Weinreb MD*, Tung-Mei Kuang MD, Linda Zangwill PhD*, Christopher A Girkin MD*, Jeffrey M Liebmann MD*, Felipe A Medeiros MD*

Purpose: To evaluate the ability of longitudinal frequency doubling technology (FDT) to predict standard automated perimetry (SAP) loss in glaucoma suspects. **Methods:** 587 eyes of 367 glaucoma suspects were included. Joint longitudinal survival models were used to evaluate the ability of rates of FDT pattern standard deviation (PSD) change to predict repeatable SAP loss. **Results:** Sixty-three eyes developed SAP loss (progressors). Mean rate

of FDT PSD change in progressors was 0.07 dB/year, vs. 0.02 dB/year in nonprogressors. Baseline and slopes of FDT PSD change were predictive of progression, with hazard ratios of 1.11 per 0.1 dB higher and 4.40 per 0.1 dB/year faster, respectively. Longitudinal model performed significantly better than baseline model. **Conclusion:** Rates of FDT change were highly predictive of SAP loss in glaucoma suspects.

Scientific Poster 85

Association Between Visual Field Defects and Quality of Life in a Population-Based Survey of the United States

Presenting Author: Mary Qiu

Co-Author(s): Sophia Ying Wang MD, Kuldev Singh MD MPH*, Shan C Lin MD*

Purpose: To examine the association between visual field defects (VFD) and quality of life. **Methods:** Cross-sectional study of 5186 subjects from the 2005-2008 National Health and Nutrition Examination Survey, age ≥ 40 years, who underwent frequency doubling technology perimetry and self-reported visual and physical functional difficulty. **Results:** The multivariate analysis adjusting for confounders revealed an association between severe VFD and disability with reading newsprint (OR 3.53), close work (3.44), descending stairs (6.56), seeing to the side (7.71), finding things on crowded shelves (5.54), daytime driving (12.40), activities of daily living (ADLs) (2.45), instrumental ADLs (2.50), and social activities (3.29), all P -values $< .05$. **Conclusion:** VFD severity is associated with subjectively impaired visual and physical function.

Scientific Poster 86

Laser Scanning Tomography in a Population-Based Cohort Study: Principal Components and Associations

Presenting Author: Anthony P Khawaja MBBS

Co-Author(s): Michelle Chan, David C Broadway MD*, Shabina Hayat MS, Jennifer Lai Yee Yip MBBS MRCPH PhD, Robert N Luben, David F Garway-Heath MD FRCOphth*, Kay-Tee Khaw*, Paul J Foster FRCS*

Purpose: To identify principal components (PCs) of and associations with Heidelberg Retina Tomograph (HRT) measures in a large population-based cohort. **Methods:** HRT2 measurements were taken from 6430 subjects aged 48-90 years. Statistical analysis comprised PC analysis and multivariable linear regression. **Results:** Three PCs were identified and named Cup, Contour, and Rim, based on their correlated measures. Female sex, higher education level, and shorter axial length were associated with greater Contour (all $P < .001$), while lower body mass index and higher IOP were associated with greater Cup (both $P < .001$) and smaller Rim (both $P < .001$). **Conclusion:** HRT measures were largely explained by 3 PCs. Cup and Rim had different associations than Contour, suggesting distinct determinants.

Scientific Poster 87

In Vivo Imaging of Lamina Cribrosa Sheet by Novel High-resolution, Broad-wavelength Laser OCT

Presenting Author: Takuhei Shoji MD

Co-Author(s): Shin Yoneya MD PhD, Motoyoshi Baba MS PhD, Hiroto Kuroda PhD

Purpose: To visualize and assess the structure of the lamina cribrosa (LC) using novel high-sensitive, high-resolution OCT. **Methods:** This prototype OCT system was used on a 200-nm bandwidth laser light source. A total of 300 optic nerve head B-scans were obtained by 10- μ m steps, and 3-D images were rendered from these image sequences. **Results:** Forty eyes of 21 patients were enrolled. Visual field mean deviation was -10.0 ± 9.5 dB. The 3-D images could provide multislice enface images of LC. The laminar pore size and location were changed, and the laminar pore shape was deformed within the LC layer. Each laminar sheet structure was identified in 36 eyes (90%). **Conclusion:** These 3-D constructed images were able to visualize each laminar sheet and detailed laminar pores within the LC.

Scientific Poster 88

Artifacts in Retinal Nerve Fiber Layer Thickness Measurement Using Spectral Domain OCT

Presenting Author: Ruojin Ren MD

Co-Author(s): Sung Chul Park MD, Tsung-Yu Ho MD, Yiyi Liu, Jeffrey M Liebmann MD*, Robert Ritch MD FACS*

Purpose: To determine the types of spectral domain OCT (SD-OCT) retinal nerve fiber layer (RNFL) thickness measurement artifacts. **Methods:** RNFL scan data (raw RNFL images, RNFL segmentation images, and RNFL thickness profiles) were reviewed for artifacts in 436 eyes (218 glaucoma patients). **Results:** RNFL thickness was falsely overestimated in eyes

with retinoschisis / subretinal fluid (7 eyes), vitreous traction (16 eyes), epiretinal membrane (14 eyes), or thick posterior hyaloid membrane (1 eye) and underestimated when the scan circle intersected beta-zone parapapillary atrophy (15 eyes). Scan circle misplacement (13 eyes), cut-off scans (7 eyes), upside-down scans (2 eyes), and poor-quality scans (43 eyes) also caused erroneous RNFL thickness results. **Conclusion:** Raw RNFL data should routinely be analyzed to detect and correct for artifacts.

Scientific Poster 89

Regression Analysis of OCT Disc Variables for Glaucoma Diagnosis

Presenting Author: Grace Marie Richter MD MPH

Co-Author(s): Brian A Francis MD*, Vikas Chopra MD*, David S Greenfield MD*, Rohit Varma MD MPH*, Joel S Schuman MD*, David Huang MD PhD*

Purpose: To improve glaucoma diagnosis with Fourier-domain OCT (FD-OCT). **Methods:** Normal and perimetric glaucoma (PG) subjects from the Advanced Imaging for Glaucoma Study were randomly selected and age-, sex-, and ethnicity-matched. RTVue FD-OCT was used. Multiple logistic regression (MLR) determined the combination of axial length (AL) and optic disc size, rim, and cup variables that optimized diagnostic accuracy. **Results:** 180 normal and 180 PG eyes were analyzed. The best single disc variable was vertical cup/disc ratio (V-CDR) with an area under the curve (AUC) of 0.874. The MLR index combining V-CDR and AL had an AUC of 0.881 ($P = .05$). **Conclusion:** V-CDR was the best diagnostic variable for glaucoma, and AL adjustment further improved diagnostic accuracy.

Scientific Poster 90

Long-term Effectiveness and Complications of Laser Peripheral Iridotomy in Acute Primary Angle Closure

Presenting Author: Sonya B Shah MD

Co-Author(s): Alicia Menezes MD, Victor Cvintal MD, Bruno M De Faria MD, L Jay Katz MD*

Purpose: To evaluate long-term outcomes of laser peripheral iridotomy (LPI) after primary angle closure (APAC) attack. **Methods:** Retrospective chart review. Sixty-seven patients presented with APAC; those with less than 6 months' follow-up were excluded. **Results:** Twenty-two patients and 24 eyes were included: 15 female and 7 male, 10 (46%) were white. All were phakic. Mean follow-up was 44 months. Initial mean visual acuity (VA) was 1.3 (logMAR), mean IOP was 46.6 mmHg. VA at last follow-up was 0.72 ($P < .001$), and IOP was 14.9 ($P < .001$). Mean deviation was -11.05 dB. Ten eyes (41.7%) needed glaucoma medication, 7 (29.1%) required cataract surgery, and 5 required trabeculectomy (20.8%). None developed retinal tear or glare. **Conclusion:** Although LPI is a safe treatment for APAC, many eyes require further surgery and have long-term sequelae.

Scientific Poster 91

Ultralow Fluence Laser Iridotomy With Pattern Scan Laser: An Efficacy and Safety Study

Presenting Author: Orlando Chan FRCS(ED) MBBS

Co-Author(s): Jeffrey C Chan MBChB, NgaKwan Bonnie Choy MBBS MRSCED(OPHTH), Kenneth K W Li MBChB

Purpose: To assess the efficacy and safety of ultralow fluence laser peripheral iridotomy (LPI). **Methods:** Twenty-two cases of primary angle closure suspects were recruited. All had ultralow fluence LPI using pattern scan laser followed by Nd:YAG laser. All cases were followed up for 6 months. **Results:** No cases had IOP spike at 1-hour following laser (post mean 12.6 ± 2.9 mmHg vs. baseline mean 15.6 ± 2.3 mmHg). Only 2 eyes had IOP increase of 0.5 mmHg on Day 1. There were no complications during or after the procedure. There was no significant corneal endothelial cell loss at 6 months (baseline: 2359 ± 298 vs. 6 months: 2269 ± 455 , $P = .47$). **Conclusion:** Ultralow fluence LPI has a very promising safety profile when compared with traditional sequential laser.

Scientific Poster 92

Association Between Single Nucleotide Polymorphisms of Metalloproteinase Genes and Latanoprost Response in Glaucoma

Presenting Author: Fernando Ussa-Herrera MD*

Co-Author(s): Lourdes Juan PhD, Maria Brion PhD, Angel Carracedo, Ana Sanchez-Jara MD, Itziar Fernandez, Soledad Jimenez-Carmona MD, Ramon Juberias MD, Jose Maria Martinez de La Casa MD*, Francisco Blazquez-Arauzo MD MS, J Carlos Pastor MD PhD

Purpose: To determine if single nucleotide polymorphisms (SNPs) of genes coding for prostaglandin F2a receptor gene (PTGFR) are related to latanoprost response in a Spanish population. **Methods:** Genotyping (Sequenom technology) was performed in 117 primary open-angle glaucoma patients with a minimum treatment duration of 4 weeks. Statistical multiple comparison tests were performed for the SNPs studied. **Results:** PTGFR SNPs were associated with positive (rs6686438, rs10786455) or negative (rs3753380, rs6672484, rs11578155) response to latanoprost. **Conclusion:** SNPs of the PTGFR and MMP-1 genes may determine latanoprost response in a white European Spanish population.

Scientific Poster 93

Effects of Benzalkonium Chloride-Preserved and SofZia-Preserved Topical Prostaglandin Analogues on the Human Ocular Surface

Presenting Author: Yoshiaki Kiuchi MD*

Co-Author(s): Masaki Tanito*, Naoki Komatsu MD PhD, Tomoko Naito, Shiro Mizoue*, Tetsuya Baba MD

Purpose: To evaluate toxicity profiles of tafluprost with 0.001% benzalkonium chloride (BAK) and travoprost preserved with sofZia on the anterior segment of glaucomatous eyes. **Methods:** A crossover randomized multicenter prospective study was conducted in 170 subjects, and evaluation was made on the IOP-lowering power, tear breakup time (TBUT), and grade levels of superficial punctate keratopathy (SPK) and conjunctival hyperemia. **Results:** Both of the ophthalmic solutions showed similar IOP-lowering effects, TBUT, and conjunctival hyperemia grade levels. BAK-preserved tafluprost demonstrated the SPK grade lower than sofZia-preserved travoprost. **Conclusion:** A BAK-preserved prostaglandin analogue is not always harmful to the human ocular surface.

Scientific Poster 94

★ Evaluation of a 60-Day Travoprost Punctum Plug for IOP Reduction

Presenting Author: Robert J Noecker MD*

Co-Author(s): Pierre Wassermann FRCOPHTH MBChB, Malcolm James Carey

Purpose: To evaluate a novel sustained-release travoprost punctum plug (TP) for IOP reduction over 60 days in ocular hypertensive or glaucoma patients. **Methods:** Twenty patients (36 eyes) at 2 sites in South Africa were treated with TP (1 per eye) in either the superior or inferior puncta and prospectively followed over 60 days. **Results:** The mean IOP reduction at 60 days from a baseline average at 8 AM of 28.7 mmHg was 23.5% or 6.7 mmHg. Overall, the TP was easy to insert and well tolerated by patients. **Conclusion:** The TP provided therapeutic benefit for the targeted duration of 60 days. The TP shows promise as an alternative to topical drops, with the potential of overcoming noncompliance.

Scientific Poster 95

Ocular Hypotensive Effect of ONO-9054, a Novel FP/EP3 Dual Receptor Agonist: Fourteen-Day Study in Subjects With Ocular Hypertension or Open-Angle Glaucoma

Presenting Author: Janet B Serle MD*

Co-Author(s): Cheryl I Rowe-Rendleman PhD*, Takafumi Ouchi**, Andrew Wood PhD*

Purpose: To evaluate IOP lowering after multiple doses of ONO-9054 in subjects with elevated IOP. **Methods:** A single-center, randomized, double-masked, dose escalation study of 3, 10, 20, or 30 $\mu\text{g/mL}$ ONO-9054 in 48 subjects. Subjects received 1 drop of either placebo or 3, 10, 20, or 30 $\mu\text{g/mL}$ ONO-9054 on Day 1 and Days 5-18 O.U. with follow-up on Day 25. Goldmann tonometry was performed at 0800, 1000, 1200, and 1600 h. **Results:** On Day 1, at 9 hours post dose, IOP reduction ranged from 5% to 25% for the 3-30 $\mu\text{g/mL}$ dose cohorts and was proportionate with dose. On Day 18 the percentage change from baseline

ranged from 15% to 30% for the 3-30 µg/mL cohorts. After withdrawal of the drug on Day 19, IOP remained below baseline for 33 hours for all but the 3-µg/mL dose cohort. **Conclusion:** ONO-9054 reduces IOP after single and multiple dosing.

Scientific Poster 96

A New Implant for Schlemm Canal Surgery

Presenting Author: Matthias Christian Grieshaber MD*

Co-Author(s): Robert Stegmann MD**, Hans R Grieshaber*

Purpose: To assess the safety and efficacy of a new implant for Schlemm canal surgery in white patients with primary open-angle glaucoma (POAG). **Methods:** Schlemm canal surgery with the implantation of the Stegmann Canal Expander (Ophthalmos GmbH) in 22 patients. **Results:** IOP dropped from 27.1 ± 5.3 mmHg preoperatively to 12.5 ± 1.5 mmHg at 1 month, and 13.1 ± 1.6 mmHg at 9 months ($P < .001$). Success rate of an IOP ≤ 21 mmHg was 95.5% (95% CI, 0.44-0.87), and ≤ 16 mmHg 90.9% (95% CI, 0.06-0.80) at 6 months. Complications were microhyphema ($n = 2$), peripheral Descemet membrane detachment ($n = 2$), and transient elevated IOP ($n = 1$). **Conclusion:** Implantation of the Stegmann Canal Expander was safe and effective in lowering IOP.

Scientific Poster 97

Outcome of Viscodilation and Tensioning of the Schlemm Canal for Uveitic Glaucoma

Presenting Author: Evan Kalin-Hajdu MD

Co-Author(s): Karim Hammamji MD, Sebastien Gagne MD**, Paul J Harasymowycz MD*

Purpose: To evaluate the safety and efficacy of canaloplasty in the treatment of uveitic glaucoma (UG). **Methods:** Canaloplasty was performed on 19 UG eyes without prior glaucoma surgery. **Results:** Mean follow-up time from canaloplasty was 2.6 ± 1.1 years. Mean IOP decreased from 30.4 ± 8.4 mmHg preoperatively to 13.8 ± 5.0 mmHg at last follow-up ($P < .001$). The mean number of ocular hypotensive medications decreased from 3.7 ± 0.8 preoperatively to 0.4 ± 1.0 at last follow-up ($P < .001$). At last follow-up, the complete success, qualified success, failure, and complete failure rates were 73.7%, 10.5%, 5.3%, and 10.5%, respectively. No canaloplasty-related permanent sight-reducing complications occurred. **Conclusion:** This study supports canaloplasty as a durable, safe, and effective primary surgical intervention in UG.

Scientific Poster 98

Long-term Outcomes of Trabeculectomy for Normal-Tension Glaucoma: The Moorfields Experience

Presenting Author: Hari Jayaram MBMBCh

Co-Author(s): Deborah Soraya Kamal**

Purpose: To evaluate long-term outcomes of trabeculectomy for normal-tension glaucoma (NTG) with contemporary surgical technique. **Methods:** Prospective and retrospective case note review of all 131 NTG cases undergoing trabeculectomy between 2007 and 2012 at Moorfields. **Results:** At 1, 2, 3, and 4 years the mean rate of IOP reduction was 42%, 38%, 36%, and 40%. No glaucoma progression was seen using progressor visual field and HRT analyses in 90% of patients up to 4 years. No significant reduction in acuity was observed, with an 8.8% cumulative risk of requiring cataract surgery. Complications such as early (2%) and late (0.8%) hypotony were significantly lower than suggested in the literature. **Conclusion:** Trabeculectomy based upon the Moorfields Safer Surgery System is associated with safer and more successful long-term outcomes in NTG patients than the current available evidence suggests.

Scientific Poster 99

Surgical Outcome of Infantile Glaucoma Presented With Acute Corneal Hydrops

Presenting Author: Anil K Mandal MD

Purpose: To determine the long-term outcomes of surgery in infantile glaucoma presenting with acute hydrops. **Methods:** Retrospective analysis of 19 children (24 eyes) who underwent combined trabeculectomy-trabeculectomy (CTT) between 1990 and 2010. **Results:** The mean IOP was reduced from 27.05 ± 5.27 to 11.17 ± 3.43 mmHg ($P < .0001$). Postoperatively, 1 patient needed antiglaucoma medication and 1 underwent repeat trabeculectomy. All other patients (17/19) were controlled without medications. The mean follow-up was 40.03 ± 51.39 months. Postoperatively, all eyes had clear cornea with Haab striae. There were no sight-threatening complications. **Conclusion:** Primary CTT is safe and effective for infantile glaucoma presenting with acute hydrops.

Scientific Poster 100

Outcome of Primary Trabeculectomy With Adjunctive Bevacizumab vs. 5-Fluorouracil

Presenting Author: Tomasz Zarnowski MD

Co-Author(s): Ewa Kosior-Jarecka

Purpose: To compare the effect of bevacizumab and 5-fluorouracil (5-FU) on the efficacy and safety of trabeculectomy. **Methods:** In Group 1 trabeculectomy with adjunctive 5-FU was performed. In Group 2 trabeculectomy enhanced by subconjunctival bevacizumab application was done. **Results:** Mean IOP before 5-FU-augmented trabeculectomy was 28.0 ± 8.0 mmHg, and before bevacizumab-augmented trabeculectomy mean IOP was 27.8 ± 9.5 mmHg ($P = .96$). After 36 months, mean IOP in the 5-FU group valued 13.8 ± 3.4 mmHg and in the bevacizumab group, 15.3 ± 3.0 mmHg ($P = .2$). No differences were noted with respect to corneal endothelial density, visual field indices, or postoperative complications. **Conclusion:** Results at 36 months comparing the outcome of bevacizumab and 5-FU-augmented trabeculectomy did not show any significant difference.

Scientific Poster 101

A Multicenter Retrospective Study on Gamma-Irradiated Sterile Cornea for Glaucoma Drainage Device Surgery

Presenting Author: Qing Pan MD

Co-Author(s): Rubamalar Gunatheesan MBA MBBS, Frank Cotter MD, Gail F Schwartz MD*, David L Cote DO, Henry D Jampel MD MHS*, Yassine J Daoud MD*, Pradeep Y Ramulu MD PhD*, Walter J Stark MD*, Walter J Stark MD*

Purpose: To evaluate the safety and efficacy of a new gamma-irradiated sterile cornea (GISC) as a graft in glaucoma drainage device (GDD) surgery. **Methods:** A multicenter retrospective study of 319 eyes (295 patients) between April 2009 and October 2012 was conducted. The primary outcome was graft-related tube erosion / exposure (GRTE). **Results:** The mean follow-up was 15.8 ± 10.0 (SD) months. Eight out of 319 eyes (2.5%) experienced GRTE, with a median time of 13.3 ± 7.2 (SD) months after surgery. All eyes tolerated the GISC graft well, with no clinical evidence of graft-related infection and inflammation. **Conclusion:** GISC appears to be an effective and safe alternative in GDD surgery. It offers ease of availability and sterility advantages, as well as improved cosmesis because of its clarity.

Scientific Poster 102

★ Second Aqueous Tube Shunt vs. Endoscopic Cyclophotocoagulation after Failed Aqueous Tube Shunt in Glaucoma

Presenting Author: Brian A Francis MD*

Co-Author(s): Vikas Chopra MD*, Rohit Varma MD MPH*

Purpose: To compare the efficacy of a second tube shunt to that of endoscopic cyclophotocoagulation (ECP) after failed tube shunt. **Methods:** Glaucoma patients who underwent second tube shunt (Group 1) or ECP (Group 2) due to failure of IOP control were retrospectively analyzed. The primary outcome was reduction of IOP at 1 year. A subanalysis of matched pairs (IOP and age) was also performed. **Results:** Mean IOP in Group 1 ($n = 49$) was reduced from 23.7 ± 8.2 mmHg to 14.8 ± 4.0 at 1 year. Group 2 ($n = 25$) IOP was reduced from 24.0 ± 6.2 to 15.4 ± 3.8 at 1 year. **Conclusion:** After failed tube shunt, both second tube shunt and ECP significantly lowered IOP by a comparable amount.

Scientific Poster 103

★ Phacoemulsification vs. Peripheral Iridotomy in the Management of Chronic Primary Angle Closure: Long-term Follow-up

Presenting Author: Arnaldo D Santos MD

Co-Author(s): Joana Patrícia Ferreira, Luís Pinto, Joao Paulo Cunha MHSA MD, Isabel Moraes Domingues II**, Jose Pedro R Pires Da Silva MD, Maria P Reina MD

Purpose: To compare the long-term efficacy of phacoemulsification to that of laser peripheral iridotomy (LPI) in the management of chronic primary angle closure (CPAC). **Methods:** Thirty eyes of 30 subjects with CPAC were randomized to receive either LPI or phacoemulsification. Examinations before and after the procedure included gonioscopy, Goldmann applanation tonometry, and anterior chamber evaluation using the Pentacam Scheimpflug camera. **Results:** The mean follow-up time was 31.1 ± 5.0 months. The IOP was significantly lower in the phacoemulsification group, along with higher anterior chamber depth,

angle, and volume ($P < .01$). **Conclusion:** Phacoemulsification appears to be more effective in lowering IOP and preventing its long-term increase by improving anterior chamber morphology in CPAC.

Scientific Poster 104

Comparative Study of Phacotrabeculectomy vs. Small-Incision Cataract Surgery With Trabeculectomy

Presenting Author: Kalyani Vijaya Kumari Sodimala MBBS

Co-Author(s): Vidya J Chelarker MBBS, Manthan Zaverilal Dedhia DOMS MBBS

Purpose: To compare the results of phacotrabeculectomy (phacotrab) and small-incision cataract surgery with trabeculectomy (SICS+trab). **Methods:** Cross-sectional retrospective study of 100 patients with primary open-angle glaucoma, primary angle-closure glaucoma, and pseudoexfoliation with cataract. Surgical decision was taken on affordability. Post-operative vision (Snellen), IOP (applanation tonometer), and disc progression (90 D) were recorded at 1, 7, 30, 90, 180, and 365 days. **Results:** Early follow-up visual recovery was faster in phacotrab than in SICS+trab ($P < 0.038$). In the later follow-ups, visual recovery was good in all patients ($P < 0.105$). Mean IOP in phacotrab (11) and SICS+trab (13) was statistically not significant ($P < 0.087$). No significant difference in disc progression was noted ($P = -0.615$) in either of the groups. **Conclusion:** SICS with trab is as effective as phacotrab in long-term follow-up. So in patients with less affordability, SICS+trab can be a good surgical option.

Scientific Poster 105

Structure and Function in Multifocal Pupillographic Objective Perimetry

Presenting Author: Ted Maddess PhD*

Co-Author(s): Allan Yao Hong Chain MBBS, Andrew Charles James PhD*, Maria Kolic*, Corinne Francis Carle PhD*

Purpose: To compare correlations between peripapillary retinal nerve fiber layer (RNFL) thicknesses and standard automated perimetry (SAP) and multifocal pupillographic objective perimetry (mfPOP) in glaucoma. **Methods:** Structure-function correlations from 25 glaucoma and 25 normal subjects for SAP and fields from 3 mfPOP methods: yellow and 2 red/green variants testing 44 / regions / eye in the central 60°. **Results:** The strongest correlations were observed in the superior-superotemporal sector in severe glaucoma eyes: $r = 0.94$ for yellow mfPOP $r = 0.90$ ($n = 16$, $P < .05$). Correlations across all test points in both SAP and mfPOP were strongest in eyes with severe glaucoma SAP $r = 0.56$, mfPOP ($r = 0.55, 0.52, 0.41$, all $n = 192$, $P < .05$). Scatterplots of mfPOP/RNFL deviations were quite linear while SAP/RNFL data saturated. **Conclusion:** AP and mfPOP and SAP showed similar structure/function relationships.

Scientific Poster 106

★ Visual Field Factor Related to Collisions With Oncoming Right-Turning Car During the Driving Simulator in Advanced Glaucoma Patients

Presenting Author: Shiho Kunimatsu MD

Co-Author(s): Toru Nakazawa MD PhD, Yuki Aoki MD**, Sachiko Udagawa, Shinji Ohkubo MD PhD*, Aiko Iwase MD PhD*, Kazuhisa Sugiyama MD PhD, Takeo Fukuchi MD, Hiroshi Ono**, Makoto Araie MD*

Purpose: To examine factors related to visual field defects affecting motor vehicle collisions (MVCs) with oncoming right-turning cars. **Methods:** 104 patients with mean deviation < -12 dB in both eyes (Humphrey Field Analyzer 24-2 SITA-S program; HFA 24-2) used a driving simulator (DS; Honda Motor Co.; Tokyo). We compared HFA24-2 and the binocular integrated-visual field (IVF) in patients who did or did not have MVCs in 2 scenarios showing oncoming right-turning cars. **Results:** Patients who had MVCs in both scenarios (80 of 104) were older ($P = .006$), with worse visual acuity of the better eye ($P < .0001$), and lower IVF in the lower 10° hemifield ($P = .03$). **Conclusion:** Age, visual acuity of the better eye, and IVF in lower 10° hemifield were related to MVCs with oncoming right-turning cars in advanced glaucoma patients.

SESSION TWO

Scientific Poster 331

Set- β Regulates Axon Growth and Regeneration of Retinal Ganglion Cells In Vivo

Presenting Author: Melina Isabel Morkin MD

Co-Author(s): Ephraim Feliks Trakhtenberg**, Yan Wang PhD**, Stephanie Fernandez**, Gregory Michael Mlacker**, Jeffrey L Goldberg MD PhD*

Purpose: To investigate the role of Set- β in axon growth of retinal ganglion cells (RGCs) in order to develop a regenerative therapy for glaucoma patients. **Methods:** Wild-type Set- β and its mutant variants were overexpressed in purified RGCs to test their effect in vitro. Myristoylated Set- β , which increases the cytoplasmic retention signal, was overexpressed after optic nerve crush in vivo. **Results:** Set- β overexpressed in RGCs localized to the nucleus and suppressed axon growth. In contrast, myristoylated Set- β and shRNA knockdown of Set- β promoted axon growth. Gene therapy with myristoylated-Set- β promoted axon regeneration in vivo. **Conclusion:** Set- β inhibits or promotes axon growth in RGCs, depending on its subcellular localization and phosphorylation. Manipulation of Set- β in vivo provides a strategy to enhance regeneration.

Scientific Poster 332

Five-Year Incidence of Open-Angle Glaucoma in a Health-Screened Population

Presenting Author: Young Kook Kim MD

Co-Author(s): Jin Wook Jeoung MD, Hyukjin Choi MD PhD, Ko Eun Kim MD, Ki Ho Park MD*, Dong Myung Kim MD

Purpose: To investigate the incidence of open-angle glaucoma (OAG) and its associated factors in a health-screened Korean population. **Methods:** The health-screened population-based study (2010-2011) included 5076 subjects who were screened in 2005-2006. By using fundus photographs and automated perimetry, we determined the 5-year incidence of OAG. **Results:** The 5-year incidence of OAG was 1.49%. Incident OAG was significantly associated with older age (OR, 1.05; 95% CI, 1.02-1.09), higher body mass index (OR, 1.16; CI, 1.05-1.28), higher education level (OR, 1.65; CI, 1.09-2.19), and higher hematocrit (OR, 1.36; CI, 1.26-1.82). **Conclusion:** In a health-screened Korean population, the 5-year incidence of OAG was 1.49%. Age, body mass index, education level, and hematocrit were associated with incident OAG.

Scientific Poster 333

Systemic Comorbidities of Pseudoexfoliative Glaucoma in the Utah Population

Presenting Author: Steven M Christiansen MD

Co-Author(s): Barbara Marie Wirostko MD*, Karen Curtin PhD**, Gregory S Hageman PhD*

Purpose: To identify systemic comorbidities of pseudoexfoliative glaucoma (PEX) using the Utah Population Database. **Methods:** 1059 individuals with PEX were compared with 118,871 individuals age 40 and over without glaucoma seen at the Moran Eye Center from 1992 to 2012. Odds ratios (OR) were obtained from unconditional logistic regression models with adjustment for age, sex, race, BMI, tobacco/alcohol use, and diabetes. **Results:** Individuals with PEX have increased risk ($P < .01$) of hypertension (OR 1.4), ischemic heart disease (1.3), hyperlipidemia (1.4), and rheumatologic and collagen vascular disease (1.3), and decreased risk of diabetes (OR 0.81, $P = .03$) compared to those without glaucoma. **Conclusion:** Similar to non-PEX glaucoma, PEX is associated with a 30%-40% increased risk of vascular, collagen-vascular, and rheumatologic comorbidities.

Scientific Poster 334

The Association of Pseudoexfoliation Syndrome With Cardiovascular and Cerebrovascular Disease

Presenting Author: Helen Chung MD

Co-Author(s): Sourabh Arora MD*, Karim F Damji MD, Ezekiel Weis MD

Purpose: Meta-analysis of the association between pseudoexfoliation syndrome (PEX) and cardiovascular (CVD) and cerebrovascular (CVA) disease. **Methods:** English PubMed and Embase were searched for studies on CVD and/or CVA in PEX and control. **Results:** Odds ratio was 1.46 (1.13-1.89) for 12 CVD studies ($P < .01$), 2.16 (1.16-4.03) for 5 CVA studies ($P = .02$), and 1.58 (1.31-1.91) for 13 combined vascular events (CVE) studies ($P < .0001$). In CVD and CVE studies, there were no significant differences in patient age ($P = .29, 0.13$),

sex ($P = .82, 0.56$), and study design ($P = .20, 0.16$). CVA studies did not report these data. Publication bias was not significant for CVD, CVA, or CVE ($P = .78, 0.07, 0.13$). **Conclusion:** Strong associations exist between PEX and CVD/CVA.

Scientific Poster 335

Effect of Epiretinal Membrane on Retinal Nerve Fiber Layer Thickness in Eyes With Glaucoma

Presenting Author: Jong Jin Jung MD

Co-Author(s): Yong Ho Sohn MD, Young A Kwon

Purpose: To evaluate the effect of epiretinal membrane (ERM) on circumpapillary retinal nerve fiber layer (RNFL) thickness as determined by spectral domain OCT. **Methods:** Among the patients with open-angle glaucoma in both eyes and ERM in only 1 eye, those who underwent RNFL thickness measurement by OCT were enrolled. RNFL thicknesses in global area and quadrants were compared between glaucomatous eyes with ERM (G+E group) and glaucomatous eyes without ERM (G-only group). **Results:** Thirty-three patients with bilateral glaucoma and unilateral ERM were enrolled. In the inferior quadrant, RNFL of the G+E group was thinner than that of the G-only group ($P = .044$). In the temporal quadrant, RNFL of the G+E group was thicker than that of the G-only group ($P < .001$). **Conclusion:** This finding suggests that ERM may affect circumpapillary RNFL thickness profile in glaucomatous eyes.

Scientific Poster 336

Proportion of Undetected Narrow Angles or Angle Closure in Cataract Surgery Referrals

Presenting Author: Stephanie N Kletke

Co-Author(s): Devesh K Varma MD*, Amandeep Singh Rai MD, Iqbal K Ahmed MD*

Purpose: To identify the proportion of patients referred for cataract surgery consultation that had undetected narrow angles (primary angle closure suspect (PACS), primary angle closure (PAC), or primary angle-closure glaucoma (PACG)). **Methods:** 976 phakic patients referred by eye care providers for assessment and management of cataracts only were reviewed. **Results:** Of the sample population, the proportion of underlying PACS was 9.4%, PAC was 0.5%, and PACG was 0.2%. Overall, 10.1% of patients had missed narrow angles or angle closure. **Conclusion:** A significant number of patients referred for cataract surgery were found to have undetected narrow angles/angle closure. These results imply that gonioscopy may not be adequately performed in this patient population, and possibly in general.

Scientific Poster 337

Anterior Chamber Aqueous Flare, Pseudoexfoliation Syndrome, and Glaucoma

Presenting Author: Rim Kahloun MD

Co-Author(s): Bechir Jelliti MD, Salim Ben Yahia MD*, Moncef Khairallah MD

Purpose: To assess anterior chamber aqueous flare (ACAF) in patients with pseudoexfoliation (PEX) syndrome. **Methods:** 101 patients with bilateral ($n = 73$) or unilateral ($n = 28$) PEX syndrome and 53 control subjects were examined by laser flare photometry. **Results:** ACAF was significantly higher in the PEX syndrome group in comparison with the control group ($P = .0001$), in patients with unilateral PEX syndrome in comparison with contralateral unaffected eyes ($P = .01$), and in patients with pseudoexfoliation glaucoma compared to PEX syndrome without associated glaucoma ($P = .001$). **Conclusion:** A high ACAF value might be a predictor for the development of glaucoma in patients with PEX syndrome.

Scientific Poster 338

Prescheduled Appointments as a Strategy for Improving Follow-up Rates After Community-Based Glaucoma Screening

Presenting Author: Tave van Zyl MD

Co-Author(s): Elaine J Zhou, Zhuo Su, Ryan K Wong MD, Amir Mohsenin MD, Spencer W Rogers MD**, James C Tsai MD MBA*, Susan H Forster MD

Purpose: To determine if prescheduled appointments increase follow-up rates after community-based glaucoma screening. **Methods:** We screened individuals over age 40 and randomized positive screenees to receive either a prescheduled follow-up appointment (intervention) or standard counseling (control). Chi-squared analysis was used to determine differences in follow-up. **Results:** While there was no difference in overall follow-up rate between intervention subjects (41%, $n = 22$) and controls (24%, $n = 41$, $P = .17$), subjects lacking insurance (67% vs. 5%, $n = 28$, $P = .004$) or access to car (47% vs. 7%, $n = 30$, $P =$

.03) were significantly more likely to follow-up if provided with appointments. **Conclusion:** Prescheduled appointments improve follow-up rates among screenees lacking access to a car and/or health insurance.

Scientific Poster 339

Association Between Oral Contraceptive Use and Glaucoma in the United States

Presenting Author: Ye Elaine Wang

Co-Author(s): Diego Tebaldi de Queiroz Barbosa MD, Sophia Ying Wang MD, Shan C Lin MD*

Purpose: To investigate the association between oral contraceptives (OCs) use and prevalence of glaucoma. **Methods:** This cross-sectional study included female participants ≥ 40 years from the 2005-2008 National Health and Nutrition Examination Survey, who completed vision/reproductive health questionnaire and underwent eye exams. The predictor was > 3 years OCs use, and outcome was self-reported glaucoma. **Results:** After adjusting for confounders, those with > 3 years OCs use had odds ratio of 1.94 of having self-reported glaucoma (CI = 1.21-3.10). Other factors associated with increased risk of glaucoma included older age, African American race, and later age of menarche (all $P < .01$). **Conclusion:** Greater than 3 years OCs use was associated with increased risk of glaucoma, further supporting the role of circulating estrogen in the pathogenesis of glaucoma.

Scientific Poster 340

Comparison of Factors Associated With Occludable Angle Between American Whites and Ethnic Chinese

Presenting Author: Ye Elaine Wang

Co-Author(s): Yingjie Li Jr, Dandan Wang**, Mingguang He MD PhD, Shan C Lin MD*

Purpose: To assess differences in factors associated with occludable angle among whites and ethnic Chinese. **Method:** 120 whites, 116 American Chinese, and 116 mainland Chinese ≥ 40 years old were enrolled. Multivariate logistic regression was performed with presence of occludable angle (posterior trabecular meshwork not visible for ≥ 2 quadrants on gonioscopy) as the dependent variable, and anterior segment OCT and A-scan measured parameters as independent variables. **Results:** Occludable angle was significantly associated with lens vault, iris area, and gender (all $P < .03$) in Chinese, and with lens vault, anterior chamber depth, iris thickness, age, and gender (all $P < .04$) in whites. **Conclusion:** Factors associated with occludable angle differed between whites and Chinese. Lens vault and gender were the only 2 common factors shared by both ethnicities.

Scientific Poster 341

Intraocular Hypertension Is a Common and Significant Complication in Ocular Graft versus Host Disease

Presenting Author: Francisco Amparo MD*

Co-Author(s): Ujwala Saboo MBBS, Hasanain T Shikari MD*, Reza Dana MD MSc MPH*

Purpose: To evaluate the incidence of ocular hypertension (OHT) in patients diagnosed with ocular graft versus host disease (oGVHD). **Methods:** Retrospective review of IOP in patients with oGVHD. **Results:** We analyzed IOP patterns in 230 patients, with a median follow-up of 516 days from onset of oGVHD. A total of 64 patients (28%) developed intraocular hypertension; 27 patients (10%) presented with IOP readings ≥ 24 mmHg, and 10 patients (4%) developed characteristic diagnostic signs of glaucoma. Length of corticosteroid treatment was not statistically associated with incidence of OHT ($P = .20$). **Conclusion:** Elevated IOP and glaucoma are relatively common significant complications in patients with oGVHD.

Scientific Poster 342

Spectral Domain OCT Analysis of Optic Disc Traction in Idiopathic Epiretinal Membrane

Presenting Author: Yong-Woo Kim MD

Co-Author(s): Jin Wook Jeoung MD, Hyeong G Yu MD*

Purpose: To investigate whether optic disc traction occurs and affects the visual function in idiopathic epiretinal membrane (ERM) patients. **Methods:** Optic discs of consecutive 116 eyes with idiopathic ERM and 62 age-matched normal eyes were scanned by Cirrus HD-OCT; retinal nerve fiber layer (RNFL) thickness and optic nerve head (ONH) parameters were analyzed. Automated Humphrey visual fields (SITA 30-2) were evaluated. **Results:** Optic disc traction occurred in 52 eyes (44.8%) in ERM patients, which associated with increased average and temporal RNFL thicknesses, alteration of the rim architecture, and

decreased mean deviation values compared to ERM eyes without optic disc traction and normal control ($P < .05$). **Conclusion:** Optic disc traction occurred in idiopathic ERM patients and affected their visual function.

Scientific Poster 343

Peripapillary Tilting and Central Visual Field Loss in Early Normal-Tension Glaucoma Using OCT

Presenting Author: Shinichi Usui MD PhD

Co-Author(s): Yasushi Ikuno MD, Yukari Jo MD, Tomoko Asai MD, Masahiro Akiba PhD*

Purpose: To evaluate the relationship between the direction of peripapillary tilting and paracentral visual function in normal-tension glaucoma (NTG). **Methods:** We evaluated tilting in circle scan OCT images around the disc (tilting degree = \pm degree between tilt line and horizontal line of the optic disc) and threshold values of 4 paracentral points within 5° of SITA30-2 test in 47 NTG eyes with early visual field defect (mean deviation < -6 db). **Results:** The mean tilt was $-9.4 \pm 47.7^\circ$ (15 eyes, -7.5° ; 12 eyes, -22.5° ; 8 eyes, $+7.5^\circ$; 12 eyes, other). Of the -7.5° , -22.5° , $+7.5^\circ$ groups, the $+7.5^\circ$ threshold value was lowest ($31.1 \pm 1.5a$ vs. $29.7 \pm 5.8b$ vs. $15.3 \pm 14.2ab$, $a, P = .0001$, $b P = .0006$) supratemporally. **Conclusion:** Most NTG eyes had inferotemporal tilting. Early NTG cases with slight supra-temporal tilting tend to have a paracentral defect supra-temporally.

Scientific Poster 344

Logistic Regression Analysis for Glaucoma Diagnosis Using Spectral Domain OCT

Presenting Author: Antonio Ferreras MD PhD*

Co-Author(s): Laura Gil MD, Beatriz Abadia MD PhD, Blanca Ferrandez MD, Mirian Ara MHSA, Sofia Otin MD, Ana Belen Pajarin MD PhD

Purpose: To develop and evaluate the diagnostic ability of a linear discriminant function (LDF) based on optic disc and retinal nerve fiber layer parameters measured with Cirrus OCT. **Methods:** Sixty-eight healthy controls and 60 patients with glaucoma comprised the teaching set. Another independent sample of 85 normal eyes and 106 glaucomatous eyes was used to evaluate the diagnostic accuracy of the LDF. **Results:** In the validating set, the LDF and rim area had the best sensitivity-specificity balance 92.5%-97.6% and 84.0%-91.8%, respectively. The LDF had the largest area under the ROC curve (0.985 vs. 0.952; $P < .001$, DeLong method). **Conclusion:** The LDF increased the diagnostic ability of OCT-provided parameters.

Scientific Poster 345

Structure-Function Relationship of the Ganglion Cell-Inner Plexiform Layer Thickness and the Macular Mean Sensitivity in Advanced Glaucoma

Presenting Author: Ko Eun Kim MD

Co-Author(s): Ki Ho Park MD*, Jin Wook Jeoung MD, Seok Hwan Kim MD, Dong Myung Kim MD

Purpose: To evaluate the structure-function relationship between the macular mean sensitivity (mMS) and the ganglion cell-inner plexiform layer thickness (GCIPLT) compared to macular circumpapillary retinal nerve fiber layer thickness (mcpRNFLT) in advanced glaucoma using Cirrus OCT. **Methods:** Eighty-six advanced open-angle glaucoma patients with mean deviation ≤ -12 dB were enrolled. The relationships between mMS and thickness of GCIPL or mcpRNFLT were compared. **Results:** In advanced glaucoma, the association between mMS and GCIPLT were all significant (R^2 of ave = 0.193, min = 0.149, $suP = .242$, and inf = 0.187; all $P < .05$). However, no significant association was found between MS and mcpRNFLT (R^2 of ave = 0.011, $suP = .061$, and inf = 0.039; all $P > .05$). **Conclusion:** GCIPLT can demonstrate the functional damage better than mcpRNFLT in advanced glaucoma.

Scientific Poster 346

Corneal Biomechanical Parameters in Different Types of Glaucoma

Presenting Author: Goktug Seymenoglu MD

Co-Author(s): Esin Fatma Baser MD, Gulsum Irey**, Sibel Zorluozturk**

Purpose: To compare the corneal biomechanical parameters in different types of glaucoma. **Methods:** Data from 400 patients for ocular hypertension (OHT), primary open-angle glaucoma (POAG), primary angle-closure glaucoma (PACG), pseudoexfoliative glaucoma (PXG), and normal-tension glaucoma (NTG) were reviewed. Corneal biomechanical parameters and central corneal thickness (CCT) were compared between groups. **Results:** The

mean corneal resistance factor of the NTG and PXG groups were significantly lower than those of the POAG group ($P = .001$). The mean corneal hysteresis measurements of NTG and PXG groups were significantly lower than those of other groups ($P = .001$). The mean CCT values of NTG and PXG groups were significantly thinner than those of the other groups ($P = .001$). **Conclusion:** These results may lead clinicians to measure IOP differently than actual in PXG, NTG, and OHT.

Scientific Poster 347

Twenty-Four-Hour Effects of IOP-Lowering Medications Using Continuous 24-Hour IOP Monitoring and Response to the Water Drinking Test

Presenting Author: Kaweh Mansouri MD*

Co-Author(s): Felipe A Medeiros MD*, Ali Tafreshi**, Robert N Weinreb MD*

Purpose: To study circadian IOP effects of glaucoma medications. **Methods:** Twenty-three glaucoma patients underwent 24-hour IOP recording using a contact lens sensor (CLS). Session 1 (S1): untreated; S2: randomly assigned to 1 of 4 classes of glaucoma drops; S3: with a prostaglandin analog add-on. To evaluate response to water drinking test (WDT), linear regression slopes were constructed from pre-WDT IOP measurements to 2 hours after WDT. **Results:** Significant positive linear slopes were seen from wake/sitting to sleep/supine at S1 (15.9 ± 15.0 arbitrary units [a.u.]) and S2 (1.2 ± 28.5 a.u.), but negative slopes at S3 (-7.5 ± 31.1 a.u.). Slopes from 30 minutes before WDT to 30 minutes after WDT were 5.0 ± 11.7 ($P = .05$) at S1, 3.7 ± 5.5 at S2 ($P = .008$), and 1.7 ± 12.6 at S3 ($P = .657$). **Conclusion:** A flattening of the IOP increase from wake/sitting to sleep/supine period was observed.

Scientific Poster 348

Power Settings for Selective Laser Trabeculoplasty and Argon Laser Trabeculoplasty in the Treatment of Open-Angle Glaucomas: A Systematic Review and Meta-analysis

Presenting Author: Sourabh Arora MD*

Co-Author(s): Karim F Damji MD, Ezekiel Weis MD

Purpose: To study the relationship between treatment protocols for first-time selective laser trabeculoplasty (SLT) and argon laser trabeculoplasty (ALT) in lowering IOP for open-angle glaucoma (OAG). **Methods:** Prospective clinical studies involving SLT and/or ALT were included if they reported mean IOP reduction at 12 months. **Results:** There were 26 eligible studies (1328 cases). The mean power setting reported was 0.79 (0.2-1.7) mJ for SLT and 725 (400-1500) mW for ALT. For SLT, there was no difference in 12-month IOP reduction based on minimum energy, maximum energy, or degrees treated. ALT led to better 12-month IOP reduction if used to higher maximum power ($P = .046$), and with increased degrees treated ($P = .025$). **Conclusion:** SLT efficacy is not influenced by power settings, or 180° vs. 360° application. Increased power settings and degrees treated using ALT resulted in larger IOP reduction.

Scientific Poster 349

The Diurnal and Nocturnal Effect of Travoprost With SofZia on IOP and Ocular Perfusion Pressure

Presenting Author: Leonard K Seibold MD*

Co-Author(s): Malik Y Kahook MD*

Purpose: To assess the 24-hour effect of travoprost with SofZia (TZ) on IOP and ocular perfusion pressure (OPP) and to assess durability of effect. **Methods:** Forty subjects with open-angle glaucoma or ocular hypertension underwent 24-hour monitoring sessions at baseline, on drug, and 72 hours after last dose. IOP and blood pressure were measured every 2 hours in the habitual position. **Results:** After 4 weeks of TZ therapy, mean IOP was significantly lower than baseline throughout the 24-hour cycle. Significant IOP reduction persisted 72 hours after last dose at all time points. OPP was increased from baseline during the diurnal, but not the nocturnal period. **Conclusion:** TZ significantly lowers IOP throughout the 24-hour cycle, with the effect enduring at least 72 hours. OPP is increased during the diurnal period.

Scientific Poster 350

Phase 3 Study of Fixed Combination Brinzolamide / Brimonidine B.I.D. vs. Brinzolamide vs. Brimonidine in Open-Angle Glaucoma or Ocular Hypertension

Presenting Author: Tin Aung FRCS PhD*

Co-Author(s): Ivan Goldberg MBBS FRANZCO*

Purpose: To compare fixed combination (FC) brinzolamide 1%/brimonidine 0.2% (Brinz/Brim) with brinzolamide 1% (Brinz) or brimonidine (Brim 0.2%) in open-angle glaucoma (OAG) or ocular hypertension (OHT). **Methods:** In this randomized double-blind study, patients ($N = 560$) received FC BrinzBrim, Brinz, or Brim 1 drop b.i.d. in affected eyes for 6 months. Primary endpoint was mean IOP change at Month 3. **Results:** At Month 3, IOP was significantly reduced with FC BrinzBrim compared to Brinz or Brim (-7.9 vs. -6.5 vs. -6.4 mmHg; $P < .0001$). FC BrinzBrim b.i.d. showed similar trends at Weeks 2 and 6 and at Month 6. Discontinuations due to related adverse events with FC BrinzBrim, Brinz, and Brim were 10.4%, 0.5%, and 7.4 %, respectively. **Conclusion:** FC Brinz/Brim b.i.d. significantly lowered IOP compared to Brinz b.i.d. or Brim b.i.d. in patients with OAG and OHT.

Scientific Poster 351

Glaucoma Medication and Tear Film Osmolarity

Presenting Author: Ioannis S Halkiadakis MD**

Co-Author(s): Georgios Kontadakis MD, Stylianos A Kandarakis MD, Artemios Kandarakis MD

Purpose: Tear film osmolarity (TFO) evaluation in patients without ocular discomfort symptoms, treated with IOP-lowering medication. **Methods:** We measured TFO in 93 patients without subjective discomfort, either treated with preserved eye drops for glaucoma (medication group, 61 patients) or not treated (32 age-matched controls), and compared groups. Correlation of TFO with treatment time, number of medications, and number of instillations was assessed in the medication group. **Results:** No difference was detected between groups (medication group: 295.56 ± 12.54 mOsm/L, controls: 294.84 ± 14.73 mOsm/L, $P = .807$). Correlations were not significant. **Conclusion:** Patients treated with preserved IOP-lowering medication with no symptoms of ocular discomfort do not exhibit tear film hyperosmolarity.

Scientific Poster 352

Two-Year Clinical Experience After Combined Cataract Surgery and Supraciliary Microstent Implantation to Treat Glaucoma

Presenting Author: Brian E Flowers MD*

Co-Author(s): William Flynn MD*, Helmut R Hoeh MD*, Marek Rekas MD PhD, Pravoslava Ianchuleva MD PhD*, Salvatore Grisanti*, Swaantje Grisanti MD*, Tsontho Ianchulev MD*

Purpose: To evaluate safety of microstent implantation in conjunction with cataract surgery. **Methods:** The CyPass Micro-Stent was implanted into the supraciliary space through the phaco incision of 136 eyes. **Results:** IOP decreased from 25.5 ± 4.9 mmHg (baseline) to 15.8 ± 3.8 mmHg (24 months) in patients with IOP ≥ 21 mmHg at baseline ($n = 23$) and was maintained (16.4 ± 2.7 mmHg to 16.1 ± 3.2 mmHg) in patients with IOP < 21 mmHg at baseline ($n = 59$). Reduction in medication use was 52% and 48%, respectively. **Conclusion:** Microstent implantation in conjunction with cataract surgery shows sustained IOP control for 2 years.

Scientific Poster 353

★ Phaco-Trabectome vs. Phaco-iStent in Patients With Open-Angle Glaucoma

Presenting Author: Khaliq Kurji MD

Co-Author(s): Sourabh Arora MD*, Christopher J Rudnisky MD*, Jaspreet S Rayat MD, Michael W Dorey MD, Samer A Abuswider MD, Karim F Damji MD

Purpose: To investigate efficacy and safety of Phaco-Trabectome (PT) vs. Phaco-iStent (Pi) for IOP control in open-angle glaucoma (OAG). **Methods:** Retrospective case-control. **Results:** Thirty-six eyes of 30 patients had PT, and 34 eyes of 25 patients had Pi. Baseline IOP differed between groups (PT, 20.92 ± 5.07 ; and Pi, 17.47 ± 4.87 ; $P = .026$). At 6 months there was no significant change in mean IOP from baseline between groups (PT, -4.94 ± 5.64 vs. Pi, -3.85 ± 3.92 ; $P = .39$). PT had a significantly greater reduction in glaucoma medication

use (PT, -0.97 ± 1.22 vs. Pi, -0.32 ± 0.59 ; $P = .005$). However, Pi had fewer complications (PT, 10 vs. Pi, 1; $P = .002$). **Conclusion:** At 6 months, PT and Pi had equivalent IOP reduction from baseline. Eyes with PT were on fewer medications but had a higher complication rate.

Scientific Poster 354

Evaluation of the New Glaukos iStent With Phacoemulsification in Coexistent Open-Angle Glaucoma or Ocular Hypertension and Cataract

Presenting Author: Pedro Arriola-Villalobos MD

Co-Author(s): David Diaz-Valle MD PhD*, Cristina Fernandez-Perez PhD, Julian Garcia-Feijoo MD PhD**, Jose Maria Martinez de La Casa MD*

Purpose: To evaluate Glaukos iStent GTS-400 combined with phacoemulsification in patients with cataract and open-angle glaucoma (OAG) or ocular hypertension (OHT). **Methods:** Prospective, noncomparative, interventional case series study. Twenty subjects with mild-moderate OAG or OHT and cataract underwent phacoemulsification along with implantation of two GTS-400. **Results:** Mean follow-up was 31.2 ± 7.18 months. A significant IOP decrease (34.66%, or 9.21 ± 3.58 mmHg; $P < .001$) from baseline washout IOP and 14.42% or 3.15 ± 3.9 mmHg ($P = .002$) from medicated baseline IOP was achieved, with a significant decrease in glaucoma medications. No complications of surgery were observed. **Conclusion:** Combined phacoemulsification and GTS-400 seems to be an effective and safe procedure to treat OAG or OHT and cataract.

Scientific Poster 355

Outcomes of Surgical Repair of Late Leaking Blebs

Presenting Author: Arpita Basia MBBS MS

Co-Author(s): Anil K Mandal MD

Purpose: To report outcomes of conjunctival procedures for the repair of late leaking blebs with hypotony. **Methods:** Retrospectively reviewed all cases of late leaking or cystic blebs with hypotony following surgical repair. **Results:** Fifty-six eyes of 54 patients had undergone surgical repair. IOP pre- and post-bleb repair surgery was 8.8 ± 4.6 and 15.1 ± 8.9 mmHg in the conjunctival advancement group and 6.5 ± 4.1 and 12.2 ± 4.2 mmHg in the conjunctival autograft group ($P < .001$). Complete success rate was 90% at 6 months in both groups. **Conclusion:** Bleb repair with conjunctival procedures are safe and effective procedures.

Scientific Poster 356

Blebitis After ExPRESS Shunt

Presenting Author: Sunita Radhakrishnan MD*

Co-Author(s): Andrew George Iwach MD*, Terri-Diann Pickering MD*, Dmitry Yarovoy MD

Purpose: To describe the course and management of blebitis after Ex-Press shunt implantation. **Methods:** Retrospective chart review, 2007 to 2013. **Results:** Five patients were identified. Median interval between Ex-Press shunt implantation and blebitis was 2.3 years (range: 1.4-3.3). Median follow-up was 7 months (range: 1-20). Two patients wore contact lenses, 3 had bleb leak along with blebitis. All patients were treated with topical antibiotics; 3 also received oral antibiotics. Blebitis resolved in all cases; 1 patient had a recurrence 1 year later which resolved with topical, oral, and intravitreal antibiotics. **Conclusion:** Blebitis after Ex-Press shunt implantation can resolve with antibiotic treatment without removal of the device.

Scientific Poster 357

Efficacy of the Baerveldt 250-mm² Compared With the Baerveldt 350- mm² Glaucoma Drainage Implant: Long-term Results

Presenting Author: Evan J Allan MD

Co-Author(s): Joshua Martin Jones, Kai Ding PhD, Gregory L Skuta MD*, Mahmoud A Khaimi MD*

Purpose: To compare results of the Baerveldt 250 mm² with those of 350 mm² glaucoma drainage implants (GDI). **Methods:** Retrospective review of 89 consecutive eyes with up to 78 months of follow-up. The primary outcome measure was surgical success. Secondary outcome measures were visual acuity, IOP, number of medications, and complications. **Results:** There was no difference in surgical survivability ($P = .98$). No significant differences were observed in visual acuity, IOP, and number of medications ($P = .09, 0.23$, and 0.82). Complication and failure rates were comparable ($P = .82$ and 0.92). **Conclusion:** No

differences were noted between Baerveldt 250 mm² and 350 mm² GDIs in surgical success, visual acuity, IOP, number of medications, complications, and failure rate. Size of GDI may not be associated with better IOP control.

Scientific Poster 358

Postoperative Course and Midterm Follow-up of FP8 (Pediatric) Ahmed Glaucoma Valves in Advanced Age

Presenting Author: Adam Kiel Muzychuk MD

Co-Author(s): Jaspreet K Grewal COMT*, Andrew Crichton MD*

Purpose: To describe the safety and efficacy of FP8 (Pediatric) Ahmed valves in patients over the age of 85. **Methods:** Retrospective chart review. Outcome measures include IOP, number of glaucoma medications, visual acuity, and complications. Analysis was performed with the paired Student *t*-test. **Results:** Sixteen females and 3 males were included. Mean IOP at Day 1 was 9.5 ± 4.7 mmHg (*r* = 2-22); Day 2, 10.2 ± 5.2 mmHg (*r* = 4-22); and 1 week, 9.2 ± 5.4 mmHg (*r* = 2-19). Significant decreases (*P* < .05) were seen in IOP at all visits up to 12 months and in medication use at the 3-, 6-, and 9-month visits. One patient suffered choroidal detachments and 1 patient required further surgical glaucoma intervention. **Conclusion:** The FP8 Ahmed valve appears to be a viable surgical modality in advanced age.

Scientific Poster 359

Amniotic Membrane Draping Technique for Leaky Cystic Blebs

Presenting Author: Pooja Sethi MD

Co-Author(s): Raj N Patel MD, Raquel Goldhardt MD, Ramesh S Ayyala MD FRCS*

Purpose: To describe the successful use of amniotic membrane graft for the repair of leaking cystic blebs following trabeculectomy with mitomycin C. **Methods:** Nineteen eyes of 20 patients that had undergone trabeculectomy with MMC and presented with leaky cystic blebs were treated with amniotic membrane graft over the leaking area with bleb retention. **Results:** Seventeen out of 20 eyes achieved nonleaking bleb with IOP controlled without further intervention. The last follow-up IOP was 11 mmHg. Nineteen eyes maintained or improved their visual acuity at last follow-up. No incidences of hypotony maculopathy were observed. **Conclusion:** Our technique of amniotic membrane draping decreases the risk of hypotony and its associated complications of maculopathy and endophthalmitis, while successfully maintaining bleb function and stabilization of IOP and visual acuity.

Scientific Poster 360

Surgical Outcomes: Canaloplasty vs. Trabeculectomy With and Without Combined Phacoemulsification at 12 Months

Presenting Author: Evan Dreskin Schoenberg MD

Co-Author(s): David Zurakowski PhD, Ramesh S Ayyala MD FRCS*

Purpose: To compare outcomes following canaloplasty (canal) or trabeculectomy (trab), with or without combined phacoemulsification. **Methods:** Charts of 75 open-angle glaucoma patients who underwent canal (48% with phaco) and 84 who underwent trab (49% with phaco) with 1 year of follow-up were reviewed. **Results:** All groups achieved significant IOP reduction (*P* < .001). Trab achieved lower mean IOP than canal (11.9 ± 4.6 vs. 14.2 ± 5.4 mmHg, *P* < .01) with fewer glaucoma drops (*P* = .03). Multivariate regression found the odds of surgical failure were 5 times higher for canal than for phaco-canal (odds ratio 5.1, 95% CI, 1.8-25.4, *P* = .02); the groups were otherwise similar. **Conclusion:** While both surgeries are effective, trab achieves lower IOP. Combined phaco-canal may have greater operative success than canal alone.

Scientific Poster 361

★ In Vivo Visualization, Measurement, and Comparison of Novel Anterior Chamber Angle Metrics Using Heidelberg Spectralis Spectral Domain OCT vs. Zeiss Cirrus Spectral Domain OCT

Presenting Author: Vikas Chopra MD*

Co-Author(s): Xiaojing Pan MD, Alexander Ho, ZhouYuan Zhang MS, Brian A Francis MD*, Srinivas R Satta MD*

Purpose: First-reported comparison of the Spectralis spectral domain OCT (SD-OCT) and Cirrus SD-OCT to identify and measure novel anterior chamber angle parameters using Schwalbe line (SL). **Methods:** The inferior angles of 42 normal eyes were imaged twice with each SD-OCT under light-meter controlled dark-conditions. **Results:** SL was identified in 100% of images with calculation of 2 new angle metrics, SL-angle opening distance

(SL-AOD) and SL-trabecular iris surface area (SL-TISA), with excellent agreement in measurements between the 2 SD-OCTs (SL-AOD, *R* 2 = 0.94, *P* < .001; and SL-TISA, *R* 2 = 0.91, *P* < .001). **Conclusion:** Both SD-OCTs provided comparable measurements and permitted calculation of novel angle metrics based on location of SL instead of scleral spur, which may provide more meaningful clinical measurements for angle grading and screening.

Scientific Poster 362

Clinical Evidence for CNS Control of Visual Field Loss in Chronic Glaucoma: The Jigsaw Effect

Presenting Author: Sylvia Groth MD

Co-Author(s): William Eric Sponsel MD*, Matthew Aaron Reilly MS PhD, Nancy Satsangi, Stuart J McKinnon MD PhD*

Purpose: To determine whether chronic bilateral visual field degeneration is an independent ocular pathologic phenomenon, or if the CNS helps direct the process. **Methods:** Forty-seven patients with bilateral severe glaucoma and reliable Humphrey 30-2 visual fields were evaluated. Each O.S. field locus was paired with (a), its directly comitant O.D. locus, or (b), a random coisopter noncomitant O.D. locus (running 10,000 iterations for b). **Results:** Mean 30-2 threshold values were 14.7 dB O.S. and 15.8 dB O.D. (15.3 dB O.U.), ~5 dB lower than a (20.6 dB; *P* < .000000001), which was also 0.5 dB greater than a (20.1 dB; *P* = .0002). Actual binocular HVF thresholds showed high correlation with a. **Conclusion:** The CNS appears to control bilateral chronic glaucomatous neurodegeneration to maximize the binocular field of vision.

Global Ophthalmology

SESSION ONE

Scientific Poster 107

Screening Eye Examination for School Children in 2 Subdivisions of South India: Cost Analysis

Presenting Author: Leela V Raju MD

Co-Author(s): Madhavi Ghanta MD DNB**, Vadrevu K Raju MD FRCS FACS

Purpose: In this study, we estimated the cost incurred in training teachers to screen, performing the screening, and providing spectacles to needy children in 2 subdivisions in southern India. **Methods:** One teacher per 200 students was trained. Data were collected on the number of children screened, referred, examined by a medical team, and provided with spectacles. **Results:** The most affected age group was > 11 years old. Myopia was the most common refractive error observed. Screening cost was \$0.09 per child, and the most cost-effective portion was the initial screening by teachers. **Conclusion:** Preliminary vision screening by teachers is the most cost-effective method to address uncorrected refractive errors in children. This kind of collaboration would ensure early identification and examination and would help ensure spectacle use.

Scientific Poster 108

Pattern of Eye Diseases in 3 Nigerian Rural Communities: Results of a Screening Study

Presenting Author: Magdalene N Ajani MBBS

Co-Author(s): Ibrahim Bashir MD, Fredrick Adizua Azogu MBBS, Jane E Ifechukwu MBBS, Olumuyiwa Joseph Olupona MBBS

Purpose: The study measured the prevalence of eye diseases and obtained data for appropriate interventions. **Methods:** A cross-sectional survey, over 9 months. **Results:** Of 2682 respondents screened, 3.8% were blind and 6.3% visually impaired. Cataract (45.3%), glaucoma (39.6%), and refractive errors (15.1%) were the leading causes of visual impairment. Leading causes of blindness were cataract (65.8%) and glaucoma (34.2%). **Conclusion:** The prevalence of the eye diseases is significant enough to justify regular eye screening programs.

Scientific Poster 109

Clinical Activities of Mobile Eye Hospital in Elimination of Preventable Blindness in Armenia

Presenting Author: Roger V Ohanesian MD

Co-Author(s): Asatur N Hovsepian MD

Purpose: To investigate the volume of surgical activity of the mobile eye hospital (MEH) in regard to outcomes and to summarize results to help make decisions for the future. **Methods:** 15,871 patients from 12 regions who had different types of ocular interventions through the MEH. All patients had undergone comprehensive ophthalmological examination, 4524 eyes were treated with lasers, 11347 eyes had surgery. The majority of cases were for cataract (9624). **Results:** On a repeat visit to one region, a special follow-up study was carried out in an example region: 94 cases of pure cataract surgeries showed 85.1% good visual outcome; 8.5% borderline; and only 6.4% poor. **Conclusion:** The MEH outcomes are similar to international standards, showing that the MEH is an effective way of providing eye surgeries to patients in far regions.

SESSION TWO

Scientific Poster 363

Uptake of Free, High-quality Cataract Surgery Among Bilaterally Blind Patients in Ethiopia

Presenting Author: David S Sanders*

Co-Author(s): Matthew S Oliva MD, Mark Mark Orrs, Alemu Kerie Tesfaw, Sanduk Ruit MD**, Geoffrey C Tabin MD

Purpose: To determine factors associated with uptake of free cataract surgery in bilaterally blind patients. **Methods:** A prospective cohort study design was employed in northern Ethiopia. Free transport and surgery were offered to all patients ($N = 535$), and uptake of cataract surgery was documented 1 month after an initial vision screening. **Results:** Decreased cataract surgery uptake was associated with female gender (OR = .41; 95% CI, 0.259-0.662; $P < .001$), and increasing age (OR = .96; 95% CI, 0.937-0.983; $P = .001$). Severity of blindness (3/60 - 1/60 vs. $< 1/60$) was not associated with a difference in uptake ($P = .9$). **Conclusions:** Female gender and increasing age were associated with lower uptake of cataract surgery in bilaterally blind patients. Increased efforts should be made to improve access to surgery in these populations.

Scientific Poster 364

★ Identifying the Prevalence of Ocular and Auditory Manifestations of Congenital Rubella Syndrome in School-Aged Children From Cameroon

Presenting Author: Imran Jivraj MD

Co-Author(s): Christopher J Rudnisky MD*, Emmanuel A Tambe MD**, Matthew T Tennant MD*

Purpose: Congenital rubella syndrome (CRS) is a global cause of preventable hearing impairment, blindness, and intellectual disability. We sought to identify the prevalence of CRS in school-aged children in Mbingo, Cameroon. **Methods:** Students at 2 schools were screened for evidence of CRS, including cataracts, congenital glaucoma, and pigmentary retinopathy. Evidence was integrated to form case definitions based on modified Centers for Disease Control guidelines. **Results:** Between September 2009 and May 2010, 320 students from the 2 schools participated in this study. There were 28 probable cases of CRS (10.2%), 104 suspects (37.8%), and 143 unaffected (52.0%). **Conclusion:** We identified 28 probable cases of CRS. Introduction of a rubella vaccination offers the potential of reducing the rates of CRS.

Scientific Poster 365

Seropositivity of the Donors: Hospital Cornea Retrieval Program Collection vs. Voluntary Collection From Home

Presenting Author: Soham Basak

Co-Author(s): Samar K Basak MD DNB MBBS*

Purpose: To compare the seropositivity profile of the donors from two different types of cornea collection in eye banking. **Methods:** Retrospective comparative case series. Blood samples of consecutive 1982 donors during 2008-2012 were tested for human immunodeficiency virus 1 and 2 (HIV), hepatitis B virus (HBV), hepatitis C virus (HCV), and syphilis by approved rapid screening tests. **Results:** 1543 donors (77.9%) from hospital and 22.1% from home death. Total 53 donors (2.67%) were seropositive, among which 49 (2.47%)

from hospital and 4 (0.20%) in home death ($P < .01$). Seropositivity was significantly higher in HBV ($P < .05$). In all cases, prior medical history was negative. **Conclusion:** Seropositivity of the donors is important for safety issues, and it is higher in hospital cornea retrieval program collection.

Scientific Poster 366

Eye Care Services for the Populations of Remote Districts: A Practical Framework Using a Mobile Vision Van

Presenting Author: Nancy Chen MD

Co-Author(s): Min-Muh Sheu MD, Rong-Kung TSAI MD PhD

Purpose: We present the framework of the Mobile Vision Van to work as an eye health screening station in remote districts. **Methods:** A van, well equipped with ophthalmic examination instruments, was brought into remote areas of Eastern Taiwan to provide eye care services. The cost-effectiveness is analyzed and reported. **Results:** 600 eye care services were delivered to 28 indigenous villages and remote townships in Eastern Taiwan within 6 years. We screened 32,048 inhabitants. 1961 patients were referred to secondary or tertiary centers. Spectacles were provided to 1644 participants. 244 educational programs were conducted. **Conclusion:** The model proved to be highly feasible in rural communities with insufficient eye care services.

Health Policy

SESSION ONE

Scientific Poster 32

Waiting Times in Out Patient Departments: Lessons to Learn

Presenting Author: Himika Gupta

Co-Author(s): Ramesh Murthy MBBS**, Vidyashankar Balasubramaniam**

Purpose: To quantify and analyze waiting times of walk-in adult patients in a charitable eye hospital. **Methods:** Time of entry, refraction, examination, and exit of 188 consecutive patients were recorded prospectively via a form attached at registration. Days were stratified (light, medium, and busy) as per workload and staff. Follow-ups, specialty referrals, and inadequate forms were excluded. Total time (TT), entry to refraction (ER), entry to doctor (ED), and doctor to exit (DE) times were calculated, and factors affecting each were examined by univariate and multivariate analysis with Kaplan Meier and Cox regression. **Results:** A 156-patient dataset gave mean values of TT: 77; ER: 27; ED: 45; DE: 35 minutes. Age > 60 , station > 6 , and diagnosed cataract significantly correlated with more TT. **Conclusion:** Older patients take extra time in refraction and reach doctors later. Special staff assisting their refraction is desirable.

Scientific Poster 72

★ Do Visors Have an Impact on Eye Injuries? A 10-Year Review of the National Hockey League

Presenting Author: Jonathan A Micieli MD

Co-Author(s): Iqbal K Ahmed MD*

Purpose: To determine the incidence, mechanisms, and time/value lost of eye injuries and the effect of visors over the past 10 years in the National Hockey League (NHL). **Methods:** Eye and orbital injuries were extracted from The Sports Network (TSN), Pro Sports Transactions, and the Sporting News Hockey Register. Visor data were obtained from *The Hockey News* annual survey. **Results:** 105 eye injuries over the past 10 years resulted in an overall incidence of 2.57 per 10,000 athlete exposures. The 883 missed games led to a lost value of over \$26 million. There was a significantly increased risk of having an eye injury when a visor was not worn (OR = 2.19; 95%CI, 1.24-3.87). Most injuries were a result of being struck by a puck. **Conclusion:** Eye injuries are a significant risk, and cost to the NHL and its players and can be greatly minimized by the use of a visor.

Scientific Poster 75

Controlled Ambient Surgery Cabin (ArcSterile) for Outpatient Ophthalmic Surgery

Presenting Author: Roberto Gallego-Pinazo MD*

Co-Author(s): Manuel Díaz Llopis MD PhD**, Maria Andreu-Fenoll NP, Rosa Dolz Marco MD, David Salom MD, M Dolores Pinazo-Duran MD**

Purpose: To evaluate the safety and profitability of the controlled ambient surgery cabin (ArcSterile) for minor ophthalmic surgery (MOS). **Methods:** Nonrandomized comparative observational retrospective study of MOS procedures performed in a conventional operating room (COR) and in the ArcSterile. **Results:** 1736 MOSs were performed in the COR, and 1851 in the ArcSterile. The cost per hour of MOS was 142.5 a and 30.5 a respectively, and the calculated cost per procedure was 137.9 a and 27.8 a. The overall productivity increased by 49.34%, with an increase in the surgical specific productivity of 18.74%. No differences were observed with regards to the rate of ocular infections between both groups. **Conclusion:** The ArcSterile for outpatient ophthalmic minor surgery may be safe and better economically than the COR.

Intraocular Inflammation, Uveitis

SESSION ONE

Scientific Poster 110

Outcomes of Post-Cataract Surgery Endophthalmitis in Egypt: Twelve-Year Experience and 143 Patients

Presenting Author: Mohamed F Abou Shousha MBCHB*

Co-Author(s): Fadel F Abou Shousha MD

Purpose: To evaluate the 12-year outcomes of post-cataract endophthalmitis (PC-E) in a tertiary eye center in Egypt. **Methods:** Retrospective consecutive case series of 143 cases of PC-E treated between 2000 and 2012. Intracameral (ICAB) and intravitreal (IVAB) antibiotic injections were done. If visual acuity (VA) was light perception (LP), pars plana vitrectomy (PPV) was added. **Results:** Fifty-five percent of cases presented with LP VA. Treatment delay was noted in 85% of cases. At 6 months, 45% and 75% of cases presenting with better than LP vision had VA better than 20/60 and 20/200, respectively, but only 8% and 36%, respectively, in the LP group. **Conclusion:** ICAB and IVAB with PPV are effective in managing PC-E. Poor outcomes might be due to treatment delay. Aggressive prophylaxis and changing practice in developing countries are warranted.

Scientific Poster 111

Cytomegalovirus Endotheliitis and Keratouveitis: A Singapore In Vivo Confocal Microscopy Study

Presenting Author: Annabel Chew MBBS

Co-Author(s): Han Nian Marcus Ang MBBS, Jay Siak MBBS, Soon-Phaik Chee MD*

Purpose: To evaluate the in vivo confocal microscopy (IVCM) findings in cytomegalovirus (CMV) endotheliitis and keratouveitis. **Methods:** This is a prospective, single-center study. Twelve eyes of 12 patients with active CMV endotheliitis or keratouveitis underwent slitlamp examination and IVCM (HRT 2-RCM). **Results:** Slitlamp findings included mutton-fat and medium-sized keratic precipitates (KPs), endothelial nodules with surrounding halo, and linear endothelial deposits. IVCM showed dendritiform and globular KPs, highly reflective round bodies, owl's eye morphology in the endothelium, activated keratocytes, and abnormal nerve plexus. **Conclusion:** CMV endotheliitis and keratouveitis had characteristic features, and IVCM might be useful as an adjunct for diagnosis of the condition.

Scientific Poster 112

Fundus Autofluorescence in Management of Paradoxical Worsening in Presumed Tubercular Serpiginous-Like Choroiditis

Presenting Author: Garima Lakhota MBBS

Co-Author(s): Padmamalini Mahendradas MBBS DO DNB, Rohit Shetty MD MBBS, Priya Srinivasan

Purpose: To study fundus autofluorescent (FAF) changes in paradoxical worsening of presumed tubercular serpiginous-like choroiditis. **Method:** Prospective observational case series. Fundus photography and FAF in all visits, OCT, and fundus fluorescein angiography (FFA) in selected visits, treated with antitubercular therapy and systemic steroids with/

without immunosuppressants. Pattern and time taken for healing were noted. **Results:** Six out of 7 patients had unilateral disease. All 8 eyes showed hypo- with hyper-autofluorescence at presentation. Increased FAF at active edge in all cases noted between 7 to 34 days (mean: 21). During healing phase, hypo- mixed with hyper- autofluorescence started at 8 weeks. Complete hypo- autofluorescence noticed after 7 months. **Conclusion:** FAF can be used as an additional investigational tool to titrate the treatment in presumed tubercular serpiginous-like choroiditis.

Scientific Poster 113

The Comparison of T-Cell Population in Uveitis Vitreous Fluid

Presenting Author: Kazuichi Maruyama MD PhD

Co-Author(s): Tohru Inaba, Manabu Mochizuki MD**, Shigeru Kinoshita MD*, Hiroshi Kunikata, Toru Nakazawa MD PhD

Purpose: CD4/CD8 ratio of vitreous T lymphocytes had high diagnostic value for ocular sarcoidosis. We investigated the vitreous lymphocyte subsets of uveitis to elucidate the immunological features of this disorder. **Methods:** This study involved 166 uveitis patients. Forty-four patients with sarcoidosis, 46 patients with suspected sarcoidosis (S-S), 11 patients with tumor, 10 patients with viral infection, 21 patients with other uveitis, and 34 patients with idiopathic uveitis were enrolled in this study. Their vitreous samples were analyzed by flow cytometry. **Results:** CD4/CD8 ratios were higher in sarcoidosis/S-S than in nonsarcoidosis vitreous samples. CD8 population was higher in tumor or viral infection. **Conclusion:** Vitreous T lymphocytes subset has high diagnostic value for uveitis.

Scientific Poster 114

★ Outcomes of the Boston Keratoprosthesis Type 1 in Uveitis and Advanced Ocular Surface Diseases

Presenting Author: Kittikamol Vongpaisarnsin MD

Co-Author(s): Gueorgui Tomov Markov MBCB, C Stephen Foster MD*

Purpose: To report the outcomes and complications of Boston Keratoprosthesis (KPro) type 1 implantation in uveitis and advanced ocular surface diseases. **Methods:** A case series of 20 eyes (17 patients) who had KPro at the Massachusetts Eye Research and Surgery Institution from July 2005 to October 2012. Mean follow-up was 32.1 months. **Results:** Ninety-five percent (19/20 eyes) had a preoperative BCVA < 20/200. After surgery, all patients had BCVA improvement and 80% achieved \geq 20/200. At last follow-up visit, 45% had retained BCVA of \geq 20/200. KPro retention rate was 90%. **Conclusion:** KPro type 1 provides effective and long-term improvement of vision in patients with uveitis or advanced ocular surface diseases, with an excellent retention rate. Postoperative care remains challenging, especially in the setting of autoimmune diseases.

Scientific Poster 115

Morphologic Analysis of Kyrieleis Perivasculitis With Spectral-Domain OCT

Presenting Author: Rosa Dolz Marco MD

Co-Author(s): Ssarah Mmrejen MD, Jerome Giovino MD**, Naomi R Goldberg MD, Emmett T Cunningham Jr MD PhD MPH, Lawrence A Yannuzzi MD, Manuel Diaz Llopis MD PhD**

Purpose: To analyze the morphologic characteristics of Kyrieleis perivasculitis by spectral domain OCT (SD-OCT). **Methods:** Retrospective review of cases with Kyrieleis perivasculitis by multimodal imaging analysis including color photographs, fluorescein angiography images, and SD-OCT scans. **Results:** Four cases of Kyrieleis perivasculitis were included. They all showed a spotted pattern with multiple small white deposits that did not induce any angiographic change, and corresponded to hyper-reflective humps anterior to the artery walls in the SD-OCT. **Conclusion:** the SD-OCT study of Kyrieleis perivasculitis revealed new morphologic insights, although the pathogenesis and anatomical correlation of these plaques are still controversial.

Scientific Poster 116

Anti-tumor Necrosis Factor Agents in Inflammatory Eye Disease

Presenting Author: Careen Yen Lowder MD PhD*

Co-Author(s): Maria M Choudhary MD, Rula Hajj-Ali MD, Sunil K Srivastava MD*

Purpose: To compare the effectiveness of anti-tumor necrosis factor agents in noninfectious inflammatory eye disease. **Methods:** Chart review of patients with noninfectious

Session One is Saturday and Sunday, Nov. 16 & 17. Session Two is Monday and Tuesday, Nov. 18 & 19. Refer to page 156 for poster presentation and tour schedule.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

uveitis and scleritis treated with anti-TNF agents, 2003-2011. Primary outcomes: time to first and time to sustained remission. **Results:** We included (1) 94 adults, mean age: 45.1 (range: 19-79 years), 69% women, 45.7% anterior uveitis, 3.2% intermediate uveitis, 9.6% posterior, 24.5% pan, and 17% scleritis; 41 patients were on infliximab; 31, etanercept; and 22, adalimumab; (2) 38 children, mean age: 11.2 (range: 3-17), 76.3% females, 60.5% anterior uveitis; 0.5%, intermediate; 7.9%, posterior; and 21.1%, pan; 5 patients were on etanercept; 21, infliximab; and 12, adalimumab. **Conclusion:** Patients on infliximab achieve first remission earlier and have sustained remission longer.

Scientific Poster 117

Monitoring of Therapeutic Response by Spectral Domain OCT and Indocyanine Green Angiography in Vogt-Koyanagi-Harada Disease

Presenting Author: Tsutomu Sakai MD

Purpose: To study choroidal thickness (CT) and circulation (CC) before and after immunosuppressive therapy in Vogt-Koyanagi-Harada disease (VKH). **Methods:** Spectral domain OCT (SD-OCT) and indocyanine green angiography (ICGA) were used to monitor the CT and CC in VKH. The CC was graded on the ordinal scales of 0-4 based on ICGA findings. **Results:** Fifty eyes of 25 patients with VKH were analyzed. After the treatment, the CT and CC were decreased 873 to 373 μ m and 3.5 to 0.7, respectively, over time. The CT and CC had rebound or persistence in 20 (40%) and 6 eyes (12%), respectively, in the absence of other evidence of increased inflammation during the treatment ($P < .01$). **Conclusion:** Evaluation of the choroidal status by SD-OCT and ICGA was helpful to monitor the therapeutic response in VKH. ICGA was superior to SD-OCT in follow-up evaluation of this study.

SESSION TWO

Scientific Poster 367

Corneal Changes Following Cataract Extraction in Children With Endogenous Uveitis

Presenting Author: Ekaterina V Denisova MD

Co-Author(s): Juliya Shestova, Ludmila Katargina PhD**

Purpose: To evaluate corneal changes after cataract extraction (CE) in children with endogenous uveitis (EU). **Methods:** CE was performed in 41 children with EU, in 34 eyes with posterior chamber IOL implantation and in 16 without implantation. Corneal morphology was assessed by ConfoScan 4 (Nidek; Japan). **Results:** Mild decrease in posterior stroma cell density and Descemet membrane tightening-up were found postoperatively. No statistically significant difference was noted in mean endothelial cell loss at 12 months in pseudophakic (15.5%) and aphakic (17.8%) eyes, as well as in endothelial cell density, which was in normal limits in 92% of cases. **Conclusion:** Corneal changes after CE in children with EU are within acceptable limits and do not differ in pseudophakic and aphakic eyes.

Scientific Poster 368

Ocular Syphilis: Case Series (2000-2009) From 2 Tertiary Care Centers in Montreal

Presenting Author: Kinda Najem MD

Co-Author(s): Laurence Jaworski MD, Annie-Claude Labbe, Claude Fortin**, Eric Fortin MD**, Marie-Lyne Belair MD**, Bouchra Serhir PhD**, Marie-Josée Aubin MD

Purpose: To review ocular syphilis cases treated between 2000 and 2009 at Maisonneuve-Rosemont and Notre-Dame Hospitals, Montreal. To describe the demographics, clinical presentations, proportion of co-infection with HIV, treatment, and outcome. **Methods:** Medical records of patients with positive treponemic serologic testing who visited the ophthalmology department were retrospectively reviewed. Several data were compiled. **Results:** Ninety-one patients (80% males) were included. The majority of cases were found in men aged 51-60 years (26%). The most common ophthalmologic diagnosis was anterior uveitis (31%). Co-infection with HIV was found in 34% of patients. In about 85% of patients treated, no history of reinfection was noted. **Conclusion:** Syphilis is important to keep in mind, especially since the treatment has an excellent outcome.

Scientific Poster 369

Treatment of Chronic, Noninfectious, Nongranulomatous Uveitis in Patients With Juvenile Idiopathic Arthritis

Presenting Author: Anton Kolomeyer MD

Co-Author(s): Yufei Tu MD, Elisabetta Miserocchi MD*, David S Chu MD*

Purpose: To describe treatment of uveitis in juvenile idiopathic arthritis (JIA) patients. **Methods:** Eighty-two patients (147 eyes) treated for ≥ 2 months were included. Main outcome measures were rates of inflammation control and medication discontinuation, visual acuity (VA), and side effects. **Results:** Mean age was 5.2 ± 4.0 years (78% female, 79% bilateral, 74% anterior uveitis). Mean VA did not significantly change. Thirty patients (37%) required surgeries (associated with older age, panuveitis, active inflammation, and lower VA at baseline ($P < .05$). Forty-one patients (50%) achieved inflammation control (more likely with adalimumab, infliximab, methotrexate ($P < .05$); less likely with cyclosporin A and steroids ($P < .05$). Nine patients (11%) experienced side effects. **Conclusion:** TNF-alpha inhibitors and methotrexate should be strongly considered for ocular inflammation in JIA patients.

Scientific Poster 370

Retinal Detachment and Uveitis at a Tertiary Center Over 25 Years: The Results of a Uveitis Survey Study Group

Presenting Author: Andrés Francisco Lasave MD

Co-Author(s): Ammar M Al Mahmood MD, Sulaiman M Alsulaiman MD, Abdul Aziz Al Rushood MD, Yaha Ahmad Alzahrani, Hassan A Al-Dhibi MD, J Fernando Arevalo MD FACS*

Purpose: To evaluate the frequency, visual prognosis, and treatment of retinal detachment (RD) in patients with uveitis. **Methods:** The authors retrospectively evaluated 888 consecutive patients (1409 eyes) with uveitis of whom 173 patients (19.5%) (273 eyes) with RD were identified. **Results:** Exudative retinal detachment (ERD) was diagnosed in 177 eyes (64.8%), rhegmatogenous retinal detachment (RRD) in 96 eyes (35.1%), and tractional retinal detachment (TRD) in 78 eyes (28.5%). Panuveitis was present in 125 patients (71.8%). Oral prednisone was the first line of treatment in 141 patients (81%). Immunosuppressive treatment was employed in 64 patients (36.8%). More than 70% of eyes maintained a visual acuity of 20/50 or better. **Conclusion:** RRD and TRD may be a late complication of eyes with uveitis.

Scientific Poster 371

Effect of Cataract Surgery on Eyes With Chronic Uveitis

Presenting Author: Merih Oray MD

Co-Author(s): Nilufer Gozum MD, Ilknur Tugal-Tutkun MD*, Ayse Yildiztas MD

Purpose: To evaluate the outcomes of phacoemulsification with IOL implantation in eyes with chronic uveitis. **Methods:** Review of clinical records of 55 patients (66 eyes) with chronic uveitis. Main outcome measures were BCVA, anterior chamber reaction, and quantitative measurement of inflammation with laser flare photometry. **Results:** BCVA improved in 60 eyes (91%), and 46 eyes (70%) had a final BCVA ≥ 0.5 . No improvement was seen in 6 eyes (9%). Visual loss did not occur in any eye. Laser flare photometry did not show major increases in inflammation. **Conclusion:** If the ocular inflammation is controlled before surgery, phacoemulsification with IOL implantation is safe and efficient and does not increase inflammation further than the disease itself.

Scientific Poster 372

Does Intracameral Cefuroxime Reduce Postcataract Surgery Endophthalmitis?

Presenting Author: Savitri Sharma MD

Co-Author(s): Srikant Kumar Sahu**, Soumyava Basu MS, Sujata Das MBBS, Taraprasad Das MD, Tapas Padhi**

Purpose: To determine if intracameral injection of cefuroxime at the end of cataract surgery decreases the incidence of endophthalmitis. **Methods:** Other factors remaining comparable, incidence of endophthalmitis was measured in patients with or without intracameral cefuroxime. **Results:** Patients without cefuroxime (WOC) numbered 7756 (2006-2010); and with cefuroxime (WC), 7366 (2010-2012). The difference in rate of clinical endophthalmitis in WOC (12, 0.155%) and WC (8, 0.108%) was not significant ($P = .13$). The culture positivity rate, at 58.33% (7/12) for WOC and 37.5% (3/8) for WC, was also not statistically significantly different ($P = .24$). No immediate or delayed adverse reaction was reported. **Conclusion:** Intracameral cefuroxime did not significantly reduce the risk for developing acute endophthalmitis after cataract surgery.

Scientific Poster 373

★ Clinically Significant Distinct Fundus Autofluorescence Patterns in Posterior Uveitis

Presenting Author: Hossein Nazari Khanamiri

Co-Author(s): Narsing A Rao MD

Purpose: To determine fundus autofluorescence (FAF) alteration patterns in patients with posterior uveitis. **Methods:** Prospectively 182 eyes of 97 patients with various posterior/panuveitis entities underwent FAF imaging and spectral domain OCT during a 2-year period. In patients with chronic Vogt-Koyanagi-Harada syndrome, multifocal choroiditis, tuberculosis, and autoimmune retinopathy, FAF alterations correlated with clinical features and corresponding color fundus image. **Results:** FAF revealed distinct retinal pigment epithelial damage patterns in the above-mentioned entities and early progression of the uveitis that were not apparent from clinical examination or fundus photography. **Conclusion:** FAF imaging was found useful in diagnosis of posterior uveitis and recommended for monitoring of early progression and for timely medical intervention.

Scientific Poster 374

Incidence of Peripheral Vascular Leakage in Intermediate / Posterior Uveitis With Ultrawide-field Fluorescein Angiography

Presenting Author: Robert M Beardsley MD

Co-Author(s): John P Campbell MD MPH, Wonchon Lin MD, Christina J Flaxel MD, James T Rosenbaum MD*, Eric B Suhler MD*, Phoebe Lin MD PhD

Purpose: To determine the incidence of peripheral vascular leakage in posterior and intermediate uveitis utilizing ultrawide-field fluorescein angiography (UWF-FA). **Methods:** A single center, retrospective FA image review of 60 eyes of 60 patients with posterior or intermediate uveitis compared to 25 patients without uveitis in whom UWF-FA was done. Vascular leakage was evaluated by masked graders. **Results:** Sixty-five percent (39/60) of uveitic eyes displayed peripheral leakage, while none of the nonuveitic eyes did. Of uveitic eyes with expected leakage (active disease, intermediate, vasculitis, etc.), 94.8% (37 of 39) did. **Conclusions:** UWF-FA is a useful adjunct for the management of posterior and intermediate uveitis, and peripheral leakage may serve as a surrogate for disease activity.

Scientific Poster 375

Efficacy and Safety of Infliximab Treatment for Inflammatory Lesions in Behçet Disease

Presenting Author: Takeshi Kezuka MD PhD

Co-Author(s): Yoko Okunuki MD, Jun Suzuki MD PhD**, Yoshimichi Matsunaga MD, Yoshihiko Usui MD, Hiroshi Goto MD

Purpose: To evaluate the efficacy and safety of infliximab for refractory inflammatory lesions in Behçet disease (BD). **Methods:** We reviewed 36 BD patients with inflammatory lesions treated with infliximab and no other immunosuppressant at Tokyo Medical University. **Results:** Mean duration of follow-up was 3.2 years. Infliximab was effective in 26 of 36 patients (72%) with uveoretinitis, and in 21 of 36 patients (58%) with extraocular diseases. Adverse events related to infusion reaction were encountered in 3 patients, including anaphylactic shock in 2, antiphospholipid antibody syndrome in 1, psoriasis-like exanthema in 1, and lower limb cellulitis in 1. **Conclusion:** Although strict monitoring is required, infliximab treatment is effective for inflammatory lesions in BD in the long term.

Medical Education

SESSION TWO

Scientific Poster 376

Validity of Ophthalmology Surgical Competency Assessment Rubric for Strabismus Surgery (OSCAR: Strabismus) in Resident Training

Presenting Author: W Walker Motley MD

Co-Author(s): Karl C Golinik MD, Irene I Anteby MD, Huban Atilla MD, Glen Anthony Gole MD FRANZCO, Claudia Elena Murillo-Correa, Scott E Olitsky MD, Rachel Pilling MB ChB,

Aravind R Reddy MD MBBS**, Pradeep Sharma MD, R Michael Siatkowski MD*, Maria B Yadarola MD

Purpose: To validate the OSCAR:Strabismus assessment tool inter-rater reliability. **Methods:** Video recordings of strabismus surgeries performed by 5 ophthalmology residents were distributed to 10 experienced strabismus surgery mentors in 9 countries. Surgical skills were evaluated using the OSCAR:Strabismus assessment tool. Scored evaluations were analyzed for inter-rater agreement using the Cronbach alpha coefficient. **Results:** The OSCAR:Strabismus tool demonstrated excellent inter-rater agreement with a composite Cronbach alpha coefficient of 0.91. Analyzed individually, each OSCAR:Strabismus element demonstrated acceptable inter-rater agreement except for one pertaining to muscle disinsertion. **Conclusion:** The OSCAR:Strabismus is a valid tool for the evaluation of ophthalmology residents learning strabismus surgery.

Scientific Poster 377

Measuring Quality of Care: New High-throughput Automated Analysis of Compliance With Preferred Practice Patterns in Management of Glaucoma in a Resident-Run Ophthalmology Clinic

Presenting Author: Bozho Todorich MD PhD

Co-Author(s): Kenneth Goldberg MD, Kuruvilla P Kurian PhD, Pratap Challa MD*

Purpose: To develop novel, automated analysis of glaucoma practice patterns in a resident-run ophthalmology clinic. **Method:** Ophthalmology resident notes of 914 glaucoma patients were extracted from Durham VA CPRS record using programmed script and subsequently analyzed for conformance with American Academy of Ophthalmology Preferred Practice Patterns utilizing a binary algorithm. Method was validated using manual analysis. **Results:** The study showed high concordance (> 80%) with manual analysis for all components of clinic encounter except family history. Residents performed well in documenting history, exam, treatment, and follow-up, except for therapeutic counseling (< 0.2% notes). **Conclusion:** Automated analysis is a comprehensive method to evaluate practice patterns, improve quality of patient care, and aid in ophthalmology resident education.

Scientific Poster 378

Quality Evaluation of Ophthalmology Web-Based Learning Resources for Trainees

Presenting Author: Sourabh Arora MD*

Co-Author(s): Feisal A Adatia MD*

Purpose: To identify and quantitatively evaluate ophthalmology educational websites. **Methods:** Quantitative evaluation involved the Michigan Website Evaluation Tool (MWET), Quality Component Scoring system (QCS), and the Technical Component Score System (TCS). **Results:** Fifty-two websites were included. The mean MWET score was 40.0 ± 16.3 (maximum possible score [MPS]: 80). For a sample of websites, the mean QCS score was 9.6 ± 1.7 (MPS: 13); while for TCS it was 10.6 ± 6.6 (MPS: 20), with a mean aggregated score of 20.2 ± 6.7 (MPS: 33). The dominant teaching styles used were text-based (39%), multimedia (24%), case-based (21%), research-based (12%), and quiz-based (3%). **Conclusion:** This study has provided a quality-ranked listing of online learning resources for ophthalmology trainees.

Scientific Poster 379

Strabismus Surgery Outcomes From Trainee vs. Experienced Staff as Primary Surgeon

Presenting Author: Viraj Jayesh Mehta MD

Co-Author(s): Virginia M Utz MD, Elias I Traboulsi MD*, Paul Joseph Rychwalski MD

Purpose: To compare strabismus surgery outcomes of trainees to that of staff surgeons. **Methods:** Charts of 607 patients (1025 eyes) undergoing surgery for horizontal deviation, thyroid eye disease (TED), or nystagmus were reviewed. Success was defined as horizontal deviation ≤ 10 PD, no diplopia or diplopia requiring correction of ≤ 10 PD, and residual head turn ≤ 10 degrees, respectively. **Results:** 552 patients (936 eyes) had surgery for horizontal deviation, 42 patients (64 eyes) for TED, and 13 patients (25 eyes) for nystagmus. No significant difference was seen in success rates between trainee and staff surgeon for strabismus ($P = .54$), TED ($P = .84$), or nystagmus ($P = 1.0$) after ≥ 8 weeks follow-up. **Conclusion:** Properly supervised trainees achieve strabismus surgery results comparable to an experienced staff surgeon.

Neuro-Ophthalmology

SESSION ONE

Scientific Poster 118

★ Safety and Tolerability of QPI-1007 for Acute-Onset Nonarteritic Anterior Ischemic Optic Neuropathy

Presenting Author: Rishi P Singh MD*

Co-Author(s): Bradley J Katz MD*, Andrew N Antoszyk MD*, Rabia Gurses-Ozden MD*, Shai Erlich PhD**, Leonard A Levin MD PhD*, Neil R Miller MD*

Purpose: To determine the safety and tolerability of intravitreal QPI-1007, a siRNA against caspase 2, for acute-onset nonarteritic anterior ischemic optic neuropathy (NAION). **Methods:** A 12-month, 2-stratum, Phase 1, multicenter, open-label, dose-escalation (0.2-6 mg) study was performed in patients with retinal or optic nerve pathology (S1; n = 18) or acute-onset NAION (S2; n = 30). **Results:** 261 of 273 adverse events (AEs) were of mild-to-moderate severity. There were no serious AEs. One of 24 NAION subjects (4.2%) experienced a ≥ 3 -line loss of visual acuity at Month 12, compared with 15.8% of Ischemic Optic Neuropathy Decompression Trial historical controls. **Conclusion:** A single intravitreal injection of QPI-1007 was safe and well tolerated.

Scientific Poster 119

Nonvisual Responses Mediated by Intrinsically Photosensitive Retinal Ganglion Cells in Hereditary Optic Neuropathy

Presenting Author: Aki Kawasaki MD

Co-Author(s): Lorette Leon MD, Sylvie Collomb, Mirjam Munch PhD

Purpose: In this study, we examined and compared the functional integrity of conventional retinal ganglion cells and intrinsically photosensitive retinal ganglion cells in patients with hereditary optic neuropathy (HON). **Methods:** Eight patients with HON and 8 age-matched controls underwent a thorough ophthalmologic examination and chromatic pupillometry during the daytime. Study participants were then tested overnight with additional pupil testings and hourly salivary samples for melatonin, and were exposed for 2 hours to bright white light. **Results:** Patient with HON showed significant visual loss but did not demonstrate any reduction of pupil responses and acute melatonin suppression by light. **Conclusion:** This dissociation of visual and nonvisual function further supports a mechanism of selective ganglion cell damage occurring in HON.

Scientific Poster 120

The Effects of Topical Carbonic Anhydrase Inhibitor for Treatment of Nystagmus

Presenting Author: Birsan Gokyigit MD

Co-Author(s): Serpil Akar MD, Ebru Demet Aygt MD, Banu Satana MD, Ahmet Demirok MD

Purpose: To evaluate the effects of topical carbonic anhydrase inhibitor (CAI) brinzolamide (Azopt) for treatment of nystagmus patients. **Methods:** Twenty-four patients who used brinzolamide for treatment of nystagmus were prospectively analyzed. Patients' mean age was 9.5, and diagnosis were periodic alternate nystagmus in 8, infantile nystagmus syndrome in 9, and ocular albinism in 7. The mean follow-up was 24.7 months. SPSS 15.0 computer program was used for evaluation of data. **Results:** We found reduction of amplitude in 6 of the patients, increase in vision in 10. In addition, reduced abnormal head position (AHP) was noted in 5 patients. There was no identified change in 7. **Conclusion:** The medical treatment of nystagmus with topical brinzolamide was found effective in our series, but wider series and longer follow-up studies are needed.

Scientific Poster 121

Hypoxic Night Blindness at High Altitude on Mount Everest

Presenting Author: Michael S Wiedman MD FACS

Purpose: Hypoxic at 25,000 feet, while night-time descending they froze and perished. Research done to assess hypoxia effects on night vision and safety. **Methods:** Fifteen climbers dark adapted, 4000 and 13,500 feet on Everest. Threshold testing with unique portable Goldman adaptometer neutral density filters, by one investigator. **Results:** All subjects lost

significant rod sensitivity, threshold average .4 log change between base and high camps. **Conclusion:** Awareness of night blindness importance recommends appropriate lighting gear safety for nocturnal climbing.

SESSION TWO

Scientific Poster 380

Enhanced Depth Imaging OCT Features Distinguishing Papilledema and Anomalous Optic Nerves

Presenting Author: Peter Y Chang MD

Co-Author(s): Sung Chul Park MD, Rudrani Banik MD*

Purpose: To find features on enhanced-depth imaging OCT (EDI-OCT) that may distinguish pseudopapilledema (PP) and true papilledema (TP). **Methods:** We examined EDI-OCT images of 7 patients with PP, 7 patients with TP, and 7 controls with normal-appearing optic nerves. **Results:** In PP, retinal nerve fiber layer thickness is more likely to be within normal limits, whereas it is significantly increased in TP. In addition, in TP, the prelaminar neuroglial tissue bulges into the peripapillary region in all directions, whereas in PP and controls, it is more likely to bulge into the nasal aspect only. Finally, peripapillary intraretinal fluid pockets are more likely to be seen in TP but not in PP or controls. **Conclusion:** EDI-OCT may be a useful tool for distinguishing PP from TP, sparing the need for neuroimaging or lumbar puncture.

Scientific Poster 381

Erythropoietin: A Novel Treatment for Methanol-Associated Optic Neuropathy

Presenting Author: Farzad Pakdel MD

Co-Author(s): Mostafa Soltan Sanjari**, Mehdi Modarres MD, Mohsen B Kashkoui MD**

Purpose: To report the results of intravenous erythropoietin in treatment of optic neuropathy associated with recent methanol poisoning. **Methods:** In a prospective study, patients received intravenous recombinant erythropoietin 20,000 units for 3 successive days. BCVA, visual field, fundus and systemic evaluations were performed. **Results:** Sixteen consecutive patients from November 2010 to January 2013 were included. Mean follow-up time was 5.2 (range: 1-19) months. The mean BCVA improved significantly in right (3.79 and 0.710 logMAR units, before and after treatment) and left eye (3.36 and 0.82 logMAR units, before and after treatment) ($P < .0001$). No complication was detected. **Conclusion:** Intravenous erythropoietin can be regarded as a new and promising modality of treatment for methanol-associated optic neuropathy.

Scientific Poster 382

Practice Patterns Following Retinal Artery Occlusion

Presenting Author: Anne E Abel MD

Co-Author(s): Sandra R Montezuma MD, Adam Carpenter MD*, Michael S Lee MD*

Purpose: To assess retinal artery occlusion (RAO) workup by subspecialty training. **Methods:** Ophthalmologists (Ophs) and neurologists (Neuros) were invited to complete a web-based survey. **Results:** 115 Ophs and 24 Neuros responded. For RAO < 12 hours, 35% of Ophs vs. 75% of Neuros perform emergent stroke workup. No Ophs and 13% of Neuros refer these patients for intra-arterial tissue plasminogen activator (tPA). For RAO present 24-48 hours, the majority of Ophs (82%) and Neuros (71%) perform outpatient testing. **Conclusion:** Neuros recommend emergent stroke protocol for acute RAO, while most Ophs do not. Clear management differences exist when RAO presents under 12 hours. A common trend toward outpatient management was seen when RAO presents after 24 hours. Ophs should consider activating a stroke protocol in acute RAO. Intra-arterial tPA referral for RAO is uncommon.

Ocular Tumors and Pathology

SESSION ONE

Scientific Poster 122

Primary and Secondary Intra-arterial Chemotherapy for Retinoblastoma

Presenting Author: *Fairooz Puthiyapurayil Manjandavida MBBS*

Co-Author(s): *Carol L Shields MD, Giulia Pieretti MD, Sruthi Arepalli, Jerry A Shields MD*

Purpose: To analyze the efficacy of primary and secondary intra-arterial chemotherapy (IAC) in retinoblastoma. **Methods:** Retrospective analysis of 69 consecutive eyes in 65 patients undergoing intra-arterial chemotherapy over 4 years. **Results:** IAC, including melphalan (51), melphalan plus topotecan (14), and melphalan plus carboplatin (4), was administered in 69 eyes using 193 catheterizations of ophthalmic artery. The mean age at first IAC was 30 months. Primary IAC in 35 eyes had 71% eye salvage overall (100% in Groups B and C, 94% in Group D, and 35% in Group E) at 17 months mean follow-up. Secondary IAC for 34 eyes demonstrated 65% globe salvage. **Conclusion:** IAC demonstrates remarkable tumor control and globe salvage in the management of retinoblastoma, especially as primary treatment in Group B, C, and D eyes.

Scientific Poster 123

American Joint Committee on Cancer (AJCC) Cancer Staging of Posterior Uveal Melanoma Is Predictive of Prognosis: Analysis of 7731 Patients

Presenting Author: *Carol L Shields MD*

Co-Author(s): *Swathi Kaliki MD, Minoru Furuta MD, Carolina Alarcon MD, Jerry A Shields MD, Enzo M Fulco MD*

Purpose: To analyze American Joint Committee on Cancer uveal melanoma staging. **Methods:** Retrospective series. **Results:** Of 7731 patients, melanoma was stage I ($n = 2767$), stage II ($n = 3735$), stage III ($n = 1220$), and stage IV ($n = 9$). Kaplan-Meier metastasis at 5, 10, and 20 years were 5%, 12%, and 20% (stage I), 17%, 29%, and 44% (stage II), 44%, 61%, and 73% (stage III), and 100% at 1 year (stage IV). Compared to stage I, hazard ratio for metastasis was 3.1 for stage II and 9.3 for stage III. **Conclusion:** Metastases increase 3-fold for stage II and 9-fold for stage III, compared to stage I.

Scientific Poster 124

Genome-Wide Analysis of Ocular Adnexal Lymphoproliferative Disorders Using High-resolution Single Nucleotide Polymorphism Array

Presenting Author: *Yoshihiko Usui MD*

Co-Author(s): *Hiroki Takahashi DVM, Shunichiro Ueda MD, Aiko Sato-Otsubo MS, Hiroshi Goto MD*

Purpose: To identify the genomic signature of ocular adnexal mucosa-associated lymphoid tissue lymphoma (MALT), IgG4-related ophthalmic disease (IgG4-ROD), and reactive lymphoid hyperplasia (RLH). **Methods:** Thirty-nine MALT (22 conjunctiva and 17 orbit), 13 IgG4-ROD, and 4 cases of RLH were studied by using Affymetrix GeneChip Human Mapping arrays. **Results:** In MALT, chromosomal aberrations were detected at chromosomes 3 (36%), 6 (20%), 18 (18%), and 21 (10%) and found in about 76% of orbital MALT, and the frequency was higher than in conjunctival MALT (40%). Uniparental disomy (UPD) in chromosomes 3 and 6 were frequently found in MALT. No chromosomal aberrations were found in IgG4-ROD and RLH. **Conclusion:** We detected novel chromosomal aberrations in MALT. MALT lymphoma had different patterns of chromosomal aberrations.

Scientific Poster 125

Multispectral Imaging of Choroidal Tumors

Presenting Author: *Charles J Pavlin MD FRCS*

Co-Author(s): *Hatem Krema FRCS, E Rand Simpson MD*

Purpose: Multispectral imaging uses light-emitting diodes of different frequency (green to infrared) to illuminate retina and choroid. Longer wavelengths produce deeper penetration, providing a series of en face images at increasing depth. **Methods:** Thirteen choroidal tumors were imaged at all wavelengths. **Results:** Tumor margins were more clearly visual-

ized at the longer wavelengths (deep red and infrared) with increased visibility of tumor pigmentation and choroid. Lipofuscin was clearly imaged at longer wavelengths. Longer wavelengths allowed imaging of the peri-tumor choroidal vascular pattern. **Conclusion:** Multispectral imaging of choroidal tumors provides useful information without the use of injectable dyes. Tumor margins can be more clearly delineated, lipofuscin is clarified, and peri-tumor choroidal changes can be imaged.

Scientific Poster 126

Surgical vs. Medical Treatment of Ocular Surface Squamous Neoplasia: A Comparison of Recurrences and Complications

Presenting Author: *Afshan A Nanji MD*

Co-Author(s): *Christina S Moon MD, Anat Galor MD*, Julia Sein MD, Patrick Rafael Oellers MD, Carol L Karp MD*

Purpose: To compare recurrence and complication rates of surgical treatment to those of medical treatment of ocular surface squamous neoplasia (OSSN). **Methods:** A case control study of patients with OSSN treated with surgery ($n = 49$) vs. topical interferon therapy, either in drop or injection form ($n = 49$). **Results:** Mean patient age and gender were similar between the groups. Eyes in the medically treated group had higher American Joint Committee on Cancer stage tumors. Despite this, the recurrence rate was equal, at 3 recurrences per group. The 1- and 5-year recurrence rates in the surgical group were 5% and 11%, vs. 0% and 21% in the medical group ($P = .73$). Nonlimbal location was a risk for recurrence (hazard ratio: 9.72). Side effects between the groups were generally similar. **Conclusion:** Surgical and medical therapies were found to have similar recurrence rates for OSSN.

Scientific Poster 127

Association Between Regression Rate and Gene Expression Profile Class in Uveal Melanomas Undergoing I-125 Plaque Brachytherapy

Presenting Author: *Rajesh C Rao MD*

Co-Author(s): *Shahed Nicolas Badiyan MD, J William Harbour MD**

Purpose: To determine whether gene expression profiling (GEP) is associated with rate of tumor regression following I-125 plaque brachytherapy (IPB) for uveal melanoma (UM). **Methods:** Retrospective review of 138 patients with posterior UM treated with IPB in which GEP class and 3-month post-radiation tumor thickness were available. **Results:** GEP class assignment was class 1 in 83 and class 2 in 55 of patients. Mean age was 60.9 years for class 1 and 68.1 years for class 2 tumors ($P = .002$). Mean reduction in tumor thickness at 3 months post-radiation was 26.5% for class 1 and 13.0% for class 2 tumors ($P = .01$). Complete tumor regression with flat residual tumor at 3 months was observed for 4 class 1 tumors and no class 2 tumors. **Conclusion:** Class 1 tumors exhibit more rapid early tumor regression than class 2 tumors following IPB.

Scientific Poster 128

Long-term Outcomes of Anti-VEGF Therapy for Choroidal Neovascularization Associated With Choroidal Osteoma

Presenting Author: *Mohammed Ali Khan MD*

Co-Author(s): *Francis C DeCroos MD, Philip Storey MD, Jerry A Shields MD, Sunir J Garg MD*, Carol L Shields MD*

Purpose: To investigate the efficacy of serial anti-VEGF injections for CNV associated with choroidal osteoma. **Methods:** Retrospective case series at the Wills Eye Institute, Philadelphia, Pennsylvania. **Results:** Eight tumors in 8 eyes were treated with a median of 8 anti-VEGF injections (range: 1-19). Resolution of fluid on OCT was observed in 7 of 8 eyes (87%). The mean Snellen acuity improvement was 1 line (range: loss, 3 — gain, 7 lines) at a mean 32.5 months follow-up. Four eyes (50%) had at least 1 recurrence. Four eyes (50%) received supplemental photodynamic therapy (PDT); of these, only 1 (25%) had a recurrence. **Conclusion:** Therapy with anti-VEGF can be effective for CNV due to choroidal osteoma, with preservation of visual acuity. Supplemental PDT may reduce the risk of CNV recurrence.

Scientific Poster 129

RetCam Fluorescein Angiography Findings in Eyes With Advanced Retinoblastoma

Presenting Author: Jonathan W Kim MD

Co-Author(s): Srinivas R Satta MD*, Yohko Murakami MD

Purpose: We propose that fluorescein angiography (FA) performed on the Retcam II can be important in the evaluation of retinoblastoma patients. **Methods:** A retrospective case series was performed on all new retinoblastoma patients evaluated with Retcam FA from 2000 to 2012. FA images were analyzed, and a chart review was performed. **Results:** For the 100 Group D and E eyes, notable findings included iris neovascularization (54/100), intrinsic tumor vasculature (76/100), retinal or tumor nonperfusion (84/100), and retinal vein periphlebitis (20/47 Group D). Retcam FA was not clinically useful after 3 minutes. **Conclusion:** Characteristic retinovascular findings on Retcam FA were described. Retcam FA adds minimal time to the exam and is useful in defining the extent of disease and distinguishing retinoblastoma from simulating conditions.

SESSION TWO

Scientific Poster 383

The Corneal Scar in Peters Anomaly and Primary Congenital Glaucoma: An Immunohistochemical Study

Presenting Author: Mohammed A Alshamrani MBBS

Co-Author(s): Mosa AlHarby MD, Hind M Alkatan MBBS, Sabah Jastaneiah MD, Jonathan Song MD, Deepak Paul Edward MD

Purpose: To compare immunopathology of the corneal scar in Peters anomaly (PA) and congenital glaucoma (CG). **Method:** Review of corneal pathology from PA and CG patients ($n = 8$ each); semiquantitative immunolabeling with antibodies against 5 extracellular matrix proteins and smActin with appropriate controls. **Results:** PA and CG corneas showed significantly greater collagen I, III, heparan sulfate, and smActin stromal scar label and significantly decreased keratan sulfate label compared to normal age-matched control and/or adult scarred corneas ($P < .008$). 1.5 to 2-fold more intense label was noted in PA corneas. PA and CG cornea immunolabel was comparable. **Conclusion:** The ECM protein and cellular component in PA and CG corneal scars were distinctly different from normal and adult scarred corneas. The changes were more prominent in PA.

Scientific Poster 384

Wide-angle Optos Retinal Angiography Complements RetCam in Evaluation and Follow-up of Pediatric Age Group With Retinoblastoma

Presenting Author: Ihab S Othman MD

Co-Author(s): Shereen Hasan Sadek Mourad MD

Purpose: To evaluate Optos wide-angle fundus photography (OWAFF) in evaluation and further management of pediatric age group with retinoblastoma. **Methods:** Fifteen patients previously treated and managed at the EyeWorld Hospital were evaluated. Age ranged from 3 to 7 years. Fundus photos were taken with Optos 200Tx and compared to RetCam fundus imaging. Steering was performed whenever possible to get details of peripheral fundus. **Results:** OWAFF matched the RetCam fundus imaging in children over 4 years old with steering. Images were high resolution and provided detailed description of the retina and tumors. **Conclusion:** OWAFF is a useful adjunct in children over 3 years old with retinoblastoma for follow-up of the central and peripheral lesions with no need of general anesthesia.

Scientific Poster 385

Acute Inflammatory Regression of Class 1 Posterior Uveal Melanomas Following I-125 Plaque Radiotherapy

Presenting Author: Royce W Chen MD

Co-Author(s): J William Harbour MD*

Purpose: To determine if acute inflammatory regression of posterior uveal melanoma (PUM) following I-125 brachytherapy is associated with a specific gene expression profile (GEP) molecular class. **Methods:** Retrospective study of 294 consecutive PUM patients who underwent GEP testing from fine needle aspiration biopsy prior to I-125 brachytherapy. **Results:** The GEP was Class 1 in 171 (58%) and Class 2 in 123 (42%) tumors. Rapid inflammatory regression to a flat scar within 3 months of brachytherapy occurred in 12 tumors (4%). All 12 of these tumors were Class 1 ($P < .01$). **Conclusion:** Acute inflammatory

regression may occur preferentially in Class 1 PUM. This finding suggests that radiated, necrotic Class 1 melanoma cells are more immunogenic than Class 2 cells and explains why immunotherapy is rarely effective in metastatic PUM from Class 2 tumors.

Scientific Poster 386

Sebaceous Gland Carcinoma: Clinical Profile, Management, and Outcomes in 147 Patients

Presenting Author: Akshay Gopinathan Nair MD

Co-Author(s): Milind N Naik MBBS**, Swathi Kaliki MD

Purpose: To describe clinical profile, management, and outcomes of ocular adnexal sebaceous gland carcinoma (SGC). **Methods:** Retrospective. **Results:** The median age at presentation was 55, and 89 (61%) were female. Based on American Joint Commission on Cancer classification, the tumors were classified as T2 (59%), T3 (39%), and T4 (1%). Primary treatment included wide excision biopsy (74%), exenteration (12%), neoadjuvant chemotherapy (8%), external beam radiotherapy (1%), topical mitomycin C (1%), and cryotherapy (<1%). Overall, eyelid/globe salvage was achieved in 84% over a median follow-up period of 80 months. Local recurrence (14%), locoregional metastasis (18%), systemic metastasis (14%), and death due to metastasis (11%) occurred. **Conclusion:** SGC is a disease of the elderly with predilection for women. Primary excision was possible in 74%, and 16% cases required exenteration.

Scientific Poster 387

Incidence of Radiation Maculopathy in Patients With Uveal Melanoma Treated With I-125 Plaque Brachytherapy

Presenting Author: Nisha V Shah MD

Co-Author(s): Samuel K Houston MD**, Arnold Michael Markoe MD, Timothy G Murray MD MBA*

Purpose: To report radiation maculopathy incidence and BCVA outcomes on 265 patients treated with I-125 plaque brachytherapy for uveal melanoma. **Methods:** Institutional review board-approved, consecutive, retrospective study utilizing spectral domain OCT (SD-OCT) at 2-4 month intervals, prompting commencement of bevacizumab. **Results:** BCVA at the time of SD-OCT radiation maculopathy detection improved from median of 20/70 to 20/50 after 3 years of bevacizumab therapy. In patients with over 30 months follow-up, 46.8% of radiation maculopathy eyes attained 20/40 or better BCVA. **Conclusion:** Up to 70% of patients presented with radiation maculopathy following I-125 plaque brachytherapy. Intravitreal bevacizumab proves effective in preserving vision up to 4 years following plaque brachytherapy.

Scientific Poster 388

Chemoreduction for Infants Under 6 Months of Age With Retinoblastoma

Presenting Author: Jesse L Berry MD

Co-Author(s): Rima Jubran MD, Thomas Lee MD*, A Linn Murphree MD**

Purpose: To evaluate outcomes of infants diagnosed with retinoblastoma before 6 months of age. **Methods:** Retrospective review from 2000-2009. Ninety eyes of 53 infants were included. Systemic chemoreduction (CRD) was administered when local modalities failed. Primary outcome measure was globe salvage and CRD-related complications. **Results:** Of 53 infants, 35 (66%) required CRD; 28 infants (53%) avoided CRD during the first 6 months of life. Globe salvage was achieved in 60% of eyes (54/90) and 93% (41/44) of Group A-C eyes. No patient was hospitalized for CRD-related illness. Bilateral disease and Group C-E classification was associated with need for CRD ($P 0.005$, $P 0.02$). Median follow-up was 65.2 months. **Conclusion:** Bilateral disease and Group C-E classification in at least 1 eye at presentation increased the chance of an infant requiring CRD.

Scientific Poster 389

Palladium-103 Plaque Radiation Therapy for Large Choroidal Melanoma

Presenting Author: Ekaterina Semenova MD

Co-Author(s): Paul Finger MD*

Purpose: To evaluate outcomes after palladium-103 brachytherapy for American Joint Commission on Cancer (AJCC) T3- and T4-sized choroidal melanoma. **Methods:** Forty-seven patients with the AJCC T3 and T4 choroidal melanoma were treated with palladium-103 brachytherapy. **Results:** Mean radiation dose to the tumor apex was 68.9 Gy. At a mean 48 months, local control was 91.5%; and eye retention, 89.4%. Treatment-related complications were radiation maculopathy (66%), radiation optic neuropathy (51.1%), secondary

cataract (36.4%) and secondary glaucoma (17%). Vision was better than or equal to 20/200 in 53.2% of patients. Metastatic melanoma developed in 31.9% of patients. **Conclusion:** Palladium-103 ophthalmic plaque radiation therapy can be used as an eye- and vision-preserving treatment for relatively large AJCC T3 or T4 choroidal melanomas.

Ophthalmic History

SESSION ONE

Scientific Poster 130

The Last Ride of Henry II: The Demise of the Sport of Jousting in France After an Organic Orbital Foreign Body

Presenting Author: Kian Eftekhari MD

Co-Author(s): Christina H Choe MD, M Reza Vagefi MD, Lauren A Eckstein MD PhD

The sport of jousting flourished during the Renaissance in Western Europe. However, the sport was not without its dangers, and traumatic eye injuries were common. In 1559, King Henry II of France was injured in a jousting match. During the king's last ride of the day, he did not buckle his visor and was struck with a wooden lance in his right eye. His surgeons, Ambroise Pare and later Vesalius, described his injury as a splinter of wood that had entered the right orbit. They did not intervene at the time to remove the organic material in the orbit. The king went on to develop a fulminant meningitis. Despite the best efforts of his famous physicians, King Henry II died of an organic orbital foreign body, and his death coincided with the demise of jousting in France.

Scientific Poster 131

Blindness and the Blues

Presenting Author: Nicholas K Wride MBChB*

Purpose: To analyze blind musicians from the Mississippi Delta region and how they came to influence Delta blues music. **Methods:** A retrospective search of print media, the Internet, and music sources was performed to gather data on blind blues recording artists active pre-1950. **Results:** Thirty-one cases were identified for the purposes of this study. M:F, 30:1. In 15 cases, the probable cause of blindness was documented: 6 were due to trauma, 3 from glaucoma, and 3 from congenital cataract. The most common instrument was guitar (21 cases). **Conclusion:** Due to a unique combination of events, such as their disability and environmental and socioeconomic factors, blind blues musicians performed a crucial role in the development of blues music. This study assesses and celebrates their achievements.

Scientific Poster 132

Boleslaw Wicherkiewicz: An Interesting Contributor to European Ophthalmology

Presenting Author: Andrzej Grzybowski MD*

Co-Author(s): Dieter Schmidt Sr**

Purpose: Boleslaw Wicherkiewicz (1847-1915) published about 300 scientific reports in Polish, German, English, and French; however, both his interesting life and his scientific achievements were never studied in detail. The aim of this study is to fill this gap. **Methods:** The study is based on analysis of all papers written by Wicherkiewicz, mainly in Polish and German. The biographical details were verified in National Archives in Poznan and Cracow, cities where he lived and worked. **Results:** His original contributions on oculoplastic surgery, cornea transplants, glaucoma surgery, cataract surgery, and clear lens surgery in myopia are presented. **Conclusion:** Wicherkiewicz was an important contributor to European ophthalmology.

Optics, Refraction, Contact Lenses

SESSION ONE

Scientific Poster 133

Scleral Contact Lens in Pellucid Marginal Degeneration

Presenting Author: Jagadeesh C Reddy MD

Co-Author(s): Varsha M Rathi DO, Preeji Mandathara, Srikanth Dumpati**

Purpose: To assess the visual outcome of scleral contact lenses in patients with pellucid marginal degeneration (PMD). **Methods:** Nineteen patients underwent trial with scleral contact lens (PROSE; USA) for 00 PMD. Lenses with different front surface eccentricities

were tried to improve the visual acuity. **Results:** Twenty eyes of 12 patients received the lenses. Mean age was 43.83 years. Two patients had superior PMD; 4 eyes had coexisting keratoconus and PMD. Visual acuity improved with scleral lens by more than 2 lines in all eyes. The front-surface eccentricity ordered was 0.6 in most of the eyes; 1 eye had 0.3 eccentricity. Two eyes had improved visual acuity, with 0.8. Two patients had hydrops during the wearing period. **Conclusion:** Scleral lenses improve visual acuity in PMD.

Scientific Poster 134

An Explanation for Over-emmetropization Among Chinese Children: Re-evaluation of 5757 Chinese Schoolchildren's Refractive Error

Presenting Author: Yining Shi MD

Purpose: To observe the natural course of myopization in Chinese schoolchildren. **Methods:** 5757 students in 4 primary and middle schools underwent noncycloplegic refraction, VA, IOP, fundus evaluation, and the special designed questionnaire. Their data were input into a special computer program and statistically analyzed. **Results:** With no hyperopic buffering left for normal emmetropization, Chinese children's myopization began at 7 years old in an average refractive error -0.78 D, instead of +2.5 D. Their myopic shift progressed to -3.75 D at 18 years old during normal emmetropization with the -0.22 D average increase per year to compensating 1-mm normal ocular axial length growing. **Conclusion:** The high prevalence of myopia in Chinese children may be due to an exhausted hyperopic buffering with normal speed emmetropization.

SESSION TWO

Scientific Poster 390

Scleral Contact Lens Fitting in Keratoconus

Presenting Author: Varsha M Rathi DO

Co-Author(s): Preeji Mandathara, Srikanth Dumpati**, Bhupesh Bagga DO MBBS

Purpose: To report success and failures in fitting scleral contact lens (PROSE; USA) in keratoconus (KC). **Methods:** 106 out of 941 patients seen in scleral lens clinic during 2009-2012 had KC and were analyzed retrospectively. **Results:** Sixty-six patients wore and 40 patients did not order lenses. Reasons for poor candidates were no visual improvement (NVI), 13; mentally challenged, 1; lens insertion failure, 2; not comfortable, 2; and ghost images, 2. Among the good candidates: Did not order, 20; underwent keratoplasty, 4; not interested, 7; undecided, 3; NVI, 2; training failure, 2; glaucoma, 1; monetary reasons, 1. **Conclusion:** Twenty of 106 KC patients were poor PROSE candidates.

Scientific Poster 391

Accuracy of the Retinomax K-Plus3 in Measuring Refractive Error Within a Pediatric Population

Presenting Author: Michelle Yun Peng

Co-Author(s): Noelle S Matta COT, David I Silbert MD*, Jing Tian MS, Eric L Singman MD PhD

Purpose: To evaluate the accuracy of the Retinomax K-plus3 handheld autorefractor (AR) as compared to a pediatric ophthalmologist in determining refractive error in cycloplegic children. **Methods:** We determined the sphere, cylinder power, and axis of 622 eyes in 311 children, 5 months to 17 years. A paired t-test was performed for sphere, cylinder power, axis of astigmatism, and spherical equivalent, and a 1-sample t-test for vector diopter distance. **Results:** Overall, the refractions were not significantly different with regard to cylinder power and axis. An age-group comparison showed inconsistency in statistically similar refractive error parameters among the different age groups. **Conclusion:** In children \leq 18 years old, the Retinomax AR provides a reasonable estimate of only cylinder axis and power.

Orbit, Lacrimal, Plastic Surgery

SESSION ONE

Scientific Poster 135

Medial Epicanthoplasty for Epiblepharon and Entropion Patients With Combined Epicanthal Folds

Presenting Author: HyungChul Kim MD

Co-Author(s): Helen Lew MD PhD**

Purpose: To evaluate the clinical outcomes following modified epicanthoplasty to treat the epiblepharon and entropion in Korean patients. **Methods:** Between October 2010 and February 2013, epiblepharon and entropion were treated using modified epicanthoplasty in 40 patients. Prominent epicanthal folds were corrected, and horizontal tension from the lower eyelid to medial canthal angle was released by periciliary V-Y plasty ($n = 15$) or modified z-plasty ($n = 25$). **Results:** The mean age of the patients was 21.8 ± 19.5 years, and the average follow-up period was 11.1 ± 5.1 months. Cilia touch and erosion of cornea were removed without recurrence and operative scars were acceptable in all patients. **Conclusion:** Epiblepharon or entropion combined with epicanthal folds can be treated effectively and safely using modified epicanthoplasty.

Scientific Poster 136

Usefulness of Orbital Fat to Total Orbit Area Ratio in Mild to Moderate Thyroid-Associated Ophthalmopathy

Presenting Author: HyungChul Kim MD

Co-Author(s): Won Kyung Song MD, Helen Lew MD PhD**

Purpose: To find a useful predictor of orbital CT images in mild to moderate thyroid-associated ophthalmopathy (TAO). **Methods:** Between January 2012 and March 2013, 74 subjects were divided into 49 TAO patients and 23 controls following ophthalmic examination and thyroid function test. The cross-sectional areas of extraocular muscles and total orbit area were calculated on coronal view 6 mm posterior from posterior pole of globe using Syngo (2007, Argus, Siemens) and analyzed according to the clinical manifestations. **Results:** Orbital fat to total orbit area ratio (OF/TOA) was increased in TAO with retraction ($P = .009$) and TAO with proptosis ($P = .011$). There was a positive correlation between proptosis and OF/TOA ($P = .008$). **Conclusion:** The OF/TOA ratio is a useful predictor in mild to moderate TAO.

Scientific Poster 137

Eight-Year Experience With Transcanalicular Laser-Assisted Dacryocystorhinostomy

Presenting Author: Brigita Drnovsek Olup MD PhD*

Co-Author(s): Matej Beltram*

Purpose: To present 8 years of experience with minimally invasive transcanalicular laser-assisted dacryocystorhinostomy (TCL-DCR) with a 980-nm diode laser. **Methods:** We performed 332 consecutive TCL-DCR procedures with silicone stent intubation, under general or local anesthesia. The approach to osteotomy is via the anatomical pathway of tears, and a 980-nm diode laser is used with a power of 10 W. The silicone stents have been removed on average 4 months postoperatively and patency of the nasolacrimal duct has been assessed at up to 48 months follow-up. **Results:** 249 out of 301 patients had a patent nasolacrimal duct after removal of the silicone stents, yielding a success rate of 83%. **Conclusion:** The 980-nm diode laser is an effective tool for TCL-DCR, with a success rate higher than other endoscopic DCR procedures.

Scientific Poster 138

Experience With Medpor-Coated Tear Drainage Tube: A Retrospective Chart Review

Presenting Author: Vasudha Gupta MD

Co-Author(s): Ritesh Gupta, Jerrod S Kent MD, Yasser A Khan MD

Purpose: To analyze the outcomes of lacrimal bypass surgery with Medpor-coated tear drainage tube. **Methods:** A retrospective chart review was performed on all patients who had placement of a Medpor-coated tear drain between 2010 and 2012. The data collection included patient demographics, length of follow-up, patient comfort, position and function of tube, and any associated complications. **Results:** A total of 9 patients who had placement of 11 tubes were identified. There were 3 females and 6 males, mean age of 50 years, with follow-up averaging 289 days. Only 1 case (9%) had extrusion. The most common

complications were granuloma formation ($n = 5$, 45%), followed by conjunctival overgrowth ($n = 2$, 18%). **Conclusion:** Medpor-coated Jones tubes offer a lower rate of extrusion with longer-term placement.

Scientific Poster 139

Ocular Complications After Acoustic Neuroma Resection

Presenting Author: Srinivas Sai Kondapalli MD

Co-Author(s): Ian Kirchner, David K Yoo MD, Charles S Bouchard MD

Purpose: To evaluate ophthalmic complications following acoustic neuroma resection (ANR). **Methods:** Records of patients undergoing ANR from 1988 to 2012 were reviewed. Operative approach and tumor size were noted. Postoperative ocular complications and trigeminal nerve palsy were recorded. **Results:** 352 patient records were reviewed. 152 of these patients (43%) had ocular complications, the most common of which were dry eye and epiphora. Fifty-seven patients (16%) had trigeminal nerve palsy manifesting predominantly as corneal hypoesthesia. Translabryntine / transcochlear surgical approach in ANR had the highest complication rate, of 67%. Tumors > 2.0 mm resulted in greater paresis ($P < .001$). **Conclusion:** ANR can result ocular complications. Preoperative knowledge of surgical approach and tumor size may predict the postoperative course.

Scientific Poster 140

Cosmetic and Quality of Life Outcomes of the Direct Brow Lift

Presenting Author: Srinivas Sai Kondapalli MD

Co-Author(s): Craig N Czyn DO, Jill Annette Foster MD FACS*, Kenneth V Cahill MD FACS

Purpose: Retrospective study to evaluate the postoperative changes in quality of life in patients who underwent direct browplasty. **Methods:** Patients who underwent direct browplasty surgery alone were asked to participate in a 14-question survey. **Results:** Twenty-five patients participated in the study. Ninety-two percent of patients responded favorably when asked if they were happy with the results of the surgery. Overall, 15 patients noted an improvement in vision, and 14 participants denied having a visible facial scar. Moreover, 21 patients denied light sensitivity, 25 denied any new headaches/pain, and 24 denied forehead/scalp numbness. **Conclusion:** Direct browplasty provides an improvement in patients' quality of life, and issues with visible facial scars may be overstated.

Scientific Poster 141

Evaluation of Morphometric Data and Topographic Changes Before and After Application of Botulinum Toxin-A in Patients With Hemifacial Spasm

Presenting Author: Teissy H Osaki MD

Co-Author(s): Midori H Osaki MD, Tammy H Osaki MD, Mauro S Campos MD

Purpose: To evaluate the eyelid fissure and corneal topography in patients with hemifacial spasm (HS) before and 15 days after botulinum toxin-A treatment (BTX-A). **Methods:** Photographs and corneal topography in patients with HS were performed before and 15 days after treatment with BTX-A. **Results:** We evaluated 15 patients with HS. The mean values of the eyelid fissure (Image J software) were 7.08 and 9.61 mm ($P < .05$), and the mean steep Ks were 45.12 D and 44.97 D ($P > .05$) before and after treatment, respectively, in the treated eye. A correlation was observed after BTX-A application: the lower the eyelid fissure, the higher the steep K. **Conclusion:** The increase of the eyelid fissure was statistically significant 15 days after treatment with BTX-A. A larger series and longer follow-up are needed to permit further considerations.

Scientific Poster 142

A Predictive Model of Temporal Artery Biopsy Outcomes: A Validation Study

Presenting Author: Chris T Waite MD

Co-Author(s): Ezekiel Weis MD

Purpose: Validation of a predictive model for temporal artery biopsy. **Methods:** A prior analysis of 119 cases revealed that a simple model including ESR, CRP, and platelets could predict a subset of patients (40%) with a 100% pretest probability. No case was misclassified. This current study utilized a retrospective case-control series of patients undergoing temporal artery biopsy to validate this original model. **Results:** 136 new consecutive patients from a different institution were analyzed. The previously defined thresholds suc-

cessfully predicted a large subset of patients (38%) in which the biopsy result could be predicted with 100% certainty. **Conclusion:** Utilizing a simple clinically applicable predictive model of the pretest probability, 38%-40% of temporal artery biopsies can be avoided.

Scientific Poster 143

Comparison of Fasanella-Servat and Small-Incision Techniques for Involuntional Ptosis Repair

Presenting Author: Mahsa A Sohrab MD

Co-Author(s): Gary Stephen Lissner MD

Purpose: To compare small-incision external and Fasanella-Servat internal approaches for involuntional ptosis. **Methods:** Retrospective review of 104 procedures by the same surgeon (GSL). Main outcome measures included patient satisfaction, marginal reflex distance one (MRD1), surgical complications, and operating time. **Results:** MRD1 increased an average of 3.38 mm (± 0.79) in the Fasanella-Servat group and 2.79 mm (± 0.8) in the small incision group ($P < .01$). Preoperative MRD1 was lower in the Fasanella-Servat group ($P < .01$), but similar postoperatively in the 2 groups ($P = .5$). Average operating time was 53 and 27 minutes in the small-incision and Fasanella-Servat groups, respectively ($P < .01$). **Conclusion:** The Fasanella-Servat approach provides a shorter operating time, with equivalent postoperative MRD1 and satisfaction.

Scientific Poster 144

Clamp-Assisted Retractor Advancement for Lower Eyelid Involuntional Entropion

Presenting Author: Nicholas Siu Kay Fung MBChB MRSCed(OPHTH)

Co-Author(s): Marcus M Marcet MD

Purpose: To describe a novel approach to internal repair of lower lid entropion using the Putterman clamp. **Methods:** Retrospective, consecutive case series of patients with entropion who underwent retractor advancement using the clamp. **Results:** Seven eyes of 6 patients (average age: 80; 4 women and 2 men) were analyzed. Complete resolution was achieved in 5 of the 6 patients (83.3%). The 1 patient with recurrence had 2 previous entropion surgeries on each eye over the past 4 years; there was lid laxity, and horizontal tightening was needed. No severe adverse events occurred in the patients. **Conclusion:** Clamp-assisted lower lid retractor advancement offers a safe and effective, minimally invasive approach to involuntional entropion. Further study is needed to assess its role in recurrent entropion.

Scientific Poster 145

Corneal Biomechanical Properties of Patients With Thyroid-Associated Ophthalmopathy

Presenting Author: Ahmet M Sarici MD

Co-Author(s): Velittin Oguz MD**, Mustafa Hepokur MD, Burcu Balta, Ahmet Ozkok MD

Purpose: To compare the biomechanical properties of the cornea and IOP between patients with Graves ophthalmopathy (GO) and healthy individuals. **Methods:** Forty-two healthy individuals (control group) and 42 patients with GO (study group) underwent Reichert ocular response analyzer (ORA) measurements prospectively. Corneal hysteresis (CH), corneal resistance factor (CRF), and Goldman-related IOP (IOPg) were recorded. **Results:** Mean CH was 10.2 ± 0.6 mmHg and 11.3 ± 1.3 ($P = .1$); mean CRF was 9.7 ± 1.1 mmHg and 11.9 ± 1.5 mmHg, $P = .02$; mean IOPg was 13.9 ± 2.9 mmHg and 14.9 ± 2.6 mmHg in the study group and control group ($P = .3$), respectively. There were no statistically significant differences between groups. **Conclusion:** Biomechanical properties of the cornea are not altered in patients with GO compared with normal controls.

Scientific Poster 146

Preorbital and Orbital Volume in Blowout Fractures

Presenting Author: Emile Sharifi MD

Co-Author(s): Thao Phuong Le MD, Lee M Mitsumori MD**, Arash Jian-Amadi MD

Purpose: To explore orbital tissue volume relating to the mechanism of blowout fractures. **Methods:** We performed retrospective measurements of CT-based orbital scans, measuring orbital and preorbital volumes. Fifty scans of patients with unilateral orbital blowout fractures were measured and compared to a control group of 50 patients with unilateral globe rupture. **Results:** Patients with blowout fractures had on average 1.23 cm³ less preorbital volume, Student *t*-test *P*-value of .04 and 1.83 cm³ less orbital tissue volume, Student *t*-test *P*-value of .0004, compared to volumes in patients with open globe injuries. **Conclusion:** The distribution of orbital tissue volume is inversely correlated with the degree of bony damage in patients suffering unilateral blunt trauma.

SESSION TWO

Scientific Poster 392

Determinative Factors in Surgical Planning of Cosmetic and Reconstructive Eyebrow Surgery

Presenting Author: Ali Makateb MD

Co-Author(s): Mohammad Taher Rajabi MD**

Purpose: To identify different factors that an oculoplastic surgeon should consider while practicing cosmetic or reconstructive eyebrow surgery in order to have the patient's final satisfaction. **Methods:** Five photographs were taken from 60 females while demonstrating their preferred eyebrow position with fingers. Eyebrow landmarks measured in ideal brow position. **Results:** Most of subjects (49%) preferred a wider brow angle. Location of brow peak was transferred to the lateral canthus in desired position. The desired eyebrow apex angle in 2 age groups of > 40 years and ≤ 40 -year-old subjects was not statistically different. **Conclusion:** Oculoplastic surgeons should consider the difference of culture, race, age, and desire of the patients to have their surgical plans for every individual patient preference.

Scientific Poster 393

The Versatility of the Temporoparietal Fascial Graft in Orbital Implant Exposure

Presenting Author: Liam Daniel Turner MBBS

Co-Author(s): Anjana H aridas MBCh MA MRCPHTH, Timothy J Sullivan MBBS

Purpose: To demonstrate the versatility of the temporoparietal fascial graft (TPFG) in orbital implant exposures of varying duration, implant types, and patient age as well as for recurrent exposure. **Methods:** Retrospective, interventional, noncomparative case series. **Results:** Twelve patients (13 grafts) are presented with a mean follow-up of 9.5 months. The duration of exposure prior to grafting ranged from 1 to 11 months occurring in bioceramic, hydroxyapatite, porous polyethylene, and acrylic implant types. There were 2 graft failures (success rate, 84.6%), 1 of which was treated with a second TPFG. Two of the cases were from the pediatric age group. **Conclusion:** This study provides further supporting evidence for the safety and efficacy of the TPFG and demonstrates the use of this graft in a variety of different clinical situations.

Scientific Poster 394

Lacrimal Canalicular Compression and Discharging Concretions Through the Puncta Without Canaliculotomy: A Minimally Invasive Surgical Procedure for Primary Canaliculitis

Presenting Author: Tu Yunhai MD

Co-Author(s): Jia Qu MD**, Jialiang Zhao Sr MD**

Purpose: To evaluate treatment results of manual lacrimal canalicular compression and discharging the concretions through the puncta without canaliculotomy for primary canaliculitis. **Methods:** Twenty-eight patients with primary canaliculitis who were treated by this method. The concretions were sent to culture evaluation and histopathologic examination. The rigid microendoscopes with irrigation channels (PolyDiagnost GmbH; Germany) were performed through the puncta to confirm there were no concretions in the lacrimal system of any patients. **Results:** All patients were cured after primary treatment. The concretions were removed completely by this method, which was confirmed by rigid microendoscopes. **Conclusion:** This procedure may be a simple and highly effective treatment method for primary canaliculitis that is minimally invasive to the lacrimal system.

Scientific Poster 395

The Predictive Value of Probing and Irrigation in Congenital Nasolacrimal Obstruction

Presenting Author: Tsvi Sheleg MD**

Co-Author(s): Yanir Kassif MD, Shimon Rumelt MD MPA

Purpose: To evaluate which steps of probing and irrigation (P&I) predict the need for additional intervention (AI). **Methods:** Comparison between the success of P&I and success of P&I steps: first-irrigation, probing- and second-irrigation. **Results:** Of 101 consecutive procedures, 14 (14%) required AI. Twenty percent of unsuccessful and 3% of successful first irrigation required AI ($P = .011$). Sixty-two percent of unsuccessful and 2% of successful second irrigation required AI ($P < .001$). Thirteen percent of easy and 33% of difficult probing required AI ($P = .054$). Seventeen percent of those in which the probe was visualized and

Session One is Saturday and Sunday, Nov. 16 & 17. Session Two is Monday and Tuesday, Nov. 18 & 19. Refer to page 156 for poster presentation and tour schedule.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

22% of those in which it was not required AI ($P = .553$). **Conclusion:** Failure of second irrigation was a predictor for failure of P&I and for AI. AI may be performed in the same setting of P&I if second irrigation fails.

Scientific Poster 396

Clinical Profile and Survival Factors in Orbital Mucormycosis: A Large Case Series

Presenting Author: Farzad Pakdel MD

Co-Author(s): Gholamhoseyn Aghai MD, Mitra Oghazian, Mehdi Modarres MD, Mohsen B Kashkoui MD**

Purpose: To determine the clinical profile and survival factors in patients with orbital mucormycosis (OM) in a large case series. **Methods:** Clinical data of patients with OM from March 2008 to March 2012 were reviewed. Forty-two consecutive patients with biopsy-proven OM were included. Mean age was 49.5 (range: 5-80) years. Proptosis, orbital apex syndrome (OAS) periorbital swelling, and eschar were seen in 41.5%, 75.6%, 97.6%, and 31%, respectively. Overall mortality was 35.7%. OAS did not increase mortality ($P = .929$). Facial palsy was seen in 19.4%. Mortality was significantly less in exenterated patients (15 vs. 0 patients in nonexenterated and exenterated groups, respectively) ($P < .018$). **Conclusion:** OAS and facial palsy could be regarded as hallmarks of the disease. Timely exenteration can significantly increase survival.

Scientific Poster 397

★ Evaluating the Staging of Pediatric Orbital Cellulitis Utilizing Computerized Tomography

Presenting Author: Tran D Le MD

Co-Author(s): Eugene S Liu MD, Feisal A Adatia MD*, J Raymond Buncic MD, Susan Blaser MD

Purpose: To characterize significant radiological signs in children with orbital cellulitis (OC). **Methods:** Retrospective 11-year review of patients with orbital computerized tomography (CT) querying OC at the Hospital for Sick Children, Canada. **Results:** In 101 cases of OC, 71 were managed with systemic antibiotic(s), and 30 required surgeries. Bony destruction was associated with surgical intervention (P -value = .02). The sensitivity and specificity of using subperiosteal abscess (SPA) size of 3.8 mL as a cut-off for determining whether the OC case will require surgery is 76% and 85%. The likelihood of surgery for SPA less than 3.8 mL is 14%, greater than 3.8 mL is 70% (P -value < .0001). **Conclusion:** Children with OC who have bony destruction on CT and SPA greater than 3.8 mL are more likely to require surgical intervention.

Scientific Poster 398

The Physics Behind Bleb-Induced Lid Retraction: Implications for Treatment and Prevention During Ptosis Repair

Presenting Author: Thomas Clark

Co-Author(s): Carolyn D Quinn MD**, Erin Shriver MD, Juan F Batlle MD*

Purpose: To propose a mechanism for bleb-induced lid retraction based on vector forces at the lid-bleb interface. **Methods:** A retrospective review of 4 patients with an analysis of the vector forces involved. **Results:** The net force vector, the summation of all forces acting at the lid-bleb interface, is directed vertically and displaces the lid superiorly. Our case series includes 1 patient with resolution of lid retraction immediately after takedown of the bleb, 1 who was difficult to adjust during ptosis repair, and 2 patients successfully treated with botulinum toxin. **Conclusion:** Our vector force theory for bleb-induced lid retraction is based on intraoperative case experience and has significant implications for ptosis repair in patients with blebs. We are also the first to report treatment with botulinum toxin.

Scientific Poster 399

The Use of Neuronavigation in Recurrent Orbital Tumors

Presenting Author: Ihab S Othman MD

Purpose: To evaluate the infrared-based neuronavigation system VectorVision (BrainLab) in surgical removal of recurrent orbital tumors. **Methods:** Four recurrent tumors were evaluated. All patients underwent spiral CT scanning preoperatively, and the CT data was imported to the BrainLab navigation system. Tumors were nasally located in 2 patients and temporally located in 2 cases and extending to the orbital apex in all cases. Pathology was recurrent deep dermoid, isolated neurofibroma, pseudo-orbital inflammation, and rhinoscleroma invading orbit. **Results:** Complete tumor excision could be performed in all

cases. Accurate intraoperative surgical localization was successful. No recurrences were observed over a mean of 18 months follow-up. **Conclusion:** Through the use of intraoperative acquisition of CT images, surgical precision can be improved.

Scientific Poster 400

Relationship Between Lower Eyelid Epiblepharon and Epicanthus in Korean Children: A Matched Case-Control Study

Presenting Author: Kyung In Woo MD

Co-Author(s): Yoon-Duck Kim MD

Purpose: To investigate the effect of epicanthus on epiblepharon. **Methods:** 119 children who received epiblepharon repair from 2010 to 2012 and 119 age-sex matched control group were reviewed. Type of epicanthus, intercanthal distance ratio (ICD ratio: intercanthal distance / 0.5 interpupillary distance) were measured. **Results:** Mean age was 5.7 years (range: 2-16) in both groups. Epicanthus closer to lower eyelid margin was more prevalent in epiblepharon than in control group ($P = .028$). ICD ratio was higher in epiblepharon group (mean 1.394 vs. 1.343, $P < .001$), which was significant, especially in the age group of 4 or more years. ICD ratio decreased with growing in control group, but remained higher in epiblepharon group. **Conclusion:** Epicanthus closer to lower eyelid margin and high ICD ratio was associated with epiblepharon in Asians.

Scientific Poster 401

Outcomes of Posterior-Approach "Levatorpexy" in Congenital Ptosis Repair

Presenting Author: Suresh R Sagili MBBS

Co-Author(s): Alabbadi Alabbadi, Raman Malhotra MBChB FRCOphth

Purpose: We describe a minimally invasive technique and report our experience of posterior approach levator plication ("levatorpexy") for congenital ptosis. **Methods:** Retrospective review of 16 patients. Surgical procedure involves exposing posterior surface of the levator muscle through a transconjunctival approach. Levator muscle is advanced and plicated using a suture passed through its posterior surface to tarsal plate and tied on the skin. No tissues (conjunctiva, Muller muscle, levator) are excised during this procedure. **Results:** Fourteen patients (87%) achieved the desired eyelid height and fulfilled our criteria set for success. **Conclusion:** Posterior approach levatorpexy appears to be a safe and effective procedure for correction of congenital ptosis, particularly with moderate or better levator function.

Scientific Poster 402

★ The New Bicanalicular Double Silicone Encirclage Technique in Canalicular Laceration Reconstruction

Presenting Author: Yongju Song MD

Co-Author(s): Seong-Won Yang MD PhD

Purpose: To introduce the new bicanalicular double silicone encirclage in canalicular laceration. **Methods:** Fifty-six patients were reviewed. Thirty-two were treated with mono silicone tube (A) and 24 with bicanalicular double encirclage (B). Group A was subdivided with monocanalicular intubation (Aa), bicanalicular intubation (Ab), and bicanalicular encirclage (Ac). The outcome was analyzed by the timing of management, operation methods, type of tubes, and suture knot count. **Results:** The success rate of Groups A and B were 72% and 96%. The operation duration was shorter in Group B. There was a significant difference of success rate by the operation method, suture knot count, and number of tubes, whereas no difference of success rate by the timing of management or type of tubes. **Conclusion:** The new encirclage is time-saving, easy, and a more effective technique.

Scientific Poster 403

Changes in Choroidal Perfusion After Orbital Decompression Surgery for Graves Ophthalmopathy

Presenting Author: Chrysavgi Adamopoulou MD

Co-Author(s): Narieman A Nik MD**, Marianna Derdzakyany**, Robert P Murphy MD, Adam B Sise MD

Purpose: To assess choroidal perfusion before and after orbital decompression surgery in patients with thyroid ophthalmopathy. **Methods:** Noncomparative case series. Pre- and postoperative high-speed indocyanine green angiography (ICG) was performed on 3 patients undergoing orbital decompression surgery for Graves ophthalmopathy. **Results:** Four eyes of 3 patients underwent orbital decompression surgery. Abnormal choroidal perfusion

was documented preoperatively on ICG. Postoperatively, there was amelioration in choroidal perfusion as well as visual acuity, color vision, decrease in IOP, and an absence of an afferent pupillary defect. **Conclusion:** Patients with thyroid ophthalmopathy have abnormal choroidal perfusion even in the absence of optic neuropathy. Orbital decompression surgery can ameliorate the orbital and choroidal perfusion.

Pediatric Ophthalmology, Strabismus

SESSION ONE

Scientific Poster 147

Effect of IOL Asphericity on Quality of Vision After Cataract Extraction in Pediatric Eyes

Presenting Author: Anika Gupta MBBS

Co-Author(s): Usha K Raina MD, Gauri Bhushan MBBS, Vasu Kumar MBBS, Meenakshi Thakar**

Purpose: To compare the optical performance of 2 aspheric IOLs with different asphericity in pediatric eyes after cataract surgery. **Methods:** Twenty eyes in the age group 6-16 years with developmental cataract were randomly assigned to receive either of the two aspheric IOLs (Tecnis ZCB00 or AcrySof IQ SN60WF). At 3 months postoperatively, the outcomes compared between the 2 groups were BCVA, contrast sensitivity (CS), and wavefront aberrometry. **Results:** The eyes with AcrySof IQ showed significantly better CS at 3, 6, and 12 cpd ($P < .05$). The difference in total ocular aberrations, higher-order aberrations (HOA), and spherical aberrations (SA) between the 2 groups was not significant. **Conclusion:** AcrySof IQ results in better contrast sensitivity than Tecnis in children.

Scientific Poster 148

Clinical Comparison of the Optical Performance of Spherical and Aspheric IOLs in Pediatric Eyes

Presenting Author: Gauri Bhushan MBBS

Co-Author(s): Usha K Raina MD, Anika Gupta MBBS, Vishaal R Bhambhwani MBBS, Basudeb Ghosh**

Purpose: Comparison of optical performance of aspheric vs. spherical IOLs in pediatric cataract. **Methods:** Forty eyes in the age group 6-16 years with developmental cataract were randomly assigned to receive a spherical IOL (AcrySof SN60AT) or an aspheric IOL (Tecnis ZCB00 or AcrySof IQ SN60WF). At 3 months postoperatively, the outcomes compared between the 2 groups were BCVA, contrast sensitivity (CS), and wavefront aberrometry. **Results:** The aspheric IOL group showed better CS at 1.5, 3, and 6 cpd. Total ocular aberrations, higher-order aberrations (HOA), and spherical aberrations (SA) were significantly lower in the aspheric group ($P < .05$). **Conclusion:** Aspheric IOLs result in better CS and decreased ocular aberrations in children.

Scientific Poster 149

Preoperative, Intraoperative, and Postoperative Outcome of Cataract Surgery in Children With Down Syndrome

Presenting Author: Rupal H Trivedi MBBS MS*

Co-Author(s): M Edward Wilson Jr MD*, Muralidhar Ramappa MBBS

Purpose: To report outcome of cataract surgery in children diagnosed with Down syndrome. **Methods:** Review of surgery for bilateral pediatric cataract. **Results:** Twenty-four of 640 children (4%). Age at surgery: 1.9 ± 3.7 years. Preop axial length (AL): 19.9 ± 2.8 mm. Nuclear and cortical were the most common types. Fourteen eyes received primary IOL, 10 aphakic, of which 4 received secondary IOL. Follow-up: 6.0 ± 4.7 years. Postop complications in 14 eyes with primary IOL: surgical removal of posterior capsule opacification (1), removal of dislocated IOL (2), IOL reposition (2), endophthalmitis (1, after surgery for IOL dislocation). IOL reposition / dislocated was noted in 4/14 eyes (29%) with primary IOL implantation. Median postop visual acuity: 20/35. Postoperative AL: 23.3 ± 2.1 mm. **Conclusion:** Postoperative complications related to IOL (reposition/removal of dislocated IOL) were seen frequently in children with Down syndrome.

Scientific Poster 150

Visual Outcome in Children Who Develop Endophthalmitis Following Cataract Surgery

Presenting Author: Vikas Khetan DO

Co-Author(s): Sandeep Mark Thirumalai MD, Tarun Sharma MBBS, Sumita S Agarkar MBBS

Purpose: To study the visual outcome in 4 cases of endophthalmitis following cataract surgery in children. **Methods:** Retrospective review of 4 cases of endophthalmitis following uneventful cataract surgery from 1997 to 2012 was done. The first symptom and sign, investigations, interventions, causative organisms, the final visual acuity achieved were recorded. **Results:** Final visual acuity was 6/12, 6/18, and 6/24 in 2 cases. *Acinetobacter calcoaceticus* was isolated in 2 cases; *Pseudomonas stutzeri* was isolated in 1. Interventions required included intravitreal injections, vitrectomy, IOL removal, and retinal detachment surgery. **Conclusion:** Fairly good visual outcome can be achieved with aggressive intervention in cases of endophthalmitis following cataract surgery in children.

Scientific Poster 151

Results of Fibrillin-1 Sequencing in Children With Lens Subluxation From Inbred Families

Presenting Author: Arif O Khan MD

Co-Author(s): Hanno Jörn Bolz MD, Carsten Bergmann MD**

Purpose: To report the results of fibrillin-1 (FBN1) sequencing for consecutive referred children with lens subluxation without broken zonules, cataract, or vitreoretinal degeneration in Saudi Arabia, where recessive genetic cause may be more common because consanguineous and/or endogamous marriage is customary. **Methods:** Retrospective case series (2009-2012). **Results:** Out of 8 children, 7 harbored dominant mutations and 1 had recessive mutation with unaffected parents (the fourth such family to date). Seven of 8 had facial and/or skeletal features suggestive of type 1 fibrillinopathy. **Conclusion:** Despite the setting of consanguinity and/or endogamy in this population, dominant type 1 fibrillinopathy was the major cause for lens subluxation in this cohort. This has important implications for genetic counselling and systemic assessment.

Scientific Poster 152

Pediatric Dacryocystorhinostomy: A Success Story

Presenting Author: Sabita Katoch MBBS MD

Co-Author(s): Santanu Mitra MBBS

Purpose: To assess the results of external dacryocystorhinostomy (DCR) in children. **Methods:** Eighty-nine DCRs done in 83 patients. Age ranged from 3.3 years to 15 years. Single anterior flap anastomosis without intubation was done. **Results:** Overall success rate was 93.26%. Of 8 failed cases, 1 cleared on probing, 1 on revision diode laser DCR, and 2 were partially patent. One in 3 cases with Down syndrome failed. **Conclusion:** Pediatric DCRs have excellent results. Syndromes associated with facial anomalies could worsen the prognosis.

Scientific Poster 153

SmartTools in the Toolbox: Smartphone Applications in Pediatric Ophthalmology and Strabismus

Presenting Author: Timothy P Lindquist MD

Co-Author(s): Scott E Oilitsky MD

Purpose: To demonstrate use of smartphone applications in clinical practice of pediatric ophthalmology and strabismus. **Methods:** Smartphone applications on the iOS, Android, and Windows platforms were used to demonstrate the following measurements and calculations: (1) degree of angle for head tilt, face turn, and chin position, (2) degrees of cyclotorsion in conjunction with Maddox rod testing, Angle of axis for application of Fresnel prism, (3) final prescription from over-refraction, and (4) contact lens power from refraction. **Results:** Pictorial demonstrations of each application will be included. **Conclusion:** Smartphone applications can enhance the ease, accuracy, and precision of measurements and calculations in clinical practice.

Scientific Poster 154

An iPhone Application to Measure Corneal Diameter in Children

Presenting Author: Mosa AlHarby MD

Co-Author(s): Mohammed A Alshamrani MBBS, Deepak Paul Edward MD

Purpose: To compare an iPhone app for noncontact measurement of corneal diameter (CD) to the contact caliper method. **Methods:** Multiple CD measurements in one eye with the "multimeasure iPhone" app and calipers in children ($n = 20$) under anesthesia by two observers. iPhone CD was measured on corneal photographs taken with the head facing straight and at a tilt. **Results:** Caliper CD (11.68 ± 0.41 mm) was not significantly different from the iPhone app (11.85 ± 0.28 mm) in the straight position. In contrast, head tilt CD (11.34 ± 0.47 mm) resulted in a significant deviation from the mean values obtained with the other two measures. **Conclusion:** CD measurements using an iPhone app might be a useful noncontact method of measuring diameter in children. Head position plays an important role in accurate measurements.

Scientific Poster 155

A Fresh Look at the iScreen Utilizing the New American Association for Pediatric Ophthalmology and Strabismus Referral Criteria

Presenting Author: David I Silbert MD*

Co-Author(s): Noelle S Matta COT

Purpose: To evaluate the iScreen photoscreener in detecting amblyopia risk factors in children age 6 and under using the newly revised 2013 American Association for Pediatric Ophthalmology and Strabismus (AAPOS) referral criteria. **Methods:** Retrospective review of children who had an iScreen as part of a pediatric ophthalmology exam. Amblyopia risk factors were based on the current AAPOS criteria. **Results:** 184 children were examined. Fifty-six percent were found to have amblyopia risk factors. The iScreen was found to have a sensitivity of 93% and specificity of 91%. **Conclusion:** The iScreen photoscreener is a fast, user-friendly, portable tool for the detection of amblyopia risk factors in children. iScreen's reading center has continued to improve their interpretation paradigms and seems to have improved both sensitivity and specificity for the newly revised AAPOS referral criteria.

Scientific Poster 156

★ Retinopathy of Prematurity Screening Outcomes and Treatment for 23 Weeks Gestational Age Infants: Seven Years' Experience

Presenting Author: Juan Ayala Haedo MD

Co-Author(s): Majd Dardas, Mina Chung MD*, Sanjiv B Amin MBBS MD MS

Purpose: To evaluate adequacy of initiating screening at 30 weeks postmenstrual age (PMA) to detect threshold ROP in 23 weeks gestational age (GA) infants. **Methods:** ROP results of 23 weeks GA infants born between Jun 2005 and July 2012 were reviewed. **Results:** Forty-one infants with mean GA of 23.6 weeks (23.1-23.9) were cared for at our NICU. Nineteen (46.3%) had ROP exams and 22 (53.6%) died before being screened at 30 weeks. ROP exams performed at: 00 PMA 30, 31.6, and 33.3 weeks showed that 3 (15.8%), 10 (52.6%), and 16 (84.2%) infants had evidence of any ROP, respectively. Seven (36.8%) required laser surgery at mean PMA of 38.1 weeks (33.6-45.7). Following laser, 4 showed complete and 3 showed partial regression of ROP by 40 weeks PMA. **Conclusion:** Our data suggest that initiating screening at 30 weeks PMA is adequate to detect threshold ROP in 23-week GA infants.

Scientific Poster 157

Zone I and Posterior Zone II Retinopathy of Prematurity

Presenting Author: Milad Modabber MS

Co-Author(s): Sourabh Arora MD*, Gloria M Isaza-Zapata MD**

Purpose: To compare clinical presentation and progression to treatment for infants classified as zone I (Z1) and posterior zone II (PZ2) ROP. **Methods:** A retrospective analysis of 50 infants with Z1 and PZ2 ROP assessed for postmenstrual age (PMA) at first ROP diagnosis and treatment. Retinal photographs were also analyzed. **Results:** Of the 50 infants, 14 (28%) were Z1 ROP and 36 (72%) were PZ2 ROP. The incidence of treatment was higher in Z1 ROP (79%) than in PZ2 ROP (47%). In Z1 ROP, 64% had an elapsed time of ≤ 2 weeks from ROP diagnosis to treatment, compared with 50% of PZ2 infants. Retinal images reflected the differential presentation of ROP across these zones. **Conclusion:** Despite similar clinical courses, Z1 ROP infants required treatment earlier and more often than PZ2 ROP patients.

Scientific Poster 158

Comparative Outcomes of Intravitreal Bevacizumab vs. Laser Photocoagulation for Type 1 Retinopathy of Prematurity

Presenting Author: Christopher Hwang

Co-Author(s): G Baker Hubbard MD, Amy K Hutchinson MD, Scott R Lambert MD*

Purpose: To determine the efficacy of intravitreal bevacizumab (IVB) vs. laser photocoagulation (LP) for the treatment of zone I ROP and the recurrence rate for zone I/II ROP treated with LP. **Methods:** Data from consecutive infants treated with Type 1 ROP from 2008-2012 were analyzed. **Results:** The recurrence rates were similar with both treatments for zone I (IVB, 3/22 (14%) eyes; LP, 1/14 (7%) eyes; $P = 1.0$), but the time to re-treatment was longer with IVB (IVB, 7.5 weeks; LP, 2.6 weeks). The recurrence rate for zone I/II ROP treated with LP (1/51 eyes, 2%) was significantly lower than the rate reported in the BEAT-ROP study (23%) ($P = .002$). No infant treated with IVB died; 2 infants treated with LP died. **Conclusion:** Recurrence rates for zone I ROP after IVB vs. LP were similar, and the recurrence rate for ROP treated with LP was low.

Scientific Poster 159

Overcorrection Shift Following Surgery for Hypertropia in Superior Oblique Palsy

Presenting Author: Kyle Cox MD

Co-Author(s): Quynh Tran PhD, Natalie Kerr MD

Purpose: To determine if inferior rectus (IR) recession on adjustable suture is a risk factor for overcorrection shift in patients operated for superior oblique palsy (SOP). **Methods:** Retrospective chart review of patients with SOP undergoing either single inferior oblique (IO) or IR on adjustable suture, recording postoperative shift during the 2 months following surgery. **Results:** IO group ($n = 26$) had 8 (34.7%) overcorrection shifts of ≥ 2 PD. The IR group ($n = 11$) had 5 (45.4%) overcorrection shifts ($P = .$). The amount of overcorrection was not different ($P = .6354$). **Conclusion:** Overcorrection shifts occur with similar frequency and magnitude after IO or IR recession in SOP patients, suggesting that overcorrection in SOP may not be caused by slippage of the IR.

Scientific Poster 160

Ocular Alignment After Bilateral Lateral Rectus Recession in Exotropic Children With Cerebral Palsy

Presenting Author: So Young Han MD

Co-Author(s): Hyesun Kim MD, Jong Bok Lee MD

Purpose: To evaluate surgical outcome for patients in cerebral palsy (CP). **Methods:** The medical records of 30 exotropia patients with CP were retrospectively reviewed from December 2005 to October 2011. All underwent bilateral lateral rectus recession based on the larger angle deviation at distance and near. Surgical success was categorized as esotropia or exotropia of ≤ 10 PD. **Results:** Among the 8 failures, 2 (6.7%) were overcorrected and 6 (20.0%) undercorrected. With the generalized estimate equation, postoperative exotropic drift was time dependent, and the mean of exotropic drift at 24 months was 5.57 PD (95% CI, 2.06-9.08), which was in the success range. **Conclusion:** CP patients with exotropia showed successful outcome with standardized surgical table.

Scientific Poster 161

A New Approach of Inferior Oblique Over Action Without Cyclotorsion

Presenting Author: Birsan Gokyigit MD

Co-Author(s): Serpil Akar MD, Ebru Demet Aygt MD, Engin Bilge Ozgurhan BSB, Ahmet Demirok MD, Omer Faruk Yilmaz MD*

Purpose: To introduce a new operation technique for inferior oblique overaction (IOOA). **Methods:** Following all evaluation of inferior oblique (IO) activity, 9 patients who had no cyclotorsion but notable hypertropia underwent the new operation technique. All patients had +4 IOOA with mean 14.6 PD hypertropia. Through a peripheral radial conjunctiva incision, the IO muscle was found and approximately 6-7/8 of posterior fibers were released from insertion, cleared from adjacent tissues and anterior part. A locking vicryl suture was placed on posterior parts of the muscle and attached 1 mm lateral and 5 mm distant from insertion to the inferior rectus. **Results:** Patients' IOOA decreased between 0 and +1, and vertical deviation decreased a mean of 1.42 PD ($P < .05$). **Conclusion:** The new technique was found effective for treatment of the patients with IOOA without cyclotorsion.

Session One is Saturday and Sunday, Nov. 16 & 17. Session Two is Monday and Tuesday, Nov. 18 & 19. Refer to page 156 for poster presentation and tour schedule.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

Scientific Poster 162

Prediction of Trochlear Nerve Absence by Superior Oblique Muscle Volumetry in Congenital Superior Oblique Palsy

Presenting Author: Daeseung Lee MD

Co-Author(s): Hee Kyung Yang MD, Sang Beom Han, Jae Hyoung Kim MD**, Jeong-Min Hwang MD

Purpose: To evaluate the predictability of superior oblique muscle volumetry in diagnosing trochlear nerve absence in congenital superior oblique palsy (SOP). **Methods:** Retrospective study of congenital SOP with (present group, $n = 38$) and without a trochlear nerve (absent group, $n = 87$) and controls ($n = 34$) using high-resolution MRI to analyze superior oblique muscle volume (SOV) and trochlear nerve absence. **Results:** The paretic SOV was significantly smaller than the normal SOV only in the absent group ($P < .001$). The cut-off value of paretic/normal side SOV ratio for diagnosing trochlear nerve absence was ≤ 0.75 (sensitivity 100%, specificity 100%). **Conclusion:** In congenital SOP, the paretic/normal side SOV ratio has an excellent predictability in diagnosing trochlear nerve absence.

SESSION TWO

Scientific Poster 404

Pattern of Strabismus in Children Who Undergo Cataract Surgery

Presenting Author: Shilpa Devidas Sonarkhan Sr MS

Co-Author(s): Ramesh Kekunnaya MBBS MD

Purpose: To study pattern of strabismus in children who undergo cataract surgery. **Methods:** Retrospective case series involving 179 children who presented from January 2007 to August 2012 and underwent cataract surgery. **Results:** Group 1 (61 patients) had unilateral, Group 2 (81 patients) had bilateral symmetrical, and Group 3 (37 patients) had bilateral asymmetrical cataracts. In Group 1, 60.66% had exotropia ($P = .001$), and in Group 3, 64.86% had exotropia ($P = .005$). In Group 2, 41.98% had esotropia and 38.27% had exotropia ($P = .74$). **Conclusion:** Exotropia is more common with unilateral and bilaterally asymmetrical cataracts, while esotropia and exotropia is found equally in bilaterally symmetrical cataracts.

Scientific Poster 405

Refractive Growth in Pseudophakic Children Age 2-6 Years

Presenting Author: Bharti Kishore Nihalani Gangwani MD

Co-Author(s): Deborah K VanderVeen MD*

Purpose: To assess early myopic shift in children operated between the ages of 2 and 6 years. **Methods:** Chart review of pseudophakic children with minimum follow-up of 3 years. Refraction was recorded 1-2 months after surgery and then yearly. Refractive change in each year was used to calculate mean myopic shift and rate of refractive growth. **Results:** Forty-two eyes of 27 children were studied. Refractive change in each year was not significantly different by age groups: 2-3 years ($n = 12$) had mean shift of -1.2 D/yr, 3-4 years ($n = 14$) had -1.4 D/yr, and 4-6 years ($n = 16$) had -1.3 D/yr. Patients with unilateral cataract had slightly higher myopic shift than bilateral cases (-1.5 vs. -1.2 D/yr). **Conclusion:** Myopic shift is similar between ages 2 and 6 years.

Scientific Poster 406

★ Myopic Shift 3 years After IOL Implantation in the Infant Aphakia Treatment Study

Presenting Author: David R Weakley Jr MD

Co-Author(s): Michael J Lynn MS, Deborah K VanderVeen MD*, Scott R Lambert MD*

Purpose: To report the myopic shift after cataract surgery with IOL implantation for infants enrolled in the Infant Aphakia Treatment Study. **Methods:** Refractions were performed at 1 month and every 3 months postoperatively. The change in refraction over time was estimated by linear mixed model analysis. **Results:** IOL implantation was completed in 56 eyes; 43 were analyzed. Exclusions were as follows: glaucoma (11), IOL exchange (1), and Stickler syndrome (1). Mean (\pm SD) refraction was $+6.7 \pm 2.4$ D at 1 month and -0.8 ± 3.6 D at 36 months. The rate of change was -0.54 D per month until age 1 year ($P < .0001$) and then -0.11 D per month afterward ($P < .0001$). The mean myopic shift 3 years after surgery was almost 7 D. **Conclusion:** After IOL implantation during infancy, the largest myopic shift occurs during the first year of life.

Scientific Poster 407

Sutureless 25-Gauge Vitrectomy System in Management of Pediatric Cataract in Infants

Presenting Author: Usha K Raina MD

Co-Author(s): Vishaal R Bhambhwani MBBS, Anika Gupta MBBS, Gauri Bhushan MBBS, Anisha Seth MS

Purpose: To compare 25-gauge vitrectomy system use by anterior (transcorneal) and posterior (Pars plana) routes in congenital cataracts. **Methods:** Twelve patients (< 1 year) with bilateral congenital cataract were included. Eyes were randomized and operated by either transcorneal or pars plana route and left aphakic. Intra- and postoperative results were compared. **Results:** All cases had clear visual axis at 6 months. Mean spherical equivalent (SE) was 15.58 D; and mean astigmatism, 0.33 D in the transcorneal group, whereas in the pars plana group SE was 15.79 D and astigmatism was 0.25 D, the difference being insignificant. **Conclusion:** 25-gauge systems allow sutureless surgery, excellent intraoperative control, minimal postoperative inflammation and astigmatism via both routes.

Scientific Poster 408

A Twenty-Year Follow-up Study of Primary Developmental Glaucomas: The Experience of a Single Surgeon at a Tertiary Eye Care Center in Southern India

Presenting Author: Anil K Mandal MD

Purpose: To determine the surgical outcome of children with primary developmental glaucomas (PDG) operated over a 20-year period (1991-2010). **Methods:** 1128 eyes of 653 consecutive patients who underwent primary combined trabeculotomy-trabeculectomy (CTT) by a single surgeon were studied. **Results:** Kaplan-Meier survival analysis revealed 24-, 48-, 72-, 96-, and 120-month success (IOP < 16 mmHg) rates of $93.4\% \pm 1.3\%$, $89.0\% \pm 1.8\%$, $82.4\% \pm 2.5\%$, $80.2\% \pm 2.7\%$, and $69.8\% \pm 3.9\%$, respectively. At the last follow-up visit, 92 patients (27.6%) achieved normal visual acuity (ie, no visual impairment), 145 patients (43.5%) had low vision, and 96 (28.8%) were blind as defined by the WHO criteria of vision loss. **Conclusion:** CTT is safe and successful in the management of primary developmental glaucomas.

Scientific Poster 409

Reimbursement Trends Among U.S. Pediatric Ophthalmologists for Emergency Department Call Coverage

Presenting Author: Rebecca B Mets MD

Co-Author(s): Robert W Enzenauer MD MPH*

Purpose: We sought to determine trends in reimbursement among U.S. pediatric ophthalmologists. **Methods:** We sent a survey to all 1145 pediatric ophthalmologists on the American Association for Pediatric Ophthalmology and Strabismus contact list and analyzed the results. **Results:** Out of 483 returned surveys, 16% reported compensation for covering emergency department (ED) calls. Thirteen reported being paid per patient seen, averaging \$369.71 paid to carry a pager, averaging \$327 per night. Compensation is more common for those covering general ophthalmology and when ED call is not required for hospital privileges. The dollar amount was similar across academic and private practices, but greater for those who practice in the Midwest. **Conclusion:** In order to provide widespread, timely care for ophthalmic emergencies, it may become necessary for hospitals to reimburse physicians.

Scientific Poster 410

Excision of Eyelid Along Eyelash Line for Ciliary Entropion in Patients With Down Syndrome

Presenting Author: Yumi Suzuki MD

Co-Author(s): Hama Yukiko MD, Izumi Yoshikawa-Kobayashi MD, Kaoru Tomita, Makoto Inoue MD*, Akito Hirakata MD*

Purpose: To describe a surgical procedure for excising the eyelid margin along the eyelash line to treat ciliary entropion in patients with Down syndrome. **Methods:** Twenty-four Down syndrome patients with bilateral ciliary entropion underwent root excision of the eyelid margin. The area and density of fluorescein staining of the superficial punctate keratoplasty (SPK; 0 = none to 3 = wide or severe) and the frequency of spectacle wear (0 = no wear to 2 = all-day wear) was evaluated. **Results:** The dacryorrhea was abated after the surgery. The postoperative area and density of the SPK improved significantly ($P < .001$). The score

of spectacle wear improved significantly from 1.3 ± 0.8 to 1.7 ± 0.5 after surgery ($P = .018$). **Conclusion:** Eyelash line excision is effective for ciliary entropion and medial epiblepharon in patients with Down syndrome.

Scientific Poster 411

Ten-Year Review of Pediatric Uveitis at Children's Medical Center of Dallas

Presenting Author: Monica P Bratton MD

Co-Author(s): Jess Thomas Whitson MD FACS*, Yu-Guang He MD

Purpose: To describe the clinical features of pediatric uveitis. **Methods:** Retrospective review of 46 children treated between 2001 and 2011. Uveitis classified by the Standardization of Uveitis Nomenclature grading scheme. Statistical analysis performed by Mann-Whitney rank sum and t -test. **Results:** Median age at diagnosis = 9.2 years. Females = males. Most common etiology = idiopathic. Anterior chamber cell ($\Delta 1.66$), flare ($\Delta 0.96$), and vitreous cell ($\Delta 0.8$) improved significantly at final exam. Complications (73.9%), recurrence (23.9%), and surgical interventions (30.4%) were common. Hispanics were similar to others but had poorer visual outcomes. **Conclusion:** Pediatric uveitis is an uncommon but potentially devastating disease often requiring both medical and surgical therapy.

Scientific Poster 412

Macular OCT Findings in Retinopathy of Prematurity Patients Treated With Both Laser and Bevacizumab

Presenting Author: Cristina Moreira Dos Santos MD

Co-Author(s): Susana P Lopes MD, Mario Rui Rosado Ramalho MD, Ines Corga Moraes Coutinho, Catarina Pedrosa MD, Graca Barbas Pires MD**, Susana Maria P Teixeira Semedo de Sousa MD**

Purpose: To describe macular OCT findings in children with history of ROP treated with both laser and bevacizumab. **Methods:** Clinical records and OCT (Stratus OCT, Carl Zeiss Meditec) findings of the first 3 patients treated with both laser and bevacizumab at our hospital were reviewed. Control group were patients who only had laser treatment. One eye from each patient was randomly chosen. The main outcome measure was foveal and parafoveal retinal thickness. **Results:** Seven patients with type 1 (stage 3+) ROP were studied. The Wilcoxon rank-sum test showed no statistical difference between both groups. **Conclusion:** We report a similar OCT macular profile in ROP patients treated only with laser and with both laser and bevacizumab.

Scientific Poster 413

Posterior Zone 1 Retinopathy of Prematurity: Spectrum and Outcome After Laser Treatment

Presenting Author: Mangat R Dogra MBBS

Co-Author(s): Kanika Aggarwal**, Swapnil Madhukar Parchand MBBS, Sunil Chaudhary MD MBBS, Dr Deeksha Katoch, Gaurav Sanghi MD

Purpose: To report spectrum of posterior zone I ROP and outcome after laser treatment. **Methods:** Retrospective chart review and RetCam images. **Results:** Twenty-three babies (46 eyes) were included, with a mean birth weight of 1153.04 grams (range: 700-1600 g), mean gestational age of 28.65 weeks (range: 25-34 weeks). Twenty-nine eyes had flat neovascularization, 10 in addition had nasal tractional retinal detachment, 5 had hybrid ROP, 2 stage 3 ROP. Thirty eyes (65.2%) had unfavorable outcome. Four eyes had stable stage 4a ROP at last follow-up. **Conclusion:** Laser treatment demonstrated unfavorable outcome in majority of eyes with posterior zone I ROP.

Scientific Poster 414

Accuracy of the Plusoptix Photoscreening Device in Detecting Esotropia and Exotropia

Presenting Author: Jillian Silbert

Co-Author(s): Noelle S Matta COT, David I Silbert MD*

Purpose: We evaluate the accuracy of the Plusoptix to detect strabismus in children with and without significant refractive error. **Methods:** A retrospective review of 1306 children who had photoscreening performed as part of an examination. All children who had esotropia or exotropia with cross-cover testing and a Plusoptix photoscreening performed were included. **Results:** 217 children with esotropia were included and 85 with exotropia. The Plusoptix had a sensitivity and false negative rate of 87% and 13% in esotropes and a sen-

sitivity of 78% and a false negative rate of 22% in exotropes. **Conclusion:** The Plusoptix is effective in referring large angle but is less effective when the angle is smaller; there is no significant refractive error for intermittent exotropia.

Scientific Poster 415

Surgical Outcome of Exotropic Duane Retraction Syndrome

Presenting Author: Shailja Tibrewal MS

Co-Author(s): Ramesh Kekunnaya MBBS MD

Purpose: To evaluate the outcome of strabismus surgery in exotropic Duane retraction syndrome (DRS) (Types 1, 2, and 3). **Methods:** An interventional case series of 31 subjects operated between January 2008 and December 2012. **Results:** Median follow-up was 4 months. The mean exodeviation reduced from 19.7 to 4.8 PD (P -value = 0.00). Success rate (alignment within 8 PD of orthotropia and/or correction of anomalous head posture [AHP] to less than 5°) was 71%. AHP was corrected in 89.7%. Globe retraction and overshoot was reduced in 61.3% and 91.7%, respectively. **Conclusion:** Unilateral or bilateral lateral rectus recession with or without Y-splitting can successfully treat exotropic DRS.

Scientific Poster 416

The Measurement of the Limbus-Horizontal Muscle Insertion With Anterior Segment OCT

Presenting Author: Ju Yeon Lee MD

Co-Author(s): Kyung Ah Park, Sei Yeul Oh MD**

Purpose: To evaluate the limbus-insertion distance of lateral rectus (LR) and medial rectus (MR) muscles with anterior segment OCT (AS-OCT) according to the fixation. **Methods:** Total 29 adults without strabismus were included. The distance was measured with AS-OCT by 2 examiners. Patients were required to make lateral gaze with 40°, 50°, and 60° fixation. The intraclass correlation coefficient (ICC) and mixed model were used to evaluate the degree of agreement between examiners and between the methods of measurement. **Results:** ICC showed high agreement between examiners. The mean distances of LR and MR measure showed no significant difference between the methods. **Conclusion:** There was no significant difference between different fixations in measuring distances with AS-OCT.

Scientific Poster 417

The Change of Lateral Rectus Muscle Insertion After Strabismus Surgery

Presenting Author: Ju Yeon Lee MD

Co-Author(s): Kyung Ah Park, Sei Yeul Oh MD**

Purpose: To evaluate the longitudinal transition of lateral rectus (LR) muscle after strabismus surgery. **Methods:** The patients who underwent LR muscle recession were recruited. The limbus-insertion distance of LR muscle was measured with anterior segment OCT preoperatively and 1 and 3 months after surgery. Paired t test was used for statistic analysis. **Results:** Total 8 eyes of 5 patients were included. The mean distances of LR measure were 5.5 ± 0.72 mm preoperatively, 9.28 ± 1.16 mm for 1 month, and 9.84 ± 1.10 mm for 3 months after surgery. The mean difference between 1 month and 3 months after surgery was 0.56 ± 0.34 mm. The distance was significantly different between follow-up visits ($P < .01$). **Conclusion:** The insertion site of LR muscle moves back after strabismus surgery.

Scientific Poster 418

Squinting and Photophobia in Intermittent Exotropia

Presenting Author: Baek-Lok Oh MD

Co-Author(s): Sah-youn Suh MD, Hokyung Choung**, Seong-Joon Kim MD Ph

Co-Author(s): D, Sang In Khwarg MD

Purpose: To report pre- and postoperative factors associated with squinting and photophobia in intermittent exotropia (IXT). **Methods:** Ninety-nine patients were divided into 2 groups according to preoperative squinting and photophobia, respectively. Symptomatic groups were further categorized into 2 subgroups, each according to postoperative improvement. The extensive list of characteristics was compared. **Results:** The onset age was younger in the photophobia group ($P = .033$). Poor fusional state at near range ($P = .021$) and superior oblique overaction ($P = .03$) were more common in the squinting group. Early surgical correction ($P = .001$) and successful outcomes ($P = .022$) were associated with squinting-improvement. **Conclusion:** These findings may provide further insights into the mechanisms underlying these symptoms in IXT.

Refractive Surgery

SESSION ONE

Scientific Poster 163

The Visual Impact of Decentering a Hydrogel Presbyopia-Correcting Corneal Inlay

Presenting Author: Gregory Parkhurst MD*

Purpose: To evaluate the effect on UCVA of placement accuracy of the Raindrop Near Vision Inlay. **Methods:** 125 subjects were implanted, targeting the light constricted pupil center, at 2 clinical sites. Wavefront aberrometry determined inlay position, and UCVA was assessed via ETDRS charts. **Results:** Inlay positions within 0.9 mm of target (98%) showed no decentration influence on treated eye UCVA at 1 month postop; 0.1 logMAR mean for near, intermediate, and distance. Outside 0.9 mm to the 1.25 mm worst case, only near acuity appeared to decrease. **Conclusion:** Placing the Raindrop inlay within an effective region of the cornea is straightforward.

Scientific Poster 164

A Hydrogel Corneal Inlay for the Surgical Correction of Presbyopia in a High-volume LASIK Practice: The UltraLase Experience

Presenting Author: Mark T Wevill MBChB*

Co-Author(s): Gerry N Kervick MD, Vinod kumar Gupta FRCPHth FRCS, Jay Dermott OD

Purpose: To evaluate patient satisfaction with the Raindrop Near Vision Inlay into a high-volume LASIK center. **Methods:** The Raindrop Near Vision Inlay was implanted under a 150-mn femtosecond laser-created flap of 58 nondominant eyes on routine LASIK surgery lists. Near and distance visual acuities were measured at 1, 3, and 6 months. Patient satisfaction was evaluated. **Results:** With at least 1 month follow-up, 96% of treated eyes saw 0.3 logMAR or better uncorrected near visual acuity (UNVA). Binocularly, 96% of patients saw 0.1 logMAR uncorrected distance visual acuity and 78.3% saw 0.1 logMAR UNVA. Regarding patient satisfaction, 93% of patients reported their results as "Satisfied" or better. No patient "regretted having it done." **Conclusion:** The Raindrop Near Vision Inlay is effective and can be incorporated into a high-volume LASIK practice as a presbyopia treatment.

Scientific Poster 165

Visual Acuity Outcomes for Combined LASIK KAMRA, Pocket Emmetropic KAMRA, and Post-LASIK KAMRA Performed to Correct Presbyopia

Presenting Author: Sheldon Herzig MD

Co-Author(s): Jacqueline Freudenthal MD

Purpose: To evaluate visual acuity (VA) outcomes following the implantation of the Kamra corneal inlay to correct presbyopia, with combined LASIK Kamra (CLK), pocket emmetropic Kamra (PEK), or post-LASIK Kamra (PLK). **Methods:** This prospective, nonrandomized, comparative study analyzed 3 procedures in 10 patients selected: (a) CLK with an iFS femtosecond flap created at 200 μ s in the nondominant eye, (b) PEK, and (c) PLK with a temporal lamellar pocket. **Results:** Means from Day 1 to Week 1: CLK uncorrected distance VA (UDVA) improved from 20/50 to 20/30. Uncorrected near VA (UNVA) was unchanged at J1. PLK UDVA went from 20/25 to 20/30. UNVA improved from J2 to J1. PEK: UDVA went from 20/30 to 20/40, UNVA went from J2 to J3. **Conclusion:** UNVA outcomes following Kamra placement do not seem to be influenced by the technique performed; however, UDVA outcomes may be impacted.

Scientific Poster 166

Refractive Outcomes Following Post-LASIK Femtosecond Cataract Surgery

Presenting Author: Kerry Assil MD*

Purpose: To assess the feasibility of laser cataract surgery in post-LASIK cataract patients. **Methods:** Single-center prospective evaluation. **Results:** Twenty-six eyes of 20 patients were enrolled, with 23 eyes completing 1 month follow-up and 16 eyes completing 3 months follow-up. Mean attempted correction was 1.82 (1.47) D. Mean achieved corrections (SD) at 1 and 3 months were 1.90 (1.53) (R2 = 0.94) and 1.99 (1.26) D (R2 = 0.77). Mean deviation from target was 0.25 (0.26) D at 1 month and 0.48 (0.40) at 3 months. LogMAR

uncorrected distance visual acuity (Snellen) was 0.15 (20/28) at 1 month and 0.13 (20/27) at 3 months. **Conclusion:** Laser cataract surgery can be reliably performed in post-LASIK IOL implantation.

Scientific Poster 167

A Prospective Study of Corneal Sensation Following Myopic LASIK With 2 Femtosecond Lasers

Presenting Author: Jennifer S Kung MD

Co-Author(s): Edward E Manche MD*

Purpose: To prospectively compare corneal sensation following 2 femtosecond laser modalities. **Methods:** 120 eyes of 60 patients underwent LASIK: one eye with a 150-kHz femtosecond laser using a 130-degree inverted side-cut and the fellow eye with a 60-kHz femtosecond laser using a 70-degree conventional side-cut. Cochet-Bonnet esthesiometry (CB) measured corneal sensation preop and at postop months 1, 3, and 6. **Results:** CB values were equal at preop. Postop CB values were greater with inverted vs. conventional side-cuts with means of 1.45 > 1.32 ($P = .08$) at 1 month, 2.49 > 1.84 ($P < .01$) at 3 months, and 5.12 > 4.26 ($P < .01$) at 6 months, respectively. **Conclusion:** Eyes treated with an inverted side-cut had a greater recovery of corneal sensation compared to a conventional side-cut.

Scientific Poster 168

Traumatic Bilateral LASIK Flap Dislocation

Presenting Author: Ananda Kalevar MD

Co-Author(s): Devinder Paul Cheema MD**

Purpose: To report the first case of a patient who developed bilateral corneal flap dehiscence 2 years after LASIK following trauma. **Methods:** Clinical presentation, mechanism of injury, complications, treatment, and outcome were studied. **Results:** Case involved a 41-year-old who presented with bilateral flap dislocation, epithelial ingrowth, and macrostriae. UCVA was 20/400 O.D. and 20/200 O.S. Immediate lift of both flaps with removal of the epithelium ingrowth from the stromal beds was completed. The flaps were refloated and repositioned. Final BCVA was 20/20 O.D. and 20/25 O.S., with mild microstriae and mild focal areas of epithelial ingrowth O.U. **Conclusion:** Flap dehiscence is a rare complication of LASIK. This is the first case report to have traumatic flap dislocation bilaterally years after surgery.

Scientific Poster 169

★ Fellow-Eye Comparison of Dry Eye Symptoms in LASIK Patients After Standard vs. Inverted Side Cut Femtosecond Flaps

Presenting Author: Christopher S Sales MD

Co-Author(s): Edward E Manche MD*

Purpose: To compare dry eye symptoms after standard LASIK with those after inverted side cut LASIK flaps. **Methods:** The dominant eye of 61 myopic LASIK patients was randomized to receive a 9-mm, 105- μ m thick, superiorly hinged flap with either a 70-degree side cut (60-kHz IntraLase FS) or a 130-degree inverted side cut (150-kHz IntraLase iFS); the nondominant eye received the alternative. Subjects completed a subjective questionnaire assessing dry eye symptoms preoperatively and postoperatively. **Results:** There were no statistically significant differences between the groups for light sensitivity, dry eye, and foreign body sensation at 6 months (all $P > .05$). **Conclusion:** Inverted side cut flaps may not affect dry eye symptoms.

Scientific Poster 170

Fellow-Eye Comparison of Quality of Vision Outcomes in LASIK Patients After Standard vs. Inverted Side Cut Femtosecond Flaps

Presenting Author: Christopher S Sales MD

Co-Author(s): Edward E Manche MD*

Purpose: To compare subjective outcomes of standard LASIK with those of inverted side cut LASIK flaps. **Methods:** The dominant eye of 61 myopic LASIK patients was randomized to receive a 9-mm, 105- μ m thick, superiorly hinged flap with either a 70-degree side cut (60-kHz IntraLase FS) or a 130-degree inverted side cut (150-kHz IntraLase iFS); the nondominant eye received the alternative. Subjects completed the validated, Rasch-tested, linear-scaled quality of vision (QoV) questionnaire preoperatively and postoperatively. **Re-**

sults: There were no statistically significant differences between the groups for the 30 QoV parameters at 6 months (all $P > .05$). **Conclusion:** Inverted side cut flaps may not affect subjective quality of vision outcomes.

Scientific Poster 171

Comparison of the Changes in Corneal Biomechanical Properties of High Myopic Patients After Femtosecond LASIK and Laser-Assisted Subepithelial Keratomileusis

Presenting Author: Fei Ma PhD

Co-Author(s): Jinhui Dai MD PhD**, Xingtao Zhou MD PhD

Purpose: To observe and compare the corneal biomechanical properties of high myopic patients after femto-LASIK and LASEK. **Methods:** Corneal hysteresis (CH) and corneal resistance factor (CRF) were measured with the Ocular Response Analyzer (Reichert Ophthalmic Instruments) in 40 consecutive patients (40 eyes) who underwent femto-LASIK and LASEK, respectively. **Results:** The CH at 3 months postoperatively was decreased significantly after LASEK and femto-LASIK ($P < .001$). There was a significant correlation between the amount of myopic correction and changes in biomechanical properties after LASEK and femto-LASIK ($P < .05$, $r_1 = .315$; $r_2 = .308$). **Conclusion:** From a biomechanical viewpoint, LASEK may be a less invasive surgical approach for the correction of high myopia than femto-LASIK.

Scientific Poster 172

The Effect of Ocular Dominance on Stereoacuity in Experimentally Induced Anisometropia

Presenting Author: Minoo Azadeh MD

Co-Author(s): Reza Nabie MD, Dima Andalib

Purpose: To evaluate the effect of ocular dominance on stereoacuity in experimentally induced anisometropia. **Methods:** Anisometropia (unilateral myopia) was induced by placing trial lenses over the dominant and nondominant eyes in 1 D increments ranging from 1-3 D. Stereoacuity was measured using TNO, Randot, and Titmus tests. Values were converted into Neperian logarithm (ln) and compared between the two eyes. **Results:** Sixty healthy individuals were enrolled. Stereoacuity was reduced proportionate to the degree of anisometropia. Mean stereoacuity was 4.3, 5.5, and 7.4 ln for dominant eyes and 4.1, 5.4, and 7.3 ln for nondominant eyes using TNO by applying 1, 2, and 3 D lenses, respectively ($P > .05$). **Conclusion:** Experimentally induced anisometropia could reduce stereoacuity. However, ocular dominance has no effect on the amount of stereoacuity reduction.

Scientific Poster 173

Safety and Efficacy of a Presbyopic Algorithm in Post-LASIK Eyes

Presenting Author: Robert Edward T Ang MD*

Purpose: To determine the safety and efficacy of an excimer laser treatment for presbyopic post-LASIK patients. **Methods:** A single-center, single-surgeon, prospective study of 30 post-LASIK patients who underwent a monolateral Supractor LASIK treatment (Bausch + Lomb Technolas). Visual acuity, safety, refraction, and a subjective patient questionnaire were assessed. Follow-up was 6 months postop. **Results:** Monocular uncorrected near visual acuity (UNVA) was 69% at 1.0 or better 6 months postoperatively compared with 22% at 0.8 preoperatively; monocular uncorrected distance visual acuity (UDVA) remained stable postoperatively. Patients had a good level of satisfaction. **Conclusion:** The Supractor LASIK procedure is a safe and effective treatment option for post-LASIK patients with presbyopia.

Scientific Poster 174

The Influence of Pupil Size on Visual Acuity Following KAMRA Inlay Implantation

Presenting Author: Minoru Tomita MD PhD*

Co-Author(s): George O Waring MD*, Tukezban Huseynova

Purpose: To investigate the influence of pupil size on the visual acuity following Kamra inlay implantation. **Methods:** 684 presbyopic eyes were evaluated. Uncorrected near visual acuity (UNVA), uncorrected distance visual acuity (UDVA), corrected distance visual acuity (CDVA), and corrected near visual acuity (CNVA) were measured. Two groups were classified, with mesopic and photopic pupil size parameters. The follow-up was 6 months. **Results:** There were no significant differences between groups in UNVA and CNVA. Mean UDVA and CDVA was 20/20 or better for both groups. **Conclusion:** Pupil size has no influence on visual acuity following Kamra inlay implantation.

Scientific Poster 175

The Influence of 3% Trehalose Solution on the Quality of Vision in Patients After Refractive Surgery

Presenting Author: Ewa Mrukwa-Kominek MD PhD*

Co-Author(s): Monika Sarnat, Beata Jolanta Bubala-Stachowicz

Purpose: Function of vision in patients after photorefractive keratectomy (PRK) with uses of trehalose were assessed. **Methods:** Eighty eyes after PRK were divided into 2 groups of 40 eyes each: Group I, treated with a solution of 3% trehalose, and Group II, treated with preservative-free artificial tears. There were assessed: UCVA, fluorescein tear breakup time (FTBUT), mean spherical equivalent (SEq), keratometric values, optical aberrations, and confocal microscopy. **Results:** There were no differences between the groups in mean UCVA, SEq, keratometric values, or corneal aberration. Significant differences in corneal fluorescein staining test and FTBUT were found. Three eyes in Group II experienced delayed epithelialization longer than 7 days after surgery. **Conclusion:** Three percent trehalose solution after PRK is reasonable due to the efficient regeneration of the corneal epithelium and tear film stability.

Scientific Poster 176

Stereoacuity After Photorefractive Keratectomy in Anisometropia

Presenting Author: Hamidreza Hasani MD

Co-Author(s): Farid Karimian MD, Nooshin Dadbin**

Purpose: To determine the changes of stereoacuity in anisometropic myopic eyes after PRK. **Methods:** This study was performed in myopic anisometropic patients who underwent PRK. Changes in stereoacuity were observed by TNO and butterfly stereoacuity test (BFA) before and after PRK. **Results:** Ninety-eight eyes of 49 patients (71.4% male) with mean age of 28 ± 5.5 years and mean myopia of -3.32 ± 1.74 D and mean astigmatism of 1.3 ± 1.3 D were enrolled in the study. The preoperative mean stereoacuity values 102 ± 103.44 sec/arc and 56.8 ± 41 sec/arc by TNO and BFA test changed to 90 ± 110.52 sec/arc ($P = .009$), and 56.5 ± 41.3 sec/arc ($P = .805$), respectively at 3 months after PRK. **Conclusion:** Stereoacuity improves after photorefractive keratectomy in anisometropic myopic patients. This improvement is better diagnosed with TNO test than BFA test.

Scientific Poster 177

Angle Kappa Measurements in Corneal Refractive Surgery

Presenting Author: Walter Benjamin Kunz MD

Co-Author(s): Michael Karon MD, Hoon C Jung MD**

Purpose: To analyze angle kappa measurements before and after excimer laser corneal refractive surgery. **Methods:** Retrospective observational study of 125 myopic patients, 250 eyes. Analysis was made pre- and postoperatively using Placido disc-based corneal topography. **Results:** Spherical equivalent of eyes undergoing treatment ranged from -0.375 to -7.875 D. Average preoperative angle kappa was 5.55, and average postoperative angle kappa was 5.53. T-test of angle kappa before and after surgery showed no statistically significant change ($P = .70$). Linear correlation testing revealed no linear relationship between spherical equivalent and change in angle kappa ($r = 0.022$). **Conclusion:** There is no evidence that current treatment algorithms induce any postoperative change in angle kappa.

Scientific Poster 178

Visual Outcome and Higher-Order Aberrations in Wavefront-Guided LASIK and PRK

Presenting Author: Yashpal Goel MBBS

Co-Author(s): Ritu Arora MD MBBS, Jawahar Lal Goyal MD**, Gaurav Goyal MBBS, Deepa Gupta MBBS, Arushi Garg MBBS, Trushaa Garg MS

Purpose: To compare visual outcome and higher-order aberrations (HOA) between wavefront-guided LASIK (WF-LASIK) and wavefront guided PRK (WF-PRK) in patients with high preoperative HOA. **Methods:** Eighty myopic eyes with preoperative HOA > 0.35 μ m underwent WF-LASIK (Group A) or WF-PRK (Group B) on Zyoptix platform over 2 years (40 eyes each). Patients were followed up for 6 months. **Results:** At 6 months, mean UCVA (logMAR) in Group A was -0.01 ± 0.04 and Group B was 0.00 ± 0.07 ($P = .23$). HOA RMS (6-mm pupil) in Group A was 0.61 ± 0.24 μ m and Group B was 0.55 ± 0.25 μ m. The increase was statistically significant in both the groups ($P < .05$). Both groups showed similar efficacy, predictability, and safety. **Conclusion:** WF-LASIK and WF-PRK have similar efficacy, safety, and predictability, though WF-PRK induces less HOA.

SESSION TWO

Scientific Poster 419

Corneal Asphericity: Distribution and Epidemiological Characteristics

Presenting Author: *Naji E Waked MD*

Co-Author(s): *Naji E Waked MD, Elyse Jabbour, Joelle Antoun*

Purpose: To determine the repartition of the corneal asphericity (Q) and evaluate its possible associations with age, sex, and central corneal thickness (CCT). **Methods:** On 10,038 eyes of 5019 subjects examined over a period of 50 months with the high-resolution Pentacam Corneal Topography System (WaveLight Allegro Oculyzer), we evaluated different parameters including Q, central and thinnest corneal thickness, age, and gender. **Results:** The mean Q was -0.31 ± 0.12 . 98.9% of the corneas were prolate, and 1.1% were oblate. A statistically significant correlation was found between Q and CCT, but not between Q and each of age and gender. **Conclusion:** Corneas in our population were oblate in 110 eyes and presented high variability in Q value ranging between -0.90 and $+0.42$. When CCT decreases, the cornea becomes less prolate.

Scientific Poster 420

Risk of Corneal Ectasia: Inter-rater Agreement and Comparison to a New Software

Presenting Author: *Florence A Cabot MD*

Co-Author(s): *Sonia H Yoo MD*, Alain Saad MD*, George D Kymionis MD PhD, Ana P Fraga Santini Canto MD, Damien Gatinel MD**

Purpose: To assess the level of agreement between 5 refractive surgeons and a new software in detecting corneal ectasia risk. **Methods:** Retrospective multicenter study including 168 eyes of 84 patients. Three attending ophthalmologists and 2 cornea fellows reviewed 168 corneal topographic maps and determined whether a refractive surgery was advisable or not. The same maps were also screened by a new corneal ectasia risk detection software (the SCORE Analyzer) combined with the Orbscan (Bausch + Lomb; Rochester, NY, USA). **Results:** The overall rate of agreement was 0.56, and the fixed marginal kappa coefficient was 0.24. **Conclusion:** The inter-rater agreement between surgeons from different backgrounds is low. The SCORE analyzer provides valuable information to help surgeons in refractive surgery evaluation.

Scientific Poster 421

Understanding Post-Refractive Surgery Keratoneuralgia: Symptomatic, Clinical and Imaging Assessment

Presenting Author: *Yureeda Qazi MBBS*

Co-Author(s): *Shruti Aggarwal MBBS, Bernardo Menelau Cavalcanti MD, Leslie Jan Wu, Perry Rosenthal MD, Pedram Hamrah MD**

Purpose: To correlate signs and symptoms of post-refractive keratoneuralgia with sub-basal corneal nerve and immune cell changes by in vivo confocal microscopy (IVCM). **Methods:** Seventeen patients and 62 controls were assessed by history, Ocular Surface Disease Index (OSDI) questionnaire, ocular surface examination, and corneal IVCM. **Results:** Patients had minimal corneal staining (0.5 ± 0.8) but constant pain. Photophobia (94%) and sensitivity to air (47%) correlated with corneal immune cell densities ($R = 0.8$, $P < .001$; $R = 0.6$, $P < .001$), and sensitivity to chemical fumes (47%) with nerve tortuosity ($r = 0.5$, $P < .001$), whereas OSDI scores with total nerve length ($R = -0.7$, $P < .001$) and immune cell density ($R = 0.7$, $P < .001$). **Conclusion:** Despite minimal clinical findings, symptoms correlated strongly with corneal nerve and immune cell changes on IVCM.

Scientific Poster 422

Comparison of Elliptical vs. Circular flaps With the iFS Femtosecond Laser LASIK Surgery

Presenting Author: *Suruchi Gupta MBBS*

Co-Author(s): *Amit Gupta MBBS, Aniruddha K Agarwal MBBS*

Purpose: To compare the visual performance, corneal asphericity, corneal biomechanics, and corneal aberrations of elliptical to those of circular flap LASIK. **Methods:** 145 LASIK patients (290 eyes) were divided into Group I (elliptical flap) and Group II (circular flap). Descriptive statistics to compare relevant parameters. **Results:** Group I vs. Group II, change in MRSE (-4.20 ± 2.15 vs. -4.31 ± 2.10), corneal asphericity (-0.52 vs. -0.64), corneal hysteresis (1.82 vs. 2.39), corneal resistance factor (2.31 vs. 3.48), vertical coma (0.23 vs. 0.92),

trefoil 900 (0.016 vs. -0.04), tetrafoil 900 (0.03 vs. 0.005) was noted. **Conclusion:** Elliptical flap LASIK was associated with improved biomechanical profile and induced lesser ocular aberrations.

Scientific Poster 423

Higher-Order Aberrations and Corneal Asphericity in Wavefront-Guided and Aspheric LASIK for Myopia

Presenting Author: *Arushi Garg MBBS*

Co-Author(s): *Jawahar Lal Goyal MD**, Ritu Arora MD MBBS, Deepa Gupta MBBS, Gaurav Goyal MBBS, Yashpal Goel MBBS, vikas veerwal MBBS*

Purpose: To compare visual outcome, higher-order aberrations (HOA), and corneal asphericity (Q value) between wavefront-guided (WFG) and aspheric LASIK (Asp). **Methods:** Eighty eyes with -2 to -8 D myopia, 0 to 2.5 D astigmatism, underwent WFG or Asp LASIK (40 eyes each) on Zyoptix platform over 2 years. **Results:** At 6 months, Asp group had significantly better uncorrected visual acuity and lower mean residual spherical error than WFG. Mean change in HOA-RMS at 6 mm pupil was $0.16 \pm 0.17 \mu\text{m}$, $0.27 \pm 0.28 \mu\text{m}$ after Asp and WFG LASIK ($P = .02$), with lower induced spherical aberrations in the Asp group ($P < .01$). Change in Q value was 0.91 ± 0.3 , 0.53 ± 0.31 following WFG and Asp LASIK, significantly lower in ASP ($P < .01$). **Conclusion:** Asp LASIK induced lesser change in HOAs, spherical aberrations, and corneal asphericity than WFG LASIK, with better visual outcome.

Scientific Poster 424

Precision of Corneal Flaps Created With a New Femtosecond Laser

Presenting Author: *Michael J Endl MD**

Co-Author(s): *Thomas R Elmer MD**

Purpose: To assess the precision (thickness) of LASIK corneal flaps created with a new femtosecond laser. **Methods:** A newly FDA-approved femtosecond laser (Victus, Bausch + Lomb) was used to create a corneal flap in 48 eyes of 24 patients prior to LASIK surgery. One month postoperatively, OCT (Visante, Zeiss) was used to measure flap thickness and uniformity. **Results:** The intended flap thickness was $120 \mu\text{m}$; the mean OCT-measured flap thickness was $119.16 \mu\text{m}$. No flap complications or loss of best corrected preoperative vision was observed. **Conclusion:** Corneal flaps created with this new femtosecond laser demonstrate reproducibility within $10 \mu\text{m}$ of the intended thickness.

Scientific Poster 425

Effect of a Surgical Safety Checklist for Refractive Procedures

Presenting Author: *Catherine J Choi MD*

Co-Author(s): *Marie-Claude Robert MD, Fred E Shapiro, Samir A Melki MD PhD**

Purpose: To identify potential sources of error in refractive surgery and to measure the effect of a surgical safety checklist to prevent errors. **Methods:** A single-center, prospective study of standard preoperative and intraoperative steps in refractive surgery was undertaken to identify potential sources of error. A new safety checklist was designed and validated in 1500 eyes. **Results:** The most common potential sources of error included identification of the correct patient, eye, procedure, eye-specific refractive aim, nomogram, optical zone, and laser entry. A new safety protocol addressing each of these sources achieved a 0% error rate in 1500 eyes. **Conclusion:** Multiple potential sources of error exist in refractive surgery. A new surgical safety checklist seems to be effective in minimizing and/or preventing errors.

Scientific Poster 426

★ Corneal Refractive Surgery for High Hyperopia and High Astigmatism: U.S. Air Force Experience

Presenting Author: *Matthew C Caldwell MD*

Co-Author(s): *James R Townley MD, Vasudha A Panday MD*

Purpose: To compare outcomes of PRK and LASIK in hyperopia and mixed astigmatism (MA) on two different excimer lasers. **Methods:** Retrospective chart review of 180 hyperopic, 480 MA treatments using wavefront optimized or wavefront guided platform at Lackland AFB from 2006 to 2011. Refractive error ranged from $+0.25$ to $+5$ D and MA cylinder from $+0.25$ to $+4.75$ D. Primary outcome measures included UCVA and BCVA at 1, 3, and 6 months. **Results:** Approximately 50% of treatments were performed on each laser. Although not statistically significant, LASIK had better UCVA at all time points across

both groups regardless of platform. The MA group showed trend toward better UCVA on wavefront-guided laser. **Conclusion:** LASIK may be superior to PRK in this population; wavefront-guided treatments may give better results in mixed astigmatism.

Scientific Poster 427

Corneal Sensation After Small-Incision Lenticule Extraction Compared to Previous LASIK Studies

Presenting Author: Dan Z Reinstein MD*

Co-Author(s): Marine Gobbe PhD, Elena Bartoli MD, Timothy J Archer MS

Purpose: To measure the change in central corneal sensation (CCS) after small-incision lenticule extraction (SMILE) and to compare results to published LASIK studies. **Methods:** Cochet-Bonnet esthesiometry was done before and 1 day, 1 week, and 1, 3, and 6 months after SMILE in 156 eyes. Data were averaged for 20 LASIK studies reporting CCS. **Results:** Mean max myopia was -7.16 D (up to -12.78 D). Median age was 33 years (19-66). After SMILE, CCS was 54 mm (preop), 32 mm (day 1), 40 mm (1 wk), 44 mm (1 mo), 49 mm (3 mo), and 50 mm (6 mo). CCS was at baseline by 3 months in 77% of eyes. After LASIK (mean SEQ treated, -4.3 D; mean age, 34.2 years), CCS was 56 mm (preop), 9 mm (day 1), 15 mm (1 wk), 22 mm (1 mo), 33 mm (3 mo), 44 mm (6 mo). **Conclusion:** There was less reduction in CCS after SMILE at all timepoints. CCS recovered to baseline by 3 months in most eyes after SMILE.

Scientific Poster 428

Reliability of Intraoperative Measurement of Residual Stromal Bed Thickness Using Noncontact Spectral Domain OCT

Presenting Author: Vishal Jhanji MBBS

Co-Author(s): Marco Yu, Christopher Kai-shun Leung MD MBChB*

Purpose: To compare intraclass correlation coefficient (ICC) for residual stromal bed thickness (RSBT) measurements with spectral domain OCT (SD-OCT) and ultrasound pachymetry (USP). **Methods:** RSBT was measured intraoperatively in 14 eyes undergoing LASIK using USP and SD-OCT. Three measurements were obtained with each instrument. **Results:** Both instruments demonstrated adequate reliability (both ICC > 0.9). The reproducibility coefficients were slightly better for USP (8.7 and 7.0, respectively; $P = .240$). Bland-Altman plot showed no significant systemic ($P = .155$) or scaling bias ($P = .561$). The 95% limits of agreement were relatively large (-48.5 to 32.0). **Conclusion:** Intraoperative RSBT measurement with USP and SD-OCT showed adequate reliability. SD-OCT has an advantage of being a noncontact technique.

Scientific Poster 429

Central Toxic Keratopathy After Photorefractive Surgery

Presenting Author: Hossein Mohammad Rabie MD

Co-Author(s): Ahmad Shojaei-Baghini MD, Kourosh Sheibani

Purpose: To report a distinct clinical syndrome, central toxic keratopathy, as a cause of early postoperative corneal opacity. **Methods:** Twelve eyes from 6 patients who presented with decreased vision 3 to 9 days postoperatively accompanied by central corneal opacity, corneal melting, and hyperopic shift are presented. They underwent PRK (3 patients), LASEK (1 patient), and epi-LASIK (2 patients); and mitomycin C (0.02% dilution) had been applied for all of them. **Results:** The opacification persisted for a minimum of 2 months to a maximum of 6 months before clearing. One to 2 line loss of BCVA persisted in 2 patients after 6 months. **Conclusion:** In central toxic keratopathy, despite the clearance of opacity in most cases, an irreversible complication might remain in a few patients.

Scientific Poster 430

★ Six-Year Follow-up of Posterior Chamber Phakic IOLs (ICL/TICL) for High Myopia in China

Presenting Author: Xiaoying Wang MD

Co-Author(s): Xingtao Zhou MD PhD, Yi Lu MD**

Purpose: To evaluate the long-term safety, efficacy, predictability, and stability of ICL/TICL implantation for high myopia. **Methods:** 1360 eyes of 743 patients were included in this retrospective study. **Results:** 933 eyes were implanted with ICL, and 427 eyes were implanted with TICL. The preoperative and postoperative mean spherical equivalent refractions (SE) were -14.74 D \pm 4.95 SD and -0.85 D \pm 1.95 SD, respectively. The mean change in refraction was -0.87 \pm 0.34 SD from 1 week to 6 years. The preoperative and postoperative mean UCVA and BCVA were 0.06 \pm -0.08, 0.65 \pm 0.40, 0.76 \pm 0.33, and 0.88 \pm 0.25, respectively ($P < .001$). Predictability was achieved within \pm 0.50 D in 1086 eyes and within

\pm 1.00 D in 1289 eyes. Fifteen eyes developed anterior subcapsular cataract. **Conclusion:** ICL/TICL implantation was good for long-term safety, efficacy, predictability, and stability for correction of high myopia.

Scientific Poster 431

The Study of the Rotational Stability of the Posterior Chamber Toric Phakic IOL

Presenting Author: Jin Zhou MBBS

Purpose: To evaluate the rotational stability of toric phakic IOL (Visian ICL, Staar Surgical) implantation for high myopic astigmatism. **Methods:** This retrospective study evaluated 337 eyes of 202 patients who underwent toric ICL implantation for the correction of high myopic astigmatism. We assessed the safety, efficacy, and stability of the surgery of toric ICL implantation. **Results:** At 1 year, the mean postoperative spherical equivalent was -0.04 \pm 0.63 D, and the refractive cylinder was -0.61 \pm 0.52 D; the postoperative rotation was within 15 degrees in 100%, within 10 degrees in 94.2%, and within 5 degrees in 81.5%. **Conclusion:** Toric ICL implantation was good in all measures of safety, efficacy, and stability for the correction high myopic astigmatism throughout 1 year.

Scientific Poster 432

Posterior Chamber Phakic IOLs for Correction of Refractive Error After Deep Anterior Lamellar Keratoplasty

Presenting Author: Sherif S Toles MD

Co-Author(s): Alaa M Eldanasoury MD*

Purpose: To assess outcomes after posterior chamber phakic IOL (P-IOL) (ICL and TICL) in patients who have had deep anterior lamellar keratoplasty (DALK). **Method:** DALK eyes unable to wear glasses, contact lenses, or where corneal laser surgery was contraindicated. **Results:** Sixteen eyes. Preop spherical equivalent: -6.80 D \pm 4.14 D (range: -14.75 to -1.00) reduced to -0.36 D \pm 0.37 D (range: -0.75 to 0.25) at 1 year; preop sphere was -5.78 D \pm 4.31 D (range: -14.50 to 0.50), reduced to mean 0.07 D \pm 0.31 D° (range: -0.50 to 0.50) after 1 year; preop ref cyl -2.05 D \pm 1.60 D° (range: -5.00 to 0.00), reduced to -0.86 D \pm 0.61 D° (range: -1.50 to -0.25) at 1 year. UCVA was 20/40 or better in 88%, refractive outcome 92% within \pm 1.00 D and a gain of at least 2 lines in 31% of eyes with no loss of BSCVA. Endothelial cell count loss as compared with preoperatively was 9.8% \pm 11.7% ($n = 12$) at 1 year postop. No graft rejections occurred. **Conclusion:** Posterior chamber P-IOLs were safe and effective in correcting error of refraction after DALK.

Retina, Vitreous

SESSION ONE

Scientific Poster 179

Microvesicles/Exosomes in Vitreous

Presenting Author: Michael Hughes

Co-Author(s): Nadia A Atai MD PhD, JamiLynne Metzinger MS, Vimal Sarup MBBS, Claudia P Castiblanco MD, Henk Albertus vanVeen Sr BSMT, Rienk Nieuwland PhD**, Sarada Sivaraman, C Stephen Foster MD*, Fred H Hochberg MD

Purpose: To evaluate vitreous microvesicles (MCV) as a novel diagnostic tool for uveitis. **Methods:** Vitreous from diagnostic vitrectomy was examined by transmission electron microscopy (TEM) in 7 cases of inflammatory / malignant uveitis: malignancy ($n = 1$), autoimmune disease ($n = 4$), and idiopathic ($n = 2$). NanoSight analysis was performed in additional cases. **Results:** All 7 samples contained MCV with diameter 50 nM — 400 nM with "autoimmune" specimens numerous and clustered in size of 100 nM, while "idiopathic" specimens trended larger in size; the lymphoma specimen showed rare exosomes. NanoSight data will be presented. **Conclusion:** This is the "First in Man" description of MCV in vitreous fluid. As MCV contain RNA, ncRNA, and mRNA, their analysis offers important diagnostic potential.

Scientific Poster 180

Symptomatic Posterior Vitreous Detachment: Assessing Quality of Care

Presenting Author: Stephen J Sramek MD PhD

Co-Author(s): David Lee Ennis CPC

Purpose: To improve the assessment of patients with posterior vitreous detachment (PVD). **Methods:** Chart review: (1) PVD patients before/after provider education to determine per-

Session One is Saturday and Sunday, Nov. 16 & 17. Session Two is Monday and Tuesday, Nov. 18 & 19. Refer to page 156 for poster presentation and tour schedule.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

cent evaluated with dilated fundus examination (DFE) and scleral depression (SD). (2) Tear/rhegmatogenous retinal detachment (RRD) consults after education. **Results:** Before/after education DFE was done in 40%/85%, and SD in 11%/38%. After education 30 of 376 were referred and 5 subsequently were found to have a tear. In a series of 21 consecutive RRDs, 9 (4 had SD) had a prior fundus exam. Prior exams were normal. **Conclusion:** Education increased the percent of PVD patients receiving DFE and SD. Prior DFE/SD exam did not find the pathology in all patients with PVD. A high index of suspicion remains critical for the referring provider; patient education is needed.

Scientific Poster 181

The Use of the Argus II Retinal Prosthesis to Identify Common Objects in Blind Subjects With Outer Retinal Dystrophies

Presenting Author: Yvonne Hsu-Lin Luo

Co-Author(s): Lyndon daCruz FRANZO FRCOPHTH*, Francesco Merlini MS*, Fatima Anafloous*, Maura Arsiero MS PhD*, Paulo E Stanga MD*

Purpose: To determine if blind retinitis pigmentosa patients with Argus II Retinal Prosthesis can differentiate a range of common objects chosen by them. **Methods:** Argus II subjects were asked to identify 8 light-hued solid objects (SOB) presented against a dark background, in a forced-choice, closed-set series of tests. The SOB were then modified to enhance their outlines (outlined objects, OOb), and the tests were repeated. **Results:** All the subjects performed better with the device on than off for both SOB and OOb identification ($P = .071$ for SOB, $P = .026$ for OOb, Wilcoxon signed rank test). When the signals were scrambled, identification was statistically better with device on for OOb ($P = .043$), but not for SOB ($P = .891$). **Conclusion:** Argus II helps subjects to identify daily objects by the shape and reflectivity.

Scientific Poster 182

Real-world Monitoring of Patients Treated With Anti-VEGF Agents in Common Retinal Diseases

Presenting Author: Szilard Kiss MD*

Co-Author(s): Ying Liu PhD*, Joseph N Brown MBA*, Nancy M Holekamp MD*, Arghavan Almony MD, Joanna Campbell PhD*, Jonathan Kowalski*

Purpose: To assess patient monitoring after initiating anti-VEGF therapy for AMD, branch retinal and central retinal vein occlusion (BRVO, CRVO) and diabetic macular edema (DME). **Methods:** A large U.S. insurance database with 64 million unique patients was analyzed. **Results:** From 2008 to 2010, mean annual ophthalmologist visits ranged from 8.6 to 8.7 (AMD) for ranibizumab, and from 6.8 to 7.2 (AMD), 5.1 to 5.6 (BRVO), 5.8 to 6.5 (CRVO), and 4.4 to 5.3 (DME) for bevacizumab patients. Mean annual OCT exams ranged from 5.8 to 6.7 (AMD) for ranibizumab, and from 4.8 to 5.4 (AMD), 3.7 to 3.9 (BRVO), 3.4 to 3.8 (CRVO), and 3.1 to 3.8 (DME) for bevacizumab patients. **Conclusion:** Real-world patients were monitored less frequently than those enrolled in major anti-VEGF trials. The impact of this reduced patient monitoring on visual outcomes needs to be further elucidated.

Scientific Poster 183

Clinical Feasibility and Utility of Ultrawide-field Indocyanine Green Angiography

Presenting Author: Szilard Kiss MD*

Co-Author(s): Anton Orlin MD, Matthew T Witmer MD**, Matthew M Wessel MD, Swetangi D Bhaleeya MD, Sarju S Patel MD

Purpose: Given the increasing importance of ultrawide-field (UWF) imaging, the aim of this study was to determine the feasibility and clinical utility of UWF indocyanine green angiography (ICGA). **Methods:** A modified Optos P200Tx UWF device with a near infrared laser and filters was used to image 40 eyes of 20 patients. **Results:** Eyes included posterior uveitis (8 patients), central serous chorioretinopathy (CSCR, 6 patients), AMD (4 patients), macular dystrophy (1 patient), and retinal degeneration (1 patient). Both peripheral and central choroidal and retinal vasculature was well visualized in all eyes. Thirty-five percent of eyes had pathology in the posterior pole, and 10% showed largely peripheral pathology; the remaining 22 eyes exhibited both central and peripheral pathology. **Conclusion:** UWF ICGA is clinically practical and most valuable in posterior uveitis (eg, sarcoidosis and birdshot) and in CSCR.

Scientific Poster 184

Ophthalmology Consultation for Inpatients With Positive Blood Cultures: Risk Factors of Disseminated Retinal Lesions

Presenting Author: Yuki Nagasako MD

Co-Author(s): Masafumi Hamada MD**, Keiji Inagaki MD, Gautam A Deshpande MA MD, Kishiko Okoshi MD

Purpose: To clarify risk factors for disseminated retinal lesions in patients with positive fungal or bacterial blood cultures (BC). **Methods:** Retrospective cross-sectional study of 462 BC-positive inpatients with ophthalmology consultation between January 2006 and September 2012. **Results:** Thirty-two patients had retinal lesions (50%, bacterial; 40.6%, fungal; 9.4%, both). *Staphylococcus aureus* and *Candida albicans* were the most common organisms. In multivariate analysis, candidemia, infective endocarditis (IE), and broad-spectrum antibiotic use ($P < .05$ for all) were independent risk factors for presence of retinal lesions. **Conclusion:** Ophthalmic consultation is warranted in cases of candidemia, IE, or broad-spectrum antibiotic use. Ophthalmic consultation may not be necessary for bacteremic patients without definitely diagnosed IE.

Scientific Poster 185

Is Aflibercept More Effective in the Treatment of Retinal Pigment Epithelial Detachments?

Presenting Author: Lingmin He MD*

Co-Author(s): Amila Ruwan Silva MD, Theodore Leng MD*

Purpose: To describe the outcomes of patients with retinal pigment epithelial detachments (PED) previously treated with bevacizumab or ranibizumab after switching to aflibercept. **Methods:** Retrospective review of vision and size of PED on high-resolution spectral-domain OCT in eyes switched to aflibercept from Nov. 2011 to Feb. 2013. **Results:** Of 131 eyes switched, 25 had PEDs. Baseline vision was 0.5 ± 0.5 logMAR, and PEDs measured 220 ± 124 μ m tall. After 3 injections, PED height decreased to 179 ± 137 μ m ($P = .02$). At the last visit (7 ± 2 injections), acuity was stable at 0.7 ± 0.6 logMAR ($P = .10$) and PED height was still significantly lower at 171.82 ± 97.79 μ m ($P < .01$). **Conclusion:** Aflibercept maintained stable vision and significantly reduced PED height for patients previously on bevacizumab or ranibizumab.

Scientific Poster 186

Impact of New Genes and Number of Genes on Prediction of Advanced Macular Degeneration Subtypes

Presenting Author: Johanna M Seddon MD*

Purpose: To determine whether genes in multiple biologic pathways contribute to prediction of AMD progression. **Methods:** Among 2734 individuals in the Age-Related Eye Disease Study, 777 progressed to geographic atrophy or neovascular disease. Genotypes for 24 AMD loci were determined. Cox proportional hazards analyses were performed, and predictive models were compared. **Results:** New genetic loci were significantly related to progression: R1210C in *CFH*, *COL8A1*, and *RAD51B*, controlling for drusen and stage of AMD, smoking, BMI, and 6 common variants. Genetic information contributed to prediction models (odds ratio [OR] 3.3, $P < .001$ for genes vs. no genes, and OR 2.7, $P < .001$ for the 6 vs. 9 loci model). **Conclusion:** Genes contribute predictive information for advanced AMD beyond macular and behavioral phenotypes, and more genetic loci enhance predictive power.

Scientific Poster 187

Intravitreal Aflibercept for Polypoidal Choroidal Vasculopathy After Developing Ranibizumab Tachyphylaxis

Presenting Author: Masahiro Miura MD*

Co-Author(s): Takuya Iwasaki**, Hiroshi Goto MD

Purpose: To evaluate the effect of switching to aflibercept after developing ranibizumab tachyphylaxis for the treatment of polypoidal choroidal vasculopathy (PCV). **Methods:** Twenty-five eyes of 25 patients with PCV who developed ranibizumab tachyphylaxis were reviewed. Therapeutic responses were evaluated from the OCT findings. **Results:** Mean number of intravitreal ranibizumab treatments before intravitreal aflibercept was 13.3 ± 4.2 . Twenty-four of 25 eyes (96%) had positive therapeutic responses after 1 injection of aflibercept. Mean central retinal thickness was significantly decreased from 416 ± 178 to 196 ± 84 μ m ($P = .001$) after 1 injection of aflibercept. **Conclusion:** Switching therapy to aflibercept is effective for patients with PCV who develop tachyphylaxis to ranibizumab.

Scientific Poster 188

Ranibizumab Leads to Lesion and Choroidal Neovascularization Regression: Correspondence With Thickness on Spectral Domain OCT

Presenting Author: *Nikolas J London MD*

Co-Author(s): *Paul E Tornambe MD*, Howard Shapiro PhD*

Purpose: To examine the effect of ranibizumab (RBZ) on lesion and CNV size in the High-Dose Ranibizumab for Neovascular AMD (HARBOR) study. **Methods:** Patients ($n = 1097$) were randomized to intravitreal RBZ 0.5 mg or 2.0 mg monthly (M) or p.r.n. after 3 loading doses. Change from baseline in lesion and CNV area was evaluated by fluorescein angiography (FA) and thickness by spectral domain OCT (SD-OCT) at Months 3, 6, 12, and 24. **Results:** At Month 24, mean change in the 0.5-mg or 2.0-mg groups was as follows: lesion size (disc areas) -1.6, -2.1 for M, -1.1, -1.4 for p.r.n.; CNV size: -2.0, -2.6 for M, -1.6, -1.9 for p.r.n.; lesion thickness on SD-OCT (μm): -205.5, -232.3 for M, -200.9, -224.5 for p.r.n.; CNV thickness: -26.5, -61.5 for M, -22.3, -36.0 for p.r.n. **Conclusion:** RBZ provided consistent regression in lesion and CNV size on FA as well as lesion and CNV thickness on SD-OCT over time in all treatment groups and for all 4 outcome measures.

Scientific Poster 189

Risk Factors in Pure Phenotypes of Reticular Macular Disease

Presenting Author: *Sucharita Boddu*

Co-Author(s): *Michele Danielle Lee, Marcela Marsiglia MD PhD, Michael Marmor PhD*, K Bailey Freund MD*, R Theodore Smith MD*

Purpose: To investigate risk factors for reticular macular disease (RMD) among patients with AMD. **Methods:** Scanning laser ophthalmoscopy identified 30 cases of pure RMD among 72 AMD patients genotyped for *ARMS2* and *CFH*. **Results:** RMD patients were more often female (83.3% vs. 50%, $P = .004$); older (median 87 vs. 81 years; $P = .05$); and older at age at onset of AMD (median 83 vs. 70 years; $P = .0007$); *ARMS2* and *CFH* frequencies did not differ. Age at onset and sex remained significant in multivariable modeling. **Conclusion:** RMD was associated with older age of onset of AMD and being female.

Scientific Poster 190

Pigment Epithelial Detachment Improvement in Non-naïve Neovascular AMD Patients After Intravitreal Aflibercept: One-Year Results

Presenting Author: *James C Major MD PhD**

Co-Author(s): *Daniel Croft**, Angeline Mariani, David Brown MD FACS*, Charles C Wyckoff MD PhD**

Purpose: To examine the effect of aflibercept on recalcitrant pigment epithelial detachments (PEDs) in anti-VEGF-treated non-naïve exudative AMD patients. **Methods:** This retrospective spectral domain OCT study reviewed 65 eyes unresponsive to 2 or more intravitreal injections of bevacizumab or ranibizumab. Endpoints were mean changes in PED height at 1, 6, and 12 months after initial aflibercept injection. **Results:** The mean number of previous anti-VEGF injections was 24.2. Overall PED improvement was noted in 55/63 (87%), 38/47 (81%), and 37/47 (79%) visits at Months 1, 6, and 12, respectively. PED height was reduced by 14%, 18%, and 22% at Months 1, 6, and 12, respectively. **Conclusion:** Intravitreal aflibercept resulted in significant, persistent reduction in recalcitrant PEDs in non-treatment-naïve patients.

Scientific Poster 191

A Vitreous Proteomic Biomarker Panel That Can Guide the Choice of Patients With Wet AMD Who Will Respond to Treat and Extend Therapy: Personalized Medicine Applied to AMD

Presenting Author: *Joshua Hines BSMT**

Co-Author(s): *Stephanie Marie Ecker*, Bert M Glaser MD**

Purpose: To use vitreous proteomics to guide the choice of wet AMD (wAMD) patients who will respond to treat-and-extend therapy (TER). **Methods:** Levels of a large range of proteins were measured in preinjection in-office vitreous aspirates from wAMD patients during the monthly injection phase before initiating TER. Response to TER was divided into 2 groups: Stable visual acuity (VA) = VA decreased by < 10 letters; and Worsening VA = VA decreased ≥ 10 letters. Proteins were measured using reverse phase microarrays. **Results:**

PDGFR β Y751 and VEGFR2 Y951 were elevated in the vitreous of patients who responded with worsening VA during TER ($P = .0270$ and $P = .0256$); as a panel, significance strengths to $P = .0041$. **Conclusion:** The vitreous proteome can guide in identifying candidates for TER and will improve the management of wAMD, allowing personalized retinal care.

Scientific Poster 192

Multilaminar Subretinal Pigment Epithelium Hyper-reflectivity in Regressing Drusen

Presenting Author: *Giuseppe Querques MD*

Co-Author(s): *Anouk Georges, Naima Benmoussa MD, Eric H Souied MD PhD**

Purpose: To describe a multilaminar sub-retinal pigment epithelium (RPE) hyper-reflectivity in regressing drusen. **Methods:** Twenty-three patients with regressing calcific drusen due to non-neovascular AMD were submitted to spectral-domain OCT (SD-OCT). **Results:** The multilaminar hyper-reflectivity localized to beneath the RPE and above the outer Bruch membrane (oBM), characterized by an intense signal originating from the inner Bruch membrane (iBM), and by an intense signal originating from the oBM and showed different degrees of fragmentation from both the iBM and oBM. **Conclusion:** We describe a novel SD-OCT finding appearing as multilaminar sub-RPE intense hyper-reflectivity in eyes with regressing drusen

Scientific Poster 193

Focal Choroidal Elevations

Presenting Author: *Eric J Sigler MD*

Co-Author(s): *Rocio Diaz*

Purpose: To describe the clinical and imaging characteristics of focal chorioretinal contour changes overlying specific large choroidal vessels, or focal choroidal elevations. **Methods:** Enhanced depth imaging OCT was performed on consecutive patients presenting for retinal evaluation over a 2-month study period. **Results:** Thirty-eight of 787 patients (4.8%) presented with focal choroidal elevation. Metamorphopsias in the absence of additional pathology were demonstrated in 17/38 (55%), all of which were subfoveal. **Conclusion:** Focal choroidal elevations are relatively common lesions in AMD, high myopia, and age-related choroidal atrophy. The lesions may simulate pigment epithelial detachments or chorioretinal folds, and have a distinct OCT appearance.

Scientific Poster 194

Predicting Progression to Advanced Disease from Spectral Domain OCT Analysis of Intermediate AMD

Presenting Author: *Cynthia A Toth MD**

Co-Author(s): *Francisco A Folgar MD, Molly Harrington MS*, Katrina Postell Winter, Sina Farsi PhD*, Stefanie G Schuman MD, Wai T Wong MD PhD, Michelle Norton McCall, G Baker Hubbard MD, Sunil K Srivastava MD*, Traci E Clemons PhD, Emily Y Chew MD*

Purpose: To determine spectral domain OCT (SD-OCT) findings that predict progression from intermediate AMD to central geographic atrophy (CGA) or neovascular (nv) AMD. **Methods:** Characteristics from SD-OCT image analysis of one eye per subject at baseline were compared to progression. **Results:** In 308 eyes, those with retinal pigment epithelial (RPE) atrophy/absence, highly reflective drusen, or hyper-reflective foci were more likely to progress to CGA than eyes without. Eyes with subretinal or sub-RPE fluid on OCT were more likely to progress to nvAMD. Median RPE+drusen volume was greater for eyes that progressed to nvAMD. **Conclusion:** Review and segmentation of SD-OCT macular volumes revealed OCT-unique factors predicting AMD progression.

Scientific Poster 195

Morphologic and Angiographic Changes of Retinal Periphery in Patients With Age-Related Macular Disease: The OPERA Study

Presenting Author: *Zoran Vataavuk MD***

Co-Author(s): *Biljana Andrijevic Derk, Tamara Knezevic MD, Goran Bencic*, Thomas R Friberg MD**

Purpose: To show the morphologic and angiographic peripheral retinal changes of patients with age related macular disease (AMD) using the wide-field fundus camera, Optomap P200 MA (Optos). **Methods:** Study included 150 patients with AMD signs and 150 healthy controls. Peripheral retinal changes were studied according to type, frequency, distribution extension, and localization. **Results:** Drusen were present in 68% of eyes with AMD, and

in 25% of control eyes. Reticular pigmentary changes (RPC) were observed in 41% of AMD eyes and in 8% of control eyes. Pavingstone degenerations (PS) were seen in 18% of AMD eyes, and in 3% of control eyes. **Conclusion:** Drusen, RPC, and PS occur more frequently, with statistical significance, in the AMD group.

Scientific Poster 196

Prospective Randomized Controlled Study on the Efficacy of 0.16-mg Intravitreal Bevacizumab Injection for Proliferative Diabetic Retinopathy

Presenting Author: Ayumu Manabe MD

Co-Author(s): Hiroyuki Shimada MD

Purpose: To verify the usefulness of 0.16 mg/0.05 ml of intravitreal bevacizumab (IVB) given 1 day before vitrectomy. **Methods:** Fifty-nine eyes were assigned randomly to a sham group (31 eyes) and an IVB group (28 eyes). One day following injection, vitreous samples were collected at the start of surgery, and intraoperative and postoperative complications were evaluated. **Results:** The VEGF concentrations were 26 ± 14 pg/ml in the IVB group and 1273 ± 1047 pg/ml in the sham group, with a significant difference ($P < .0001$). The incidence of postoperative vitreous hemorrhage (PVH) and the reoperation for PVH were significantly lower in the IVB group than in the sham group ($P = .008$ and $.035$, respectively). **Conclusion:** 0.16 mg/0.05 ml IVB given 1 day before surgery blocked VEGF in the vitreous and reduced the rates of PVH and reoperations for PVH.

Scientific Poster 197

Influence of Laser Photocoagulation and Ranibizumab Injections on Biomarkers in Serum of Patients With Diabetic Macular Edema

Presenting Author: Jessica Voegelers PHARM D*

Co-Author(s): Sandra Liakopoulos*, Claudia Weiss*, Sandra Y Hu MD, Gabriele E Lang MD**, Rainer H Straub, Lothar Faerber MD**

Purpose: Beside influence of treatment on biomarkers over time, correlation of serum levels with morphologic characteristics and visual acuity (VA) at baseline was evaluated. **Methods:** 128 patients were randomized to laser photocoagulation plus ranibizumab or sham injection. Visual acuity and morphologic changes were investigated up to 12 months. Serum biomarker samples were analyzed for 114 patients using Luminex or ELISA. **Results:** VEGF serum levels were stable in the combined group, but some biomarkers (eg, VCAM-1) changed over time. No correlation was found between VA, morphologic characteristics, and serum biomarker levels at baseline. **Conclusion:** Repeated anti-VEGF treatment with ranibizumab did not result in lower systemic VEGF levels. Analyzed serum biomarkers were no predictors for baseline disease severity.

Scientific Poster 198

Scotopic Contrast Sensitivity in Diabetic Patients With No Diabetic Retinopathy

Presenting Author: Hamid Ahmadi MD

Co-Author(s): Eduardo Solessio MS PHD, Afsaneh Raeesi II**, Sare Safi MS, Mohammad Haeri PHD, Mojtaba Malek**, Mehdi Yaseri PhD

Purpose: To evaluate scotopic contrast sensitivity (CS) in diabetic patients with no diabetic retinopathy (DR) in comparison to normal controls. **Methods:** In this comparative cross-sectional study, 47 patients with BCVA of 20/20 and no sign of DR were compared with 47 healthy matched controls. CS was evaluated employing the CSV-1000 device (Vector Vision, Inc.) under scotopic conditions (less than 2 lux). **Results:** In diabetic subjects, scotopic CS was 1.53 ± 0.2 , 1.8 ± 0.22 , 1.38 ± 0.3 , and 0.96 ± 0.33 (log units) at 3, 6, 12, and 18 cycles per degree, respectively. Corresponding values were 1.68 ± 0.15 , 1.93 ± 0.25 , 1.60 ± 0.25 , and 1.18 ± 0.30 among controls ($P < .001$). **Conclusion:** Significant scotopic CS reduction occurs in diabetic subjects before the appearance of DR.

Scientific Poster 199

Driving Ability Reported by Patients With Diabetic Macular Edema Receiving Ranibizumab in the RESTORE Extension Study

Presenting Author: Paul Mitchell MD PhD*

Co-Author(s): Susan B Bressler MD*, Pascale G Massin MD*, Jennifer Petrillo PhD*, Cheryl Coon PhD*, Alberto Ferreira PhD*, Neil M Bressler MD*

Purpose: To examine changes in self-reported driving ability in the Ranibizumab Plus Laser in Diabetic Macular Edema (RESTORE) Extension Study. **Methods:** Post hoc analysis of the National Eye Institute Visual Function Questionnaire (NEI VFQ-25) driving subscale among participants driving at baseline with visual impairment due to DME randomized for 12 months to ranibizumab+sham laser (R, $n = 52$), ranibizumab+laser (R+L, $n = 54$), or sham injection+laser (L, $n = 48$) followed by open-label treatment with ranibizumab as needed for 24 months. **Results:** At 36 months, the LS mean (standard error) change from baseline in driving subscale were -1.4 (4.2), -2.1 (4.1), and -7.5 (4.3) in the R, R+L, and L groups, respectively. **Conclusion:** Patients treated with ranibizumab 0.5-mg as needed throughout the study reported stable NEI VFQ-25 driving subscale scores at 36 months; those initially treated with laser reported a loss of driving function.

Scientific Poster 200

Effect of Intravitreal Ranibizumab Administration on Aqueous Levels of IL8 and IL6 in Patients With Diabetic Macular Edema

Presenting Author: Yasir Jamal Sepah MBBS

Co-Author(s): Alyssa Morimoto*, Kyu Hee Hong MS, Diana Do MD*, Menno Campagne PhD*, Quan Dong Nguyen MD*, Mohamed A Ibrahim Ahmed MBChB, Mauricio Maia PhD*

Purpose: To determine changes in levels of cytokines in the aqueous fluid of patients with diabetic macular edema (DME), treated with ranibizumab (RBZ). **Methods:** Aqueous levels of IL6 and IL8 were measured in serial samples of 131 patients at baseline (BL) and Months 3, 6, 9, and 12. **Results:** A decreasing trend was noted in the levels of IL8 from BL to Month 12. The mean changes at Months 3, 6, 9, and 12 were -2.4 pg/mL, -3.4 pg/mL, -4.7 pg/mL ($P < .02$), and -5.0 pg/mL ($P < .01$), respectively, when compared to BL. An increasing trend was noted in the levels of IL6, BL to Month 12. The mean changes at Months 3, 6, 9, and 12 were +21.4 pg/mL, +35.0 pg/mL, +5.8 pg/mL, and +42.7 pg/mL ($P < .05$), respectively, when compared to BL. **Conclusion:** IL-8 may act downstream of VEGF and play a role in the VEGF-dependent development of DME, while the levels of IL-6 are regulated independently of VEGF.

Scientific Poster 201

A Phase 2a Study of Darapladib, an Oral Lipoprotein-Associated Phospholipase A2 Inhibitor, in Diabetic Macular Edema

Presenting Author: Giovanni Staurenghi MD*

Co-Author(s): Li Ye MS*, Mindy Magee PHARM D*, Ronald Peter Danis MD*, Megan McLaughlin MS*

Purpose: This is the first study to evaluate darapladib, an oral lipoprotein-associated phospholipase A2 inhibitor, for diabetic macular edema (DME). **Methods:** A randomized, double-masked, placebo-controlled study of 160-mg oral darapladib administered daily for 3 months to subjects with center-involved DME. **Results:** Darapladib (D) and placebo (P) were well tolerated in 36 and 18 subjects, respectively. Five subjects were rescued with anti-VEGF (2D and 3P). A mean (95% CI) increase of 4 (2.3, 5.8) ETDRS letters BCVA and a decrease of -57 (-84, -30) microns OCT center subfield were observed in the darapladib arm. **Conclusion:** The efficacy and safety of darapladib in DME was observed in Phase 2a, and it warrants further investigation.

Scientific Poster 202

Cone Structure in Achromatopsia

Presenting Author: Venki Sundaram MBChB

Co-Author(s): Caroline Louise Wilde MBChB, Marko Nardini*, Robin Ali PhD**, James W Bainbridge MA PhD FRCPHth*, Michel Michaelides**

Purpose: Recent studies suggest that cone loss occurs with age in achromatopsia (ACHM). We further investigate cone structure in ACHM to help identify potential patients for gene therapy. **Methods:** Forty patients (mean age: 24.9 years) underwent spectral domain OCT

(SD-OCT) imaging. Images were graded into 5 categories: (1) continuous inner segment ellipsoid (ISe), (2) ISe disruption, (3) ISe absence, (4) hyporeflective zone (HRZ) presence, and (5) outer retinal atrophy. **Results:** 22.5% had a continuous ISe layer, 27.5% had ISe disruption, 20% had an absent ISe layer, 22.5% had a HRZ, and 7.5% had outer retinal atrophy. No difference in age of subjects between the SD-OCT categories occurred ($P = .77$). **Conclusion:** SD-OCT changes were not present in an age-dependent manner, suggesting the window of opportunity for gene therapy may extend into adulthood.

Scientific Poster 203

Outer Retina Analysis by OCT in Cone-Rod Dystrophy Patients

Presenting Author: Luiz Lima MD

Co-Author(s): Juliana M F Sallum MD, Richard F Spaide MD*

Purpose: To analyze the outer retina with spectral domain OCT (SD-OCT) in patients with cone-rod dystrophy (CRD). **Methods:** Using SD-OCT, the outer retina was retrospectively evaluated in 24 eyes of 12 CRD patients. The 4 studied hyper-reflective outer retinal bands were labeled as follows: Band 1, the external limiting membrane (ELM), Band 2, the ellipsoid zone (EZ), Band 3, the interdigitation zone (IZ) between the cone outer segments, and Band 4, the retinal pigment epithelium (RPE). **Results:** There was an absence of IZ in the entire length of SD-OCT scan in all 24 study eyes. Outside the foveal area, the ELM and EZ were intact. Within the foveal area, there was loss of the ELM and EZ in 20 (83%) and 22 eyes (92%), respectively. The RPE was identified in all study eyes. **Conclusion:** SD-OCT scans demonstrated complete absence of the IZ in CRD patients.

Scientific Poster 204

Martinique (West Indies) Crinkled Retinal Pigment Epitheliopathy

Presenting Author: Albert Jean-Charles MD

Co-Author(s): Salomon Y Cohen MD*, Isabelle A Meunier MD, Gabriel G Quentel MD*, Alain Gaudric MD*, Harold R Merle MD

Purpose: To revisit a peculiar autosomal dominant retinal dystrophy, ie, crinkled retinal pigment epithelium, noted in a large family of black Martinique patients. **Methods:** Angiography and spectral domain OCT were studied. **Results:** Eleven out of 35 patients (3 generations, age 10 to 87 years) were affected. OCT showed a striking and specific crinkled pattern of slightly elevated retinal pigment epithelium in the posterior pole and midperiphery, giving an image of dry desert land in angiography. **Conclusion:** The observed pattern appeared different from previously described dystrophies and could be referred to as "Martinique crinkled retinal pigment epitheliopathy."

Scientific Poster 205

★ Adult-Onset Vitelliform Macular Dystrophy Caused by Mutations in IMPG1 and IMPG2 Interphotoreceptor Matrix Genes

Presenting Author: Isabelle A Meunier MD

Co-Author(s): Gaël Manes PhD, Béatrice Bocquet PhD, Christian Hamel

Purpose: To identify the phenotype of macular dystrophies associated with *IMPG1* and *IMPG2* mutations. **Methods:** Both genes were systematically screened in 98 probands of unrelated registered families with autosomal dominant hereditary macular dystrophy. **Results:** A c.713T>G (p.Leu238Arg) *IMPG1* mutation was found and segregates in 3 families. In 1 family, affected patients have a bilateral macular vitelliform lesion. In the other 1 families, patients have a multifocal vitelliform dystrophy. A c.3230G>T (p.C1077F) *IMPG2* mutation was noted in only 1 family with a multifocal vitelliform dystrophy. Patients with *IMPG1* and *IMPG2* mutations have a moderate visual impairment observed after the age of 40. **Conclusion:** *IMPG1* and *IMPG2* are new causal genes of autosomal dominant adult-onset vitelliform macular dystrophy.

Scientific Poster 206

Ocular Involvement in Patients With Fungemia: A Meta-analysis

Presenting Author: Mohammad H Dastjerdi MD

Co-Author(s): Rebecca A Linquist MD, Jennifer A Spiegel MD, Thomas J Whittaker MD

Purpose: To determine the prevalence and patterns of ocular involvement in patients with fungemia. **Methods:** A systematic review and meta-analysis of the literature describing fungemia with ocular involvement. **Results:** Eighteen studies involving 1662 patients with

fungemia were included. The pooled relative risks for chorioretinitis and endophthalmitis were 5.5% (95% CI, 3.3%-8.9%) and 1.6% (95% CI, 1.0%-2.4%), respectively. Only 6 patients (0.4% of total patients) required intravitreal injections or vitrectomy. In subgroup analyses, the overall pooled percentage of ocular involvement prior to year 2001 was 5.7%, which significantly decreased to 1.9% after year 2001. **Conclusion:** The current prevalence of disseminated ocular fungal infection in patients with fungemia is low.

Scientific Poster 207

Presentation of Fungal Endophthalmitis Outbreak Following Intravitreal Injections of Triamcinolone Contaminated by a Compounding Pharmacy

Presenting Author: Kent W Small MD

Purpose: To report a series of cases with fungal endophthalmitis following intravitreal triamcinolone injection derived from a single lot prepared by a compounding pharmacy (Franck's). **Methods:** A retrospective review of 15 patients who received intravitreal injections of triamcinolone obtained from Franck's compounding pharmacy that was later found to be contaminated with the plant fungus *Bipolaris hawaiiensis*. **Results:** Infection developed in 82% of the exposed eyes. Mean onset was 183 days. Most common signs and symptoms included decreased vision and vitreous cell. Detection of fungus by cytology or cultures was poor. **Conclusion:** Fungal endophthalmitis can have an extremely delayed clinical onset, making it difficult to manage.

Scientific Poster 208

Analysis of Prognostic Factors in Vogt-Koyanagi-Harada Disease

Presenting Author: Yoko Okunuki MD

Co-Author(s): Yoshihiko Usui MD, Takeshi Kezuka MD PhD, Hiroshi Goto MD

Purpose: To identify pretreatment ocular findings predicting chronicity in Vogt-Koyanagi-Harada (VKH) disease. **Methods:** 210 eyes of 105 patients with new-onset active VKH disease were reviewed retrospectively. The association of each pretreatment ocular finding with chronicity was evaluated. **Results:** Seventy-three eyes had chronic disease. In multivariate logistic regression analysis adjusted for age, sex, interval between onset and treatment initiation, and first-month steroid dose, only severity of anterior inflammation among the ocular findings evaluated was associated with chronicity (odds ratio 2.11, $P = .004$). Older age was also significantly associated with chronicity in multivariate model. **Conclusion:** Anterior inflammation and age may be prognostic factors for chronicity in VKH disease.

Scientific Poster 209

Role of Ultrawide-field Imaging and Fluorescein Angiography in the Management of Tuberculous Retinal Vasculitis

Presenting Author: Priya Srinivasan

Co-Author(s): Padmamalini Mahendradas MBBS DO DNB, Garima Lakhota MBBS, Rohit Shetty MD MBBS

Purpose: To determine the usefulness of ultrawide-field imaging and fluorescein angiography (UWFIFA) in the management of tuberculous retinal vasculitis. **Methods:** Prospective interventional case series of 10 patients of diagnosed tuberculous retinal vasculitis who underwent UWFIFA using the Optos panoramic P200 imaging system. **Results:** Ultrawide-field angiography showed active inflammatory disease in 4 eyes of 2 patients that had no clinical evidence of active posterior segment inflammation. Retinal neovascularization was noted in 4 eyes of 3 patients. Treatment decision was altered in 6 eyes of 4 patients. **Conclusion:** Ultrawide-field imaging and fluorescein angiography is a very useful tool in the management of tuberculous retinal vasculitis.

Scientific Poster 210

Combined Treatment of Intravitreal Bevacizumab and Intravitreal Triamcinolone for Macular Edema Associated With Central Retinal Vein Occlusion

Presenting Author: Saurabh Arora MS

Co-Author(s): Vijayalaxmi Satyanarayanan Rao Bezankiwar, Sarvesh Tiwari**, George Manayath, V R Saravanan, Narendran Venkatapathy MBBS**, Sandeep Bachu, George Manayath, Veerappan Saravanan**

Purpose: To compare the efficacy and safety of intravitreal bevacizumab and triamcinolone (IVBT) with bevacizumab (IVB) for treatment of macular edema (ME) in central retinal vein occlusion CRVO. **Methods:** Twenty-eight eyes were each treated with IVBT and IVB. Repeat injections were given if ME persisted on OCT 1 month after the first treatment or BCVA loss of at least 2 lines. **Results:** In IVBT, mean BCVA was logMAR 0.71, compared to 0.76 in IVB, whereas mean macular thickness (MT) in IVBT was 390 microns, compared to 396 in the IVB group at 6 months, with no statistical difference. The mean numbers of reinjections were 1.04 in IVBT compared to 2.43 in IVB. A significant mean IOP rise was noted in IVBT. **Conclusion:** IVBT and IVB improve BCVA and reduce MT; however, IVBT offers an advantage of fewer injections with due risk of IOP hike.

Scientific Poster 211

Oral Kallidinogenase Improved Retinal Blood Flow Levels and Visual Acuity in Diabetic Macular Edema Patients

Presenting Author: Eiko Tsuiki DOMS

Co-Author(s): Kiyoshi Suzuma MD, Makiko Matsumoto MCBP MD DOMS, Takashi Kitaoka MD**

Purpose: We investigated the influence of oral kallidinogenase on retinal blood flow in diabetic macular edema (DME) patients who received focal laser for clinically significant macular edema. **Methods:** Retinal blood flow was measured by laser speckle flowgraphy in 21 patients (12 with and 9 without kallidinogenase) and evaluated using the mean blur rate (MBR). **Results:** Although MBR of 6 months after significantly decreased to 83.8% in patients without kallidinogenase ($P = .01$), it was maintained at 99.5% in patients with kallidinogenase. BCVA significantly improved in patients with kallidinogenase ($P < .05$) and has a significant correlation with retinal blood flow levels ($r = 0.69$, $P = .009$). **Conclusion:** Kallidinogenase is able to improve retinal blood flow levels and visual acuity in DME patients.

Scientific Poster 212

★ Intraoperative OCT Evaluation of Macular Thickness Following Membrane Peeling

Presenting Author: Hideyasu Oh MD PhD

Co-Author(s): Tomoyuki Chihara, Takeshi Moriya**, Toshitaka Bun MD**, Takafumi Hirashima, Takao Utsumi**

Purpose: To evaluate the immediate effect of membrane peeling on macular thickness (MT) using intraoperative OCT (iOCT). **Methods:** Twenty-one subjects with either epiretinal membrane (ERM) or diabetic macular edema (DME) were analyzed with iOCT. Both epiretinal membrane, if present, and internal limiting membrane were removed during surgery. **Results:** Following membrane peeling, MT in the ERM group decreased by 11% ($P = NS$) and 21% in the DME group ($P < .01$). The mean decreases in MT were 53 μ m for the ERM group and 114 μ m for the DME group. **Conclusion:** The changes in MT analyzed with iOCT highlight the immediate effects of membrane peeling on intraoperative macular morphology during surgery for these macular diseases.

Scientific Poster 213

★ One-Year Results of Intravitreal Dexamethasone Implant in Drug-Naive Patients With Diabetic Macular Edema

Presenting Author: Patricia Udaondo MD

Co-Author(s): Ana Hervas, Salvador Garcia-Delpech MD, Manuel Diaz Llopis MD PhD**, Begona Pina MD**

Purpose: To determine the effectiveness of intravitreal dexamethasone implant (Ozurdex) for diabetic macular edema (DME). **Methods:** Twelve-month pilot study including drug-naïve patients with DME treated with dexamethasone implant and followed by re-treatment based on central macular thickness (CMT) and vision loss. **Results:** Sixty-eight naïve eyes of 58 patients were enrolled. The mean re-treatment time was 5 months, and the mean number of implants was 2.6. Both visual acuity and CMT improvement were statistically

significant. Security profile: 6.5% of cataract surgery and 9.2% of patients needed topical treatment for IOP. No other side effects during follow-up. **Conclusion:** Intravitreal dexamethasone implant was well tolerated and was effective in the management of DME in this study.

Scientific Poster 214

★ Systemic Safety Profile of Ranibizumab in AMD, Retinal Vein Occlusion, and Diabetic Macular Edema: A Comprehensive Patient-Level Meta-analysis

Presenting Author: Baruch D Kuppermann MD PhD*

Co-Author(s): Phillip C Lai MD*, Daniel S Reshef MD PhD*, Aaron Osborne MRCOphth*, Lisa Tuomi, Steven F Francom*

Purpose: To better characterize the systemic safety profile of ranibizumab (RBZ) in AMD, diabetic macular edema (DME), and retinal vein occlusion (RVO). **Methods:** This meta-analysis of 14 Phase 2-3b RBZ clinical trials (6504 patients; 7544 patient-years) included pairwise comparisons for 0.5 mg or 0.3 mg vs. control and 0.5 mg vs. 0.3 mg. **Results:** In patients with AMD or RVO, no imbalances were observed. In DME, small numerical imbalances were noted for wound healing complications, and for stroke and death in Year 2 of monthly treatment. **Conclusion:** Ranibizumab is a Fab fragment without a Fc region designed to minimize systemic exposure. Event rates were low for all groups. These results are consistent with the established RBZ safety profile.

Scientific Poster 215

Bevacizumab Plus Laser vs. Laser Alone for Diabetic Macular Edema: A Prospective Randomized Trial

Presenting Author: Alicia C Pareja Rios MD

Co-Author(s): Isabel M Lopez Galvez MD*, Elena Maria De Armas Ramos MD**, Pablo Airam Pareja-Rios RN, Wladimiro Pareja-Rios Sr PA, Romero P Aroca MD, Eugenio Jose Pareja-Rios, Alejandro Quijada-Fumero MD, Miguel Angel Reyes-Rodriguez MD, Miguel A Serrano MD**

Purpose: To prospectively compare 1-year outcomes of patients receiving either focal/grid photocoagulation or bevacizumab + laser for diffuse diabetic macular edema (DME). **Methods:** Fifty-three eyes with DME involving the fovea and visual acuity (VA) 20/32 to 20/320 randomly received focal/grid photocoagulation ($n = 28$) or bevacizumab + laser ($n = 25$). There were no significant intergroup differences in VA at baseline. **Results:** At 1 year the difference in VA was 10 ± 10 letters in favor of patients receiving bevacizumab + laser ($P < .05$). The most notable improvements occurred in patients who had subretinal fluid pattern on OCT before receiving bevacizumab treatment. **Conclusion:** Bevacizumab + laser significantly improved VA at 1 year compared with laser alone.

Scientific Poster 216

Efficacy of Intravitreal Dexamethasone Implant (Ozurdex) in Recalcitrant Nonuveitic Macular Edema

Presenting Author: Chetan Rao MBBS

Co-Author(s): Vikas Khetan DO, Tarun Sharma MBBS

Purpose: To study the efficacy of Ozurdex on visual acuity and OCT in recalcitrant nonuveitic macular edema. **Methods:** Retrospective case series of 25 patients (14 venous occlusions, 8 diabetic maculopathy, 3 choroidal neovascular complex). **Results:** At 3 months follow-up, in patients with venous occlusions, visual acuity improved by 2 lines (Snellen) in 35% of eyes and mean OCT thickness reduced by 289 microns; no such significant improvement was observed in the other groups. **Conclusion:** Dexamethasone implant was efficacious in reducing macular edema and improving visual acuity in one-third of eyes with recalcitrant macular edema caused by venous occlusions.

Scientific Poster 217

Longitudinal Assessment of Macular Pigment Parameters in Patients With Macular Telangiectasia Type 2

Presenting Author: Simona Degli Esposti MD

Co-Author(s): Catherine Ann Egan MBBS FRANZCO*, Anthony G Robson PhD

Purpose: To monitor macular pigment optical density (MPOD) parameters in MacTel type 2 patients. **Methods:** Two-wavelength fundus autofluorescence was used to quantify the spatial profile and total amount of MP (OD units) within the central 21° in 40 patients with MacTel type 2. Measurements were repeated over 12-52 months (mean: 29 months). **Results:** All eyes had a paracentral distribution of MP (mean peak MPOD 0.1; mean ec-

Session One is Saturday and Sunday, Nov. 16 & 17. Session Two is Monday and Tuesday, Nov. 18 & 19. Refer to page 156 for poster presentation and tour schedule.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

centricity: 4.5°; mean total amount: 3410). The mean changes in peak OD and eccentricity were -0.02 (SD 0.04) and +0.36 degrees (SD 1.13). Mean change in total MP was -360 (SD 1225); reduction was greater than 1000 units in 11 cases. **Conclusion:** Most patients with MacTel Type 2 have an abnormal but relatively stable distribution of MP. Some show progressive loss of MP over time.

Scientific Poster 218

Change in Subfoveal Choroidal Thickness Using Enhanced Depth Imaging Spectral Domain OCT After Treatment for Extramacular Choroidal Melanoma With Plaque Radiotherapy

Presenting Author: Juan David Arias MD

Co-Author(s): Shripaad Y Shukla MD, Haitham Al-Mahrouqi MBChB, Arman Mashayekhi MD, Carol L Shields MD, Jerry A Shields MD, Enzo M Fulco MD

Purpose: To evaluate the change in subfoveal choroidal thickness (SFCT) using enhanced depth imaging spectral domain OCT (EDI-OCT) after plaque radiotherapy of extramacular choroidal melanoma. **Methods:** SFCT was measured with EDI-OCT before and 1 year after plaque radiotherapy of choroidal melanoma. **Results:** Of 22 study eyes, mean SFCT was 280 ± 59 microns at baseline and 245 ± 59 microns after treatment ($P = .003$). The change in SFCT was borderline related to radiation dose at tumor base ($P = .054$) but was not related to radiation dose at foveola ($P = .445$) or optic disc ($P = .327$). **Conclusion:** SFCT decreases significantly following plaque radiotherapy of extramacular choroidal melanoma and appears related to tumor basal radiation dose.

Scientific Poster 219

★ Long-term Results of Ranibizumab for Myopic Choroidal Neovascularization

Presenting Author: Salomon Y Cohen MD*

Co-Author(s): Minh-Huyen Nghiem-Buffer MD*, Typhaine Grenet**, Lise Dubois, Sandrine Ayrault, Franck Fajnkuchen MD*, Gabriel G Quentel MD*

Purpose: To evaluate the long-term efficacy of ranibizumab for myopic CNV (mCNV). **Methods:** Monocentric, retrospective analysis of consecutive patients with naïve juxtafoveal or subfoveal mCNV, treated with intravitreal ranibizumab (IVR) on a pro re nata basis, for at least 24 months. **Results:** Fifty-one patients (51 eyes), 12 men and 39 women (mean age: 64 years) were included. Visual acuity improved from 58.7 to 66.3 letters ($P < .001$, mean visual gain: 7.62 ± 15 letters). Mean number of IVR was 3.5 (range: 1-12), during a mean follow-up of 39.3 months (range: 24-69). **Conclusion:** IVR resulted in long-term efficacy for treating mCNV.

Scientific Poster 220

Follow-up of Patients With Hydroxychloroquine Toxicity

Presenting Author: Reshma Katira MD

Co-Author(s): Jonathan S Lyons MD, James M Osher MD

Purpose: To use multifocal electroretinography (mfERG) to follow retinal function in patients who stopped taking hydroxychloroquine (HCQ). **Methods:** A retrospective review of 89 patients with HCQ retinal toxicity. Following cessation of HCQ, multiple variables were evaluated, including changes in mfERG ring ratio, visual acuity, and fundus examination. **Results:** Twenty-three female patients, median age 57 years, with retinal toxicity from HCQ use were included in this study. Mean follow-up was 23 months (3.5-78), and cumulative dose was 2147 grams (1015-3625). Using ring ratio patterns on mfERG, 8/23 (34.8%) worsened, 9/23 (39.1%) had no change, and 6/23 (26.1%) showed improvement during the follow-up period. **Conclusion:** This study shows that a significant proportion of patients had an improved mfERG after cessation of HCQ.

Scientific Poster 221

Estimation of Oxidative Stress Level in Central Serous Retinopathy

Presenting Author: Aniruddha Maiti MD

Co-Author(s): Surajit Bose Sr, Chirag Dilip Bhatt MBBS MS, Dr Ratish Chandra Paul IV**

Purpose: To estimate the oxidative stress levels in central serous retinopathy (CSR). **Methods:** Twenty cases and 22 age-matched controls were tested within a period of 6 months. After clinical diagnosis supported by OCT and DFA the patients' blood was tested for lipid peroxidation product (LPP). To determine the LPP level, thiobarbituric acid was added to plasma sample and the absorption of color that developed after heating was

estimated spectrophotometrically. The concentration was expressed in nmol/ml of malondialdehyde (MDA). MDA is a biomarker of the oxidative stress. **Results:** Average age was 40.9 years, and 90% were males. The results were evaluated using a 2 sample t -test. Mean LPP in the CSR patients was statistically significant (P -value < 7.8 X 10⁻⁹). **Conclusion:** The oxidative stress levels are high in CSR.

Scientific Poster 222

Aflibercept (Eylea) for Radiation Retinopathy

Presenting Author: Liliya Shevchenko DO

Co-Author(s): Thomas M Aaberg Jr MD*, James Robert Singer DO*

Purpose: To report the results of using intravitreal aflibercept (Eylea) in patients with radiation-related complications. **Methods:** A list of patients who received intravitreal injections of Eylea (IVE) as treatment for radiation-related complications was compiled. The following data were analyzed: visual acuity, central macular thickness, number of injections, complications encountered, and prior treatments. **Results:** Twenty patients received IVE. There was a statistically significant improvement in visual acuity after the third injection and a statistically significant decrease in central retinal thickness after the first injection. **Conclusion:** Intravitreal aflibercept improved or maintained visual acuity, decreased central retinal thickness, and reversed anterior segment neovascularization in patients with radiation-related complications.

Scientific Poster 223

Predictive Value of Pharmacological Pupillary Dilation in Retinopathy of Prematurity Diagnosis

Presenting Author: Mohammad Riazi Esfahani MD

Co-Author(s): Reza Karkhaneh MD**, Ramak Roohipour MD, Nazanain Ebrahimiadib MD**

Purpose: To assess whether pupillary response to mydriatics can predict ROP and its severity. **Methods:** Pupillary diameter was measured with a ruler. **Results:** 134 eyes of premature infants (< 33 weeks, < 2000 g) were enrolled. ROP was diagnosed in 38.81%. 19.4% had poor response to mydriatics (final dilation < 6 mm) Final pupil diameter after mydriatic administration in patients with ROP was significantly lower than in those without ROP ($P = .001$) as well as those with plus disease compared to subjects without plus disease ($P < .001$). The best cut-off value seems to be 5.6 mm because it is able to differentiate involvement of zone I from zone II and III with a sensitivity of 80% and a specificity of 100%. **Conclusion:** Rigid pupil is indicative of plus disease and high stages of ROP, but it is not recommended to be used as a screening test due to its low sensitivity.

Scientific Poster 224

Ocriplasmin for the Treatment of Vitreomacular Traction: Clinical Indications and Predictors of Success

Presenting Author: Daniel B Roth MD*

Co-Author(s): Kunjal K Modi, Howard F Fine MD MHS*, Matthew Wheatley MD

Purpose: To evaluate eyes treated with intravitreal ocriplasmin and determine predictors of success. **Methods:** Retrospective review of 21 eyes with symptomatic VMA was performed. Each eye was treated with a single pars plana injection of ocriplasmin. **Results:** Mean Snellen visual acuity was 20/92. Mean length of VMA on OCT was 935 µm and 340 µm in eye with macular hole (MH). Ocriplasmin injection induced a vitreomacular separation in 33% of all eyes and 71% of eyes with MH. However, MH closure was seen in only 29% of these eyes. Fifty-three percent of eyes had worsening of vision at the 1-week follow-up visit. Successful vitreomacular separation was associated with presence of MH and short length of vitreomacular attachment. **Conclusion:** Case selection and appropriate patient expectations are important in the management of symptomatic VMA with ocriplasmin.

Scientific Poster 225

★ Post-Intravitreal Injection *Mycobacterium abscessus* Nodular Scleritis Outbreak

Presenting Author: Steven M Cohen MD

Co-Author(s): Laura Tonjes Muller MD, Edgar M Espana MD, Scott C Behler MD

Purpose: To report a *Mycobacterium abscessus* nodular scleritis outbreak following intravitreal injection for wet macular degeneration. **Methods:** Chart review. **Results:** Ten patients presented with a painful nodular scleritis 27 days (7-52 days) following intravitreal injection administered by the same surgeon in the same office. The source of the infection

was probably contaminated tap water used to rinse glutaraldehyde-soaked lid specula. Six eyes were culture positive for *M. abscessus*. Scleritis resolved following treatment with topical amikacin, oral clarithromycin or azithromycin, and surgical debridement. **Conclusion:** *M. abscessus* nodular scleritis can occur following intravitreal injection. Treatment with topical and systemic antibiotics as well as prompt surgical debridement is effective.

Scientific Poster 226

Study of Corneal Sensitivity After Circumferential Photocoagulation With Argon or Diode Laser for Retinal Detachment

Presenting Author: Alexis Pinel MD

Co-Author(s): Lucie Biard MD, Pierre-Kahn Vincent SR MD

Purpose: To compare the corneal sensitivity after circumferential intraocular laser photocoagulation using 810-nm diode laser or 532-nm argon laser for retinal detachment surgery. **Methods:** Corneal sensitivity was measured using a Cochet-Bonnet esthesiometer in patients treated by circumferential intraocular laser photocoagulation with diode or argon laser for retinal detachment and in control patients. **Results:** Median corneal sensitivity was lower ($P < .001$) in eyes treated with laser photocoagulation ($n = 33$) compared to control eyes ($n = 28$) and lower in the diode laser group than in the argon laser group ($P < .001$). **Conclusion:** Corneal sensitivity is impaired after circumferential intraocular photocoagulation, more so with diode laser than with argon laser.

Scientific Poster 227

Occurrence of Retinal Detachment in Japanese Patients With Stickler Syndrome

Presenting Author: Hiroyuki Kondo MD

Co-Author(s): Takaaki Hayashi MD, Mineo Kondo MD PhD**, Masahito Ohji MD*

Purpose: To investigate the occurrence of retinal detachment (RD) in Japanese patients with genetically confirmed Stickler syndrome (STL). **Methods:** A review of medical records was conducted for 18 families with STL. The diagnosis was established by detecting mutations in the COL2A1 gene. **Results:** Of the 43 members of the 18 families, 29 had RD: 14 had bilateral and 15 had unilateral RD. Twenty-three eyes (82%) presented RD under the age of 20. For 9 patients who had bilateral RD, 5 patients were diagnosed at one time and 4 patients suffered RD at an interval ranging from 3 to 6 years. **Conclusion:** A risk of developing RD is as high in Japanese patients with STL as in whites. The mutational analysis is efficient in determining STL.

Scientific Poster 228

The Association of Oral Fluoroquinolone Use With the Need for Retinal Detachment or Tear Repair

Presenting Author: Kian Eftekhari MD

Co-Author(s): Devan H Ghodasra MD, Jinbo Chen PhD**, John H Kempen MD*, Kevin Haynes PHARMd*, Brian L VanderBeek MD MPH

Purpose: To determine if oral fluoroquinolone (FQ) exposure is associated with retinal break repair (RB). **Methods:** Nested case-control study in The Health Improvement Network (THIN) cohort database. Cases: subjects undergoing a procedure for retinal detachment or tear (RB). The outcome measure was the odds ratio of FQ exposure for RB within 8, 45, and 180 days of the index date. **Results:** Cases (3099) with a RB were matched to 10926 controls. A total of 8238 prescriptions for oral FQ were written for both cases and controls. Logistic regression did not detect an association between FQ exposure and a procedure to repair a RB at any of the time points. **Conclusion:** Our results do not support an association between oral FQ use and the need for a procedure to repair a retinal break.

Scientific Poster 229

Heavy Silicone Oil in Inferior Retinal Detachments

Presenting Author: Sundaram Natarajan MD

Co-Author(s): Pandurang Kulkarni MS**, Rishi Bhardwaj MS, Anoop Sivaraman

Purpose: To evaluate effectiveness of heavy silicon oil in inferior retinal detachment. **Methods:** Consecutive case series of 37 eyes with inferior rhegmatogenous retinal detachment included. Patients underwent vitrectomy followed by heavy silicon oil, a mixture of 69.5% ultrapure polydimethylsiloxane and 30.5% ultrapure perfluorohexyloctane infusion. Each patient was evaluated at 1 day, 6 weeks, and 6 months. **Results:** At 6 weeks, anatomic success was observed in 91% of eyes; this was reduced to 75% at 6 months ($P = .058$). Twenty-four percent of eyes developed redetachment after surgery at the end of 6

months. Macular attachment was observed in 83.7% of eyes at 6 months as compared to 43.2% eyes preoperatively. **Conclusion:** Recurrent and inferior retinal detachments can be effectively managed with heavy silicon oil with statistically significant anatomic success.

Scientific Poster 230

Double Endotamponade With Perfluorodecalin and Silicone Oil in Retinal Detachment Surgery: A Clinical Study

Presenting Author: Pavel Lyskin MD

Co-Author(s): Elena Kazimirova, Alexander A Shpak MD

Purpose: To assess the safety and efficacy of double endotamponade (DT) with perfluorodecalin and silicone oil. **Methods:** Inclusion criteria: total retinal detachment with retinal breaks located in both upper and lower retina. All patients underwent vitrectomy and photocoagulation. In a study group ($n = 26$), DT was performed. In a control group ($n = 20$), surgery was finished with silicone oil tamponade. Tamponade duration: 30 days. Examinations: standard + OCT + microperimetry (MP). **Results:** Anatomic success and BCVA difference between the groups were insignificant, but there was a trend to better anatomic outcome in the study group (81% vs. 65%). OCT and MP data had no significant differences between the groups. **Conclusion:** Thirty-day DT is safe. DT shows a trend toward better anatomic success of surgery.

Scientific Poster 231

Intraoperative Spectral Domain OCT During Pars Plana Vitrectomy for Macula Involving Retinal Detachments

Presenting Author: Sunil K Srivastava MD*

Co-Author(s): Peter K Kaiser MD*, Alex Yuan MD, Rishi P Singh MD*, Daniel F Martin MD, Justis P Ehlers MD*

Purpose: To describe the intraoperative spectral domain OCT (iSD-OCT) findings of macula involving retinal detachments and their relationship to visual outcomes. **Methods:** A retrospective review was performed of patients who had undergone repair via vitrectomy and who had iSD-OCT performed. **Results:** Intraoperative imaging findings included persistent subretinal fluid after perfluoro-n-octane (PFO) tamponade (29/29). Full thickness macular holes were noted in 3 eyes. Stage 1 macular hole under PFO was noted in 15/26 eyes. The ability to identify the outer retinal layers after tamponade was seen more often in eyes with postoperative visual acuity greater than 20/50. **Conclusion:** OCT is feasible during PPV for retinal detachments. The identification of outer retinal layers after PFO tamponade was more likely in eyes with good postop vision.

Scientific Poster 232

OCT Angiography of Optic Nerve Head Perfusion in Multiple Sclerosis Patients

Presenting Author: Xiaogang Wang

Co-Author(s): Yali Jia PhD*, Rebecca Spain MD, James Fujimoto PhD*, David Huang MD PhD*, Joachim Homegger PhD

Purpose: To investigate optic nerve head (ONH) perfusion in multiple sclerosis (MS) by OCT angiography. **Methods:** Twenty-seven MS without optic neuritis (MS-ON) eyes, 3 fellow eyes, 7 MS with ON eyes (MS+ON), and 21 normal eyes were scanned by high-speed 1050-nm swept-source OCT. Flow was detected by the split-spectrum amplitude-decorrelation angiography algorithm, and ONH flow index (FI) was computed from 4 registered scans. **Results:** A significantly ($P = .038$) higher percentage of MS+ON eyes (43%) had abnormally low ONH FI (< 2.33 standard deviations below mean) compared to normal subjects (5%). Thirty-three percent of fellow eyes and 11% of MS-ON eyes also had reduced FI. **Conclusion:** OCT angiography may be useful in the evaluation of ONH damage in MS.

Scientific Poster 233

Macular Ganglion Cell-Inner Plexiform Layer Thickness Change After Internal Limiting Membrane Peeling During Vitrectomy for Idiopathic Macular Hole

Presenting Author: Hyung Woo Kwak MD PhD

Co-Author(s): Seung Young Yu MD, Ji-Ho Yang MD

Purpose: To evaluate macular ganglion cell-inner plexiform layer (GCIPL) thickness changes after vitrectomy with internal limiting membrane (ILM) peeling in eyes with idiopathic macular hole (MH). **Methods:** Fifty-two eyes with an idiopathic MH treated by vitrectomy with ILM peeling were studied. The macular GCIPL thickness was measured by the Cirrus

HD-OCT using the ganglion cell analysis (GCA) before and at 1 and 6 months after vitrectomy. **Results:** The mean GCIPL thickness at 1 and 6 months after surgery was significantly reduced from 78.75 ± 10.73 to 70.83 ± 8.90 and to $67.06 \pm 12.94 \mu\text{m}$, respectively ($P < .001$). The postoperative GCIPL thickness was thinner than that of the group without ILM peeling at 6 months postoperatively ($P < .001$). **Conclusion:** Reduction of the macular GCIPL thickness was observed after vitrectomy for idiopathic MH that may be associated with ILM peeling.

Scientific Poster 234 Spectral Domain OCT Features of Silicone Oil Interface

Presenting Author: Navneet Mehrotra

Co-Author(s): Manish Nagpal MD*, Rituraj Videkar MS, Gaurav S Paranjpe

Purpose: To objectively determine the silicon oil (SO)-retinal interface, macular status, and tamponade effect in SO-filled eyes using spectral domain OCT (SD-OCT). **Methods:** 104 eyes underwent SD-OCT examination. Horizontal and vertical macular scans were taken. **Results:** Incomplete tamponade was noted in $n = 12$; complete tamponade, in $n = 92$. Deposits, $n = 12$; foveal thickening, $n = 22$; epiretinal membrane, $n = 13$; foveal thinning, $n = 6$; subfoveal fluid, $n = 8$; subsilicon membranes, $n = 4$; emulsified SO, $n = 4$; macular hole, $n = 2$. **Conclusion:** SD-OCT is a useful tool to assess the SO-retina interface, tamponade effect, and macular status in SO-filled eyes.

Scientific Poster 235 Relationship of Choroidal Thickness Using Enhanced Depth Imaging OCT and Visual Acuity in High Myopes of Asian Indians

Presenting Author: Ashish Sharma MBBS*

Co-Author(s): Jay Umed Sheth Doms MD, Baruch D Kuppermann MD PhD*

Purpose: To examine predictive factors for visual acuity in high myopes. **Methods:** Images were obtained in highly myopic eyes (≥ 6 D). Correlation among subfoveal choroidal thickness (CT), age, refractive error, photoreceptor inner segment outer segment (PRISOS) length, and visual acuity was analyzed. Generalized estimating equation models were used to identify predictors of visual acuity. **Results:** The mean refractive error of 86 eyes was -9.5 D. The mean subfoveal CT was $204.4 \mu\text{m}$ and was correlated negatively with age ($P < .0001$, $r = -0.452$), refractive error ($P < .0001$, $r = -0.745$), and visual acuity ($P < .0001$, $r = -0.462$). The only significant predictor in the pooled data for the visual acuity was subfoveal CT ($P = .037$). **Conclusion:** Subfoveal CT is an important predictor of visual acuity in high myopes.

Scientific Poster 236 Comparison of OCT Characteristics in Patients With Multifocal Choroiditis and Punctate Inner Choroidopathy

Presenting Author: Roomasa Channa MD

Co-Author(s): Mohamed A Ibrahim Ahmed MBBS, Daniel A Ferraz MD, Syed Mahmood Shah MBBS, Millena Gomes Bittencourt MD, Yasir Jamal Sepah MBBS, Quan Dong Nguyen MD*

Purpose: To determine if multifocal choroiditis (MFC) and punctate inner choroidopathy (PIC) can be distinguished using spectral domain OCT (SD-OCT). **Methods:** Two graders independently evaluated lesions on SD-OCT. Generalized linear latent and mixed models were used for analysis. **Results:** Forty-two lesions included: 48% MFC, 52% PIC. Retinal pigment epithelium (RPE) elevation was identified in 20% of MFC and 36% of PIC lesions ($P = .409$). RPE disruption was identified in 50% of MFC and 54% of PIC lesions ($P = .788$). IS/OS disruption was identified in 90% of MFC and 64% of PIC lesions ($P = .044$). **Conclusion:** Inner segment / outer segment disruption was significantly more common in MFC lesions.

Scientific Poster 237 Measuring Macular Choroidal Thickness in Reticular Pseudodrusen Using High-penetrating Swept-Source OCT

Presenting Author: Sotaro Ooto MD

Co-Author(s): Naoko Ueda-Arakawa MD, Abdallah Ahmed Ellabban, Akitaka Tsujikawa MD PhD*, Nagahisa Yoshimura MD PhD*

Purpose: To measure macular choroidal thickness in reticular pseudodrusen (RPD) using high-penetrating swept-source OCT (SS-OCT). **Methods:** Forty-two patients with RPD and 15 age-matched volunteer subjects underwent SS-OCT. Mean regional choroidal thickness measurements were obtained by 3-D raster scanning. **Results:** The mean choroidal thick-

ness of each sector was significantly smaller in RPD eyes compared with normal eyes ($P < .01$ for all). The mean choroidal thickness of each sector was similar in 22 RPD eyes with late AMD and 20 RPD eyes without it ($P > .05$ for all). **Conclusion:** SS-OCT revealed decreased choroidal thickness throughout the entire macular area in RPD.

Scientific Poster 238 The Role for Ophthalmoscopy in Ongoing Management of Retinal Disease in the Current Era of High-resolution OCT Imaging

Presenting Author: Paul Hahn MD PhD

Purpose: To elucidate the role for ophthalmoscopy vs. OCT in the ongoing management of retinal diseases. **Methods:** 100 consecutive retina clinic return records were retrospectively reviewed for clinical exam and imaging findings and documented assessment and treatment plan. **Results:** Ninety-nine percent of patients were imaged with OCT. Of 30 patients followed for neovascular AMD, 2 had new subretinal heme seen on ophthalmoscopy; management was otherwise solely OCT-guided. Management of dry AMD, nonproliferative diabetic retinopathy, central serous retinopathy, and epiretinal membrane was exclusively OCT-guided. Management of proliferative diabetic retinopathy, chronic retinal detachments, and other peripheral pathology was primarily ophthalmoscopy guided. **Conclusion:** Ophthalmoscopy is still important for management of peripheral retinal pathology, but current management of macular disease is almost exclusively guided by OCT imaging alone.

Scientific Poster 239 Spectralis-Obtained Spectral Domain OCT Is Superior to Cirrus in Accuracy as well as Reproducibility of Retinal Thickness and Volume Measurements

Presenting Author: K V Chalam MD PhD

Co-Author(s): Shailesh K Gupta MD**, Sandeep Grover MD*

Purpose: To compare coefficient of reproducibility (COR) of retinal measurements from OCT images of spectral domain (Cirrus and Spectralis) instruments. **Methods:** A prospective observational study of persons ($N = 46$) with macular edema (CSF thickness $\geq 320 \mu\text{m}$). Each study eye underwent 2 replicate Cirrus/Spectralis scans. Central subfield thickness (CST) and retinal volume (RV) were used in reproducibility analyses. **Results:** COR for change in CST was lower on Spectralis than on Cirrus (2%, 14%; $P < .01$). Mean difference in CST was $24 \mu\text{m}$ vs. $47 \mu\text{m}$ ($P < .01$). COR for change in RV was lower on Spectralis than on Cirrus (1%, 12%; $P < .01$). Mean difference in RV was 0.28 vs. 1.18 cu. mm ($P < .01$). **Conclusion:** Spectralis is superior to Cirrus in reproducing CST as well as RV, probably because of its tracking ability.

Scientific Poster 240 ★ High-Power Blue Laser Pointer-Induced Maculopathy

Presenting Author: Saba Al Rashaed MD

Co-Author(s): Sulaiman M Alsulaiman MD, Emad Bishara Abboud MD, Nicola G Ghazi MD, Jluwi S Almasaud MD, J Fernando Arevalo MD FACS*

Purpose: To report various types of maculopathy induced by high-power blue handheld laser. **Methods:** Fourteen eyes with a history of handheld laser with mean power of 450-nm exposure were identified. **Results:** Macular hole in 4 eyes, intraocular hemorrhage in 7 eyes; the remaining 3 eyes had an outer retinal disruption, epiretinal membrane, and a schisis-like cavity. Vision improved in 4 eyes (29%) spontaneously, whereas 10 eyes (71%) were managed with Nd:YAG hyaloidotomy or surgery. Pars plana vitrectomy was successful to close all 4 full-thickness macular hole cases. Final BCVA improved in all cases with a mean of 20/40. **Conclusion:** Visual acuity improved in all patients spontaneously or following intervention. High-power handheld lasers are extremely dangerous to the eye and public awareness should be encouraged.

Scientific Poster 241 Photodynamic Therapy With Verteporfin in Circumscribed Choroidal Hemangioma

Presenting Author: Fairouz Puthiyapurayil Manjandavida MBBS

Co-Author(s): Arman Mashayekhi MD, Marco Pellegrini MD, Jerry A Shields MD, Carol L Shields MD

Purpose: To study the effect of photodynamic therapy (PDT) on tumor thickness, subretinal fluid (SRF), and BCVA in eyes with symptomatic circumscribed choroidal hemangioma (CCH). **Methods:** Retrospective series of 54 eyes with symptomatic CCH undergoing standard PDT with verteporfin (50 J/cm² over 83 s) over 10 years. **Results:** The mean initial

Session One is Saturday and Sunday, Nov. 16 & 17. Session Two is Monday and Tuesday, Nov. 18 & 19. Refer to page 156 for poster presentation and tour schedule.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

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tumor thickness was 3.0 (range: 2 to 6) mm. CCH was macular in 48%, and there was SRF in 93%. The mean number of PDT sessions was 1.5 (range: 1 to 6). Over a mean follow-up of 42 months, there was 35% reduction in mean tumor thickness. SRF resolved in 80% at a median of 3 months. The BCVA improved by ≥ 2 Snellen lines in 50% and remained stable in 19%. **Conclusion:** Standard PDT causes tumor regression and SRF resolution and stabilizes or improves BCVA in a majority of treated eyes with symptomatic CCH.

Scientific Poster 242

Dexamethasone Intravitreal Implants as Initial or Subsequent Treatment for Macular Edema in Retinal Vein Occlusion

Presenting Author: Pravin U Dugel MD*

Purpose: To evaluate safety and efficacy of ≥ 2 dexamethasone (DEX) implants in treatment-naïve (TN) vs. previously treated (PT) patients with retinal vein occlusion (RVO). **Methods:** Subgroup analysis of 26-center chart review of 289 patients (39 TN, 250 PT) treated with ≥ 2 implants, followed 3-6 months after last implant. **Results:** Mean gain from baseline (BL) BCVA range after implants 1-6 was 3.0-8.0 lines in TN vs. 0.9-2.4 in PT. Mean decrease from BL central retinal thickness range was 241-459 μm in TN vs. 137-164 in PT. Increased IOP was the most common adverse event. **Conclusion:** Improvements in BCVA were larger in treatment-naïve than in previously treated patients. No new safety concerns arose with multiple implants.

Scientific Poster 243

Changes in Central Retinal Venous Pressure After Central Retinal Vein Occlusion and Correlation With Visual Outcome and Retinal Ischemia

Presenting Author: Mei Hong Tan MbBCh BA0

Co-Author(s): Lynne Anne Smithies PhD, Ian L McAllister MD*

Purpose: To investigate central retinal venous pressure (CVP) changes following central retinal vein occlusion (CRVO) and correlate with visual acuity (VA), capillary nonperfusion (CNP), and rubeosis. **Methods:** 104 patients diagnosed with CRVO were followed prospectively for 18 months. At each visit, measurements of CVP, VA, and CNP, and evaluation for rubeosis were performed. **Results:** At 18 months, mean BCVA was 31.2, 9.5, and 0 letters ($P < .0001$) and rubeosis was present in 4.0%, 24.4%, and 57.1% ($P = .03$) in CVP groups low, moderate, and high, respectively. CVP lowering was seen in 36.4%; where 59.4% gained ≥ 5 letters, 25% remained stable, and 15.6% lost vision. Early CVP lowering was associated with higher rates of visual improvement. CNP increased significantly with higher CVP and progressed with time. **Conclusion:** CVP may have prognostic significance for visual outcome, CNP and rubeosis following CRVO.

Scientific Poster 244

Dexamethasone Implant Improves Retinal Function in Retinal Vein Occlusion Recalcitrant to Anti-VEGF Therapy

Presenting Author: Josh O Wallsh

Co-Author(s): Ron Gallemore MD PhD**, Behnam Sharareh, Samantha Y Lui

Purpose: To assess macular function with multifocal electroretinogram (mfERG) in anti-VEGF resistant patients with retinal vein occlusions (RVO) rescued with dexamethasone (DEX) implants. **Methods:** Patients were randomized to DEX implant treatment every 16 weeks vs. p.r.n. for the 48-week study. **Results:** In studied eyes ($N = 9$) mfERG mean central amplitude improved significantly from 4.9 ± 0.7 to 25.9 ± 5.4 nv/deg^2 ($P < .05$). Visual acuity improved in 5 eyes (55%), and central retinal thickness on view permitting OCT ($n = 6$) decreased significantly by 33.3 μm ($P < .05$) at 2 and 4 months, respectively. Posterior subcapsular cataract progression limited these measures at study completion, increasing an average of 1.4 points in phakic eyes. **Conclusion:** DEX implant improves macular function in RVO patients resistant to anti-VEGF therapy alone.

Scientific Poster 245

Monotherapy vs. Combination Therapy With Dexamethasone Intravitreal Implant in Retinal Vein Occlusion

Presenting Author: Antonio Capone Jr MD*

Co-Author(s): Michael A Singer MD*, David Gary Dodwell MD, Daniel B Roth MD*, John G Walt MBA*, Lanita C Scott MD*, David Hollander MD*

Purpose: To evaluate safety and efficacy of ≥ 2 dexamethasone (DEX) implants as monotherapy (MT) vs. DEX combined with other treatments (CT) for retinal vein occlusion (RVO)-associated macular edema. **Methods:** Subgroup analysis of 26-center chart review of 289 patients (84 MT, 205 CT) treated with ≥ 2 implants, followed 3-6 months after last implant. **Results:** Mean gain from baseline (BL) BCVA range was 0.3-3.1 lines after implants 1-6 in MT vs. 1.1-2.7 in CT; mean decrease from BL central retinal thickness range was 165-230 μm in MT vs. 136-175 in CT. Increased IOP was the most common adverse event. **Conclusion:** Use of ≥ 2 DEX implants alone or in combination with other RVO treatments is safe and effective for both reducing central retinal thickness and improving BCVA.

Scientific Poster 246

External Limiting Membrane: The Best Predictor of Visual Improvement after Epiretinal Membrane Surgery

Presenting Author: Arnab Das MBBS MD

Co-Author(s): Tushar K Sinha MBBS

Purpose: To evaluate and compare the predictors of visual improvement in idiopathic epiretinal membrane (ERM) cases treated with surgery. **Methods:** Prospective, interventional, masked study included 88 consecutive eyes with idiopathic ERMs, who underwent ERM removal surgery. Spectral domain OCT variables including inner segment/outer segment (IS/OS) junction, external limiting membrane (ELM) integrity, central foveal thickness (CFT), and visual acuity (VA) were evaluated before and 3 and 6 months after surgery. **Results:** A strong correlation was found between the preoperative ELM status and final VA ($r = -0.76$, $P < .001$) and that was higher than that of IS/OS ($r = -0.68$, $P < .001$). Final visual improvement most strongly correlated with baseline ELM grade ($P = .0217$). Preoperative CFT did not correlate significantly with final VA or visual improvement. **Conclusion:** ELM status is a better predictor than IS/OS in ERM cases.

Scientific Poster 247

Outcome of Surgical Treatment of Symptomatic Inner Lamellar Macular Hole With and Without Endotamponade

Presenting Author: Arnab Das MBBS MD

Co-Author(s): Santanu Mandal MBBS

Purpose: To see if endotamponading is necessary for successful surgical treatment of inner lamellar macular hole (ILMH). **Methods:** Prospective study of 82 eyes with symptomatic ILMH. Each case underwent 23-gauge vitrectomy with epiretinal membrane removal and internal limiting membrane peeling, then randomly assigned to Group I (28 eyes), gas tamponade; Group II (25 eyes), air tamponade, or Group III (29 eyes), no tamponade. Follow-up minimum, 1 year. **Results:** Mean visual acuity (VA) improved significantly in all groups, with no significant intergroup difference. OCT showed improved foveal contour with reduction in metamorphopsia in all cases. The diameter of the lamellar defect was not found to be a factor influencing closure or final VA within a particular group, nor also in intergroup comparison. **Conclusion:** Endotamponade is not crucial in achieving closure and VA improvement in ILMH.

Scientific Poster 248

Open-Angle Glaucoma Following Uncomplicated Pars Plana Vitrectomy: Results of the Pan American Collaborative Retina Study Group

Presenting Author: Natalia Alpizar-Alvarez MD

Co-Author(s): Lihteh Wu MD*, Maria H Berrocal MD*, Francisco J Rodriguez MD*, Mauricio Maia MD, Virgilio Morales-Canton MD*, Marta Figueroa MD*, Martin A Serrano MD, J Fernando Arevalo MD FACS*, Rodrigo Milan Navarro MD, Hector Homero Hernandez Torres MD

Purpose: To report the rates of open-angle glaucoma (OAG) following uncomplicated pars plana vitrectomy (PPV) and compare it to the unoperated fellow eye. **Methods:** Retrospective multicenter study of 198 patients who underwent PPV for an idiopathic epiretinal membrane. Patients had at least 12 months of follow-up. **Results:** Patients were followed for

an average of 47.3 ± 24 months (range: 12-106 months). In the vitrectomized eyes, 38/198 (19.2%) developed OAG compared to 9/198 unoperated fellow eyes (4.5%) ($P < .0001$ Fisher exact test; OR 4.988). Possible risk factors include a family history of OAG ($P = .0004$ Fisher exact test; OR 7.206) and cataract surgery ($P = .0303$ Fisher exact test; OR 2.731). **Conclusion:** Uncomplicated PPV appears to increase IOP which may lead to glaucomatous damage if not managed appropriately.

Scientific Poster 249

Inverted Internal Limiting Membrane Flap Technique in Macular Hole Associated With Pathological Myopia

Presenting Author: Jerzy Nawrocki MD PhD

Co-Author(s): Karolina Dulczewska-Cichecka**, Zofia Michalewska MD

Purpose: To present the anatomic and functional results of vitrectomy with the 'inverted ILM flap technique' in high myopic macular holes without retinal detachment. **Methods:** A prospective, interventional study of 19 eyes. The main outcome measure was visual outcome and macular hole closure rate in spectral domain OCT. **Results:** Mean visual acuity improved from 1.2 to 0.56 logMAR. Macular holes were closed in all cases. Photoreceptor and external limiting membrane defects improved during the first 12 months after surgery. **Conclusions:** We propose expanding the indications for vitrectomy with the inverted ILM flap technique to include myopic macular holes. The process of normalization of foveal architecture after surgery for myopic macular holes lasts at least 12 months.

Scientific Poster 250

Prospective Analysis of Intraoperative OCT for Vitreoretinal Surgery: PIONEER 18-Month Results

Presenting Author: Justis P Ehlers MD*

Co-Author(s): Peter K Kaiser MD*, Rishi P Singh MD*, Daniel F Martin MD, Alex Yuan MD, Sunil K Srivastava MD*

Purpose: To assess the use of intraoperative OCT (i-OCT) for vitreoretinal (VR) surgery. **Methods:** Prospective study examining i-OCT during ophthalmic surgery. An imaging protocol and microscope-mounted spectral domain OCT probe were utilized. Image analysis was performed. **Results:** At 18 months, 196 eyes were identified within the PIONEER VR surgery arm. Successful i-OCT imaging was obtained in 188 of 196 eyes (96%). Common surgical indications included ERM ($n = 73$), macular hole (43), RD (31), and PDR (27). Microarchitectural alterations were frequently noted following surgical maneuvers. No i-OCT complications occurred. **Conclusion:** Using i-OCT, rapid feedback is obtained regarding completion of surgical objectives and architectural alterations are well-visualized that occur during surgical maneuvers.

Scientific Poster 251

Temporal Macular Thinning After Inner Limiting Membrane Peeling

Presenting Author: Antonio P Ciardella MD

Co-Author(s): Francesco Pichi MD, Chiara Veronese, Maria Chiara Morara MD, Gian P Giuliani MD, Paolo Nucci MD*

Purpose: To quantitatively assess postoperative changes in macular thickness in eyes with epiretinal membrane and macular hole that underwent internal limiting membrane (ILM) peeling. **Methods:** 195 consecutive patients who underwent pars plana vitrectomy and ILM peeling between January 2009 and May 2012. The macular area was scanned with spectral domain OCT preoperatively and at 7 days and 1, 3, 6, 9, and 12 months postoperatively. **Results:** The mean difference in retinal thickness was $-66.65 \mu\text{m}$ and $-6.14 \mu\text{m}$, in the temporal and nasal macula respectively, at 2-3 mm from the foveal center, before surgery and after 12 ± 2 months ($P < .05$). **Conclusion:** We report a postoperative increased thickness of the outer nuclear layer and the ganglion cell layer of the nasal parafovea, whereas the layers in the temporal macula showed a progressive reduction of macular volume.

Scientific Poster 252

Modified Retinopathy of Prematurity Screening Guidelines Using Birth Weight

Presenting Author: Shailesh K Gupta MD**

Co-Author(s): K V Chalam MD PhD, Sandeep Grover MD*, Keyvan Koushan MD

Purpose: To investigate whether a birth weight (BW) of 1250 grams (g) would provide a safe criteria for ROP screening. **Methods:** Retrospective chart review of 1387 premature infants with $\text{BW} \leq 1500$ g were screened for ROP by ophthalmoscopy. **Results:** 2.9% ($n = 13/437$) of Group A infants (> 1250 g) had ROP, as compared to 32.5% ($n = 309/950$) of

Group B (≤ 1250 g). Of 322 infants with ROP (23.2%) (BW 852.6), 13 had $\text{BW} > 1250$ g (stage 1 disease) and did not need intervention. The mean ROP stage was 1.79, 138 eyes (27%) had \geq stage 3 disease (BW 795.2), 164 (32%) had stage 2 disease, and 48 (4.9%) required intervention (BW 733.5 g; $P < .05$). **Conclusion:** $\text{BW} \leq 1250$ g is a dependable criterion for ROP screening and reduces screening visits by 26% without missing treatable disease.

SESSION TWO

Scientific Poster 433

Impact of Antibiotic Prophylaxis on the Conjunctival Flora of Patients Receiving Intravitreal Anti-VEGF Injections

Presenting Author: Maria Picoto Rodrigues MD

Co-Author(s): Joana Portelinho Padua Figueiredo MD, Teresa Pacheco**, Antonio J E Rodrigues MD**, Fernanda Maria Vaz MD

Purpose: To characterize the conjunctival flora of patients receiving antibiotic (AB) before intravitreal (IVT) anti-VEGF injections. **Methods:** We studied 31 eyes, all given 3-day preinjection topical ofloxacin. Conjunctival cultures from the injection site were collected before AB prophylaxis (Sample A) and on the injection day, both before (Sample B) and after (Sample C) povidone-iodine application. **Results:** Culture positivity was significantly different between Samples A (50%) and C (4.5%) ($P < .001$), and between B (30.4%) and C ($P = .015$) but not between A and B. Positive cultures were mainly coagulase-negative staphylococci (SCN) (57% of A, 62.5% of B, and 100% of C samples) and susceptible to vancomycin (100%), moxifloxacin (90%), and ofloxacin (60%). **Conclusion:** Povidone-iodine application, but not AB, reduced culture positivity.

Scientific Poster 434

Electroretinographic Changes in the Sound Eyes of Patients With Unilateral Necrotizing Herpetic Retinitis

Presenting Author: Mohsen Azarmina MD

Co-Author(s): Siamak Moradian MD, Masoud Soheilian MD, Hamid Ahmadi MD

Purpose: To evaluate electroretinogram (ERG) changes in the sound eyes of patients with unilateral necrotizing herpetic retinitis (NHR). **Methods:** In 20 sound eyes of 20 patients with NHR, ERGs and BCVAs were evaluated before initiation of classic treatment with acyclovir, 1 and 3 months thereafter. **Results:** Although ERG b-wave amplitudes decreased significantly before treatment in the sound eyes of patients with NHR, they reached to the normal level 3 months after treatment ($P < .001$). **Conclusion:** ERG b-wave amplitude decreased in the sound eyes of patients with NHR that reached to the normal level 3 months after treatment.

Scientific Poster 435

Long-term Safety of Intravitreal Aflibercept Injection in Neovascular AMD

Presenting Author: W Lloyd Clark MD*

Purpose: To assess long-term safety and tolerability of intravitreal aflibercept injection (IAI) in patients completing the 2-year VEGF Trap-Eye (VIEW 1) study. **Methods:** After completing VIEW 1, patients were eligible for an open-label extension study receiving mandatory quarterly dosing (later amended to every 2 months) of 2-mg IAI; treatment as often as monthly was allowed. **Results:** 323 VIEW 1 patients previously treated for 96 weeks with IAI or ranibizumab were enrolled. Initial BCVA was 65.3 ± 15.95 (mean \pm SD), an increase of about 10 letters over baseline BCVA in VIEW 1. Approximately 2/3 of enrolled patients have completed 96 weeks of IAI treatment in this ongoing study. **Conclusion:** Visual outcomes achieved by the end of VIEW 1 were largely maintained during this extension study. No new safety signals compared with known profile of IAI were noted.

Scientific Poster 436

Visual and Anatomic Outcomes for Anti VEGF Therapy for Exudative AMD Associated With Vitreomacular Interface Disease

Presenting Author: Meena Chakrabarti MBBS

Co-Author(s): Arup Chakrabarti MBBS, Sonia Rani John MS

Purpose: To describe outcome of eyes with vitreomacular interface disease (VMID) treated with anti-VEGF injections for wet AMD. **Method:** Retrospective case series of 36 eyes with VMID. **Results:** Thirty-six eyes with VMID received 5 injections of bevacizumab in 1 year. Posterior vitreous separation occurred in 18 eyes with VMID (50%), with reduction in

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central retinal thickness ($318 \pm 17 \mu\text{m}$ vs. $400 \pm 24 \mu\text{m}$) and improvement in visual acuity (2 lines), and eyes required fewer injections (2 injections) subsequently. **Conclusion:** Induction of posterior vitreous detachment following intravitreal anti-VEGF therapy is beneficial in arresting progression of wet AMD and helps the eye to respond better to each subsequent injection.

Scientific Poster 437

Treat and Extend vs. Treat and Observe in Wet AMD Patients Treated With Ranibizumab: A 3-Year Follow-up Study

Presenting Author: Pilar Calvo MD PhD

Co-Author(s): Antonio Ferreras MD PhD*, Yao Wang BHS, Robert G Devenyi MD FACS FRCSC MBA, Wai-Ching Lam MD*, Michael Henry Brent MD*

Purpose: To compare two strategies in wet AMD patients treated exclusively with ranibizumab over 3 years. **Methods:** Treat-and-extend (TaE) dosing group ($n = 43$) and treat-and-observe (TaO) dosing group ($n = 34$) were retrospectively analyzed. Survival rates (SR) based on visual acuity (VA) were calculated and compared. **Results:** At 36 months, Kaplan-Meier SRs were 90.9% for TaE and 89.7% for TaO (loss < 0.3 units logMAR). VA improved in 42.4% and 24.1%, while 33.4% and 62.1% remained stable for TaE and TaO groups, respectively. No final VA differences were found between both therapeutic strategies ($P > .05$, log-rank test). **Conclusion:** Both regimens showed similar visual outcomes after a 3-year period.

Scientific Poster 438

Aflibercept for the Treatment of Polypoidal Choroidal Vasculopathy

Presenting Author: Di Zhou

Co-Author(s): Sabah A Shah MD, Jason S Slakter MD*

Purpose: To evaluate treatment outcomes of aflibercept for polypoidal choroidal vasculopathy (PCV). **Methods:** Forty-seven eyes with PCV were treated with aflibercept, of which 44 were previously treated with ranibizumab and/or bevacizumab. **Results:** The mean visual acuity (VA) before and after ranibizumab and/or bevacizumab was 20/53.3 and 20/67.5, respectively. There was a decrease in largest polyp height by 15% on OCT with the medications. The mean VA before and after aflibercept treatment was 20/67.5 and 20/57.9, respectively ($P < .05$). A mean reduction of 30.9% in height and 14.0% in width of the largest polyp after the third aflibercept injection ($P < .05$) was seen. **Conclusion:** Aflibercept appears to be more effective than ranibizumab and/or bevacizumab in improving VA and reducing polyp size of PCV.

Scientific Poster 439

Long-term Characteristics of Exudative AMD in Japanese Patients

Presenting Author: Masaaki Saito MD

Co-Author(s): Tomohiro Iida MD*, Ichiro Maruko MD, Kanako Itagaki**, Tetsuju Sekiryu MD**

Purpose: To evaluate the clinical characteristics of exudative AMD in Japanese patients for 10 years. **Methods:** We retrospectively reviewed 1587 naïve patients (mean age: 75.0 years) with AMD from March 2003 to Febr. 2013. **Results:** Of 1587 patients, 714 (45.0%), 734 (46.2%), and 90 (5.7%) patients were diagnosed with typical AMD, polypoidal choroidal vasculopathy (PCV), and retinal angiomatous proliferation. The remaining 49 patients (3.1%) had both typical AMD in one eye and PCV in the other. The mean visual acuity at baseline (289 patients) and at 2 years (401 patients) were 20/100 and 20/60 ($P < .0001$). **Conclusion:** PCV has been highly prevalent in Japanese AMD compared with in the white population. The annually better baseline visual acuity may be considerably related to development of treatment.

Scientific Poster 440

The Role of Genetics in Response to Anti-VEGF Therapy for Wet AMD

Presenting Author: Jaclyn L Kovach MD

Co-Author(s): Stephen G Schwartz MD MBA*, Anita Agarwal MD, Milam A Brantley Jr MD, William Cade PhD**, William Scott PhD*, Jonathan L Haines PhD**, Margaret A Pericak-Vance PhD

Purpose: To evaluate the relationship between high-risk genetic polymorphisms and the response to anti-VEGF therapy in wet AMD. **Methods:** Forty-three patients with wet AMD

treated with anti-VEGF therapy were followed for 1 year. Individuals were classified as good responders, poor responders, and maintainers based on visual acuity and OCT appearance. Patients were genotyped, and risk scores (RS) were created. The 16RS considered 16 SNPs identified as loci reaching genome-wide significance, and the 4RS considered CFH, C2/CFB, ARMS2, and C3. **Results:** Average 16RS ($P = .0197$), 4RS ($P = .0186$), and individual risk allele frequencies for the 4 major SNPs were significantly lower in good responders compared to maintainers. **Conclusion:** Individuals that maintained stable vision with anti-VEGF therapy had greater genetic risk than those with good responses.

Scientific Poster 441

Serum and Whole-Blood TNF- α and MCP-1 Levels in Patients With Neovascular AMD

Presenting Author: Tsutomu Sakai MD

Co-Author(s): Kiichiro Okano**, Hideo Kohno MD

Purpose: To investigate the involvement of TNF- α and MCP-1 in the serum and peripheral blood in patients with neovascular AMD (nAMD). **Methods:** The study population consisted of 21 patients with nAMD as well as 20 healthy volunteers as control. TNF- α and MCP-1 concentration levels in the serum and whole-blood samples were measured by ELISA. Whole-blood samples were obtained by lysing cell membranes of peripheral blood cells. **Results:** The serum and whole-blood TNF- α and MCP-1 levels in the patients with nAMD were significantly higher than controls ($P < .05$). In subgroup analysis, the patients with polypoidal choroidal vasculopathy showed higher serum and whole-blood levels of MCP-1 than those in the typical AMD group. **Conclusion:** We found a close relationship between the cell-associated TNF- α and MCP-1 and nAMD.

Scientific Poster 442

Pazopanib Eye Drops vs. Ranibizumab Intravitreal Injections for Neovascular AMD

Presenting Author: Karl G Csaky MD*

Co-Author(s): Ronald Peter Danis MD*, Pravin U Dugel MD*, Deborah S Kelly MD*, Amy Pierce*, Michael Fries*, Trupti Trivedi*, Mohammad Hossain PhD*, John Wurzelmann*

Purpose: To determine if pazopanib eye drops could maintain or improve visual acuity (VA) and reduce continual need for ranibizumab. **Methods:** Prospective study: $N = 510$ with 7 arms: 5 daily-dosed pazopanib eye drops ($n = 364$) and 1 placebo eye drops ($n = 73$), all with as-needed (p.r.n.) ranibizumab; and 1 monthly ranibizumab ($n = 73$). **Results:** The addition of pazopanib eye drops was noninferior to both monthly and p.r.n. ranibizumab for maintaining VA over 1 year. Pazopanib (up to 1 gtt 10 mg/mL q.i.d.) did not displace 50% or more p.r.n. ranibizumab injections, the prespecified minimal success criteria for efficacy. Administration of pazopanib eye drops for 1 year was safe and well tolerated. **Conclusion:** Pazopanib eye drops when added to p.r.n. ranibizumab did not demonstrate additional efficacy or added benefit at any dose.

Scientific Poster 443

Aflibercept and the Functional Treatment Response in Neovascular AMD: Correlating Retinal Sensitivity Change and Spectral Domain OCT Morphology Up to 12 Months

Presenting Author: Florian Sulzbacher

Co-Author(s): Christopher G Kiss MD, Marion Ronit Munk MD, Katharina Eibenberger MD, Stefan Sacu MD*, Ursula M Schmidt-Erfurth MD*

Purpose: To evaluate the OCT-related functional treatment response after aflibercept therapy in patients with neovascular AMD. **Methods:** A point-to-point analysis of 22 eyes examined with the Spectralis-OCT and the Nidek MP-1 up to 12 months. **Results:** Loci of initial subretinal or intraretinal fluid were associated with a median retinal sensitivity gain of 5 dB, quartiles (0 dB; 9 dB) or 2 dB (0 dB; 7 dB), respectively. Loci of an initial neovascular complex showed a median retinal sensitivity change of 4 dB (0 dB; 11 dB). An initial serous or fibrovascular pigment epithelial detachment was associated with a median retinal sensitivity increase of 6 dB (1 dB; 9 dB) or 7 dB (-1.5 dB; 8 dB), respectively. **Conclusion:** Precise anatomical classification of spectral domain OCT findings has predictive capability for the functional treatment response of Aflibercept in neovascular AMD.

Scientific Poster 444

Vascular Structure Changes of Choroidal Neovascularization in Indocyanine Green Angiography After Intravitreal Ranibizumab Injection

Presenting Author: Ji Eun Lee MD

Co-Author(s): Joo Eun Lee MD, Hyun Woong Kim MD**, Sang-Joon Lee MD

Purpose: To describe vascular structure changes of choroidal neovascularization (CNV) after intravitreal ranibizumab using indocyanine green angiography (ICGA). **Methods:** Thirty-one patients having CNV whose vessels were identifiable in ICGA were investigated prospectively. Ranibizumab was injected 3 times monthly and then as-needed to 6 months. **Results:** The patients were categorized into 3 groups. In the regressed group (10 eyes, 31%), usually capillary components were resolved at 3 months without regrowth. In the matured group (7 eyes, 23%), distinct vascular structures were observed at 3 and 6 months. In the regrowing group (14 eyes, 45%), capillary growth was noted between 3 and 6 months. **Conclusion:** Vascular structures of CNV changed variously after ranibizumab injections. Regrowth of CNV was noted during as-needed treatment.

Scientific Poster 445

OCT and Vision Results at 6 Months After Transition to Aflibercept for Patients on Prior Ranibizumab or Bevacizumab Therapy for Exudative AMD

Presenting Author: Clement K Chan MD*

Co-Author(s): Atul K Jain MD*, Srinivas R Sudda MD, Neeta Varshney MD*

Purpose: To compare visual acuity (VA)/OCT results for eyes on aflibercept (A) after conversion from prior bevacizumab (B), ranibizumab (R), or mixed therapy (Mx). **Methods:** Retrospective study assessing 6-month VA/OCT (Cirrus) data for eyes converted to A. Same masked investigator made all OCT measurements. **Results:** 161 eyes (87 B, 64 R, and 10 Mx) were converted to A (Nov. 2011 – Febr. 2012). Baseline traits for all groups were alike. At 6 months, post- vs. preconversion VA was improved by 4.1 letters, and OCT (SRF/CME/PED, Ht, and Vol) measures for all groups were improved (no intergroup differences; all $P \leq .004$). Postconversion VA/OCT results were better for eyes with incomplete but not complete responses to B/R (all $P \leq .002$). Retinal pigment epithelial tear in 1 eye was the only complication. **Conclusion:** Postconversion VA/OCT results were improved and similar for all drug groups, with rare complications.

Scientific Poster 446

Reticular Pseudodrusen in Early AMD Is Associated With ff-zone Peripapillary Atrophy

Presenting Author: Aakriti Garg

Co-Author(s): Dana Blumberg MD, Lama A Al-Aswad MD, Max Forbes MD**, Hamed B Bazargan Lari MD, Suzanne Yzer DOMS**, Rando Allikmets PhD*, Srilaxmi Bareilly MD*

Purpose: To determine if an association exists between reticular pseudodrusen (RPD) and glaucoma in early AMD. **Methods:** Cross-sectional study of age- and sex-matched early AMD subjects, 44 RPD (61 eyes) and 37 non-RPD (64 eyes). Exclusion criteria were myopia > -6 D, prior vitreoretinal surgery, and poor imaging. Chart review yielded ocular history and IOP. Masked glaucoma specialists graded β -peripapillary atrophy (β -PPA) and cup-to-disc ratio (CDR) on nonstereoscopic fundus photographs. **Results:** β -PPA was more prevalent in RPD than non-RPD (49% vs. 21%, $P = .0002$). Pre-existing glaucoma diagnosis, IOP, and CDR did not differ. **Conclusion:** RPD in early AMD may be associated with β -PPA, which has been linked to normotensive glaucoma.

Scientific Poster 447

Angiographic Factors Related to Surgical Outcome of Diabetic Macular Edema

Presenting Author: Jeong Mo Han MD

Co-Author(s): Hyeong G Yu MD*

Purpose: To identify angiographic prognostic factors in vitrectomy for the management of diabetic macular edema. **Methods:** Fifty-five eyes of 47 patients that underwent vitrectomy and removal of epiretinal membrane for diabetic macular edema were prospectively reviewed. **Results:** The early foveal leakage at arteriovenous phase was significantly decreased at 3 and 6 months after vitrectomy ($P = .031$). Moreover, the eyes with early foveal leakage before vitrectomy showed better visual improvement and more decrease in central macular thickness ($P < .05$). On the other hand, the size of foveal avascular zone did not

change after vitrectomy and was not related to the visual outcome. **Conclusion:** The eyes with early foveal leakage may have a greater visual benefit from vitrectomy for the management of diabetic macular edema.

Scientific Poster 448

Comparison of Panretinal Photocoagulation for High-risk Proliferative Diabetic Retinopathy Using Single Session of Pattern Scan Laser vs. Multiple Sessions of Conventional Laser

Presenting Author: Goktug Seymenoglu MD

Co-Author(s): Ozcan R Kayikcioglu MD, Esin Fatma Baser MD, Oguz mahmut Ulusoy

Purpose: To evaluate the results of panretinal photocoagulation (PRP) via a single session of pattern scan laser (PASCAL) in comparison with multiple sessions of conventional laser in patients with proliferative diabetic retinopathy. **Methods:** Charts of 35 eyes treated with PASCAL (Group 1) and 35 eyes treated with conventional laser (Group 2) were reviewed. Persistence and/or recurrence of neovascularization, incidence of complications, total number of laser spots, and mean power used were compared. **Results:** Group 1 received significantly higher number of laser spots than Group 2 (2885 vs. 1642, $P = .001$). The groups required an average power of 650 vs. 330 mw, respectively ($P = .001$). Treatment failure rates were similar in both groups (14% vs. 11%, $p > .05$). **Conclusion:** Both treatment modalities have similar efficacy and side-effect profiles.

Scientific Poster 449

Combination of Anti-VEGF Injections and Navigated Laser Photocoagulation for Diabetic Macular Edema: Twelve-Month Results

Presenting Author: Marcus Kernt MD*

Co-Author(s): Michael W Ulbig MD*, Igor Kozak MD*, William R Freeman MD*, Aljoscha S Neubauer MD*, Anselm Kampik MD

Purpose: To evaluate the number of anti-VEGF injections needed in diabetic macular edema (DME) patients using a protocol with navigated laser. **Methods:** Three groups out of 76 DME eyes: (1) Three initial ranibizumab injections ($n = 27$), (2) three initial ranibizumab injections followed by navigated laser ($n = 15$), (3) monthly ranibizumab injections until CRT ≥ 450 μ m followed by navigated laser ($n = 34$). After, anti-VEGF injections were reinitiated if DME recurred. BCVA and CRT were evaluated. **Results:** VA improved in all groups. After the initial 3 injections, at 12 months Group 1 needed an average of 5.2 ± 3.2 injections; in Group 2 and 3 the required number of injections ranged from 0.5 to 0.8 injections. **Conclusion:** Combining anti-VEGF with navigated laser showed similar visual improvements to those of anti-VEGF monotherapy, with significantly fewer injections.

Scientific Poster 450

Comparison of Incidence of Diabetic Ischemic Maculopathy in Patients With and Without Metabolic Syndrome

Presenting Author: Sriram S Thirumalai MBBS

Co-Author(s): Usha K Raina MD, Richa Vaishya MD, Meenakshi Thakar**, Vasu Kumar MBBS

Purpose: To examine the role of metabolic syndrome (MetS) as an additional risk factor in diabetic maculopathy. **Methods:** This observational study recruited 58 patients with non-proliferative diabetic retinopathy (NPDR) and clinically significant macular edema (CSME), who were divided into 2 groups (50 eyes each) depending on the presence or absence of MetS. Both groups underwent examination, biochemical tests, fluorescein angiography, and OCT. **Results:** Ischemic maculopathy was seen in 79.4% of patients with MetS, but was only seen in 20.6% of those without MetS—a significant difference ($P < .001$). **Conclusion:** A significant increase in incidence of ischemic maculopathy was observed in patients with MetS. Thus control of MetS can decrease incidence of ischemic maculopathy.

Scientific Poster 451

Intravitreal Ranibizumab Therapy Improves Resolution of Hard Exudates in Patients With Diabetic Macular Edema

Presenting Author: Amitha Domalpally MBBS

Co-Author(s): Michael S Ip MD*, Jason S Ehrlich MD*

Purpose: To analyze the effect of monthly 0.3- and 0.5-mg ranibizumab (RBZ) therapy on hard exudates (HE) in participants from the RIDE and RISE Phase 3 trials of RBZ in diabetic macular edema. **Methods:** The presence and severity of HE in study eyes ($N = 739$; 1 per patient) was categorized at each time point as absent, definite, obvious, moderate, or severe. **Results:** The proportion of eyes without HE in the sham, RBZ 0.3-mg and 0.5-mg groups increased from 20.9%, 22.1%, and 23.6% at baseline to 36.3%, 61.3%, and 62.0% at Month 24, respectively. Decrease in HE was evident after 12 months of RBZ treatment. There was no correlation between HE in the macula and visual acuity. **Conclusion:** RBZ therapy may be associated with reduction in the area of HE in patients with DME.

Scientific Poster 452

Systemic Oxygen Therapy vs. Enalapril for Treatment of Diabetic Macular Ischemia: A Randomized Controlled Trial

Presenting Author: Masoud Soheilian MD

Co-Author(s): Mohammad Reza Razzaghi MD, Farideh Sharifipour MD, Alireza Ramezani MD, Mohsen Azarmina MD, Roham Soheilian Jr

Purpose: To evaluate the effects of systemic oxygen and oral enalapril on diabetic macular ischemia (DMI). **Methods:** In this 3-armed trial, 101 cases with foveal avascular zone (FAZ) $> 1000 \mu$ were randomized to 3-month treatment with either 100% normobaric oxygen (flow rate = 10 L/min) or enalapril (5 mg/day) or considered as control. **Results:** In the oxygen group, central macular thickness decreased (from 367 ± 62 to $355 \pm 67 \mu\text{m}$), FAZ decreased (from 0.773 to 0.759 mm^2), and VA improved (from 0.57 to 0.48 logMAR) significantly ($P < .001$ for all) at 6 months. However, no significant change was observed in enalapril and control groups. **Conclusion:** Normobaric oxygen therapy might improve anatomical and functional outcomes in eyes with DMI.

Scientific Poster 453

Early Neural Retinal Changes Previous to Microangiopathy on Patients With Type 2 Diabetes Mellitus

Presenting Author: Eduardo B Rodrigues MD*

Co-Author(s): Muller Gonçalves Urias, Fernando M Penha MD*, Eduardo Amorim Novais MD, Michel Eid Farah MD

Purpose: To investigate retinal changes in patients with type II diabetes mellitus (DM) on OCT. **Methods:** Three groups of patients were evaluated with Cirrus OCT software 6.0: (1) controls ($n = 20$), (2) patients with DM but no diabetic retinopathy (DR) ($n = 46$), (3) patients with mild DR ($n = 28$). Macular cube 200x200 scan provided automated analysis: central subfield thickness (CST), mean thickness average (TA), retinal nerve fiber layer (RNFL), and ganglion cell layer and inner plexiform layer (GCL+IPL) thickness. **Results:** Mean CST thickness was thinner in DM than in no-DR patients ($245.46 \pm 24.36 \mu\text{m}$). There was a progressive reduction in the GCL+IPL thickness (A: $80.8 \pm 6.9 \mu\text{m}$; B: $79.8 \pm 7.3 \mu\text{m}$; C: $74.0 \pm 10.6 \mu\text{m}$; $P = .006$). **Conclusion:** This study supports the concept that early DR includes neurodegeneration.

Scientific Poster 454

Characterization of Ultrawide-field Fundus Autofluorescence Patterns in Retinal Dystrophies

Presenting Author: Georgios Trichonas MD

Co-Author(s): Elias I Traboulsi MD*, Justis P Ehlers MD*

Purpose: To describe the ultrawide-field fundus autofluorescence (FAF) patterns in retinal dystrophies and their genotypic / phenotypic associations. **Methods:** FAF imaging was performed with the Optos 200Tx system. Clinical variables, genotypes, and phenotypic characteristics were analyzed. **Results:** Thirty-two patients were included. Diagnoses included retinitis pigmentosa ($n = 11$), Stargardt disease (7), Leber congenital amaurosis (4), rod-cone dystrophy (3), congenital stationary night blindness (2), pattern dystrophy (2), North Carolina macular dystrophy (1), Doyme honeycomb macular dystrophy (1), and enhanced S-cone syndrome (1). Macular FAF abnormalities were noted in 100% of cases, with peripheral FAF abnormalities noted in 48% of cases. **Conclusion:** Distinctive macular and peripheral FAF patterns are identified with ultrawide-field imaging in a large percentage of patients with retinal dystrophies.

Scientific Poster 455

Leber Congenital Amaurosis: Noninvasive Testing Feasibility, and Novel Phenotypic Retinal Cell Function

Presenting Author: Radwan S Ajan MBBS

Co-Author(s): Leah Marie Wood MS, Jamie Koenekoop, Irma Lopez-Solache, Vafa Keser**, Ayesha Khan FRCS(ED), Huanan Ren MS, Rui Chen PhD, Robert K Koenekoop MD PhD**, Sorath Siddiqui

Purpose: This is a feasibility study of pupillometry in blind subjects with Leber congenital amaurosis (LCA) due to various genotypes. **Methods:** We genotyped 30 LCA subjects. Specific spectral bands ($640 \pm 10 \text{ nm}$, $467 \pm 17 \text{ nm}$) were used to test cone, rod, and ganglion cell functions using different luminance intensities of 1, 10, and 100 cd/m^2 . **Results:** Most patients showed significant pupillary responses despite nonrecordable electroretinograms. Stimulating the intrinsically photosensitive melanopsin ganglion cells was found to generate the most prominent response when present (P -value $< .001$). **Conclusion:** Pupillometry testing is feasible for testing different retinal cell types noninvasively while bypassing cortical processing. Our data also describes cells mostly affected in different LCA genotypes, as well as providing evidence of viable cells previously thought to be lost.

Scientific Poster 456

Spectral Domain OCT Progressive Alterations in a Family Affected With Müller Cell Sheen Dystrophy

Presenting Author: Jose Dalma MD

Co-Author(s): Valentina Franco Cardenas MD, Rosa Martinez, Alejandro Dalma MD

Purpose: Müller cell sheen dystrophy is an AD disorder characterized by a wrinkled sheen-like appearance in the posterior pole. We describe the spectral-domain OCT (SD-OCT) findings at different stages of the disease. **Methods:** Forty-eight patients spanning 3 generations underwent full ophthalmic evaluation and SD-OCT. OCT was evaluated for posterior vitreous detachment, cyst location, thickness, and inner segment/outer segment disruption. Findings were cross-related to visual acuity and age. **Results:** Ten affected patients presented with macular alterations on SD-OCT. These consisted of cystic spaces progressing to retinal disruption and atrophy. SD-OCT alterations correlated with advancing age and visual decline. **Conclusion:** SD-OCT changes appear around the fifth-sixth decade of life. Their progression correlates with visual acuity, age, and reported electroretinographic changes.

Scientific Poster 457

Cone-Rod Dystrophy With Macular Cystic Degeneration From Recessive CRB1 Mutation

Presenting Author: Arif O Khan MD

Co-Author(s): Mohammed Abdullah Aldahmesh PHD, Leen Abu Safieh PhD, Fowzan S Alkuraya MD**

Purpose: To determine the genetic mutation underlying childhood cone-rod dystrophy with macular cystic degeneration in 3 siblings and rod-cone dystrophy in their parents, who were first cousins. **Methods:** Clinical examination, homozygosity-analysis guided candidate gene analysis. **Results:** At 11 years old the proband had cone-rod dystrophy and bilateral macular cystic degeneration, as did his 15-year-old sister and his 7-year-old brother. Both the father (45 years old) and mother (35 years old) had early adult-onset rod-cone dystrophy with eventual macular atrophy. Homozygosity-analysis guided candidate gene testing revealed a homozygous CRB1 mutation (c.80G>T [p.Cys27Phe]) in affected family members. **Conclusion:** Cone-rod dystrophy with cystic macular degeneration is an additional CRB1-related phenotype.

Scientific Poster 458

Longitudinal Changes in Peripheral Autofluorescence in Patients With Retinitis Pigmentosa

Presenting Author: Akio Oishi MD PhD

Co-Author(s): Ken Ogino MD, Yukiko Makiyama MD, Norimoto Gotoh MD, Masafumi Kurimoto MD, Nagahisa Yoshimura MD PhD*

Purpose: To evaluate the longitudinal changes in peripheral hypoautofluorescence area in patients with retinitis pigmentosa (RP). **Methods:** We measured the area of 40 patchy hypoautofluorescent regions in 14 patients with RP at baseline and after 1 year. **Results:** The mean area of patchy hypoautofluorescent region enlarged from 11,905 pixels to 13,465 pixels. ($P < .001$) The average rate of enlargement was 27.3% per year. **Conclusion:** The patchy hypoautofluorescent regions enlarge at a significant speed in patients with RP.

Quantified observation of the regions would be useful in monitoring patients with RP. The longitudinal enlargement of the region is consistent with the previous finding that the area of the regions is associated with duration of the disease.

Scientific Poster 459

The Role of Topical Antibiotic Prophylaxis in Preventing Endophthalmitis After Intravitreal Injection

Presenting Author: Philip Storey MD

Co-Author(s): Michael Dollin MD, John D Pitcher MD, Natalie Fang-Yen BA, James F Vander MD, Jason Hsu MD*, Sunir J Garg MD*

Purpose: To compare the incidence of endophthalmitis following intravitreal injection with and without postinjection antibiotic prophylaxis. **Methods:** Endophthalmitis cases and number of injections between 2009 and 2012 were determined from billing data and infection log, with case confirmation via chart review. A 28-month period when topical antibiotics were prescribed following injection was compared to a 9-month period when no antibiotics were prescribed. **Results:** 121,492 intravitreal injections were performed during the study period. The use of topical antibiotics was associated with an increased risk of presumed endophthalmitis (0.050% with antibiotics vs. 0.035% without antibiotics; odds ratio 1.40; 95% CI, 0.73-2.68). **Conclusion:** Postinjection antibiotics are associated with a trend toward higher endophthalmitis rates.

Scientific Poster 460

Microbial Spectrum and Outcomes in Endophthalmitis Following Intravitreal Injection vs. Pars Plana Vitrectomy

Presenting Author: Michael Dollin MD

Co-Author(s): Philip Storey MD, John D Pitcher MD, James F Vander MD, Jason Hsu MD*, Sunir J Garg MD*

Purpose: To compare causative organisms and visual outcomes in endophthalmitis after intravitreal injection (IVI) with those after pars plana vitrectomy (PPV). **Methods:** Retrospective case series of all patients with suspected endophthalmitis after IVI or PPV between January 1, 2009, and October 1, 2012. **Results:** Thirty-six cases of endophthalmitis after IVI and 16 cases of endophthalmitis after PPV were reviewed. Culture positivity rates were similar (44.4% IVI vs. 43.8% PPV, $P = 1.000$). IVI patients were more likely to have lost ≥ 3 lines of visual acuity at final follow-up (86.7% vs. 20.0%, $P = .014$). 56.3% of culture-positive IVI cases were due to bacteria associated with oral flora vs. none among PPV cases ($P = .019$). **Conclusion:** Oral flora and poorer outcomes are more likely seen in endophthalmitis after IVI than after PPV.

Scientific Poster 461

★ Prospective Comparison of 2 Interferon- γ Release Assays for Tuberculous Uveitis

Presenting Author: Han Nian Marcus Ang MBBS

Co-Author(s): Wan Ling Wong, SiehYean Kiew MBChB, Soon-Paikh Chee MD*

Objective: Head-to-head comparison of QuantiFERON Gold-in-tube (QFT) (Cellestis, Inc.; Australia) to T-SPOT.TB (Oxford Immunotech; UK) to diagnose tuberculous (TB) uveitis. **Methods:** We prospectively enrolled 106 consecutive patients with uveitis, who underwent full ocular examination and systemic review, including QFT and T-SPOT.TB, and followed up for 1 year. **Results:** Mean age was 48 ± 16 years, majority Chinese race, presenting with anterior uveitis (59.9%). QFT was more sensitive (66.1% vs. 55.9%) and specific (93.0% vs. 81.6%) than T-SPOT.TB. Statistical decision analysis revealed QFT to be the best first-line test to diagnose TB uveitis. **Conclusion:** To our knowledge, this is the first prospective direct comparative study demonstrating that QFT is superior to T-SPOT.TB in the diagnosis of TB uveitis.

Scientific Poster 462

Noninfectious Inflammation After Intravitreal Aflibercept Injection

Presenting Author: Roger A Goldberg MD*

Co-Author(s): Chirag P Shah MD*, Jeffrey S Heier MD*, Torsten W Wiegand MD PhD

Purpose: To report the clinical features and outcomes of noninfectious inflammation after intravitreal aflibercept injection (IAI). **Methods:** Retrospective noncomparative consecutive case series. **Results:** Twelve patients developed inflammation, presenting 1-13 days after IAI. All presented with decreased visual acuity (VA); only 1 (8.3%) had pain or conjunctival injection. No patient had hypopyon, though all had vitritis. All received topical steroids and eventually regained their preinjection VA (range: 13-73 days). The incidence of inflamma-

tion after IAI was 0.3% (injections) or 1.6% (patients). **Conclusion:** Noninfectious inflammation after IAI should be carefully distinguished from endophthalmitis. Lack of hypopyon, pain, or conjunctival injection can be helpful clues, as is a prompt response to topical steroids. Outcomes are generally favorable, though recovery can take weeks.

Scientific Poster 463

★ Postoperative Bacterial Endophthalmitis: Tap/Inject vs. Sutureless Vitrectomy

Presenting Author: John O Mason MD

Co-Author(s): Lauren Mason**, Thomas P Lindquist MD, Lauren Mason**, Gerald McGwin PhD, John O Mason IV, Duncan A Friedman MD, Robert E Morris MD, Matthew H Oltmanns MD**, Amanda Dinsmore

Purpose: To compare sutureless vitrectomy (VIT) with vitreous tap/injection (TAP) in eyes with postoperative endophthalmitis. **Methods:** Retrospective study of 126 consecutive eyes that underwent VIT (82) or TAP (44) between 2005 and 2011. Outcomes measures were postintervention visual acuity (VA) and complications. **Results:** Mean preop VA was 20/2000 in VIT and 20/1800 in TAP ($P = .30$), while postop VA was 20/160 in VIT and 20/125 in TAP ($P = .18$). If presenting VA was $< 20/400$, postop vision was better in VIT than in TAP ($P = .05$). Retinal detachment occurred in 12 eyes (9.5%), only in the VIT group. **Conclusion:** Sutureless vitrectomy was more beneficial than TAP in eyes with $< 20/400$ vision. VIT and TAP are similar in eyes with 20/400 or better VA.

Scientific Poster 464

Vitreoretinal Surgical Outcomes Performed by Supervised Retina Fellows vs. Attending Faculty Surgeons

Presenting Author: John O Mason MD

Co-Author(s): John O Mason IV, Lauren Mason**, Gerald McGwin PhD, Thomas A Finley MD, Duncan A Friedman MD, Dustin Pomerleau MD, Richard M Feist MD, Martin Lee Thomley MD, Michael A Albert MD

Purpose: To evaluate outcomes of common vitreoretinal surgeries performed by retina fellows under direct faculty supervision, compared to experienced faculty. **Methods:** Retrospective cohort study of 592 eyes undergoing surgery from 2009 to 2011. Three fellows performed 390 cases (all under direct faculty supervision), while 4 faculty performed 202 cases. **Results:** Mean postop visual improvement was statistically significant and equal in all groups, as well as between each physician ($P = .0001$). Complications occurred in 29/592 (4.8%), with reoperations in 30/512 (5%), and were equally distributed across all physician groups ($P = .1002$), as well as among individual physicians ($P = .1311$). **Conclusion:** With proper supervision retina fellows achieved similar surgical success, with low complication and reoperation rates, compared to experienced faculty.

Scientific Poster 465

★ Comparative Efficiency of 27-Gauge Vitrectomy and 25-Gauge Vitrectomy

Presenting Author: Kazuhisa Mitsui MD

Co-Author(s): Jiro Kogo MD, Akira Shiono MD, Hiroki Sasaki MD, Hitoshi Takagi MD PhD

Purpose: To compare 25-gauge (G) with 27G microincision vitrectomy (MIV) in patients with epiretinal membrane (ERM). **Methods:** We prospectively evaluated 45 ERM patients (47 eyes) who underwent 25G or 27G MIV. **Results:** No differences between the 27G and 25G groups were found in flare value (18.7 vs. 17.2), IOP (8.8 vs. 9.7 mmHg), rate of hypotony (30% vs. 35%), and duration of wound closure (9.7 vs. 10.7 weeks), evaluated 1 day postoperatively by OCT. The mean operation time was significantly longer in the 27G group than the 25G group (31.2 ± 12.6 vs. 24.7 ± 13.1 min, respectively, $P < .05$). **Conclusion:** Both systems are safe and useful for ERM vitrectomy. However, these systems could be improved further to reduce surgical time.

Scientific Poster 466

Ranibizumab for Diabetic Macular Edema: Long-term Open-Label Extension of the Phase 3 RIDE and RISE Trials

Presenting Author: David S Boyer MD*

Co-Author(s): Karen Basu PhD*, Jason S Ehrlich MD*

Purpose: To determine if the efficacy and safety achieved with monthly ranibizumab (RBZ) could be maintained long term with less-than-monthly treatment. **Methods:** Diabetic macular edema (DME) patients ($n = 759$) were randomized to monthly 0.5-mg or 0.3-mg

Session One is Saturday and Sunday, Nov. 16 & 17. Session Two is Monday and Tuesday, Nov. 18 & 19. Refer to page 156 for poster presentation and tour schedule.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

RBZ or sham. In Year 3 the sham group could cross over to 0.5-mg RBZ. After Month 36 remaining patients received open-label 0.5-mg RBZ based on changes in vision or OCT. The visit interval could be extended from 30 to 60 or 90 days for patients who did not need monthly treatment. **Results:** Through 36 months, 36.8%-51.2% of patients originally randomized to RBZ gained ≥ 15 letters from baseline. Lesser gains were seen at Month 36 with delayed treatment in sham patients. **Conclusion:** Efficacy outcomes with monthly RBZ were sustained through 3 years. Extension phase data on less-than-monthly dosing will be discussed.

Scientific Poster 467

Factors Affecting Frequency of Intravitreal Aflibercept Injections During PRN Phase of COPERNICUS and GALILEO

Presenting Author: Julia A Haller MD*

Purpose: To identify factors at end of fixed dosing (Week 24) predicting number and odds of having ≥ 3 intravitreal aflibercept injections (IAI) in p.r.n. phase (6 months). **Methods:** Analyses included central retinal vein occlusion (CRVO) patients with macular edema receiving 6 monthly 2-mg IAI (2 mg every 4 weeks, abbrev. 2q4; $n = 207$) or sham ($n = 60$) followed by IAI p.r.n., with known fluid status at Week 24. **Results:** Dry vs. wet patients at Week 24 received 2.4 vs. 3.9 injections in 2q4-p.r.n. and 1.8 vs. 4.6 injections in sham-IAI p.r.n., respectively. Proportions of dry vs. wet patients requiring ≥ 3 injections were 47.4% vs. 75.9% in 2q4-p.r.n. and 33.3% vs. 86.7% in sham-IAI p.r.n. Wet vs. dry patients at Week 24 were 1.6 and 2.6 times more likely to have ≥ 3 injections in 2q4-p.r.n. and sham-p.r.n., respectively. **Conclusion:** Initial treatment and fluid status at end of fixed dosing were associated with the number of injections in p.r.n. phase.

Scientific Poster 468

IOP Trends Following Intravitreal Injections of Anti-VEGF Agents for Diabetic Macular Edema

Presenting Author: Sawsan R Nowilaty MD

Co-Author(s): Abdulelah Al-Abdullah, Nicola G Ghazi MD

Purpose: To study IOP trends after intravitreal anti-vascular endothelial growth factor (IVA-VEGF) agents in diabetic macular edema (DME). **Methods:** Review of 486 patients (age: 28-83 years) who received IVA-VEGF agents. **Results:** Over a mean follow-up of 18 months, 760 eyes received 1-24 injections. Persistent IOP elevation ($> 20\%$ from baseline [BL] or > 24 mmHg) occurred in 45 eyes (5.9%). Final IOP was higher in this group than in the rest of the eyes (mean: 20.8 vs. 17.2, $P < .001$) despite similar BL IOP ($P = .1$). IOP rise was associated with a higher number of injections (mean: 5 vs. 3.2, $P = .001$) and shorter interval between injections (mean: 3.4 vs. 6.3 months, $P < .0001$). **Conclusion:** A higher frequency of anti-VEGF injections appears to increase the risk of IOP elevation in DME.

Scientific Poster 469

Macular Edema and Laser for Retinopathy of Prematurity: Relationship Assessed by OCT

Presenting Author: Ramiro S Maldonado MD

Co-Author(s): Du Tran-Viet, Dordi Austeng, David K Wallace MD MPH*, Sharon F Freedman MD*, Cynthia A Toth MD*

Purpose: To examine impact of laser treatment for retinopathy of prematurity (ROP) on macular edema of prematurity (MEOP). **Methods:** MEOP characteristics and foveal thickness (FT) were assessed in infants with portable spectral domain OCT (SD-OCT) 0-2 weeks before and after laser. **Results:** In 26 eligible eyes, MEOP decreased in prevalence (42% pre, 26% after). Twelve eyes did not have MEOP and 4 eyes had MEOP before and after; 7 eyes had MEOP resolved and 3 eyes had new MEOP onset. The mean FT change was +7, -159, -95, and +297 microns, respectively ($P < .001$). **Conclusion:** MEOP diminishes in some eyes after laser treatment, possibly due to VEGF effects or, alternatively, due to natural history of MEOP. Changes in retinal microanatomy after ROP treatment may provide new insight into disease pathophysiology.

Scientific Poster 470

Efficacy and Safety of Alternate Ranibizumab Dosing in Retinal Vein Occlusion: The SHORE Study

Presenting Author: Charles C Wykoff MD PhD*

Co-Author(s): Linda Yau*, Gary Sternberg MBA MD*

Purpose: To compare the efficacy of ranibizumab (RBZ) given monthly or p.r.n. following ≥ 7 monthly doses in retinal vein occlusion (RVO). **Methods:** Phase 4, randomized, open-label,

15-month study. RVO patients ($n = 202$) with macular edema were treated monthly with RBZ 0.5 mg. After dose 7, once visual acuity and spectral domain OCT stability criteria were met, patients were randomized to either continue monthly dosing or p.r.n. dosing. **Results:** Change in BCVA at Month 15 was 18.7 (ETDRS letters) in monthly, 21.0 in p.r.n., and 14.5 in nonrandomized (NR). Change in central foveal thickness was -289.9 μm , -247.8 μm , and -93.2 μm in monthly, p.r.n., and NR groups, respectively. Incidence of serious adverse events was 3.0% ocular (study eye), 14.9% systemic. **Conclusion:** After ≥ 7 monthly doses, efficacy with p.r.n. RBZ 0.5-mg in RVO was comparable to monthly treatment.

Scientific Poster 471

Enhanced Depth Imaging of the Choroid and Retina in Macular Edema

Presenting Author: Ella H Leung MD

Co-Author(s): Patricia MT Garcia MD, Richard Rosen MD*

Purpose: To investigate the relationship between choroidal and retinal thickness in macular edema, and to identify risk factors for choroidal thinning. **Methods:** Retrospective case-control study of 70 eyes (46 with macular edema, 24 controls). The choroid and retina were measured at the fovea, 500 μm , 1000 μm , 1500 μm , and 2000 μm nasal, inferior, temporal, and superior to the fovea. **Results:** Eyes with and without macular edema showed no statistically significant difference in choroidal thickness ($P = .278$). In eyes with vascular occlusion, however, the choroid was thinner compared to controls ($P = .00484$). There was no difference between diabetic eyes and controls ($P = .135$). **Conclusion:** Choroidal thickness is not correlated with macular thickness, but the choroid may be thinner in eyes with vascular occlusion.

Scientific Poster 472

The Use of Nonsteroidal Anti-inflammatory Medicines for the Treatment of Central Serous Chorioretinopathy

Presenting Author: Andrew N Antoszyk MD*

Co-Author(s): Michael A Singer MD*, Angela Herro MD, Sharif Sabbah

Purpose: To determine if nonsteroidal anti-inflammatory (NSAID) medicines increase the time to resolution of symptoms in patients with central serous chorioretinopathy (CSCR). **Methods:** Multicentered chart review of patients treated with NSAID drops were compared to control patients with CSCR to determine the time to resolution of macular edema on OCT and restoration of vision to 20/20. Time course was up to 1 year without any intervention. **Results:** Thirty-eight patients were treated with NSAIDs (13 Nephac, 25 Bromfenac) vs. 52 control patients. Mean time to resolution was 42 days (14-95) in the NSAID arm and 127 days in the control (12-362) ($P < .0001$). Mean time to resolution was also highly significant individually ($P < .001$) vs. control. **Conclusion:** NSAID drops are effective in reducing time to resolution in of CSCR.

Scientific Poster 473

Retrospective Comparison of 25-Gauge Vitrectomy With and Without Air Tamponade to Repair Lamellar Macular Hole

Presenting Author: Tatsuhiko Sato MD

Co-Author(s): Kazuyuki Emi MD, Hajime Bando MD**, Tomohiro Ikeda MD**

Purpose: To compare the surgical outcomes of vitrectomy with or without air tamponade for the repair of lamellar macular hole (LMH). **Methods:** Twenty-three eyes underwent 25-gauge (G) vitrectomy with air tamponade, and 18 eyes underwent 25G vitrectomy alone. **Results:** The pre- and postoperative BCVAs were 0.26 ± 0.27 and 0.12 ± 0.15 logMAR units in cases with tamponade, and 0.35 ± 0.30 and 0.14 ± 0.23 logMAR units in cases without tamponade. The postoperative BCVA was significantly improved in cases with tamponade ($P = .023$) and without tamponade ($P < .001$). None of the cases developed full-thickness MH postoperatively. **Conclusion:** These results suggest that tamponade may be not necessary to achieve visual improvement and anatomical closure in eyes with LMH.

Scientific Poster 474

Retrospective Comparison of 25-Gauge Vitrectomy for Repair of Proliferative Vitreoretinopathy With vs. Without Anterior Proliferation

Presenting Author: *Tatsuhiko Sato MD*

Co-Author(s): *Kazuyuki Emi MD, Hajime Bando MD**, Tomohiro Ikeda MD***

Purpose: To compare the surgical outcomes of 25-gauge (G) vitrectomy for the repair of proliferative vitreoretinopathy (PVR) with anterior PVR (A-PVR) with those without A-PVR. **Methods:** Twenty-two eyes of PVR with A-PVR and 10 eyes of PVR without A-PVR underwent 25G vitrectomy. **Results:** The number of eyes requiring retinotomy was significantly greater in eyes with A-PVR ($P = .005$). The surgical time was significantly longer in eyes with A-PVR ($P = .002$). There were no significant differences in the anatomical success rate or in the postoperative visual acuity between the 2 groups. **Conclusion:** These results suggest that 25G vitrectomy can achieve equal surgical outcomes for PVR with and without A-PVR. However, cases with A-PVR may need retinotomy more often and may require longer surgical times.

Scientific Poster 475

Focal Choroidal Excavation in Patients With Central Serous Chorioretinopathy

Presenting Author: *Fiona O Luk MBChB**

Co-Author(s): *Andrew Chung-tin Fok MBChB, Allie Lee MBBS MRCS(ED)**, Andrea Tin Wai Iiu MBBS, Timothy Y Lai MBBS**

Purpose: To determine the prevalence of focal choroidal excavation (FCE) on spectral-domain OCT in patients presenting with central serous chorioretinopathy (CSC). **Methods:** Review of OCT and angiographic findings of consecutive patients presenting with CSC. **Results:** Among 77 CSC patients, FCE was found in 9 eyes of 6 patients (7.8%). FCE was associated with subretinal fluid in 3 cases; and serous pigment epithelial detachment, in 2 cases. The mean central foveal thickness of FCE patients was 281.5 μm , compared with 377.6 μm in patients without FCE. All FCE patients had focal leakage on fluorescein angiography and choroidal hyperpermeability on indocyanine green angiography. **Conclusion:** FCE is not an uncommon feature in patients with CSC and might be associated with choroidal hemodynamic disturbances.

Scientific Poster 476

Prevalence of Vitreomacular Interface Abnormalities and Candidates for Ocriplasmin Therapy

Presenting Author: *Omar S Punjabi MD*

Co-Author(s): *Lucy T Xu, Jack Z Shao MD, Justis P Ehlers MD*, Sunil K Srivastava MD*, Rishi P Singh MD*, Daniel F Martin MD, Peter K Kaiser MD**

Purpose: To evaluate the prevalence of different vitreomacular interface (VMI) diseases and to determine candidates for ocriplasmin therapy. **Methods:** A retrospective, consecutive study was performed on all patients with a diagnosis of macular cyst, hole, pseudohole, and VMT using OCT. **Results:** 426 eyes of 365 patients were included. Thirty-nine eyes (10.7%) had macular cyst without hole, 53 (12.4%) had lamellar hole, 66 (15.5%) had pseudohole, and 30 (7%) had VMT. Among 216 eyes (50.7%) with full-thickness hole (FTMH), 73 (17.1%) were $< 250 \mu\text{m}$ in size, 47 (11.0%) were 250-400 μm and 96 (22.5%) were $> 400 \mu\text{m}$. Twenty-two fellow eyes (10.2%) of FTMH had VMA (Stage 0 MH). Seventy-eight eyes (18.3%) had symptomatic VMT and were candidates for ocriplasmin therapy based on clinical trials. **Conclusion:** We present a novel OCT-based classification system of VMI diseases.

Scientific Poster 477

Oral Rifampin for the Treatment of Long-standing Chronic Central Serous Chorioretinopathy

Presenting Author: *Shiri Shulman MD*

Co-Author(s): *Michaella Goldstein MD*, Dafna Goldenberg*, Zohar Habet-Wilner MD, Anat Loewenstein MD**

Purpose: To prospectively investigate the effect of oral rifampin for central serous chorioretinopathy (CSCR). **Methods:** Patients with chronic CSCR and persistent subretinal fluid (SRF) for at least 3 months were treated with rifampin 300 mg twice daily for 3 months. Clinical examinations and spectral domain OCT were performed at 1, 2, 3, 4, and 6 months. **Results:** Twelve eyes of 10 patients (7 men) were included. Mean age was 62.5 years, mean SRF duration was 28.4 months, mean visual acuity at presentation was 6/18, improv-

ing to 6/15 and 6/12 at Months 3 and 6, respectively ($P > .05$). Mean central retinal thickness at presentation was 353 μm , improving to 260 μm , 280 μm , and 275 μm at Months 1, 2, and 3, respectively ($P < .05$). Mean choroidal thickness at presentation was 476 μm (SD 188 μm) and 427 μm (SD 125 μm) after 3 months. Five eyes (28.4%) had no SRF after 3 months. **Conclusion:** Oral rifampin may be an effective treatment for longstanding chronic CSCR.

Scientific Poster 478

Spirolactone for Central Serous Retinopathy

Presenting Author: *Rocio Blanco-Garavito MD*

Co-Author(s): *Nathalie Puche**, Jenyfer Zerbib MD*, Hassiba Oubraham-Mebroukine MD*, Farah Ferial-Soraya Gherdaoui**, Eric H Souied MD PhD**

Purpose: To evaluate the effect of oral spiro lactone on the course of chronic central serous retinopathy (CSC). **Methods:** Ten eyes of 8 patients with chronic CSC were included. Patients were treated with 75 mg a day of oral spiro lactone. Main outcome measures were visual acuity and macular and choroidal thickness on OCT. **Results:** Visual acuity improved by 0.07 logMAR. Macular thickness and choroidal thickness on OCT did not vary greatly. **Conclusion:** We found no significant effect of spiro lactone on chronic CSC.

Scientific Poster 479

The Use of Topical 2% Lidocaine Gel in Panretinal Photocoagulation With Pattern Scan Laser: A Double-Blind Randomized Controlled Trial

Presenting Author: *Man Kit Tong MBBS*

Co-Author(s): *Michelle Fan MBBS, NgaKwan Bonnie Choy MBBS MRSC(ED)(OPHTH), Derek K Yu MBBS, Kenneth K W Li MBChB*

Purpose: To assess whether the use of topical 2% lidocaine gel can further reduce pain in pattern scan laser panretinal photocoagulation (PRP). **Methods:** Forty-two consecutive treatment naïve patients requiring PRP were prospectively recruited and randomized into methylcellulose group (0.4% Novain + methylcellulose gel) or lidocaine group (0.4% Novain + 2% lidocaine gel). Primary outcome measure was pain level utilizing the Numerical Pain Scale (NPS). **Results:** The lidocaine group had statistically significant lower pain scores immediately after the laser (NPS: 3.41 \pm 1.07 vs. 1.91 \pm 2.49; $P = .015$) but not during the insertion of contact lens ($P = .754$) or during the laser procedure ($P = .673$). **Conclusion:** The use of supplementary 2% lidocaine gel can significantly improve patient comfort in pattern scan laser PRP.

Scientific Poster 480

Ocular Findings In Aplastic Anemia: Multicenter Study and Literature Review

Presenting Author: *Ramzi Alameddine MD*

Co-Author(s): *Ahmad M Mansour MD, Seungah Yahng MD, Kyu Seop Kim, Maha Shahin, Nelson Hamerschlag MD PhD, Rubens Belfort MD PhD, Shree Kumar Kurup MD MB**

Purpose: To report ocular findings in aplastic anemia (AA). **Methods:** Retrospective series of 719 AA patients followed at a hematology center. **Results:** 156 patients had retinal exam; 37 patients (23.7%) had retinal hemorrhage with mean hemoglobin (Hb) 6.6 g/dl (range: 2.7-12.6)—similar to mean Hb 6.7 g/dl in 104 subjects without retinal hemorrhage—and platelet count 18.8 $\times 10^9/\text{L}$ (range: 4-157). Nine patients had central retinal vein occlusion-like picture with similar rheology to rest of subjects. A literature review (1958-2010) of 200 AA cases revealed retinopathy in 20%-28.3%, vs. 69% with concomitant anemia and thrombocytopenia. **Conclusion:** Around one-quarter of AA subjects develop retinal hemorrhage and around two-thirds when there is concomitant thrombocytopenia.

Scientific Poster 481

Retinal Arterial Macroaneurysms: Natural History vs. Treatment

Presenting Author: *Baseer U Ahmad MD*

Co-Author(s): *Gaurav K Shah MD**

Purpose: To compare long-term clinical course of patients with treated retinal arterial macroaneurysms (RAMs) with those of observed patients. **Methods:** Retrospective chart review of patients from 2003-2012 with ≥ 6 months follow-up. Thirteen treated eyes and 14 observed eyes were assessed for visual outcomes. **Results:** Both groups had similar baseline demographics. Average follow-up times were 24 and 18 months for the treated and observed groups. Initial logMAR visual acuities (VA) were 1.14 and 1.11 in the treated and

observed groups. Final logMAR VAs were 0.51 and 0.77 in the groups. All patients showed resolution or near resolution of hemorrhage and macular edema at final visit. **Conclusion:** The natural history of RAM shows gradual improvement of clinical signs and visual acuity over time. However, laser treatment appears associated with greater improvement in VA and decreased scar formation.

Scientific Poster 482

Retinal Blood Flow Levels Improved by Oral Kallidinogenase in Central Retinal Vein Occlusion Patients

Presenting Author: Makiko Matsumoto MCB MD DOMS

Co-Author(s): Kiyoshi Suzuma MD, Eiko Tsuiki DOMS, Azusa Fujikawa, Takashi Kitaoka MD**

Purpose: We investigated the influence of oral kallidinogenase on retinal blood flow in central retinal vein occlusion (CRVO) patients. **Methods:** Mean blur rate (MBR), which represents retinal blood flow, was measured by laser speckle flowgraphy in 26 patients (13 with and 13 without kallidinogenase). **Results:** At their last visits (mean follow-up duration: 18.6 ± 9.8 months), MBR was higher with than without kallidinogenase in the fellow eyes ($P = .11$). A significant difference was seen in CRVO eyes ($P = .02$). **Conclusion:** Kallidinogenase may improve retinal blood flow levels in both eyes of CRVO patients, with greater sensitivity seen in affected eyes.

Scientific Poster 483

The Coefficient of Repeatability for Multifocal Electroretinography Measurements in Normal Volunteers and Patients Taking Hydroxychloroquine

Presenting Author: David J Browning MD PhD*

Co-Author(s): Chong Lee COA

Purpose: To estimate the size of changes in multifocal electroretinography (mfERG) variables that exceed noise in hydroxychloroquine (HC) screening. **Methods:** Duplicate measurements of NP amplitudes and ring ratios were made in 21 normal controls and 44 hydroxychloroquine (HC) users. Bland-Altman plots were analyzed. **Results:** In normals, the coefficients of repeatability (COR) for R1 amplitude, R2 amplitude, and R1/R2 ratio were 51%, 43%, and 43%, respectively. In HC users, the analogous values were 60%, 53%, and 47%, respectively. **Conclusion:** These estimates permit clinicians to determine if changes in mfERG variables exceed measurement variability (noise). If a change exceeds the COR for a variable, the probability exceeds 95% that the change is real and not measurement variability. The CORs for commonly studied mfERG variables are large, confounding interpretation of testing.

Scientific Poster 484

The Relative Sensitivity and Specificity of 10-2 Visual Fields, Multifocal Electroretinography, and Spectral Domain OCT in Detecting Hydroxychloroquine Retinopathy

Presenting Author: David J Browning MD PhD*

Co-Author(s): Chong Lee COA

Purpose: To determine the relative sensitivity and specificity of 10-2 visual fields (VF), multifocal electroretinography (mfERG), and spectral domain OCT (SD-OCT) in screening for hydroxychloroquine (HC) retinopathy. **Methods:** Retrospective review of 100 patients with all 3 tests. **Results:** Retinopathy, defined as cessation of HC by the doctor, was present in 11 and absent in 89. The sensitivities of 10-2 VF, mfERG, and SD-OCT in detecting retinopathy were 81.8%, 90.9%, and 72.7%, respectively. The specificities were 92.1%, 86.5%, and 96.6%, respectively. Positive likelihood ratios were 10.4, 6.7, and 21.6, respectively. For pretest probabilities ranging from 0.1% to 5%, the increase in post-test probability implied by a positive mfERG or SD-OCT was small, regardless of the result of the 10-2 VF. **Conclusion:** Appropriate use of mfERG and SD-OCT in screening for HC retinopathy will probably be selective rather than universal.

Scientific Poster 485

Anterior Chamber Migration of the Dexamethasone Implant (Ozurdex) May Result in Corneal Decompensation

Presenting Author: Rahul Khurana MD*

Co-Author(s): Suri N Appa MD, Colin McCannel MD*, Michael J Elman MD**, Susan Wittenberg MD, David J Parks MD, Saad Ahmad MD, Steven Yeh MD*

Purpose: To describe the migration of a dexamethasone (DEX) implant (Ozurdex) into the anterior chamber. **Methods:** Fifteen patients had 18 episodes of anterior chamber migration of a DEX implant. **Results:** All 15 patients had prior pars plana vitrectomy, and 14 (93%) had no lens capsule. Among those eyes undergoing surgical removal of the implant, earlier intervention reduced the likelihood of permanent corneal edema (0.5 days vs. 5.5 days, $P = .04$). Among the 14 patients with corneal edema, the corneal edema did not resolve in 10 patients (71%), and 6 patients (43%) required corneal transplantation. **Conclusion:** Absence of lens capsule and prior vitrectomy are risk factors for anterior chamber migration of the DEX implant. Early implant removal may be necessary to minimize the risk of chronic corneal edema.

Scientific Poster 486

Histopathologically Confirmed Vitreous Cavity and Retina Surface Epithelial Downgrowth in Enucleated Specimens and in Eyes With Visual Potential

Presenting Author: Aleksandra V Rachitskaya MD

Co-Author(s): Audina Berrocal MD*, Rehan Hussain MD, Sander Dubovy MD

Purpose: To report vitreous cavity and retina epithelial downgrowth. **Methods:** Retrospective 15-year review of Florida Lions Ocular Pathology Laboratory slides for cytokeratin-positive epithelium in the vitreous cavity or on the retina surface. **Results:** Six of 122 eyes (5%) with epithelial downgrowth had vitreous and retina involvement. Three were enucleation specimens. Three with visual potential had more prior surgeries ($P = .03$), including keratoprosthesis implant; cytokeratin-positive epiretinal membranes were peeled during vitrectomy for tractional retinal detachment. The final vision was HM to LP. **Conclusion:** Vitreous cavity and retina epithelial downgrowth occurs after multiple surgeries. In the eyes with visual potential, keratoprosthesis might be a predisposing factor. The treatment is challenging, with poor outcomes.

Scientific Poster 487

Sub-Silicone Oil Triamcinolone Acetonide Drops: A New Approach Against Proliferative Vitreoretinopathy

Presenting Author: Subhendu K Borral MBBS

Co-Author(s): Tushar K Sinha MBBS

Purpose: To detect efficacy of sub-silicone oil (SO) triamcinolone acetonide (TA) crystal application over relaxing retinotomy (RR). **Methods:** TA-assisted 23-gauge vitrectomy done in 74 complex retinal detachments (RD)—A: primary, $n = 43$, and B: failed, $n = 31$ —divided into Subgroup I-A ($n = 21$) and I-B ($n = 17$), where additional TA crystals were applied on the RR margin, after laser and before injecting SO, and Subgroup II-A ($n = 22$) and II-B ($n = 14$), where no additional TA was applied. **Results:** Post-SO removal, epimacular membrane (EMM) was noted in 19.05% (I) and 54.55% (II) ($P < .05$) (A) and 11.76% (I) and 64.29% (II) ($P < .005$) eyes (B). Marginal PVR changes in 17.65% vs. 71.43% ($P < .005$) (B) eyes. **Conclusion:** Sub-silicone oil additional TA crystals over RR significantly decrease EMM in both groups and marginal PVR in failed RDs.

Scientific Poster 488

Oral Fluoroquinolones and the Incidence of Rhegmatogenous Retinal Detachment and Symptomatic Retinal Breaks: A Population-Based Study

Presenting Author: Andrew J Barkmeier MD

Co-Author(s): Kapil G Kapoor MD, David O Hodge MS, Jennifer StSaver PhD

Purpose: To investigate whether oral fluoroquinolones increase the risk of retinal detachment (RD) and breaks. **Methods:** We identified patients age ≥ 18 prescribed oral fluoroquinolones in Olmsted County, Minn., from Jan. 2003 to June 2011 with macrolide and beta-lactam comparison cohorts. RD repair and prophylaxis CPT codes identified patients treated ≤ 1 year from prescription dates. **Results:** Oral fluoroquinolones were prescribed for 38,071 unique patients during the study period (macrolide, $n = 48,052$; beta-lactam, $n = 69,159$). Risk of RD repair and laser procedures within 7, 30, 90, and 365 days of the first prescription were calculated for each cohort and compared using Cox proportional hazard

models (age- and sex-adjusted *P*-values not significant for all comparisons). **Conclusion:** Oral fluoroquinolones do not confer a clinically relevant risk of rhegmatogenous retinal detachment.

Scientific Poster 489

Influence of Persistent Submacular Fluid on Structural Recovery of Retina After Successful Repair of Macula-off Retinal Detachment

Presenting Author: *Yong-Kyu Kim MD*

Co-Author(s): *Yong-Woo Kim MD, Se Joon Woo MD, Jeeyun Ahn MD, DuckJin Hwang MD, Kyu Hyung Park***

Purpose: To determine the influence of persistent submacular fluid (SMF) after successful treatment of macula-off rhegmatogenous retinal detachment on structural recovery of retina. **Methods:** We retrospectively investigated the medical record of 106 patients. We divided patients into 2 groups according to the absence (Group 1) or presence (Group 2) of persistent SMF at 1 month postoperatively, and compared OCT findings. **Results:** In patients with preoperative visual acuity (VA) worse than 20/200, Group 1 showed better visual gain and higher recovery rate of retina in the first postoperative 6 months, but no significant differences thereafter. **Conclusion:** The persistent SMF delayed functional and structural recovery of retina, especially in those with poor preoperative VA. However, it did not affect final visual or structural outcome.

Scientific Poster 490

Clinical Profile and Long-term Outcome of Scleral Buckle Infection: Retrospective Study

Presenting Author: *Jay K Chhablani MD*

Co-Author(s): *Sameera Nayak MD, Avinash Pathengay FRCS, Subhadra Jalali MS, Annie Mathai MBBS*

Purpose: To study the clinical profile and long-term outcome of scleral buckle (SB) infection. **Methods:** 112 eyes undergoing buckle removal for SB infection, presented between July 1991 and June 2012, were analyzed. **Results:** Commonest complaints were pain (64%) and watering (33%). Mean follow-up was 35.71 months. Inciting event was present in 8 eyes. Unusual presentations were subconjunctival hemorrhage (3 eyes), panophthalmitis (3 eyes), and orbital cellulitis (2 eyes). Recurrent retinal detachment was present in 2 eyes after buckle removal. **Conclusion:** Presentations of SB infection can vary from subconjunctival hemorrhage to panophthalmitis. Recurrent retinal detachment following buckle removal is uncommon.

Scientific Poster 491

Decentralizing OCT Testing Increases Vitreoretinal Clinic Efficiency

Presenting Author: *Theodore Leng MD**

Purpose: To reduce wait times and total time in clinic for return patients. **Methods:** During March 2013, patients were randomized to have OCT testing performed in a centralized photography department (Photo) or by an ophthalmic technician during initial workup and dilation (tech). Total time in clinic and wait times were recorded. **Results:** Seventy-four patients were randomized (42 photo, 32 tech). Mean wait times were 21.5 min for the photo group and 5.6 min for the tech group (*P* < .01). Mean total time in clinic was 63.8 min for the photo group and 40.9 min for the tech group (*P* < .01). This represented a 15.9 min (74%) reduction in wait time and a 22.9 min (36%) reduction in total clinic time. **Conclusion:** Placing an OCT device in the technician screening room can significantly increase clinic efficiency.

Scientific Poster 492

Analysis of Topographic Correlation Between Reticular Pseudodrusen and the Choroidal Vasculature Using En Face OCT

Presenting Author: *Jonathan Chou*

Co-Author(s): *Dilraj Singh Grewal MBBS, Stuart D Rollins, Samira Khan MD**, Amani Fawzi MD*

Purpose: To analyze the topographic correlation between reticular pseudo-drusen (RPD) on infrared reflectance (IR) and choroidal vasculature using en face OCT. **Methods:** Topographic map of superficial choroid was generated using a 6x6 mm cube (Cirrus HD-OCT). Independent masked observers defined RPD, generated random dots for "control RPD," and

thresholded choroidal map using ImageJ. **Results:** Seventeen eyes (11 patients, 9 female, mean age 78 ± 13.7 years), with average of 414 ± 72 RPD each were analyzed. 49.6% of RPD overlaid choroidal vessels, greater than the 45.4% controls (*P* < .02). 50.4% of RPD overlaid choroidal stroma, of which 76.5% were ≤ 3 pixels from vessels, greater than the controls (*P* < .02). **Conclusion:** RPD appear to follow underlying choroidal vessels, suggesting their correlation with choroidal pathology.

Scientific Poster 493

OCT Imaging Features of Large Choroidal Blood Vessels in Central Serous Chorioretinopathy

Presenting Author: *Sung Yang Park MD*

Co-Author(s): *Sang Jin Kim MD PhD, Sung Min Kim MD, Don-Il Ham MD*

Purpose: To identify morphological features of large choroidal blood vessels in central serous chorioretinopathy (CSC) using enhanced depth imaging (EDI) OCT. **Methods:** Large choroidal blood vessels in EDI OCT raster scan images were analyzed. The presence and prevalence of characteristic sign were investigated. **Results:** The characteristic sign of dilated large choroidal blood vessels was found at areas showing retinal pigment epithelial abnormalities. It was significantly more prevalent in CSC eyes (86.4%, 57/66) than in unaffected fellow eyes (30%, 15/50) or in healthy eyes (9.5%, 11/116). **Conclusion:** Eyes with CSC have the characteristic sign of large choroidal blood vessels, which could be helpful for the diagnosis and the evaluation of CSC.

Scientific Poster 494

Adaptive Optics Fluorescein Angiography of Diabetic Retinopathy

Presenting Author: *Richard Rosen MD**

Co-Author(s): *Joseph J Carroll*, Michael Dubow, Alexander Pinhas, Nishit Shah, Rishard Weitz MBA, Joseph B Walsh MD*

Purpose: To investigate the ability of fluorescein angiography (FA) performed using an adaptive optics scanning laser ophthalmoscope (AO SLO) to reveal histopathological features in diabetic patients. **Methods:** An AO SLO modified to enable FA imaged diabetics with various stages of retinopathy. Oral fluorescein was utilized to maintain sustained fluorescence over extended imaging sessions. **Results:** AO SLO FA demonstrated structural details of diabetic lesions previously seen only in pathology slides. Microaneurysms, capillary remodeling, and exudates showed complexity that challenge conventional therapeutic approaches. **Conclusion:** AO SLO FA provides a new level of clinical detail of common diabetic lesions and the opportunity to study the dynamic response of these features to therapy.

Scientific Poster 495

Pre- and Post-treatment Enhanced Depth Imaging OCT Choroidal Thickness Measurements in Polypoidal Choroidal Vasculopathy

Presenting Author: *Nicola Y Gan MBBS*

Co-Author(s): *Colin S Tan MBBS*, Nikolle WH Tan MBBS**

Purpose: To evaluate baseline and post-treatment choroidal thickness (CT) in polypoidal choroidal vasculopathy (PCV) with enhanced depth imaging/spectral domain OCT. **Methods:** Baseline and 3-month CT of 23 PCV eyes treated with photodynamic therapy/focal laser ± anti-VEGF agents were measured at a few locations: subfoveal (F), underlying active/leaking polyps (AP), and branching vascular network (BVN). **Results:** At 3 months, F (*P* < .001), AP (*P* = .003), and BVN (*P* < .001) were thinner than baseline. Eyes with recurrent / persistent leakage between Months 3 and 12 had thicker baseline mean F (318.6 vs. 238.4 μm, *P* = .022), AP (312.1 vs. 220.2 μm, *P* = .004), BVN (334.0 vs. 212.8 μm, *P* = .005), and 3-month mean F (*P* = .014), AP (*P* = .008), BVN (*P* = .005) compared to quiescent eyes. **Conclusion:** Baseline CT was thicker in eyes with persistent / recurrent leakage and may be useful in predicting treatment response.

Scientific Poster 496

Relevance of Indocyanine Green Angiography for the Diagnosis of Noninflammatory Chorioretinal Diseases

Presenting Author: *Salim Ben Yahia MD**

Co-Author(s): *Rim Kahloun MD, Sonia Attia, Cyrine Hamdi, Moncef Khairallah MD*

Purpose: To assess the relevance of indocyanine green angiography (ICGA) for the diagnosis of noninflammatory chorioretinal diseases. **Methods:** Retrospective review of 918

patients with noninflammatory chorioretinal disease examined by ICGA. We reviewed pathologies for which ICGA was strongly contributive to establish definitive diagnosis. **Results:** ICGA was imperative for the definitive diagnosis of choroidal hemangioma ($n = 6$), complicated retinal or optic disc macroaneurysms ($n = 7$), polypoidal choroidal vasculopathy ($n = 5$), choroidal neovascularization ($n = 15$), atypical central serous chorioretinopathy ($n = 10$), complicated osteoma ($n = 1$), and amyloidosis ($n = 1$). **Conclusion:** ICGA may strongly help to establish the definitive diagnosis in a subset of patients with specific chorioretinal diseases.

Scientific Poster 497

Adaptive Optics Imaging of Eyes With Epiretinal Membrane Before and 6 Months After Surgery

Presenting Author: Mario Stirpe MD

Co-Author(s): Fabio Scarinci Sr, Gaetano Cupo, Marco Andrea Pileri**, Sebastiano Serrao MD PhD, Marco Lombardo

Purpose: To investigate the epiretinal membrane (ERM) abnormalities before and 6 months after ERM peeling using an adaptive optics (AO) retinal camera and a spectral-domain OCT (SD-OCT). **Methods:** Images of the inner retinal surface (IRS) were obtained via AO and SD-OCT in 15 eyes of 15 patients with ERM. **Results:** Before surgery, "microfolds" (MI), "macrofolds" (MA), and "hyper-reflective lines" (HRL) were identified in AO images of the IRS of each eye. After surgery, the density of MI and MA was greatly reduced. The HRL were reduced in number, however, with variation between eyes. The nerve fiber bundles were imaged with more details than preoperatively. **Conclusion:** AO retinal imaging provides new insights into the surgically induced changes of the IRS.

Scientific Poster 498

Pseudo-PCV: Lessons Learned From Screen-Failures in a Randomized Controlled Trial for Polypoidal Choroidal Vasculopathy

Presenting Author: Colin S Tan MBBS*

Co-Author(s): Wei Kiong Ngo MBBS, Nikolle WH Tan MBBS*, Tock H Lim MBBS FRCSE*

Purpose: To describe screen-failures of the EVEREST Study, a randomized controlled trial for polypoidal choroidal vasculopathy (PCV). **Methods:** Standardized confocal scanning laser indocyanine green angiography (ICGA) images were graded by a Central Reading Center. **Results:** Of 95 cases, 34 were excluded: 13 PCV not treatable, 10 small-dot hyperfluorescence $< 150 \mu\text{m}$, 1 double pathology, and 10 "pseudo-PCV": 1 microaneurysm, 1 retinal angiomatous proliferation, 1 retinochoroidal anastomosis, 3 retinal pigment epithelial (RPE) staining/defect, 1 choroidal neovascularization, 1 disciform scar, and 2 choroidal vascular knuckle. Additional detailed grading using stereoisomaging and dynamic ICGA reliably distinguished pseudo-PCV from true PCV. **Conclusion:** Image grading methods can effectively differentiate pseudo-PCV from actual PCV.

Scientific Poster 499

Vitreoretinal Surgery for Shotgun Eye Injuries Related to Hunting Accidents

Presenting Author: Alexandre C Assi MD

Co-Author(s): George Michel Cherfan MD**

Purpose: To analyze the anatomic and functional outcomes in addition to complications in shotgun injuries. **Methods:** Retrospective review of 20 consecutive cases with a minimum follow-up of 1 year. **Results:** BCVA at presentation ranged from perception of light (PL) to 20/200. Ten eyes had a penetrating injury, and 10 others had a perforating injury. All eyes underwent a vitrectomy with internal tamponade in 15 cases and a scleral buckle in 12 cases. Nine cases required further surgery. At last follow-up BCVA ranged from no PL to 20/20 and was 20/100 or better in with 10 eyes. All patients had a flat retina except for 2 cases that developed severe proliferative vitreoretinopathy. No cases of endophthalmitis were reported. **Conclusion:** Vitreoretinal surgery can offer good visual rehabilitation in patients with shotgun eye injuries.

Scientific Poster 500

Retinal Detachment After Open Globe Injuries

Presenting Author: Tomasz Stryjowski MD

Co-Author(s): Christopher M Andreoli MD, Dean Elliott MD*

Purpose: To characterize retinal detachment (RD) after open globe injury (OGI). **Methods:** Retrospective review of 893 open globe injuries presenting to Massachusetts Eye and Ear

Infirmery. **Results:** An RD incidence of 29% was identified after OGI; 27% (69/255) detached within 24 hours of primary open globe repair, 47% (119/255) detached within 1 week, 72% (183/255) within 1 month. Multivariable regression analysis revealed vitreous hemorrhage, zone of injury, and visual acuity to be associated with retinal detachment. A screening tool, the Retinal Detachment after Open Globe Injury (RD-OGI) Score, was created. **Conclusion:** RD is common after open globe trauma, though often not appearing until days to weeks after the traumatic event. The RD-OGI score is a useful predictor of retinal detachment following open globe injuries.

Scientific Poster 501

Photodynamic Therapy of Choroidal Metastasis and Evaluation of Response With Enhanced Depth Imaging OCT

Presenting Author: Hakan Demirci MD

Co-Author(s): Alexis Cullen, Jeffrey M Sundstrom MD

Purpose: To evaluate photodynamic therapy (PDT) in the management of choroidal metastasis. **Methods:** Retrospective review of 7 tumors in 6 eyes of 6 patients. **Results:** Six tumors were treated with 1 session; and 1 tumor, with 3 sessions of PDT. The mean basal diameter was 9 mm. All tumors were associated with subretinal fluid, which resolved in all eyes after PDT. The mean increase in Snellen visual acuity was 3 lines. Tumor thickness decreased from a mean of 1100 μm to 655 μm in enhanced depth imaging OCT (EDI-OCT) and from 1300 μm to 300 μm in ultrasonography. In 4 tumors, post-treatment thickness could be measured with only EDI-OCT. In EDI-OCT, internal tumor reflectivity changed from hyporeflective to hyper-reflective in all tumors. **Conclusion:** PDT can be an alternative therapy for selected choroidal metastasis.

Scientific Poster 502

Choroidal Thickness After Treatment of Uveal Melanoma With Plaque Brachytherapy

Presenting Author: Kavitha R Sivaraman MD

Co-Author(s): Clement C Chow MD, William F Mieler MD*

Purpose: To quantify choroidal thickness in eyes with radiation retinopathy after plaque brachytherapy for uveal melanoma. **Methods:** Retrospective chart review of 31 eyes of 31 patients. Postoperative subfoveal choroidal thickness was measured by enhanced-depth imaging OCT. The contralateral eye served as a control. **Results:** At a mean of 25 months postbrachytherapy, eyes with active radiation retinopathy ($n = 5$) had a greater mean change in choroidal thickness than eyes without retinopathy ($n = 26$) when compared to the contralateral eye (+120 vs. -17 microns; $P < .05$). These 5 eyes also had a greater mean choroidal thickness compared to the contralateral eye (380 vs. 260 microns; $P = .056$). **Conclusion:** Choroidal thickness appears to increase in active radiation retinopathy.

Scientific Poster 503

Neovascular Events in Eyes With Central Retinal Vein Occlusion Undergoing Intravitreal Anti-VEGF Therapy

Presenting Author: Bozho Todorich MD PhD

Co-Author(s): Francis C DeCroos MD, Rayan A Alshareef, Allen C Ho MD*, Carl D Regillo MD FACS*, Marc J Spirm MD, Sharon Fekrat MD

Purpose: To characterize the onset and type of neovascular complications in patients with central retinal vein occlusion (CRVO) undergoing anti-VEGF therapy. **Methods:** Retrospective review of 30 eyes in 30 consecutive patients with CRVO at Wills Eye and Duke Eye Center undergoing serial anti-VEGF therapy between 2005 and 2012. **Results:** Patients received mean of 5 anti-VEGF injections prior to any neovascularization (NV), with mean time to NV of 14.3 months. NV of the iris (NVI) / NV of the angle (NVA) was observed in 60%, vitreous hemorrhage in 27%, and NV of the disc in 20% eyes. Observed trend toward earlier onset and higher number of NVI/NVA complications in pseudophakic patients was not statistically significant. All NV events were treated with panretinal photocoagulation, and 20% of eyes required glaucoma shunt surgery. **Conclusion:** Anti-VEGF therapy may delay rather than eliminate neovascular complications in some eyes with CRVO.

Scientific Poster 504

Aqueous Levels of Erythropoietin in Acute Retinal Vein Occlusion With Macular Edema

Presenting Author: Hyun Jin Shin MD

Purpose: To investigate aqueous erythropoietin (EPO) levels and associated factors in acute retinal vein occlusion (RVO). **Methods:** Aqueous EPO level was measured in patients with branch RVO (BRVO) or central RVO (CRVO). We also evaluated whether aqueous level of EPO was associated with factors such as central macular thickness (CMT) and nonperfusion area. **Results:** Sixteen BRVO, 11 CRVO, and 9 control subjects (cataract patients) were enrolled. Aqueous EPO level was higher in RVO (68 ± 54) than in controls (12 ± 5). Aqueous EPO level (mU/ml) was higher in CRVO (118 ± 52) than in BRVO (33 ± 10). Aqueous EPO level had a positive correlation with CMT ($r = 0.66$) and more elevated in the ischemic subgroup than in the nonischemic subgroup. **Conclusion:** Aqueous EPO level could be associated with retinal ischemia and may be involved in the pathogenesis of macular edema secondary to RVO.

Scientific Poster 505

Guarded 360° Supraciliary Drainage (360-CB): A New Surgical Approach to Reverse Silicone Oil-Associated Chronic Hypotony

Presenting Author: William Eric Sponsel MD*

Purpose: To devise a safe surgical method to restore aqueous secretion and visual function in severely hypotonous eyes on the verge of phthisis, when ultrabiomicroscopy (UBM) cannot be used because of retained oil. **Methods:** Three eyes with IOP < 2 mmHg for > 12 months after silicone-oil complex retinal detachment repair, with severe corneoscleral decompensation and recalcitrant to standard surgical therapy, underwent a circumferential 360° partial-thickness sclerostomy with ruby-knife lamellar step incision over the ciliary body. Multiple offset circumferential diamond-blade sclerostomies were made beneath the scleral shelf, and eyes were reconstituted with viscoelastic. **Results:** All 3 eyes resumed aqueous production, with major improvements in function and cosmesis. **Conclusion:** The 360-CB procedure may be an effective restorative option where UBM is impossible.

Scientific Poster 506

Endolaser Associated With Cystoid Macular Edema and Epiretinal Membrane Formation Following Small-gauge Retinal Detachment Repair

Presenting Author: Tanuj Banker MD

Co-Author(s): Kyle Godfrey MD, Eric D Weichel MD

Purpose: To analyze the relationship between endolaser spots used during small-gauge (23/25-gauge) pars plana vitrectomy (PPV) repair of uncomplicated primary retinal detachment (RD) and the development of postoperative cystoid macular edema (CME) and epiretinal membrane (ERM). **Methods:** A review of 117 cases of primary RD repair using 23/25-gauge PPV. All eyes underwent focal laser to the break with or without 360 degree laser. ERM/CME was confirmed using spectral domain OCT and fluorescein angiography. **Results:** The mean number of laser spots was higher in eyes with CME (1015 vs. 784) than without CME ($P < .03$). The mean number of laser spots was higher in eyes with ERM (915 vs. 704) than in eyes without postoperative ERM ($P < .02$). **Conclusion:** Increased endolaser spots during RD repair may be a risk factor for CME/ERM. A greater number of endolaser spots is significantly related to increased severity of ERM and need for secondary PPV/membrane peeling.

Scientific Poster 507

Natural Course and Surgical Management of High Myopic Foveoschisis

Presenting Author: Amanda Rey

Co-Author(s): Ignasi Jurgens MD, Xavier Maseras MD**

Purpose: To describe spectral-domain OCT characteristics, natural course, and surgical management in myopic foveoschisis. **Methods:** The medical records of 39 patients (56 eyes) with myopic foveoschisis were retrospectively reviewed. Pars plana vitrectomy with internal limiting membrane peeling was performed in 16 symptomatic eyes (14 patients). **Results:** OCT at baseline showed an isolated foveoschisis in 62.5% of the eyes, foveal detachment in 21.4%, and lamellar hole in 16.1%. After a mean follow-up of 15.7 months,

1.8% developed a full-thickness macular hole and 28.5% required surgery, with an anatomical success rate of 75%. **Conclusion:** Myopic foveoschisis remained stable in most eyes. However, 28.5% required surgery, with both anatomical and visual improvement.

Scientific Poster 508

A Multicentered Randomized Clinical Trial Comparing Epiretinal Membrane Surgery With and Without Indocyanine Green-Assisted Internal Limiting Membrane Peeling

Presenting Author: Tran D Le MD

Co-Author(s): Wai-Ching Lam MD*, Mark S Mandelcorn MD**, Rajeev H Muni MD, Efreem D Mandelcorn MD*, Peter J Kertes MD*

Purpose: To compare the efficacy of epiretinal membrane (ERM) surgery with and without indocyanine green (ICG)-assisted internal limiting membrane (ILM) peeling. **Methods:** Patients scheduled for ERM surgery were randomized to Group 1 (ERM surgery without ILM peeling) or Group 2 (ERM surgery with ICG-assisted ILM peeling). **Results:** At baseline, visual acuity (VA) for Groups 1 ($n = 26$) and 2 ($n = 18$) were 0.63 and 0.55 logMAR ($P = .15$), central macular thickness (CMT) for Groups 1 and 2 were 456 and 487 μm ($P = .32$). At postoperative Month 6, the mean reduction in CMT for Groups 1 and 2 were 81 and 89 μm ($P = .81$). There was an improvement in VA by 0.165 and 0.007 logMAR for Groups 1 and 2 ($P = .09$). At postoperative Month 6, residual ERM were found in 47% of subjects in Group 1 and 43% in Group 2. **Conclusion:** ERM surgery with and without ICG-assisted ILM peeling had similar postop CMT and VA outcomes.

Scientific Poster 509

Mechanism of Macular Hole Closure in Postoperative Eyes as Assessed by OCT

Presenting Author: Samish Amit Patel MD

Co-Author(s): Sunil Patel MD PhD*

Purpose: To assess the rate of closure of macular holes (MH) in postoperative eyes by OCT. **Methods:** We retrospectively reviewed 16 eyes that had pars plana vitrectomy, internal limiting membrane peeling, gas/oil tamponade, and face down positioning for stages 2-4 MHs. OCT was performed within a day to assess the size of MH under tamponade. Detailed measurements of MH parameters were performed by OCT. **Results:** Eyes had complete closure of the MHs (size 107-668 μm diameter) by 3.5 to 26.4 hours. Rate of closure was 350.9-3.7x10⁴ $\mu\text{m}^2/\text{hr}$. The mean retinal area elevated by subretinal fluid was 1.5x10⁶ μm^2 , and the mean area for cuff of fluid was 1.3x10⁶ μm^2 ($P = .853$). **Conclusion:** The data suggest that there is sufficient retinal tissue over the cuff of fluid for complete MH closure within hours after surgery.

Scientific Poster 510

Retinal Migration Toward the Optic Disc in Eyes Undergoing Vitrectomy for Idiopathic Macular Hole

Presenting Author: Masahiro Ishida MD

Co-Author(s): Rieko Higashida MD, Yoshikazu Ichikawa, Yutaka Imamura MD PhD

Purpose: To examine the retinal migration following idiopathic macular hole surgery with internal limiting membrane peeling using spectral-domain OCT. **Methods:** Distances between optic disc and retinal vessels temporal to the fovea were measured manually before (A) and 2 weeks after surgery (B). **Results:** Twenty-one eyes of 21 patients (9 male; mean age: 64.6 \pm 8.4 years) were retrospectively studied. Retina migrated towards the optic disc with the distance of 260.8 \pm 145.8 mm postoperatively. The ratio of retinal movement [(A-B)/A] significantly correlated with the maximum size of macular hole (Spearman rank correlation, $P = .017$). **Conclusion:** Retina moves toward the optic nerve after vitrectomy in idiopathic macular hole.

Scientific Poster 511

Outcomes of Endoscopic Vitrectomy for Retinal Detachment in Retinopathy of Prematurity

Presenting Author: S Chien Wong MBBS FRCS*

Co-Author(s): Emil Anthony T Say MD, Thomas Lee MD*

Purpose: To evaluate outcomes of endoscopic vitrectomy (Endo-Vit) in stage 4 and 5 ROP. **Methods:** Retrospective review of 48 eyes with stage 4A, 4B, or 5 ROP, including combined traction rhegmatogenous retinal detachment (5-CTRRD). **Results:** Mean gestational age

was 24.8 weeks. Median age at surgery was 44 weeks postmenstrual age. Mean follow-up was 17 months. Overall, partial, or complete retinal reattachment occurred in 64% across all groups; in stage 4A, 4B, 5, and 5-CTRRD, reattachment occurred in 83%, 47%, 25%, and 80%, respectively. Of the 33 eyes with visual outcome data, 70% had \geq fix and follow (FF); in the 5-CTRRD group, 100% (5/5) had light perception or FF. Phthisis bulbi occurred in 13%. **Conclusion:** Endo-Vit appears to be a useful technique for stage 4 and 5 ROP, particularly for 5-CTRRD.

Vision Rehabilitation

SESSION ONE

Scientific Poster 253

★ Electronic Tablet (iPad) Improves Reading Ability as well as Quality of Life of Patients With Poor Vision Secondary to Macular Degeneration

Presenting Author: Shailesh K Gupta MD**

Co-Author(s): K V Chalam MD PhD, Sandeep Grover MD*

Purpose: To evaluate the effect of the iPad as a low vision aid in improving the reading ability of low vision patients. **Methods:** All patients ($N = 228$) with BCVA $< 20/200$ were included. Low vision was secondary to dry AMD. Reading ability was assessed both with the patients' own spectacles and with the iPad. Modified VF-14 QOL Questionnaire was administered for measuring quality of life (QOL). Patients were encouraged to enlarge the reading material until they could read comfortably. **Results:** Initial median BCVA was 20/800 and N30. With the assistance of the iPad, 94% of patients were able to read N8 or smaller text ($P < .01$). VF-14 subscale score improved from 2.0 to 4.4 ($P < .01$). **Conclusion:** The iPad is an effective low vision aid and improved reading ability of 9 out of 10 patients as well as their QOL (VF-14 subscale score of reading ability).

Scientific Poster 254

Validation of the Burden Index of Caregivers for U.S. Patients With Severe Visual Impairment

Presenting Author: Puneet Singh Braich MD

Co-Author(s): Sai B Gandham MD, Maria Ciarleglio PhD, David Almeida MD PhD MBA

Purpose: To validate a novel care burden scale for the caregivers of patients with severe visual impairment in the United States. **Methods:** The Burden Index of Caregivers (BIC) was completed by 463 caregivers of legally blind patients in the United States. Validity of the instrument was compared to the Short Form-8, the Epidemiologic Depression Scale (CES-D), and the Zarit Burden Interview (ZBI). Reliability was performed by retesting respondents after 3 weeks. **Results:** Validity assessments showed adequate to strong correlations between BIC and the 3 instruments mentioned above ($r = 0.54$, $r = 0.63$, $r = 0.81$, respectively). The intraclass correlation coefficient was 0.82. **Conclusion:** The BIC is reliable and valid for assessing the burden among caregivers of patients with visual impairment.

Scientific Poster 255

Educational and Vision-Assistive Smartphone Apps for Patients: A Quantitative Evaluation

Presenting Author: Stephanie N Kletke

Co-Author(s): Feisal A Adatia MD*

Purpose: To identify and evaluate educational and vision-assistive smartphone apps for patients. **Methods:** iPhone and Android webstores were searched. Quantitative evaluation was performed using the Quality Component Scoring system (QCS), Technical Component Score system (TCS) for educational apps, and usability parameters for assistive apps. **Results:** 200 apps (173 vision assistive, 27 educational) were included. Assistive apps had a combined QCS/usability score of 13.38 ± 3.04 (max score: 23). Magnifiers (49%) and accessibility-related (20%) were most common. Combined QCS/TCS for educational apps was 14.15 ± 6.37 (max score: 29). Text-based (63%) and video/audio-based (15%) were most common. **Conclusion:** This study will allow patients to access apps, and physicians to make recommendations.



Video Program

Saturday – Tuesday, Nov. 16 - 19

Best of Show Videos

This year's Video Program comprises 66 videos. The "Best of Show" award winners are indicated by a 🏆.

Videos on Demand

Hall C, Booth 100

All videos are available to view at your convenience at the Videos on Demand computer terminals. This service is also available through the Mobile Meeting Guide, www.aao.org/mobile, or on the Academy's website, www.aao.org/meeting-resources. After Dec. 1 view Videos online: www.aao.org/aao-archives.

Learning Lounge

Hall G, Booth 3647

The Learning Lounge is hosting several "At the Movies" sessions screening scientific videos from the Video Program with the Producers on hand to discuss. A full schedule is available on page page 246 or through the Mobile Meeting Guide, www.aao.org/mobile.

Selection Committees

The Annual Meeting Program Committee selected all videos. See page page 33 for committee details.

★ Video #1

Lessons Learned: Complications of Glued IOL

*Sr. Producer: Athiya Agarwal MD**

Glued IOL is a technique to fix a secondary IOL in eyes without any capsule. Complications are part and parcel of any procedure, and we would like to highlight the complications in this technique and how to manage them.

Video #2

Glued IOL Scaffold

*Sr. Producer: Athiya Agarwal MD**

Glued IOL scaffold helps manage nuclear fragments if one has got a posterior capsular rupture. It combines the IOL scaffold and the glued IOL technique.

Video #3

Traumatic Cataract: Managing Vitreous Prolapse

*Sr. Producer: David F Chang MD**

This case of a traumatic cataract with a truncated lens equator demonstrates several pearls regarding the prevention and management of vitreous prolapse. A dispersive ophthalmic viscosurgical device can be used to the wall of the area of zonular dialysis, and capsule retractors help to prevent further zonular dialysis. Bimanual irrigation-aspiration dissociates the infusion and aspiration ports to minimize posterior misdirection of irrigation fluid. Following insertion of a capsular tension ring, sulcus placement of a 3-piece IOL with continuous curvilinear capsulorhexis capture ensures IOL stability and centration. Finally, triamcinolone staining reveals occult vitreous prolapse that can be managed with a pars plana anterior vitrectomy to remove and prevent further vitreous prolapse into the anterior chamber.

Video #4

An Unsung Hero—Hydrodissection in Cataract Surgery

Sr. Producer: Arup Chakrabarti MBBS

Co-Producer(s): Sonia Rani John MS, Meena Chakrabarti MBBS

Hydrodissection, an unsung hero in the game of phaco, plays a crucial role in the overall safety and success of the procedure. This film will trace the evolution of hydrodissection, teach instrumentation, correct techniques, and subtle maneuvers to achieve a successful hydrodissection in various types of cataracts. The difficulties, potential complications and their solutions will also be demonstrated. After watching this film a novice surgeon will be able to perform hydrodissection successfully in all his cases, and will learn of cases where this step is contraindicated and how to deal with complications.

★ Video #5

Napkins and Postage Stamps: The Femtosecond Laser Capsulotomy

*Sr. Producer: Robert P Rivera MD**

*Co-Producer(s): Phillip Hoopes MD**

This video examines the different types of anterior capsulotomies that we observed were created by the two femtosecond cataract laser systems we acquired in our practice, the Alcon LenSx and the Optimedica Catalys Precision Laser System. Using the analogy of napkins and postage stamps, complete free-floating capsulotomies are shown to be comparable to the napkin, while incomplete capsulotomies with tags are better compared to postage stamps. Reasons for incomplete capsulotomies are further explored and described.

Video #6

Novel Combination of Femtosecond Laser and Nanosecond Laser Completion of Bladeless Clear Cornea Cataract Extraction

*Sr. Producer: A John Kanellopoulos MD**

*Co-Producer(s): George Asimellis PhD**

Purpose: Presentation and safety evaluation of this novel combination.

Methods: Cornea incisions, capsulorhexis, and lens fragmentation performed with the LenSx. Quadrants were viscoelastically hydrodissected. The Cetus nanolaser probe fragmented and removed the quadrants within the iris plane/anterior chamber. **Results:** Uncorrected distance visual acuity improved from 20/100 to 20/20; corrected distance visual acuity from 20/40 to 20/15; spherical equivalent from 3.7 to 0.5 D; cylinder, -2.25 to -0.55 D; capsulorhexis diameter, 5.0 mm; ECC, from 1,950 to 1,850; and mean energy used by nanolaser, 0.8 J. **Conclusions:** This novel, all-laser surgery appears safe and effective, with significantly less energy compared with standard phacoemulsification and no thermal exposure within the main corneal incision.

Video #7

Reduction of Femtosecond Astigmatic Keratotomy Regression With Combined Simultaneous High-Fluence Corneal Collagen Cross-Linking: A Novel Refractive Procedure

Sr. Producer: Ioanna Kontari

*Co-Producer(s): A John Kanellopoulos MD**

Purpose: Safety, efficacy, and clinical parameters evaluation of high-fluence corneal collagen cross-linking (hfCXL). **Methods:** Fifteen eyes evaluated for vision, refraction, cylinder, and cylinder change. Two 30-degree arcuate optical coherence tomography-guided femtosecond astigmatic keratotomy (fsAK) incisions performed with the LenSx laser (7-mm optical zone, 85 percent depth). Following manual incision separation with Sinsky hook, one drop of 0.1 percent riboflavin was administered in one incision, with 60 seconds of soak. **Results:** CXL incisions statistically significant in meridional astigmatic change to the non-CXL incisions—day 1 (2.25 to 1.75 D), week 1 (2.25 to 1.65 D), month 1 (2.1 to 1.45 D), and month 3 (2.05 to 1.25 D). **Conclusions:** hfCXL significantly enhances fsAK efficacy, allowing for smaller arc, treatment, higher stability, and lesser symptoms.

Video #8

21st-Century COAX: New-Generation Phacoemulsification

Sr. Producer: Arun K Galli Lakshmi Narayanan MBBS

Co-Producer(s): Sivagnanam Subbiah

In recent years, there has been an increased concern among ophthalmologists about the phacoemulsification incision stability in a standard 2.8-mm incision, and increasing evidence indicates that smaller microcoaxial phaco incisions made with 1.8- and 2.2-mm-sized blades offer greater ocular stability. This video explains how to optimize the incision size of microcoaxial phaco surgery and also emphasizes the understanding of 1.8- and 2.2-mm microphacoemulsification by analyzing various aspects, such as the active and passive wound size measurements, fluidics behavior, and the procedure to implant microincision IOLs. To technically analyze these microincisions, a computational fluid dynamics study is also performed with different input parameters applied in a specialized software.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

Video #9

The Road Not Taken

*Sr. Producer: Abhay Raghukant Vasavada MBBS FRCS**

*Co-Producer(s): Viraj A Vasavada MD**, Shetal Raj MD, Mamidipudi Praveen DO**, Samaresh Srivastava BMBS MS, Vandana Nath***

In the eventuality of a posterior capsule rupture (PCR), anterior segment surgeons usually perform a limbal anterior vitrectomy. This film highlights the value of the pars plana approach for vitrectomy in the event of a PCR and also guides the anterior segment surgeon stepwise to safely perform pars plana vitrectomy.

Video #10

Temporary Haptic Externalization and Double-Point Fixation to Enhance Stabilization in IOL Scleral Fixation

Sr. Producer: Kyu Hwan Jang MD

Co-Producer(s): Joo Young Shin MD, Hum Chung MD, Jang Won Huh

Two strands of 10-0 Prolene were threaded through two points 2 mm from the corneal limbus and 2 mm from each other at 12 to 6 o'clock. The 12 o'clock strands were pulled out through a 9 o'clock clear corneal incision, and the 6 o'clock strands through a 3 o'clock incision. The IOL was injected using an injector, and the haptics were partially externalized at each incision. The Prolene strands were fixed on the haptics at two points 2 mm apart, respectively. The IOL was inserted and fixed, and the lens showed good centering and minimal tilting. Lens astigmatism was significantly smaller than conventional single-point fixation. By double-point fixation, lens tilting can be minimized, and the possibility of IOL dislocation in the long term may be decreased.

Video #11

Holistic Approach in the Management of Pediatric Cataract

Sr. Producer: Muralidhar Ramappa MBBS

Co-Producer(s): Amit Gupta MD, Sunita Chaurasia MD, Shobha Mocherla

This video highlights the detailed preoperative evaluation of the morphology of cataract and underlying systemic disorder, if any, the surgical options indicated for different types of cataract, postoperative care, and early vision rehabilitation. The indication, timing of surgical intervention, appropriate surgical technique, types of IOLs, timing of IOL implantation, and considerations for primary posterior capsulorhexis with anterior vitrectomy are presented as an algorithm.

★ Video #12

Pearls to Shorten the Learning Curve for the Novice Femtosecond Laser Cataract Surgeon

Sr. Producer: Dilraj Singh Grewal MBBS

*Co-Producer(s): Surendra Basti MBBS**

Femtosecond cataract surgery is an important recent advance, with the potential to provide enhanced safety and improved outcomes. Despite the semiautomated nature of the procedure, there is a learning curve for both experienced and novice cataract surgeons transitioning to this technology. In this video, we demonstrate potential difficulties with patient positioning, performing the laser procedure, and cataract removal following laser lens fragmentation. We describe our modifications to different stages of the surgical procedure, along with their rationale. Knowledge about these pearls and pitfalls will shorten the learning curve and avoid undue complications.

Video #13

Femtosecond Laser-Assisted Cataract Surgery in Presence of a Hydrogel Intracorneal Inlay

*Sr. Producer: Gregory Parkhurst MD**

The patient had a Raindrop hydrogel inlay (ReVision Optics, Lake Forest, CA) in their nondominant eye for three years with uncorrected distance visual acuity (UDVA) and uncorrected near visual acuity (UNVA) of 20/20 and 20/32, respectively. The patient experienced glare and halos due to cataract. Following IOL power selection biometry, a 21-D monofocal IOL was implanted in the inlay eye after performing the incision, rhexis, and lenticular fragmentation using a femtosecond laser (Alcon LenSx, Fort Worth, TX). UDVA and UNVA at one-month postop were 20/25 and J2, with excellent patient satisfaction. The transparent Raindrop corneal inlay did not impede the cataract surgical procedure using femtosecond laser technology.

★ Video #14

T-Fixation Technique Used for Intrasccleral Haptic Fixation of Posterior Chamber IOL

Sr. Producer: Toshihiko Ohta MD PhD

We report a new surgical technique that allows intrasccleral fixation of a posterior chamber IOL without sutures. The technique (the T-fixation technique) does not involve complicated intraocular manipulation and achieves safe, sutureless fixation. First, a T-shaped incision is made in the sclera and a 23-gauge microvitrectomy (MVR) knife is used to create the sclerotomy instead of a needle. The T-shaped incision eliminates the need to raise a lamellar scleral flap, while performing sclerotomy with the 23-gauge MVR knife simplifies extraction of the haptic and greatly improves wound closure. This technique is a method that achieves both anatomical and optical stability.

Video #15

Spider IRIS

Sr. Producer: Amina Berraho MD

*Co-Producer(s): Selmane Tabetaoul MD DOMS, Bekkay Rezzoug MD***

Two cases with the obturant form of persistent pupillary membrane are reported, to which an early surgical excision has been recommended in order to avoid deprivation amblyopia. This surgical technique is simple and consists of realizing clear corneal wounds. We will try to describe a safe method to remove the pupillary membrane by using vitreoretinal scissors after it has been elevated with viscoelastic.

Video #16

Small Corneal Lesions: Big Problems for Premium IOL Surgeons!

*Sr. Producer: Samar K Basak MD DNB MBBS**

This video demonstrates two important small corneal problems that may be missed by cataract surgeons during routine examination. These are epithelial basement membrane dystrophy and Salzmann nodular degeneration. These so-called small lesions are important, because they can give rise to faulty IOL power calculations and faulty axis of corneal cylinder, which are so important for premium and toric IOL implantation in phacoemulsification. This video also shares tips on how to treat these conditions for the general ophthalmologists.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

Video #17

Simple Limbal Epithelial Transplant (S.L.E.T): Simple Answer to a Difficult Problem

Sr. Producer: Santanu Mitra MBBS

*Co-Producer(s): Samar K Basak MD DNB MBBS**

This video demonstrates the autologous simple limbal epithelial transplant in unilateral limbal stem cell deficiency diseases. A block of 3- x 2-mm limbal tissue is taken from the contralateral eye. This tissue is then cut into eight or more smaller pieces. The surface of diseased cornea is clearly dissected. First, amniotic membrane is pasted with fibrin glue on the cleared surface. Fibrin glue is again spread over the amniotic membrane. Small bits of limbal tissue are placed all over the cornea closer to the limbus. At the end of the procedure, a bandage contact lens is given. This procedure is a very simple one-stage, economical procedure compared with ex vivo cultivation of limbal cells. The results are quite satisfactory.

Video #18

Live Floating Larva in Anterior Chamber

Sr. Producer: Hamidreza Hasani MD

Co-Producer(s): Mohammad Reza Jafarinassab MD, Roghiyeh Shamsoddinimotlagh

Purpose: To describe an interesting case with a live floating larva in anterior chamber. **Case report:** A 12-year-old boy presented with blurred vision and red eye since some weeks ago following swimming in the river. In ophthalmic examination, a conjunctival redness and a live floating micro-organism were seen in slit-lamp biomicroscopy. Other exams were normal. Under general anesthesia, first, intracameral acetylcholine (Miochol) was injected to induce miosis to prevent larval migration into posterior chamber, which led to larval immobilization and death, and then it was removed from the eye. **Conclusion:** It is recommended to be careful in ocular exam to explore any probable foreign body, including live larva intracamerally, especially in pediatric group patients.

Video #19

New Technique for the Safe Creation of a Big Bubble in Deep Anterior Lamellar Keratoplasty

*Sr. Producer: Jorge L Alio MD PhD**

Co-Producer(s): Felipe A Soria MD

Achieving a big bubble during a deep anterior lamellar keratoplasty procedure through a clear cornea is still a blind maneuver, especially when lacking certainty about where the air is injected and the depth of the injection. The color differences of the limbal region occur because of interdigitation of the corneal fibers into scleral fibers, which may help to perform the air injection in a safe manner. The junction of blue and white zones of the limbus demarcates the mid-limbus, where it overlies the Schwalbe line. It is in this anatomical site where we can have a greater certainty of where Descemet's membrane is located in order to achieve a big bubble.

Video #20

Pearls and Pitfalls of Descemet's Membrane Endothelial Keratoplasty

*Sr. Producer: Robert L. Schultze MD**

Co-Producer(s): Adam G Chun MD, Amit Todani MD

Purpose: To demonstrate the surgical pearls and complications encountered in the first 10 Descemet's membrane endothelial keratoplasty (DMEK) cases performed by the author. **Methods:** Surgical video will demonstrate eye bank prestripped tissue inserted with a novel, inexpensive shooter devised by the authors utilizing common equipment already readily available

(Schultze Shooter). **Results:** Evolution of the author's surgical technique will be discussed along with complications encountered along the way. **Conclusions:** DMEK represents a promising future with a substantial learning curve. Despite impressive clinical outcomes, the procedure remains technically challenging and demands open exchange of information among surgeons to improve outcomes and minimize complications.

Video #21

Evaluation of Cornea Topography, Astigmatism With the Use of Tissue Adhesive in Sutureless DSAEK

Sr. Producer: Ioanna Kontari

*Co-Producer(s): A John Kanellopoulos MD**

Purpose: Tissue adhesive (TA) (ReSure Adherent Ocular Bandage) in Descemet's stripping automated endothelial keratoplasty: safety and efficacy. **Methods:** Twenty-three consecutive cases, randomly assigned. In group A, sutures were employed to close the cornea, and in group B, the TA was used. All cases were evaluated for uncorrected distance visual acuity, corrected distance visual acuity, refraction, and topographic cylinder. Follow-up was eight to 21 months. **Results:** Cylinder change was 2.2 D for group A and 1.1D for group B. There were two repositionings in group A only. **Conclusions:** TA may be a valuable adjunct in clear-cornea cataract surgery in reducing astigmatic change, graft dislocation, and the risk of endophthalmitis due to early wound ingress.

Video #22

Long-Term Follow-Up of the Athens Protocol: Combined Topography-Guided Partial PRK and CXL in 212 Keratoconus Eyes

*Sr. Producer: George Asimellis PhD**

*Co-Producer(s): A John Kanellopoulos MD**

Purpose: Safety, efficacy, and potential complications evaluation of the Athens protocol (AP). **Methods:** Two hundred and twelve keratoconus cases treated with AP (combined topo-guided photorefractive keratectomy, higher fluence corneal collagen cross-linking, 10 mW/cm², 10 minutes) were evaluated over 72 months for uncorrected distance visual acuity (UDVA), corrected distance visual acuity (CDVA), refractive error, keratometry, topometry, and pachymetry. **Results:** No further ectasia progression was encountered. UDVA improved from 0.3 to 0.5 and CDVA from 0.5 to 0.8; index of height decentration improved by 55 percent, spherical equivalent from -3.8 to -1.6 D, and mean keratometry from 51.5 to 47.5 D. Fifty percent of cases gained two, and 35 percent gained three lines. **Conclusion:** The AP appears safe and effective in halting ectasia progression and improving visual function.

Video #23

Extreme Toric IOLs for Keratoconus and Following Penetrating Keratoplasty

*Sr. Producer: Alejandro Navas MD**

Co-Producer(s): Arturo J Ramirez-Miranda MD, Diana F Rodriguez-Matilde MD, Angie De La Mota MD, Enrique O Graue Hernandez MD*

This video shows important concepts and considerations for the management of high-toricity (keratoconus and following keratoplasty) cases with in-the-bag IOLs. In these cases, we performed phacoemulsification and implanted hydrophilic acrylic plate with hydrophobic surface toric IOLs of up to 12 D of cylinder (AT TORBI 709M, Carl Zeiss Meditec, Jena, Germany), obtaining excellent outcomes. In addition to higher toric IOL calculations and surgical methods, the video emphasizes the proper and strict patient selection criteria.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

Video #24

Descemet's Membrane Detachment Secondary to Deep Blue Dot Degeneration Seen in Saudi Arabia

Sr. Producer: Ali A AlRajhi MD

Deep blue dot degeneration is a new corneal entity characterized by the presence of histologically proven amyloid present between Descemet's membrane (DM) and stroma that has never been described before. This material predisposes for easy DM detachment during or following phacoemulsification and deep lamellar keratoplasty. This video will illustrate these findings clinically and pathologically and demonstrate video cases with spontaneous DM detachment and attachment. Recognition of this entity will help to avoid or manage this complication.

Video #25

Cut and Paste: Sutureless Peripheral Lamellar Keratoplasty for Limbal Dermoid

Sr. Producer: Himanshu P Matalia MBBS

*Co-Producer(s): Ashwini Ranganath, Anupama Kumar**, Sharon D'Souza MBBS, Rohit Shetty MD MBBS*

This video demonstrates technique and outcome of limbal dermoid excision with sutureless peripheral lamellar keratoplasty. Following peritomy around the lesion, partial trephination of the dermoid was done. Lamellar dissection was done with crescent blade. Donor button was prepared with the same diameter as recipient bed with automated microkeratome used in Descemet's stripping automated endothelial keratoplasty. Donor was secured to recipient bed with fibrin glue. Bandage contact lens was placed and removed after 15 days. This technique provided better cosmetic outcome compared with other methods. Thus, sutureless peripheral lamellar keratoplasty is a safe and cosmetic procedure for dermoid management.

Video #26

A Mysterious, Apparently Conjunctival, Cyst in Two Unrelated Children

Sr. Producer: Fathy F Markos MD FRCS

Two unrelated children presented with a unilateral, progressively enlarging mass on the white of their eyes. A tense cystic lesion close to the limbus was found, with no signs of inflammation or excessive vascularization. Ultrasound biomicroscopy was done. Differential diagnosis was a long list. Surgical exposure showed an identical picture in both cases. It was found that each of these lesions was an intrascleral cyst with an intraocular communication through a minute track. External scleral cyst wall was surgically shortened and tightened, and the track was closed. A pathologist reported normal scleral tissue. Both kids did very well; my theory is that these were firework injuries. The intraocular communication was created by a micro-explosion.

Video #27

Deep Anterior Lamellar Keratoplasty in Children

Sr. Producer: Muralidhar Ramappa MBBS

Co-Producer(s): Sunita Chaurasia MD, Shobha Mocherla

This video illustrates the various surgical techniques in the management of eyes with anterior corneal opacity and highlights the indication, timing of surgical intervention, appropriate surgical technique, intraoperative challenges, postoperative care, and early visual rehabilitation.

Video #28

Descemet's Stripping Endothelial Keratoplasty in Pediatric Age Group

Sr. Producer: Muralidhar Ramappa MBBS

Co-Producer(s): Sunita Chaurasia MD, Shobha Mocherla

This video illustrates the various surgical techniques in the management of eyes with endothelial dysfunction. The preoperative evaluation and surgical considerations for the better surgical outcomes are highlighted.

★ Video #29

Small Bubble Technique for Deep Anterior Lamellar Keratoplasty

*Sr. Producer: Massimo Busin MD**

Co-Producer(s): Paolo Santorum MD, Stefano DeAngelis MD, Vincenzo Scorgia MD

The "small bubble" deep anterior lamellar keratoplasty includes microkeratome-assisted removal with a 200-mm head of a 9-mm anterior lamella, small bubble creation in the central 6 mm of the residual stromal bed, excision of the dissected stroma up to Descemet's membrane, and suturing in place of a 9-mm donor anterior lamella prepared with a 300-mm microkeratome head. This novel technique shares the optic advantages of a 9-mm diameter graft and the reduced risk of perforation of a 6-mm area of Descemet baring. If necessary, conversion to mushroom keratoplasty with a 6-mm stem is possible instead of performing a 9-mm penetrating keratoplasty.

Video #30

Dia-DALK: Holy Grail in Surgical Management of Keratoconus?

Sr. Producer: Rasik B Vajpayee MD

Co-Producer(s): Namrata Sharma MD MBBS, Prafulla Maharana MD, Tushar Agarwal MD, Vishal Jhanji MBBS, Ross B MacIntyre MD

We describe a new technique of diamond knife-assisted deep anterior lamellar keratoplasty (Dia-DALK) in keratoconus. A circular 8-mm mark is made on the host cornea. Intraoperative ultrasonic pachymetry is done between the 11 and 1 o'clock positions. Diamond knife set at depth 30 mm less than this is used to make an incision of 2 mm, which is extended circumferentially. Centripetal lamellar dissection is done to excise central stromal disc, leaving a thin residual stromal bed. A 0.25-mm, oversized donor button is then sutured. Dia-DALK was done successfully in 19 eyes with no intraoperative problems. Postoperative astigmatism was 3 D in all eyes. Dia-DALK is safe and predictable, has a minimal learning curve, and can be done by novice corneal surgeons.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

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★ Video #31

Handling Descemet's Membrane Endothelial Keratoplasty

*Sr. Producer: Massimo Busin MD**

Co-Producer(s): Paolo Santorum MD, Vincenzo Scordia MD

Descemet's membrane endothelial keratoplasty (DMEK) is modified to include pneumatic dissection of the donor endothelium and Descemet, preparation of a 1-mm-square handle of deep stroma attached to the DMEK graft (diameter = 8.5 mm), pulling the handle of the graft loaded in a cartridge inserted into a nasal incision across the anterior chamber and through the temporal 1-mm side entry, from which it is left protruding, easy display and attachment of the endothelial graft anchored to the recipient cornea, and removal of the handle and air-tight suturing of all the incisions. Handling DMEK facilitates graft delivery, unfolding, and precise placement.

★ Video #32

Perfect Pannus Excision: Step One Towards Successful Surgery in Severe Ocular Surface Disease

Co-Producer(s): Virender S Sangwan MBBS, Somasheila I Murthy MD

Pannus dissection is the most crucial step of surgery in end-stage ocular surface disorders with limbal stem cell deficiency such as chemical and thermal injury, Steven-Johnson syndrome, and ocular cicatricial pemphigoid. The various steps of pannus dissection, including symblepharon release, finding the correct plane of pannus, removal of any residual chemical or foreign material, and accessing the thickness of cornea to prevent intraoperative perforation, are demonstrated. After achieving a perfect dissection of pannus, human amniotic membrane with the cultivated limbal epithelial cells or a direct, simple limbal epithelial transplant can then be performed.

Video #33

Leaking Blebs: Grafts, Patches, and Rotational Flaps

*Sr. Producer: Amar Agarwal MD**

Leaking blebs are a tricky situation to be in. One can treat them by grafts or patches. A new technique is to use a rotational scleral flap to seal the leak.

Video #34

Ab Interno Removal of Malpositioned Ex-PRESS Shunt

*Sr. Producer: Davinder S Grover MD**

*Co-Producer(s): Ronald Leigh Fellman MD OCS**

The authors describe an ab interno technique for removal of a failed and/or malpositioned Ex-PRESS shunt in two cases. The first case had well-controlled IOP but developed debilitating ocular pain due to a malpositioned shunt. Following removal of the device, her pain was successfully treated and bleb function preserved. This technique was used in a second case with a failed bleb and a well-positioned device; the authors removed the shunt during another glaucoma procedure. In conclusion, ab interno removal of an Ex-PRESS shunt is a safe and effective method that allows for continued bleb function without disturbing the conjunctiva. We also describe a new finding, eye pain from the internal malposition of the shunt, which was completely relieved by the shunt's removal.

Video #35

Tectonic Scleral Autograft for Treatment of Mitomycin C Scleral Fistula

Sr. Producer: Juan Carlos Mesa Gutierrez MD

*Co-Producer(s): Jairo Enrique Hoyos Chacon MD, Antonio Rouras Lopez MD***

The authors report a surgical procedure for the correction of a scleral fistula in a patient with late hypotony secondary to mitomycin C in a previous deep sclerectomy (DS). A partial-thickness scleral graft using a 2-mm dermatological punch was harvested. Necrotic tissue lining the scleral fistula was excised with the same punch and the original DS flap sutured to the scleral graft. A double conjunctival flap covered the scleral graft. Patient's vision improved to 20/40, with an IOP of 10 mmHg. A functioning bleb was obtained from the first moment and maintained its function after 18 months' follow-up.

Video #36

Correlation Between Episcleral Venous Channel Outflow and Circumferential Extent of Canal-Based Surgery

*Sr. Producer: Ronald Leigh Fellman MD OCS**

*Co-Producer(s): Davinder S Grover MD**

Blebless canal procedures reduce IOP by increasing flow into the patient's natural collector system. We do not have a readily available method of evaluating flow into the aqueous collector channels as we do for external filtration, such as a bleb. The authors previously described the episcleral venous fluid wave (EFW), a surge of fluid seen in the episcleral veins during phacotrabectome, as a method to determine intraoperative patency of the collector system. The authors demonstrate the EFW and, in addition, show that it correlates with the extent of angle either cleaved open or stented during canal surgery. The EFW is a new method to visualize patency of the collector system at the time of canal-based surgery and may correlate with reduction in postoperative IOP.

Video #37

Baerveldt Tube Replacement Following Spontaneous Extrusion of the Intraocular Portion of the Tube

*Sr. Producer: Nicholas K Wride MBChB**

A Baerveldt tube had been placed in an eye with primary angle-closure glaucoma with a very shallow anterior chamber. The intraocular portion of the tube had spontaneously extruded, and cataract had developed. A second operation comprising phacoemulsification of the lens and replacement of the glaucoma drainage device with a new Baerveldt tube in the superotemporal quadrant was undertaken. Along with a description of the procedure, this video also demonstrates how to plan the removal of a glaucoma drainage device and when to consider this course of action.

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Video #38

Implantable Collamer Lens Explanation With Trabeculectomy

Sr. Producer: Senthil Sirisha

*Co-Producer(s): John Praveen Janjarapu MBBS MS, Pravin Vaddavalli MD, Chandra Shekhar Garudadri MD**

A 24 year old with a best-corrected vision of 20/20 developed secondary glaucoma following a fulminant course of postoperative inflammation after posterior chamber implantable collamer lens (ICL) implantation for correction of high myopia. The medically uncontrolled IOP necessitated explantation of ICL combined with trabeculectomy. Glaucoma, though rare, is a vision-threatening complication following ICL implantation. In this video, we demonstrate the management of this serious sight-threatening complication.

Video #39

Placement of Glaucoma Tube Implants in Patients With Conjunctival Adhesions or Scarring

*Sr. Producer: Alfred M Solish MD**

Many physicians avoid placement of tube implants in quadrants with scarring from previous surgery. In this video, I demonstrate a technique for successful placement of a tube implant (Baerveldt) in a patient with firm conjunctival/scleral adhesions secondary to uveitis. A previous attempt at filtration surgery by another surgeon was abandoned due to an inability to dissect a conjunctival flap. A split-thickness scleral dissection is made allowing the implant to be placed in its usual posterior location in the superotemporal quadrant.

Video #40

Ahmed Glaucoma Valve Implantation in Iridocorneal Endothelial Syndrome

Sr. Producer: Kumar Ravi

*Co-Producer(s): Nikhil Shreeram Choudhari, Chandra Shekhar Garudadri MD**

Implantation of an Ahmed glaucoma valve (AGV) in an eye with iridocorneal endothelial (ICE) syndrome is associated with difficulties. As a proliferating abnormal endothelial cell layer may hypothetically close the ostium and thereby reduce the success rate of trabeculectomy in ICE syndrome, AGV implantation may serve as a useful alternative in the management of glaucoma in ICE syndrome. The conservative management of wound dehiscence in the early postoperative period by the addition of oral doxycycline to the postoperative regimen is described.

Video #41

Malignant Glaucoma: Can It Be Benign?

Sr. Producer: Siddharth Dikshit

*Co-Producer(s): Senthil Sirisha, Chandra Shekhar Garudadri MD**

A shallow or flat anterior chamber following an intraocular surgery characterizes malignant glaucoma in the presence of patent iridotomy and absent suprachoroidal fluid, usually with high IOP. The condition is severe and progresses relentlessly, hence the name. Diagnosis and management of this condition is a big challenge. In this video, we demonstrate a simple approach to diagnose malignant glaucoma and also present a step-ladder approach, including antiglaucoma medications with cycloplegics for phakic eyes and laser capsulo-hyaloidotomy for pseudophakic eyes as the first-line modalities and vitrectomy with hyaloido-zonulo-capsulo-iridectomy and cyclophotocoagulation as second-line therapies for the successful management of malignant glaucoma.

★ Video #42

Conjunctival Melanoma: What You Should Know

Sr. Producer: Fairouz Puthiyapurayil Manjandavida MBBS

Co-Producer(s): Sara E Lally MD, Jerry A Shields MD, Carol L Shields MD

Conjunctival melanoma is a distinct entity in the group of ocular and adnexal melanoma. It can arise from primary acquired melanosis, nevus or de novo. Differentiation from other pigmented conjunctival lesion is essential. Conjunctival melanoma has high potential for regional and systemic metastasis. Overall, metastatic spread is 25 percent in 10 years and 30 percent in 15 years. This video illustrates the clinical presentations, warning signs for early detection, and meticulous surgical technique to prevent recurrences.

Video #43

Management of Exposed Porous Orbital Implants of Large Size

Sr. Producer: Junghyun Ahn MD

Co-Producer(s): Yoon-Duck Kim MD, Kyung In Woo MD

Exposure of porous orbital implants is the most frequent serious complication of porous implants after evisceration and enucleation. Even though every effort has to be made to salvage the exposed implant, removal of the entire implant is necessary to repair large, recurrent exposures, especially if infection is accompanied. For those cases, if adequate conjunctival tissues exist, we inserted secondary implant into intraconal space posterior to Tenon's capsule after removal of exposed implant. In cases of conjunctival insufficiency, we performed implant removal with dermis fat graft. We achieved a good result without further infection or re-exposure.

Video #44

Interpretation of Orbital CT Scan: Principles and Normal Anatomy

Sr. Producer: Aditi Pujari

*Co-Producer(s): Milind N Naik MBBS**, Swathi Kaliki MD*

Computed tomography (CT) is an indispensable imaging tool in the evaluation of orbital lesions. The use of thin sections with multiplanar scanning and three-dimensional reconstruction permits thorough evaluation of orbital pathology. For proper interpretation of abnormal findings, ophthalmologists should be well versed with the normal anatomic landmarks on a CT scan. This video introduces the novice ophthalmologist to the terminology and basics of orbital CT and the important normal anatomical structures of the orbit.

Video #45

Use the Ultrasonic Osteotome (Misonix Bone Scalpel) in the External Dacryocystorhinostomy

Sr. Producer: Eladio Chourio Ortiz MD

This is a conventional dacryocystorhinostomy variant that uses an ultrasonic osteotome. This innovative device allows the surgeon to perform precise cuts as bone thin as approximately 0.5 mm, while preserving the underlying soft tissue. This will potentially reduce the risk of damage to other tissues, reduce inflammation and intraoperative bleeding, and allow precise demarcation of the area you want to extract.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

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Video #46

Say Cheese! External Ophthalmic Photography: Doing It the Right Way

Sr. Producer: Akshay Gopinathan Nair MD

*Co-Producer(s): Swathi Kaliki MD, Milind N Naik MBBS***

External ophthalmic photography involves photographic documentation, which helps in preoperative planning, documentation of progression of a disease, teaching, publishing, and pre and postoperative comparisons. External photography in ophthalmic and facial plastic surgery, like any other specialty too, has standardized guidelines. Basic photography techniques, standardized and reproducible angles, such as frontal, oblique, and lateral views, and specific photographic angles for conditions such as ptosis and proptosis are shown in this video. Use of photography accessories, post-production, and a few tips on how to click good photographs in your examination room and achieve consistency in photography are also presented in this video.

Video #47

Clutch-and-Conquer Anterior Route Lensectomy

Sr. Producer: Bhamy Hariprasad Shenoy

Co-Producer(s): Maneck D Nicholson MD, Ramesh Kekunnaya MBBS MD

Lensectomy in children can be performed through the pars plana/pars plicata approach or the limbal/corneal approach. Pediatric anterior segment surgeons prefer a more familiar limbal approach. This video demonstrates our modification of the anterior route lensectomy, which involves clutching the lens by its capsule with a pediatric capsulorrhexis forceps and then conquering it with an automated vitrector. Lens clutching also helps in centering the lens, thereby facilitating a complete lensectomy. The clutch-and-conquer lensectomy is fast and efficient. No conjunctival incision is needed, and it causes minimal surgical trauma. This is an efficient technique for the management of pediatric spherophakia, microspherophakia, and ectopia lentis and is likely to lead to gratifying results.

Video #48

Cataract Surgery in Retinoblastoma: Tips and Technique

Sr. Producer: Shailja Tibrewal MS

Co-Producer(s): Ramesh Kekunnaya MBBS MD

Cataract is a common complication of treatment of retinoblastoma, especially following radiation therapy. Surgical removal of this cataract involves unique challenges. This video illustrates the surgical technique of cataract removal in retinoblastoma patients, including the necessary modifications of the standard pediatric cataract surgery. Additionally, it aims to educate the viewer about the indications and timing of surgery, preoperative assessment, intraoperative precautions, and postoperative care involved in the treatment of retinoblastoma cataracts. It provides useful practical tips in a simple fashion, knowledge of which can help avoid undue complications.

Video #49

Congenital Rubella Cataract: A Systematic Management Approach

Sr. Producer: Vivek Warkad

Co-Producer(s): Ramesh Kekunnaya MBBS MD

Pediatric cataract associated with any anomaly can challenge the best of surgeons. In this video, we shall demonstrate a systematic approach for the surgical management of congenital rubella cataract, including preoperative evaluation and postoperative care. Special emphasis is given to the modification of the standard technique of pediatric cataract surgery in difficult situations, such as microcornea, nondilating small pupil, absorbed cataract, fibrosed and calcified anterior and posterior capsule, and total milky white cataract, that may be encountered in this situation. This video will help the viewer to avoid needless complications and achieve successful outcomes.

Video #50

The Double Trouble in Pediatric Cataract Surgery

Sr. Producer: Shilpa Devidas Sonarkhan Sr MS

Co-Producer(s): Ramesh Kekunnaya MBBS MD

Lenticonus, both anterior and posterior, is not uncommon in pediatric patients. In these cases, high irregular astigmatism or cataract formation due to spontaneous rupture of the thin capsule need prompt surgical intervention. Also, surgical modifications are required, while performing anterior capsulorrhexis, using visco surgical devices, aspirating cortical matter, performing posterior capsulorrhexis, and implanting an IOL, to tackle problems caused by the thin, fragile, or pre-existing dehiscent anterior or posterior capsule. Modifications in the surgical technique in various cases of anterior and posterior lenticonus associated with cataract are demonstrated to enhance knowledge and help the surgeon achieve better surgical outcomes.

Video #51

Treatment of Posttraumatic Epithelial Ingrowth in Visual Axis Area Two Years After LASIK Surgery: A Challenging Case

Sr. Producer: Denise Wajnsztajn MD

Co-Producer(s): David Kohn MD, Joseph Frucht-Pery MD

A 44-year-old male had a penetrating trauma in the visual axis area two years after right-eye LASIK. He had photophobia, epithelial ingrowth in the visual axis area, and decrease of uncorrected visual acuity (UCVA) to 6/24. Surgical approach comprised partial lifting of the flap, scraping of the ingrowth, and suturing the flap to the cornea. To prevent the recurrence of the ingrowth through the cut, we placed alcohol 20 percent for 30 seconds over the epithelium in the central 5 mm of the flap. Sutures were removed after two weeks. After nine months, there was no recurrence of the ingrowth, UCVA improved to 6/9, and the best-corrected visual acuity to 6/7.5. Patient's symptoms resolved. Central posttraumatic epithelial ingrowth can be efficaciously treated using the presented surgical approach.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

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Video #52**Management of Epithelial Ingrowth After LASIK: Case-Based Scenarios***Sr. Producer: Jagadesh C Reddy MD**Co-Producer(s): Christopher Rapuano MD*, Huan N Pham MD, Pravin Vaddavalli MD*

LASIK involves the creation of a corneal stromal flap, which generates a unique set of potential problems, including epithelial ingrowth. Epithelial ingrowth occurs when epithelial cells are implanted or migrate under the stromal flap after LASIK. Epithelial ingrowth can be minimal, asymptomatic or large, and progressive. Surgical intervention usually involves mechanical removal of the ingrowth and replacement of the flap with or without sutures, resulting in elimination of the ingrowth and improved visual and discomfort symptoms, with a low chance of significant recurrence. In this video, we will be highlighting the risk factors, pattern of presentation, and invasive and noninvasive management options available for managing epithelial ingrowth after LASIK.

Video #53**Early Approach in Epithelial Ingrowth After LASIK***Sr. Producer: Luciano Sandrin MD**Co-Producer(s): Leda Das Neves Almeida Sandrin MD*

The objective of this video is to show an early approach in epithelial ingrowth cases. This consists of flap border lifting three or four days after the LASIK procedure with a 27-gauge sterile needle in order to take out the epithelial ingrowth. This procedure is performed in the office, using an anesthetic eyedrop. Results include low recurrence, minimal trauma during the lifting, and easy extraction of epithelial tissue.

Video #54**Autofluorescence Basics and Applications***Sr. Producer: Jay K Chhablani MD**Co-Producer(s): Deepa Muthugaduru Jagadish MS, Priyanka Gogte Jr*

Fundus autofluorescence imaging is a novel noninvasive imaging method that allows one to assess the status of the retinal pigment epithelium (RPE). Fundus autofluorescence is affected by a balance between accumulation and clearance of lipofuscin in RPE cells. The confocal scanning laser ophthalmoscope overcomes the limitations of a conventional camera and achieves high-quality autofluorescence images. This video describes the basic principle, interpretation of autofluorescence findings, and its application in the management of various retinal diseases along with its limitations.

Video #55**Bimanual Vitrectomy for Diabetic Combined Retinal Detachment***Sr. Producer: Jay K Chhablani MD**Co-Producer(s): Riddhima Suneel Deshpande, Nitin Ganesh Dhira DOMS MBBS***

In advanced proliferative diabetic retinopathy, conventional three-port pars plana vitrectomy may lead to incomplete removal of fibrovascular membrane and is associated with bleeding and iatrogenic retinal breaks. The safer alternative is to use bimanual vitrectomy with chandelier light and two instruments, forceps and scissors, to segment and delaminate firmly adherent diabetic membranes with least trauma to thin retina. This video shows bimanual vitrectomy in an eye with combined retinal detachment in a diabetic subject leading to successful attachment of the retina.

★ Video #56**OutVitting the Humor! The Art of PVD Induction***Sr. Producer: Manish Nagpal MD***Co-Producer(s): Navneet Mehrotra, Sidharth Satyendrakumar Bhardwaj MS***

Posterior vitreous detachment (PVD) has become an integral aspect of vitreous surgery. Successful detachment of the hyaloid allows for complete removal of the vitreous and prevents future complications and failures related to the gel remnants. The outcome of the surgery depends on the accomplishment of this surgical step. This video demonstrates the techniques used for PVD creation in a variety of conditions, such as macular holes, vitreous macular traction, detached retina, diabetic retinopathy, etc.

Video #57**When Death Race Followed Boston K- Pro-1***Sr. Producer: Subhendu K Boral MBBS**Co-Producer(s): Samar K Basak MD DNB MBBS**

This video describes the hurdles in managing two cases of complex retinal detachments post Boston keratoprosthesis-1. Challenges in these post-Boston K-pro-1 eyes were thin sclera, recurrent hypotony, and limited visibility. Hurdles faced included suprachoroidal infusion, intraoperative recurrent choroidal detachments (fluid leaks around the cannulas), retroprosthetic membrane, and difficulty in base excision. Intravitreal injection of saline built up IOP to introduce infusion tip. Membranectomy was performed, wide-angle visualization systems were used, and bimanual approaches were taken. All ports had to be sutured. One case resulted in phthisical eye, and another gained finger-counting vision at six months' follow-up.

Video #58**Surgical Treatment of Retinal Detachment After Posttraumatic Expulsive Suprachoroidal Hemorrhage***Sr. Producer: Jeroni Nadal Reus MD*

We present the case of a posttraumatic expulsive hemorrhage with retinal and vitreous herniation and total retinal detachment (in an ophthalmologist who underwent penetrating keratoplasty in both eyes 30 years ago for keratoconus). We analyze the various surgical steps and procedures that we performed to reattach the retina and treat the complications encountered postoperatively.

Video #59**Transscleral 9-0 Prolene Fixation of In-the-Bag Dislocated Silicone Plate Posterior Chamber IOL***Sr. Producer: Steven M Cohen MD*

This 85-year-old woman has an in-the-bag dislocated silicone plate posterior chamber IOL in her right eye. She has chronic macular edema in her fellow eye, which, five years previously, had the same problem, and underwent a pars plana vitrectomy, removal of the dislocated lens, and placement of an anterior chamber IOL. The video shows the surgery in the right eye: a pars plana vitrectomy and transscleral 9-0 Prolene fixation of the dislocated lens. The silicone plate lens is particularly suited to this fixation technique because the positioning holes in the lens can be used to reliably secure the 9-0 Prolene sutures. The sutures are passed through 23-gauge sclerotomies, and the knots securing the 9-0 Prolene suture are rotated into the eye.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

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Video #60

Unfolding a Macular Fold: A Clinical Challenge

Sr. Producer: Avindra Gupta MS

*Co-Producer(s): Lalit Verma MD, Arindam Chakravarti, Dinesh Talwar MBBS MD**, Hem K Tewari MBBS*

A macular fold is a rare complication of detachment surgery. Treatment is not defined in literature. We will show a unique video of unfolding the fold. After doing a total vitrectomy, internal limiting membrane was peeled to remove any preretinal fibrosis. The retina was then detached with balanced salt solution. Once the macula was detached, we tried to flatten the retina with perfluorocarbon liquid but did not succeed. So we used the bimanual stretching of the retina with a diamond-dusted membrane scraper in the opposite direction under torpedo light to unfold the retina. This technique of unfolding the macular fold is, to date, not reported in the literature.

Video #61

Vitrectomy With Choroid-RPE Patch Graft for Massive Hemorrhage Associated With Neovascular ARMD

*Sr. Producer: Sengul C Ozdek MD**

Co-Producer(s): Berati Hasanreisoglu MD

This is a video of a patient with age-related macular degeneration who had a macular scar in his right eye and a new subretinal massive hemorrhage causing hemorrhagic retinal detachment in his left eye, which used to be his better eye. A cataract surgery combined with pars plana vitrectomy with 360-degree retinotomy, removal of subretinal hemorrhage, blood clots and choroidal neovascular membrane, and choroid-retina pigment epithelial (RPE) patch graft was performed. The postoperative fundus pictures, together with optical coherence tomography (demonstrating the graft), indocyanine green (demonstrating the vascularization of the graft), and autofluorescence (demonstrating the healthy RPE) of the eye, will be presented with the video. The patient's visual acuity is 20/60 for far and 20/20 with +4.00 for near at the last visit.

Video #62

First Argus II Implant Performed in the Middle East

*Sr. Producer: J Fernando Arevalo MD FACS**

Co-Producer(s): Saba Al Rashaed MD

A retinal prosthesis was implanted for the first time in the Middle East on Feb. 2, 2013 in a patient at the King Khaled Eye Specialist Hospital in Riyadh, Saudi Arabia. We performed the implantation of the Argus II, and the patient, who presented with an advanced form of retinitis pigmentosa, is progressing well. At two months, he is already able to see doors, people passing by, and buildings outside. The video will demonstrate the first procedure performed in the Middle East.

Video #63

Ultrasound B-Scan: Different Cases, Ultrasonic Characteristics, and Their Interpretation

Sr. Producer: Devendra Venkatramani

Co-Producer(s): Subhadra Jalali MS, Jay K Chhablani MD

B-scan ultrasonography is a noninvasive and commonly used diagnostic tool in the clinical assessment of a variety of ocular and orbital diseases. With proper utilization of the ultrasound technique, a vast amount of information can be gathered, which is not possible with clinical examination alone. The echographic examination of the human eye and orbit is described, and a general understanding of the echographic characteristics of various ocular pathologies are illustrated.

Video #64

Bimanual Removal of Large Foreign Bodies With the Use of a Suture Loop and a Newly Designed Foreign Body Forceps

Sr. Producer: Nur Acar MD

Intraocular foreign bodies (IOFBs) can present in various shapes and sizes. Several instruments available can be sometimes limited. In this video, a suture loop consisting of a 20-gauge angiocatheter and 6-0 polypropylene suture is shown. Its construction is very simple. Also, a newly designed IOFB forceps is demonstrated. This suture loop effectively grasps large IOFBs, both metallic and nonmetallic. The use of a bimanual technique in which the IOFB is surrounded with the suture loop with a forceps provides better control and enables the surgeon to place the suture loop along the desired axis of the IOFB so that it can be removed through a shorter incision. This may decrease surgical trauma at the incision site. The newly designed forceps adds additional control and safety for the surgeon.

Video #65

Combined Peeling of Epiretinal and Internal Limiting Membranes in One Step After Dying With Brilliant and Trypan Blue Mixture

Sr. Producer: Nur Acar MD

Epiretinal membranes (ERMs) are sometimes multilayered, which requires peeling more than once during vitrectomy. Different dyes with multiple times of injections may be used to stain ERM and internal limiting membrane (ILM). In this video, combined peeling of ERM and ILMs in a single step after dying with brilliant and trypan blue mixture in ERMs is demonstrated. The main objective is to decrease mechanical trauma of sequential peeling while avoiding injecting dyes more than once to eliminate potential concern of toxicity for exposed retina. After a single injection, peeling of ILM and ERM is started somewhere near the arcades and completed in the macula. The technique is found to be effective, avoiding the recurrence of ERMs and injecting dyes more than once during the surgery.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.

No asterisk indicates that the presenter has no financial interest.

Video #66

Posttraumatic Aniridia: Artificial Iris Combined With IOL Implantation

Sr. Producer: Cesare Forlini MD

Co-Producer(s): Matteo Forlini MD

In case of posttraumatic aniridia or large iris coloboma, the artificial iris offers us the best aesthetic solution. The video shows our first experience using the artificial iris and our way to correct the refraction at the same time. After our first experience with an unsuccessful iris claw implant, we found the solution with a foldable IOL sutured on the artificial iris surface. The video shows our strategy to suture a foldable IOL on the back surface of the artificial iris to achieve a cosmetic and refractive result. In this way, we can obtain a good anatomical, functional, and aesthetic result.

Video #67

What Happens When You Have a Break During ROP Surgery?

*Sr. Producer: Sengul C Ozdek MD**

Co-Producer(s): Berati Hasanreisoglu MD

This video is about vitreoretinal surgery for retinopathy of prematurity (ROP)-related retinal detachment. We will present how to handle a retinal break, which complicated a three-port 23-gauge vitrectomy for stage 4a-4b ROP surgery. The most important determinant for the result is the size and place of the iatrogenic break; if it is small and on a silent area, it can be managed even with a gas tamponade; however, if it is large and on the area of the most prominent fibrovascular proliferation and traction, it is very unlikely to manage the break and have the retina attached.

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.
No asterisk indicates that the presenter has no financial interest.

Only at the 2013 Annual Meeting

Personalize Videos at the Academy's Video Production Studio

Videos enhance patient education and boost practice promotion.

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AAOE is a division of the American Academy of Ophthalmology and the leading practice management and coding resource in ophthalmology.

SAVE THE DATE!

There's strength in numbers. Lobby on Capitol Hill for ophthalmology's top legislative issues including advocating for fair Medicare physician payment, reducing regulatory burdens and vision research. Meet face-to-face with your Members of Congress and show the might of our members at this important opportunity. It's the most effective way to protect the interests of our profession and our patients.

CONGRESSIONAL ADVOCACY DAY

APRIL 9 - 10, 2014
WASHINGTON, DC

"Congressional Advocacy Day is a vital part of your membership and a fantastic opportunity to get updated on critical issues related to ophthalmic advocacy. Each year hundreds of Academy members advocate for our profession and patients. Join me and your colleagues in Washington, D.C. in 2014"

Paul Sternberg, Jr., MD
Academy President



REGISTRATION OPENS IN JANUARY 2014.

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The Eye M.D. Association



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Subspecialty Day

October 17–18

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October 18–21

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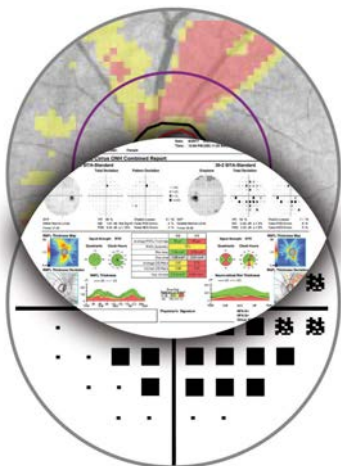


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1919



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Not all products, services or offers are approved or offered in every market and approved labeling and instructions may vary from one country to another. For country specific product information, see your local representative.

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1 Chen YA, Hirschall N, Findl O. Evaluation of 2 new optical biometry devices and comparison with the current gold standard biometer. *J Cataract Refract Surg.* Mar. 2011; 37(3):513-517.

2 Packer, M. Do you have a preferred surgical microscope? Premier Surgeon 250 Survey. <http://www.premiersurgeon.com/index.php/may-june-2011-ps250-survey>. Published May/June 2011. Accessed November 13, 2012.

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WHERE ALL OF OPHTHALMOLOGY MEETS



Academy Café

Room 271

Come join the conversation. Bring your cell phone, smartphone or laptop and text message your questions to the panel. Note: Academy Cafe sessions are eligible for CME credit; see page 317 for additional information.

How to submit a question: Point the browser on your laptop or wireless mobile device to <http://ai.acuport.org> and log in with your Badge ID and Password or send SMS text to 41411 with the keyword ACafe followed by a space and your question (example: "ACafe Here is my question").

Note: For SMS, standard text messaging fees may apply based on your wireless plan.

Saturday, Nov. 16

SYM45

Maintenance of Certification Update

1:00 - 2:15 PM

*Moderator: R Michael Siatkowski MD**

Panel: John G Clarkson MD, Keith Hugh Baratz MD, Bhavna P Sheth MD, Meghan Smith, Wallace Jones*

SYM44

Cataract

2:30 - 3:45 PM

*Moderator: Terry Kim MD**

Panel: Rosa Braga-Mele MD, Quentin B Allen MD*, John P Berdahl MD*, Christopher E Starr MD*, Elizabeth Yeu MD**

Monday, Nov. 18

SYM49

Glaucoma

8:30 - 9:45 AM

*Moderator: Thomas W Samuelson MD**

Panel: Anjali M Bhorade MD, Reay H Brown MD, Marlene R Moster MD*, Nathan M Radcliffe MD*, Kuldev Singh MD MPH**

SYM50

Uveitis

10:30 - 11:45 AM

*Moderator: Justine R Smith MD**

Panel: Russell W Read MD PhD, Jennifer E Thorne MD PhD*, Howard H Tessler MD*, Daniel V Vasconcelos-Santos MD PhD*

Sunday, Nov. 17

SYM46

Oculoplastics

10:30 - 11:45 AM

Moderator: Stuart R Seiff MD

Panel: Suzanne K Freitag MD, Jeffrey A Nerad MD, Brian S Sires MD PhD

SYM47

Cornea, External Disease

1:00 - 2:15 PM

*Moderator: Edward J Holland MD**

Panel: Clara C Chan MD, Douglas A Katsev MD*, Neda Shamie MD*, William Barry Lee MD**

SYM48

Retina

2:30 - 3:45 PM

*Moderator: Thomas R Friberg MD**

Panel: Carl C Awh MD, Alan F Cruess MD*, K Bailey Freund MD*, Brian B Berger MD**

Tuesday, Nov. 19

SYM51

Cataract

8:30 - 9:45 AM

*Moderator: Sonia H Yoo MD**

Panel: Lisa B Arbisser MD, George Beiko MD*, Richard S Hoffman MD*, Richard Tipperman MD*, Michael E Snyder MD*, David T Vroman MD**



Free Coffee.
Your Questions.
Expert Panels.
Lively Conversation.

Special Meetings and Events



Friday – Wednesday, Nov. 15 - 20

Special Meetings & Events are free of charge, unless otherwise noted. They are not eligible for CME credit.

SO Endorsed by Senior Ophthalmologist Committee

YO Endorsed by Young Ophthalmologist Committee

Friday, Nov. 15

DICOM Working Group 9 - Eye Care

Event No: SPE01 7:30 AM - 3:00 PM
Fee: FREE

Room: Marriott New Orleans, Tchoupitoulas
Presenter(s): Mark B Horton MD, Linda L Wedemeyer MD

Digital Imaging and Communications in Medicine (DICOM) is a standard for integrating different imaging data sources so that they can be readily transferred, stored and exchanged. Working Group 9, a DICOM committee sponsored by the Academy, focuses on digital imaging standards for eye care (e.g., fundus imaging, ophthalmic tomography, biometry, visual fields and macular thickness mapping). This meeting is open to vendors, ophthalmologists, IT professionals, ophthalmic photographers and ophthalmic technicians interested in advancing digital imaging.

Saturday, Nov. 16

S Selling and Purchasing on eBay, Craigslist, and other Mediums: How to Clean Your Office with Profit

Event No: SPE05 9:00 AM - 12:00 PM

Fee: FREE

Room: 350

*Presenter(s): Andrew P Doan MD PhD***

This course will offer an overview of how to shop, sell and make money on the Internet, as well as tips for protecting yourself from fraud and phishing schemes.

For more information, go to the SO website.

Note: Attendees must bring their own laptop. Although this event is complimentary, space is limited and registration is still required.

S Use Blogging & Social Networking to Super Charge Your Website & Internet Marketing

Event No: SPE08 1:00 - 4:00 PM

Fee: FREE

Room: 350-351

Presenter(s): Randall V Wong MD, Andrew P Doan MD PhD***

This course provides hands-on, step-by-step instruction in how to construct your Internet blog and publish articles to use the power of search engines to attract people to your practice, website or business.

For more information, go to the SO website.

Note: Attendees must bring their own laptop. Although this event is complimentary, space is limited and registration is still required.

Q&A with FDA

Event No: SPE26 2:00 - 3:00 PM

Fee: FREE

Room: 224

*Presenter(s): Wiley Andrew Chambers MD, Malvina Eydelman MD***

Have questions about the drug and device approval process? Want to talk about new FDA initiatives? Need answers about the latest news affecting ophthalmic products? Join FDA ophthalmic drug and device experts for a session with a new format driven entirely by you.

Sunday, Nov. 17

28th Annual Run for Vision

Event No: SPE25 6:30 AM - 7:30 PM

Fee: \$50

Bausch + Lomb and the Eye Bank Association of America (EBAA) invite you to participate in the 28th Annual Run for Vision 5k benefit run/walk. For more information and to register visit www.restore sight.org/upcoming-events/runforvision.

YO 2013 Young Ophthalmologist Program — It's YO World: Jumpstart Your Career

Event No: SPE10 10:00 AM - 2:00 PM

Fee: FREE

Room: 252

*Presenter(s): Paul Sternberg MD, Natasha L Herz MD, Ajit Nemi MD, Janice C Law MD, Katherine A Lane MD**, Derek A Preece MBA*, Brad H Feldman MD*, Eliza N Hoskins MD**, Diana R Shiba MD**, Ruben N Sanchez MD, Rajiv R Rathod MD, Lawrence Geller MBA*, Jeff H Pettet MD*, Richard G Morshedi MD**, Robert F Melendez MD MBA, Andrew P Doan MD PhD**, Sue J Vicchilli COT OCS, Keith D Carter MD FACS, Ruth D Williams MD, Randall V Wong MD*, James C Tsai MD MBA*, Thomas A Oetting MD, Gary S Schwartz MD, Ron W Pelton MD PhD*, Maria Mendicino Aaron MD, Michael J Parshall*, Vikas Chopra MD*, Christian C Hester MD, Meher Yepremyan MD**, William Lloyd III MD, Azadeh Khatibi MD*

Young ophthalmologists (YOs) face a unique set of demands in their transition from training to practice. It's a challenging world, but it's 'YO' world — so join your YO colleagues and make the most of it. Not sure how? Attend the fast-paced, interactive 2013 YO Program to learn about the key issues that affect YOs today. Choose your track — members-in-training, YOs in one to five of practice, or both. From contract negotiation to coding, to marketing and choosing your practice type, your YO Committee and expert consultants have got you covered. Gain confidence, jump start your career and take control of your future now!

For more information, go to www.aao.org/yo.

Annual Business Meeting

Event No: SPE11 10:00 - 10:30 AM

Fee: FREE

Room: The Great Hall

Fall Council Meeting

Event No: SPE24 11:30 AM - 5:00 PM

Fee: FREE

Room: Sheraton, Grand Ballroom C

Presenter(s): David W Parke II MD, Paul Sternberg MD, Gregory L Skuta MD*, Cynthia Ann Bradford MD, Daniel J Briceland MD*, Ann A Warn MD MBA*, Russell N Van Gelder MD PhD**

Members of the Academy's Council, an advisory body to the Board of Trustees, and leaders of ophthalmic state, subspecialty and specialized interest societies will meet to discuss the latest advocacy news and provide take-home messages and action items as part of the Fall Council meeting's Council of Advocates session. In addition, Academy leaders will provide updates regarding priority activities and strategic issues, such as the ophthalmic registry, compounding pharmaceuticals and health care reform. The Council will also meet by region to discuss issues common to certain areas of the country. Requires separate registration. www.aao.org/council.

Special Meetings & Events

Sunday, Nov. 17 (cont.)

2014 Medicare Update

Event No: SPE12 12:15 - 1:45 PM
Fee: FREE
Room: New Orleans Theater C

This program will provide vital information and updates on the important Medicare issues impacting your practice. Hear about changes that will impact payments and the latest on Medicare's Physician Quality Reporting System and eRx programs. What other new regulations and/or requirements will your practice need to focus on? Attend this session to hear all the latest updates that will impact ophthalmology in 2013.

Ergonomics/Musculoskeletal Disorders in Ophthalmologists

Event No: SPE13 12:45 - 1:45 PM
Fee: FREE
Room: 342

Presenter(s): Martin Wand MD, Jeffrey L Marx MD, Keith Hugh Baratz MD*, Renee Ostertag MD*

Self-reported musculoskeletal disorder (MSD) symptoms have been reported in up to 50 percent of ophthalmologists. In a recent study, ophthalmologists had a significantly increased rate of MSD symptoms compared with a family medicine physician control group. Identification of risk factors and modification of these activities will decrease the risk of MSDs. This symposium will include presentations from ergonomics specialists focusing on practical recommendations to decrease risk of injury in the office, clinic and operating rooms. In addition, a physical therapist will demonstrate exercises and stretching routines that can be performed during the day at work and at home.

The Resident Hub User Group Session

Event No: SPE14 12:45 - 1:45 PM
Fee: FREE
Room: 223

Presenter(s): Jean Hausheer MD

The Resident Hub is an online learning portal for residency programs that includes high-quality resources such as videos, courses and self-assessment exams as well as tools for building multimedia courses, assigning learning plans and more.

This session will include a brief demonstration of the learning portal's functions and features, followed by a user group meeting. Users of The Resident Hub are encouraged to attend this meeting to share ideas for desirable enhancements and to learn about new content, features and plans for future changes.

For more information, go to www.aao.org/thehub

American Board of Ophthalmology: Panel Presentation and Q&A with Board of Directors

Event No: SPE15 12:45 - 1:45 PM
Fee: FREE
Room: 222

Directors of the American Board of Ophthalmology (ABO) outline the history, values and requirements of the ABO's Maintenance of Certification programs and discuss updates and new information on activities for 2013 and beyond. Directors will also respond to questions from diplomats at the end of the presentation.

OMIC Annual Members Meeting

Event No: SPE16 1:30 - 1:45 PM
Fee: FREE
Room: 224

Presenter(s): John W Shore MD, Timothy J Padovese***

This annual meeting is held to elect directors of the company and to transact other business as may come before the meeting. The OMIC president and CEO will report on the company's latest results. The meeting usually lasts about 15 minutes.

The Bruce E Spivey MD Lecture in Risk Management & Patient Safety and OMIC Forum

Event No: SPE17 2:00 - 4:00 PM
Fee: FREE
Room: New Orleans Theater C

Presenter(s): Susan H Day MD, Steven I Rosenfeld MD FACS, Denise R Chamblee MD**, Timothy J Padovese**, Hans Bruhn***

The inaugural Bruce E Spivey MD Lecture in Risk Management & Patient Safety will be given by Susan H Day MD, past president of the Academy (2005). Dr. Day will lecture on risk management and patient safety risks as they relate to ophthalmology. The lecture will be followed by the OMIC Forum, which highlights the successful strategies OMIC has developed in collaboration with the Academy to decrease the frequency and severity of claims against ophthalmologists.

Monday, Nov. 18

Y0 Welcome to the Real World: Reality 101 for Residents and Fellows

Event No: SPE19 12:30 - 1:45 PM
Fee: FREE
Room: 252

*Presenter(s): K David Epley MD**

In this interactive forum, residents and fellows will learn about the non-medical aspects of practicing ophthalmology and get their questions answered. Panelists will discuss their personal experiences and highlight practice options, networking and referrals, advantages and disadvantages of fellowship training and other resources available to assist residents and fellows. This forum will also discuss how membership and active involvement within state ophthalmology societies and the Academy can be of benefit.

VA and DOD: Leading the Way in Simulation in Eye Care

Event No: SPE21 12:45 - 1:45 PM
Fee: FREE
Room: 217

Simulation technology has rapidly evolved over the past few decades and can provide ophthalmologists with new perspectives on how to handle real medical situations. During this meeting, Department of Veterans Affairs (VA) and Department of Defense (DOD) ophthalmologists will discuss how the VA and DOD health care systems are advancing the use of simulation technologies in eye care. Topics for discussion include residency training, skills transfer and trauma training, improving patient safety and competency maintenance. Speakers will also examine the future of simulation technology in eye care. A question-and-answer period will follow.

Monday, Nov. 18 (cont.)

Ethics and Risk Management Issues Facing Ophthalmology, Featuring Robin Cook

Event No: SPE20 2:00 - 3:00 PM
 Fee: FREE
 Room: New Orleans Theater C
 Presenter(s): *Christie L Morse MD**, *Tamara R Fountain MD**, *Ron W Pelton MD PhD**

There is a clear nexus between author Robin Cook's body of work and the ethical, socio-economic and professional liability issues facing ophthalmologists. His books "Crisis", "Nano", "Cure" and "Intervention" delve into these issues. The Academy Ethics Committee and OMIC often encounter ophthalmologists who struggle with the ethical and professional liability issues of managing a practice in challenging economic times while providing quality care to patients. Dr. Cook will lecture and moderate a panel discussion and question and answer session addressing these issues with Ethics Committee members and OMIC.

CANCELED

Senior Ophthalmologist Special Program and Reception

Event No: SPE22 2:30 - 5:00 PM
 Fee: FREE
 Room: 252

Don't miss these two vibrant speakers and authors:

The Accidental City: Improvising New Orleans is the latest book by Professor Lawrence N. Powell, emeritus faculty for the department of history at Tulane University. He specializes in Civil War and Reconstruction; Southern history; Louisiana history and politics; and the Holocaust.

Gifts of Sight is written by SO Committee member, M. Bruce Shields, MD, past Marvin L. Sears professor and chairman for the department of ophthalmology and visual sciences at Yale University School of Medicine and past president of the American Glaucoma Society.

Both authors will have their books available for purchase onsite and will sign copies. Plus, we'll present the 2013 EnergEYES Award. The EnergEYES Award was created in 2009 to recognize and honor an ophthalmologist who demonstrates exemplary leadership skills by energizing others to improve ophthalmology. This individual is one who mentors young ophthalmologists, serves as a strong role model and displays high energy that motivates them to get involved.

For more information, go to www.aao.org/so.

Wednesday, Nov. 20

Lo Mejor de la Academia en Español

Event No: SPE23 7:00 AM - 5:00 PM
 Fee: See below
 Room: Sheraton, Armstrong Ballroom

Presenter(s): *Guillermo A Pereira MD***, *Jose Roca Fernandez MD***, *Jose Gomes MD**, *Lihteh Wu MD**, *Hernan V Iturriaga MD***, *Peter A Quiros MD*, *Abelardo A Rodriguez MD***, *Luis Izquierdo Jr MD*, *Ashley Behrens MD***, *Zelia M Correa MD*, *Fernando L Colombo MD***, *Jerome C Ramos-Esteban MD***, *Enrique O Graue Hernandez MD*, *Arturo J Ramirez-Miranda MD**, *Francisco Amalich-Montiel MD***, *Gerardo F Graue-Moreno MD***, *Valentina Franco Cardenas MD*, *Manuel Diaz Llopis MD PhD***, *Javier Cordoba Umana MD***, *J Fernando Arevalo MD FACS**, *Cristian F Luco MD***, *Eduardo Arenas MD***, *Juan Murube MD***, *Margarita I Estribi MD*, *Francisco J Rodriguez MD**, *Hilda Capo MD*, *Ivan R Batlle MD***, *Jose Morales MD***, *Gregorio F*

Gabela MD, *Miguel A Materin MD*, *Daniel H Scorsetti MD*, *Federico A Graue-Wiechers MD*, *Natalio J Izquierdo MD***, *Victor H Gonzalez MD**, *Jose Claros MD***, *Benjamin Zagorin MD***, *Armando G Sandoval MD***, *Elena Jarrin MD DOMS***

La Academia Americana de Oftalmología (AAO) y la Asociación Panamericana de Oftalmología (PAAO) auspiciarán una reunión de un día en la cual se presentarán y discutirán, por oftalmólogos de habla hispana, los aspectos más importantes en 2013 ya sean en oftalmología general o en las diversas subespecialidades. Nueva literatura e instrumentos oftalmológicos serán evaluados en forma objetiva. Después del 15 de Octubre y en el sitio (on site), la inscripción será de \$40 para Miembros Titulares PAAO/AAO, y \$50 para Asociados/No Socios, y \$25 para Residentes/Fellows. Inscr' base por internet en www.paa.org buscando 'Lo Mejor'.

The Academy and the Pan-American Association of Ophthalmology (PAAO) will sponsor a one-day meeting that will summarize the important presentations in general ophthalmology and all subspecialty fields at the 2013 Annual Meeting. New ophthalmic literature and instruments will also be objectively evaluated. The presenting panels will be composed of Spanish-speaking ophthalmologists. Please note that panel topics and/or times may change. Registration fees after Oct. 15 and onsite are as follows: Active PAAO/Academy Members, \$40; Associate Members/Nonmembers, \$50 and Residents/Fellows, \$25 (with letter or appropriate Annual Meeting badge). Register online at the PAAO website, using keyword 'Lo Mejor'.

Learning Lounge



Saturday – Tuesday, Nov. 16 - 19

Hall G, Booth 3647

Visit the Learning Lounge to participate in informal, small group facilitated discussions led by experts in the field and continue the conversation with your colleagues.

Float among groups, new topics begin every 15 minutes.

For the most up-to-date schedule visit: www.aao.org/mobile.

Saturday, Nov. 16

	Theater 1	Theater 2	Theater 3
12:00	Managing the Posterior Capsular Tear <i>Louis D Skip Nichamin MD,</i> <i>Nick Mavalis MD and Mark K Walsh MD</i>	Corneal Considerations in Cataract Surgery <i>William Barry Lee MD</i>	Presbyopia Correcting IOLs <i>Samuel Masket MD, Nicole R Fram MD,</i> <i>and Daniel H Chang MD</i>
12:15			
12:30			
12:45			
1:00			
1:15			
1:30			
1:45	Femtosecond Laser Cataract Surgery in Challenging Cases Dense Lens, Small Pupil, Morgagnian Lens <i>Mark Packer MD and Jonathan D Solomon MD</i>	Microinvasive Glaucoma Surgery <i>Husam Ansari MD PhD</i>	Updates in IOL Power Calculations after LASIK/PRK <i>Douglas D Koch MD and Samuel Masket MD</i>
2:00			
2:15			
2:30			
2:45			
3:00			
3:15			
3:30			
3:45			
4:00	<small>GLOBAL OPHTHALMOLOGY</small> Volunteer Experiences <i>Timothy P Page MD</i>	<small>GLOBAL OPHTHALMOLOGY</small> Rotary Guest Presentations <i>Kenneth D Tuck MD FACS and Baxter F McLendon MD FACS</i>	<small>GLOBAL OPHTHALMOLOGY</small> Global Ophthalmology Video Courses
4:15			
4:30			
4:45			
5:00			

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date.
No asterisk indicates that the presenter has no financial interest.

Sunday, Nov. 17

	Theater 1	Theater 2	Theater 3
9:00	Opening Session: Live Broadcast	Opening Session: Live Broadcast	Opening Session: Live Broadcast
9:15			
9:30			
9:45			
10:00			
10:30	Complicated and Challenging Cases in Cataract Surgery <i>Rosa Braga-Mele MD, Lisa B Arbisser MD, Terry Kim MD, and Robert J Cionni MD</i>	Advances in Pediatric Cataract Surgery <i>M Edward Wilson Jr MD</i>	Treating Diabetic Macular Edema in 2014 <i>Diana V Do MD</i>
10:45			
11:00			
11:15			
11:30			
11:45	Advanced Techniques in Strabismus Surgery <i>Edward G Buckley MD</i>	CONTINUE THE CONVERSATION Jackson Memorial Lecture <i>Mark S Blumenkranz MD</i>	
12:00			
12:15			
12:30			
12:45			
1:00	CONTINUE THE CONVERSATION Innovation in Ophthalmology: From Theory to Therapy <i>Emmett T Cunningham Jr MD PhD MPH, Gilbert H Kilman MD, William Link PhD, Eugene De Juan Jr MD, Daniel M Schwartz MD, Richard L Lindstrom MD, and Mark S Blumenkranz MD</i>	Everything You Wanted to Know About ACA and Physician Payment - Now You Can Ask the Academy Experts <i>Michael X Repka MD MBA, Gregory P Kwasny MD OCS, Trexler M Topping MD, and Stephen A Kamenetzky MD OCS</i>	What's New in ROP <i>David K Wallace MD</i>
1:15			
1:30			
1:45			
2:00			
2:15	Surgical Pharmacology---the Need for a Clinical and Basic Research Approach <i>Henry F Edelhauser PhD</i>	CONTINUE THE CONVERSATION Innovations in Pediatric Eye Surgery <i>Daniel E Neely MD, Erick D Bothun MD, and Sharon Freedman MD</i>	Biologics Agents for Uveitis <i>Alan Gary Palestine MD</i>
2:30			
2:45			
3:00			
3:15			
3:30	Surgical Pharmacology---the Need for a Clinical and Basic Research Approach <i>Henry F Edelhauser PhD</i>	CONTINUE THE CONVERSATION Innovations in Pediatric Eye Surgery <i>Daniel E Neely MD, Erick D Bothun MD, and Sharon Freedman MD</i>	Biologics Agents for Uveitis <i>Alan Gary Palestine MD</i>
3:45			
4:00			
4:15			
4:30			
4:45	Surgical Pharmacology---the Need for a Clinical and Basic Research Approach <i>Henry F Edelhauser PhD</i>	CONTINUE THE CONVERSATION Innovations in Pediatric Eye Surgery <i>Daniel E Neely MD, Erick D Bothun MD, and Sharon Freedman MD</i>	Biologics Agents for Uveitis <i>Alan Gary Palestine MD</i>
5:00			

* The presenter has a financial interest. ** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest.

Monday, Nov. 18

	Theater 1	Theater 2	Theater 3
9:00	AT THE MOVIES Femtolasar Cataract Surgery Moderator: Mitchell P Weikert MD <i>Napkins and Postage Stamps: The Femtosecond Laser Capsulotomy (Robert P River MD); Novel Combination of Femtosecond Laser and Nanosecond Laser Completion of Bladeless Clear Cornea Cataract Extraction (A John Kanellopoulos MD); Pearls to Shorten the Learning Curve for the Novice Femtosecond Laser Cataract Surgeon (Dilraj Grewal MD)</i>	AT THE MOVIES Glaucoma Moderator: Carla J Siegfried MD <i>Correlation Between Episcleral Venous Channel Outflow and Circumferential Extent of Canal-Based Surgery (Ronald Leigh Fellman MD); Ahmed Glaucoma Valve Implantation in Iridocorneal Endothelial Syndrome (Kumar Ravi); Malignant Glaucoma: Can It Be Benign? (Siddharth Dikshit)</i>	AT THE MOVIES DALK and Pediatric Ophthalmology Moderator: Terri L Young MD <i>Small Bubble Technique for Deep Anterior Lamellar Keratoplasty (Massimo Busin MD); Dia-DALK: Holy Grail in Surgical Management of Keratoconus? (Rasik B Vajpayee MD); Deep Anterior Lamellar Keratoplasty in Children (Muralidhar Ramappa MBBS); Descemet's Stripping Endothelial Keratoplasty in Pediatric Age Group (Muralidhar Ramappa MBBS)</i>
9:15			
9:30			
9:45			
10:00			
10:15			
10:30	Preparing for Retirement: Financially and Emotionally <i>Thomas M Aaberg Sr MD MSPH FACS</i>	Glaucoma Surgery: Trabeculectomy, Tube Shunt, Minimally Invasive Technologies <i>Dale K Heuer MD, Brian A Francis MD, and Richard A Lewis MD</i>	CONTINUE THE CONVERSATION Advances in Keratoplasty: Where We Are in 2013 <i>Woodford S Van Meter MD FACS and Steven I Rosenfeld MD FACS</i>
10:45			
11:00			
11:15			
11:30			
11:45			
12:00	CONTINUE THE CONVERSATION Boston Mass Casualties <i>Allen B Thach MD, Henry D Hacker MD, and Jorge G Arroyo MD</i>	Making Sense of Glaucoma RCTs <i>Mark A Latina MD, Steven T Simmons MD, and L Jay Katz MD</i>	CONTINUE THE CONVERSATION Introduction to Cornea and Lens-Based Refractive Surgery for Residents <i>Ronald R Krueger MD and J Bradley Randleman MD</i>
12:15			
12:30			
12:45			
1:00			
1:15			
1:30			
1:45	ABO - MOC Certification and Your First MOC Cycle <i>R. Michael Siatkowski MD, Amy S Chomsky MD, and H. Culver Boldt MD</i>		Corneal Infections <i>Elmer Y Tu MD</i>
2:00			
2:15			
2:30			
2:45			
3:00			
3:15			
3:30	YOUNG OPHTHALMOLOGY Growing YOur Business with Social Media Marketing <i>Robert F Melendez MD MBA, Purnima S Patel MD, James G Chelnis MD, Randall V Wong MD, and Edward H Hu MD PhD</i>	AT THE MOVIES IOL Moderator: William J Fishkind MD FACS <i>Lessons Learned: Complications of Glued IOL (Athiya Agarwal MD); T-Fixation Technique Used for Intracapsular Haptic Fixation of Posterior Chamber IOL (Toshihiko Ohta MD PhD); Small Corneal Lesions: Big Problems for Premium IOL Surgeons! (Samar K Basak MD FRCS MBBS); Extreme Toric IOLs for Keratoconus and Following Penetrating Keratoplasty (Alejandro Navas MD)</i>	Ocular Surface Disease <i>Andrew J Huang MD MPH</i>
3:45			
4:00			
4:15			
4:30			
4:45			
5:00			

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Tuesday, Nov. 19

	Theater 1	Theater 2	Theater 3		
9:00					
9:15					
9:30		<p>AT THE MOVIES Cataract/Cornea Moderator: Kathryn A Colby MD PhD <i>Traumatic Cataract: Managing Vitreous Prolapse (David F Chang MD); Perfect Pannus Excision: Step One Towards Successful Surgery in Severe Ocular Surface Disease (Arjun Srirampur); Conjunctival Melanoma: What You Should Know (Fairouz Puthiyapurayil Manjandavida MBBS)</i></p>	<p>AT THE MOVIES Oculoplastics <i>Management of Exposed Porous Orbital Implants of Large Size (Junghyun Ahn MD); Say Cheese! External Ophthalmic Photography: Doing It the Right Way (Akshay Gopinathan Nair MD)</i></p>		
9:45					
10:00					
10:15					
10:30	<p>Ergonomics for Ophthalmologists <i>Martin Wand MD</i></p>	<p>CONTINUE THE CONVERSATION A Multidisciplinary Approach to Emerging Therapies in Neuro-Ophthalmology <i>Madhu R Agarwal MD and Matthew Dean Kay MD</i></p>	<p>Fillers and Botox Basics <i>Jeffrey A Nerad MD</i></p>		
10:45					
11:00					
11:15					
11:30					
11:45					
12:00					

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Technology Pavilion

Saturday – Tuesday, Nov. 16 - 19

Hall I1, Booth 5145

Academy members and independent consultants offer user-friendly instruction on all things high-tech for business, clinical and academic applications. Stop by for presentations on:

- The latest in hardware, from mobile devices to wireless computing.
- Internet, social networking, productivity and mobile software topics.
- Software for medical records, presentations, image manipulations and more.
- Benefits of the Mobile Meeting Guide.

Technology Pavilion

Presentation Schedule

	Saturday 11/16	Sunday 11/17	Monday 11/18	Tuesday 11/19
9:30	9:30-11:00 Using Microsoft Office 13 / Office 365	9:30-11:00 Smartphone Update and Disruptive Technologies	9:30-10:30 Step-by-Step: Edit Video Like a Pro	9:30-10:30 Internet Privacy and Wireless Security
10:30				
11:00			11:00-12:00 Fully Integrated DICOM Imaging in EHR	11:00-12:30 Microsoft Windows/Office: Ask the Expert
11:30	11:30-12:00 The Mobile Meeting Guide	11:30-12:00 The Mobile Meeting Guide		
12:00				
12:30	12:30-1:30 Privacy Breach: Now What?	12:30-2:00 A Social Media Primer	12:30-1:30 Introducing the Academy's IRIS™ Registry	
1:30				
2:00	2:00-3:00 ONE® Network 2.0 and The Resident Hub™		2:00-3:30 Mobile Computing Update	
2:30		2:30-3:30 EHR 101		
3:00				
3:30	3:30-5:00 Windows Update: Windows 8, RT and Phone			
4:00		4:00-5:00 Tele-Ophthalmology Talking Points	4:00-5:00 Social Media Influences the Doctor-Patient Relationship	
4:30				
5:00				

Indicates IHE session

Saturday, Nov. 16

9:30 – 11:00 AM

Using Microsoft Office 2013 / Office 365

Jude Brown, Senior Instructor, Digital Acumen, Inc.

Microsoft Office is now available in several versions for home and work, including the familiar format Office 2013 and newer cloud-based Office 365. We will highlight the included programs in each and how they integrate tasks, as well as see how these two versions stack up in terms of features, benefits and costs. As always, our instructor is happy to field your Office-related questions.

11:30 AM – 12:00 PM

Get the Most from the Academy's Mobile Meeting Guide

Jude Brown, Senior Instructor, Digital Acumen, Inc.

This quick session introduces users to the basics and benefits of using the Academy's powerful Mobile Meeting Guide to help plan and navigate the 2013 Annual Meeting. Learn how to sign in, find sessions, create your Personal Planner, as well as get an overview of the wealth of content and features it contains. Did you know you can view Academy posters and videos, fill out course evaluations, take notes and even ask questions live during certain sessions through the Mobile Meeting Guide? If not, this session is for you!

(Repeated on Sunday, 11:30 AM – 12:00 PM)

12:30 – 1:30 PM

Privacy Breach: Now What?

H Jay Wisnicki MD, Medical Director, Union Square Eye Care Professor of Clinical Ophthalmology & Visual Sciences and Pediatrics, Albert Einstein College of Medicine

Rainer Waedlich, President IOTA (International Ophthalmic Technology Association)

Neil H Ekblom, Health Care Attorney, LeClairRyan

There are many benefits of consolidating patient records electronically, but what if someone accesses your patient information without authorization? What are your legal and regulatory obligations? How can staff training and the EMR technology itself be used to limit and mitigate exposure? This open discussion provides valuable perspectives from a tech savvy ophthalmologist, an experienced EHR/EMR vendor and a lawyer with a rare focus on ophthalmic practice as they examine the myriad issues in this sensitive but important subject. Bring your questions and join this interactive panel discussion.

Saturday, Nov. 16 (cont.)

2:00 – 3:00 PM

ONE® Network 2.0 and The Resident Hub™

Robert F Melendez MD MBA, Editor-in-Chief of the ONE Network

Dale Fajardo EdD, Director of Online Education and the ONE Network at the American Academy of Ophthalmology

Sarah Page MA, E-Learning Project Manager at the American Academy of Ophthalmology

The Ophthalmic News and Education (ONE®) Network is a comprehensive educational resource which provides members and subscribers the ability to quickly and effectively access relevant clinical information from an extensive, up-to-date knowledge base. In this presentation we will provide an update on the ONE Network, which has recently undergone a major redesign and includes many new features designed to help you get to the content you need. Included in this presentation will be a demonstration of The Resident Hub™, a powerful online tool that ophthalmology residency programs use to facilitate, measure and track ophthalmic resident education.

3:30 – 5:00 PM

Windows Update: Windows 8, RT and Phone

Jude Brown, Senior Instructor, Digital Acumen, Inc.

See what's new with Microsoft's Windows 8, Windows RT and Windows Phone. Learn how these three platforms differ but also work together with Microsoft SkyDrive to provide seamless access to your files, photos and contacts across an array of desktop and mobile devices. See "Blue," the latest version of Windows 8, as well as the Surface tablet and Windows Phone in action. Strengths and weaknesses of each will be reviewed, as well as how they integrate Microsoft Office, Internet Explorer 10 and the new Windows Store for downloadable Apps. Bring your questions.

Sunday, Nov. 17

9:30 – 11:00 AM

Smartphone Update and Disruptive Technologies

Vinay A Shah MD, Dean McGee Eye Institute, University of Oklahoma

Rohit Krishna MD, University of Missouri - Kansas City

R Ken Lord MD, Retina Associates of Southern Utah

Learn about smartphone trends and how you can put the mobile power of smartphones and tablets to work to simplify your life and maximize productivity in your practice. Topics include the current developments in the mobile computing industry as well as effective medical and personal use Apps such as for clinical reference, education, increasing efficiency and practice branding and marketing. The session will conclude with a discussion and audience questions.

11:30 AM – 12:00 PM

Get the Most from the Academy's Mobile Meeting Guide

Jude Brown, Senior Instructor, Digital Acumen, Inc.

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12:30 – 2:00 PM

A Social Media Primer

Jude Brown, Senior Instructor, Digital Acumen, Inc.

LinkedIn, Facebook, Twitter, Google+, Snapchat, Vine... you've heard the names, but what are they and how does one differ from another? This basic session for the Social Media novice will give you a grounding in the terms and technologies at the heart of Web 2.0 and have you "tweeting" in no time. Tips for checking and protecting your "online reputation" will also be reviewed.

2:30 – 3:30 PM *

EHR 101

Colin A McCannel MD FACS, Associate Professor of Clinical Ophthalmology, Jules Stein Eye Institute UCLA

David Silverstone MD, Clinical Professor of Ophthalmology, Yale School of Medicine

This overview course is intended to familiarize the attendee with the implications of adopting an EHR system. A wide range of topics will be covered, including characteristics of good EHR systems, selection criteria that should be considered, possible impact on the practice and work flow, information technology considerations and the importance of EHR standards. This course will provide the knowledge framework about EHR systems relevant to the purchase, implementation, maintenance and utilization of an EHR system.

4:00 – 5:00 PM

Tele-Ophthalmology Talking Points

Ingrid Zimmer-Galler MD, Associate Professor, Johns Hopkins Wilmer Eye Institute

In this session we will review the current state of telemedicine in ophthalmology with an emphasis on remote retinal imaging for diabetic retinopathy assessment. We will also discuss current challenges and barriers to wide-spread implementation of telemedicine technologies in the delivery of ophthalmic care.

Monday, Nov. 18

9:30 – 10:30 AM

Step-by-Step: Edit Video Like a Pro

Jude Brown, Senior Instructor, Digital Acumen, Inc.

Want to upload professional looking videos to YouTube/Facebook or embed them in PowerPoint Presentations? Learn step-by-step how to make the most of inexpensive software to acquire, edit and professionally polish your own videos. Topics include adding transitions, effects and mixing music as well as best practices for exporting to other formats. In particular, importing video for use in PowerPoint and uploading for sharing sites on the web will be demonstrated.

Technology Pavilion

Monday, Nov. 18 (cont.)

11:00 AM – 12:00 PM *

Using a Fully Integrated DICOM Imaging and EHR system

Jeffrey Marx MD, Chair, Dept of Ophthalmology, Lahey Clinic; Chief Medical Officer, Lahey Medical Center Peabody

DICOM is the established medical image formatting standard, allowing the EHR to “talk to” the imaging and diagnostic devices in an office network. Tremendous progress has been made in the use of DICOM imaging in Ophthalmology, and refinements will assist workflow in ordering, testing, interpreting and billing. Data extraction from images can be utilized for graphing and improving patient care. Dr. Marx will describe how his integrated DICOM imaging and EHR system has improved the quality of patient care and the efficiency of his practice.

12:30 – 1:30 PM

Introducing the Academy’s IRIS™ Registry: How to Meet Regulatory Requirements for Quality Measures

William L Rich III MD Medical Director of Health Policy, American Academy of Ophthalmology and Senior Partner, Northern Virginia Ophthalmology Associates

The Academy is launching the IRIS™ Registry, an EHR-based approach to collecting data that can be used for quality improvement, qualification for PQRS incentives or avoidance of penalty, and qualification for one menu measure in the Meaningful Use incentives for EHR usage. This presentation will explain how the registry works through systems integration with your EHR, and how it can bring value to participants.

2:00 – 3:30 PM

Mobile Computing Update

Darwin J Liao MD MPH

Learn about the latest trends in hardware and software in Mobile Computing. Will the popular iOS, Android and Windows Mobile platforms be threatened or complemented by the emerging category of over-sized phone tablets (“phablets”) or wearable electronics embedded in eyeglasses and watches? Included will be a discussion of general and healthcare-specific software solutions, as well as highlights of the latest version of Apple’s popular iOS for iPhones and iPads.

4:00 – 5:00 PM

Social Media Influences the Doctor-Patient Relationship

Andrew Doan MD PhD; Deputy Editor, AAO ONE Network

With smart phones, computers and world-wide Internet connectivity, patients are “Googling” individual doctors 30 to 100 times daily on average. The Internet search results they see influence what and how the patients feel about their doctors. In this session, Dr. Doan discusses high-yield tips for physicians to help improve their patient-doctor relationship using the Internet.

Tuesday, Nov. 19

9:30 – 10:30 AM

Internet Privacy and Wireless Security Best Practices

Jonathon Santilli, Senior Network Engineer, Digital Acumen, Inc.

You can connect to your email, the web or your office EHR anywhere with a Wi-Fi hotspot, including your home or local Starbucks, but who might be eavesdropping on your private communication and what steps can you take to protect your wireless connections? This session will review best-practice procedures you can use to secure your email and network connections when you roam, how to set up a secure “Virtual Private Network” (VPN) between home and office and what questions you should ask your IT department at work to minimize the chances of someone intercepting your private information.

11:00 AM – 12:30 PM

Microsoft Windows/Office: Ask the Expert

Jude Brown, Senior Instructor, Digital Acumen, Inc.

This custom-tailored, interactive session provides an audience-driven overview of the Windows Operating Systems, Office 365, Office 2013 and Video Editing. Ask our expert any questions that remain unanswered after the other overview sessions or about solving a particular problem you have had using Windows or Office tools in the past.

WHERE ALL OF OPHTHALMOLOGY MEETS



Informational Posters

Saturday – Tuesday, Nov. 16 - 19

Hall I1, Booth 5113

View Informational Posters during exhibit hall hours presented by organizations that serve allied health and ophthalmological societies as well as the visually impaired.

Informational Posters

Poster 1

Mahatma Eye Bank & Hospital

Offers hands on surgical training courses and International Council of Ophthalmology fellowships.

Poster 2

Mission Cataract USA

Encourages and assists ophthalmologists to provide free cataract surgery to the poor and uninsured in their community.

Poster 3

The Glaucoma Foundation

Presenting groundbreaking research funded by the Foundation.

Poster 4

American Society of Ocularists (ASO)

Presenting conditions requiring prosthetic eyes and scleral shells. Handouts available.

Poster 5

LIGA International

Presenting information about the Eye Clinic in El Furete, Mexico.

Poster 6

Lighthouse for Christ Mission and Eye Centre

A mission eye hospital in Mombasa, Kenya seeking short-term volunteer ophthalmologists to serve 1-2 weeks throughout the year.

Poster 7

Himalayan Cataract Project

Presenting programmatic efforts in Asia and Sub-Saharan Africa to eradicate preventable and treatable blindness.

Poster 8

Chinese American Ophthalmological Society, Inc.

Advances medical knowledge, research and assists in the training of ophthalmologists of Chinese descent.

Poster 9

Vision Health International

Delivers vision health care services—free of charge—to the medically underserved in Latin America.

Poster 10

Volunteer Eye Surgeons International

Sends eye surgeons and paramedical personnel to developing countries where they teach the latest surgical techniques to local eye surgeons.

Poster 11

Pediatric Keratoplasty Association

Disseminates information on the clinical management of corneal diseases in infants and children.

Poster 12

The Sturge-Weber Foundation

Sturge Weber syndrome Gene Mutation identified! Clinical and scientific materials on display for patients and healthcare providers.

Poster 13

Eye Foundation of America Inc.

Combating preventable blindness through service, education, and research.

Poster 14

World Cataract Foundation

Working to eliminate cataract blindness in the developing world through surgery, training and providing equipment.

Poster 15

Christian Ophthalmology Society

Describes the organization's mission and activities.

Poster 16

International Eye Foundation

Promotes increasing affordability and access to quality, comprehensive and sustainable eye care services around the world.

Poster 17

International Eye Foundation

Shares information on SightReach Surgical, a social enterprise program to reduce the cost of eye care.

Poster 18

Centro Cristiano de Servicios Humanitarios de Honduras (CCSHH)

A full service eye clinic located in El Progreso, established to serve the indigent, welcomes volunteer medical personnel to assist our permanent staff.

Poster 19

International Symposium on Ocular Pharmacology and Therapeutics (ISOPT)

Find the latest updates on treatments of ocular diseases at ISOPT 2014, June 19-22 in Reykjavik, Iceland.

Poster 20

New Mexico Eye Injury Registry

Reports on traumatic eye injuries and compares the data for New Mexico to that of the entire United States.

Poster 21

International Eye Clinic

Promotes healthy vision through public education and establishment of eye care centers in underdeveloped communities.

Poster 22

Retinitis Pigmentosa International

Established to find and fund the cure for Retinitis Pigmentosa and related degenerative eye diseases.

Poster 23

American Foundation for the Blind

Find helpful, downloadable tips to help your patients cope with vision loss at visionaware.org/getting-started.

More than 650 practices can't be wrong

Use the #1 ophthalmic EHR on the market

“One of the strengths of the NextGen system is its robust nature. It's mature. With other EHRs, you hope you have the functionality you need – with NextGen, you have more functionality than you need.”

Mark Rosenberg, CEO
Barnet Dulaney Perkins Eye Center

Designed by ophthalmologists for ophthalmologists, our ophthalmic EHR helps improve workflow, care quality, and your bottom line. Work simpler, smarter, and faster with NextGen Healthcare.

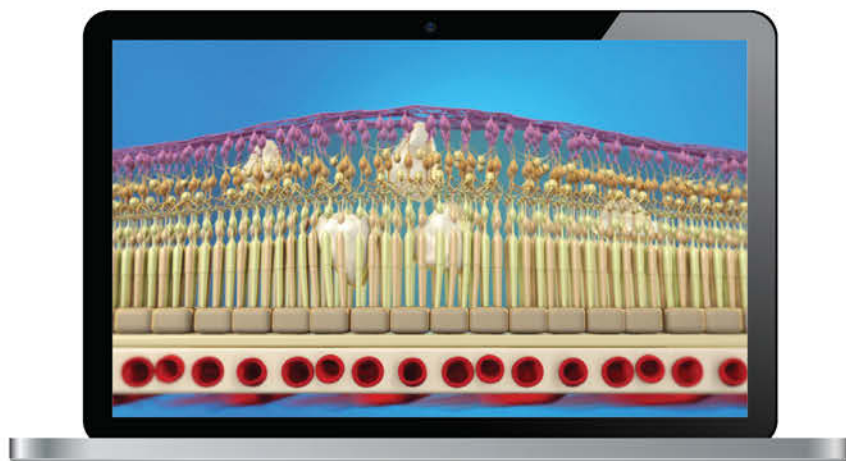
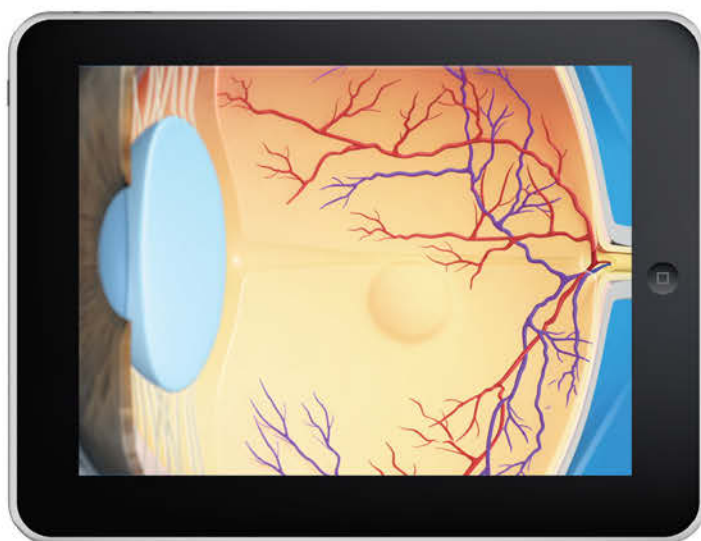


Learn why the NextGen Healthcare ophthalmic EHR is #1.
Visit nextgen.com/ophthalmology.

Black Book Rankings Top Ophthalmology Vendor 2011-2013

NEW! Retina Informed Consent Video Collection from the Academy

Manage patient expectations and reduce malpractice risk with the Academy's new informed consent videos on retinal conditions and treatment options. All videos are in **English and Spanish**, and can be shown on desktop computers, laptops, smartphones and tablets.



Collection of 21 short videos includes:

- Dilating Eyedrops
- Retinal Angiography
- Wet AMD and Medication Injections
- Dry AMD (*Bonus Educational Video*)
- Diabetic Eye Disease: Laser Surgery for Macular Edema
- Diabetic Eye Disease: Medication Injection for Macular Edema
- Diabetic Eye Disease: Medication Injection and Laser Surgery for Macular Edema
- Diabetic Eye Disease (PDR): Vitrectomy
- Diabetic Eye Disease (PDR): laser surgery
- Detached Retina: Pneumatic Retinopexy
- Detached Retina: Vitrectomy
- Detached Retina: Scleral Buckle
- Detached Retina: Vitrectomy with Scleral Buckle
- Torn Retina: Photocoagulation
- Torn Retina: Cryopexy
- BRVO: Medication Injection
- CRVO: Medication Injection and Laser Treatment
- Macular Hole: Vitrectomy Surgery
- Macular Pucker (Epiretinal Membrane): Surgery
- Vitreomacular Adhesion: Medication Injection
- Cystoid Macular Edema: Medication Injection

These downloadable videos come in a variety of file types: QuickTime SD and HD and Windows Media. They are also iPad/iPhone/iPod Touch compatible.

PRODUCT #: 057162V

Be the first to view the videos during the 2013 Annual Meeting.

Nov. 15 – Visit the Retina Subspecialty Day Exhibit, Hall B, Booth 38.

Nov. 16-19 – Visit the Academy Resource Center, Hall G, Booth 3239.

After the Annual Meeting – Order online at www.aao.org/store or call **866.561.8558**



AAOE Program / Practice Management



AMERICAN ACADEMY
OF OPHTHALMIC EXECUTIVES

A Partner of the American Academy of Ophthalmology

Saturday – Tuesday, Nov. 16 - 19

AAOE Program: Rooms 285 -297

Locations: All rooms are in Morial Convention Center unless otherwise indicated.

The AAOE Program is the most comprehensive practice management program, with over 100 courses to choose from, including a new physician/administrator collaboration track.

Academy Plus Course Pass

All AAOE instruction courses are part of the Academy Plus course pass. Academy Plus offers maximum convenience, with unlimited access to all Academy and AAOE instruction courses. Individual tickets for Academy and AAOE instruction courses will no longer be sold.

Note: Due to Fire Marshal regulations, seating capacities are limited. Seating is available on a first-come basis, so please plan accordingly.

Network

AAOE Member Lounge, Room 298

Saturday, 8:00 AM – 3:30 PM

Sunday, 9:30 AM – 5:00 PM

Monday, 8:30 AM – 5:30 PM

Tuesday, 8:30 AM – 2:00 PM

Not yet a member? Join AAOE at a discounted rate during the Meeting by visiting the Academy Resource Center, Hall G, Booth 3239.

AAOE General Session

SPE09, Sunday, Nov. 17

10:00 AM - 12:00 PM

Room 291

“Creating the Ultimate Patient Experience” promises to excite and invigorate while sharing strategies to ensure that your practice is the most prominent and well regarded BRAND in your area.

Sponsored by Genentech and ALCON, INC.

Member Appreciation Reception

Sunday, Nov. 17

6:00 PM - 7:30 PM

Loews New Orleans Hotel

The AAOE Member Appreciation Reception is open exclusively to AAOE members and their guests.

Sponsored by ALCON, INC.

The American Academy of Ophthalmology is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

AAOE Coding Sessions

Saturday, Nov. 16

Room 293

C American Academy of Professional Coders

J JCAHPO

The following coding sessions take place concurrently with the Academy's Annual Meeting as part of the AAOE program. These intensive sessions enhance participants' knowledge of appropriate coding and documentation in order to receive proper reimbursement. Separate registration is required to attend these events, they are not included in the Academy Plus course pass. Members and nonmembers can register for the AAOE Coding sessions without registering for the 2013 Annual Meeting.

C J Conquering ICD-10-CM for Ophthalmology

Instructor(s): Elizabeth Cottle CPC OCS, Raj Rathod MD MBA, Sue Vicchilli COT OCS, Joy Woodke COE OCS

Prepare for ICD-10, the biggest change happening to coding in over 30 years. This three-hour interactive course will address what practices must know in order get paid timely and correctly starting Oct. 1, 2014. Topics include: ICD-10 terminology and guidelines for usage, what administrators must know, what technicians must do, what coders and billers must know and implement and what physicians cannot delegate. The course will present in-depth case studies across all subspecialties.

Time: 8:00 - 11:00 AM

Fee: \$340

ICD-10-CM for Ophthalmology book included with registration.

C J Coding Camp

Offered in collaboration with the Annual Commission on Allied Health Personnel in Ophthalmology (JCAHPO)

Moderator: Sue Vicchilli COT OCS

Instructor(s): Elizabeth Cottle CPC OCS, Stephen Kamenetzky MD OCS, Michael X Repka MD MBA OCS, Joy Woodke COE OCS

Sharpen your coding and documentation skills while boosting your coding confidence at this three-hour intermediate/advanced course. Learn to receive proper reimbursement for all the claims you submit. Topics include modifier application to optimize reimbursement, the ten most common testing service denials, the 10 most common surgical denials and tips to successfully navigate federal and commercial payer audits.

Time: Time: 12:30 - 3:30 PM

Fee: \$280

The American Academy of Ophthalmology is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Ambulatory Surgery Centers

A Ophthalmic ASC Administration, Operations and Procedures

Course: 193 Sunday
 Room: 290 2:00 - 3:00 PM
 Education Level: INT Target Audience: ALL

Synopsis: This course will provide an overview of core competencies and essential tools and resources for running the ophthalmic ASC. As costs continue to go up, the ASC owner needs to know how to manage all costs and revenues to survive and thrive in the competitive health care markets of the 21st century.

Objective: To provide ASC managers with helpful tools to improve performance in a hands-on introduction to the process of reviewing operations of the ASC.

*Senior Instructor(s): Kent L Jackson***

Presenter(s): Louis Sheffler MPS, Maria Tietjen BSN, and Carl Desch MBA

A How to Develop a Successful Ophthalmic Ambulatory Surgery Center

Course: 519 Tuesday
 Room: 290 9:00 - 10:00 AM
 Education Level: INT Target Audience: ADMIN

Synopsis: This course will show from A to Z the difficulties of developing a successful ophthalmic ASC. It will discuss the various development options and pitfalls to avoid. Everything from revenue generation to the costs of rent, equipment, staffing, supplies, and other expenses will be covered. The pearls garnered in helping develop over 350 ASCs will be thoroughly discussed. Because the ASC industry including allowable procedures, CMS payments, architectural requirements, and more is constantly changing, this presentation changes from year to year.

Objective: By the conclusion of this course, attendees will be able to independently develop their own strategic ASC business plan. This business plan will allow attendees to determine the feasibility of adding an ASC to their own practice. This course will help attendees navigate the rocky waters between them and a successful ophthalmic ASC.

*Senior Instructor(s): John A Marasco**

A ASC Benchmarking

Course: 546 Tuesday
 Room: 290 10:15 - 11:15 AM
 Education Level: INT Target Audience: ALL

Synopsis: This course will provide an overview of benchmarking for the ophthalmic ASC, including a brief history, reasons for benchmarking, processes involved, and highlights from the 2013 Outpatient Ophthalmic Surgery Society Benchmarking Survey, including instructions for participation. Presenters will introduce examples based on case studies and engage the audience in hands-on discussion of how to gather and apply key benchmarks to their facilities.

Objective: To provide ASC staff with a compelling rationale for benchmarking and a hands-on introduction to the process.

*Senior Instructor(s): Kent L Jackson***

Instructor(s): Maureen Waddle MBA, Albert Castillo*

Business Operations & Finance

NEW SO A Top 10 Topics Ophthalmology Practices Ask Us About

Course: 173 Sunday
 Room: 286 2:00 - 3:00 PM
 Education Level: BAS Target Audience: ALL

Synopsis: This course will review and discuss the 10 most relevant topics presented to us by our ophthalmology clients from around the country throughout the year prior to the meeting. The course will cover an assortment of questions and issues spanning business, practice management, tax, and legal issues that are certain to be relevant to ophthalmology practices of all sizes. Attendees will learn about the variety of questions and issues confronting other ophthalmology practices, and recommendations for how to handle them, from experienced attorneys / consultants with more than 50 years com-

bined experience working with ophthalmology practices. By covering a wide range of different topics that have been actually presented to us by our ophthalmology clients, attendees will gain knowledge and understanding of the business, practice management, tax, and legal issues that can arise in an ophthalmology practice on a day-to-day basis.

*Senior Instructor(s): Mark E Kropiewnicki JD LLM**

*Instructor(s): Daniel M Bernick JD**

NEW A Internal Financial Controls for the Small Practice

Course: 194 Sunday
 Room: 296 2:00 - 3:00 PM
 Education Level: BAS Target Audience: ADMIN

Synopsis: Internal financial controls prevent or detect errors, safeguard assets (especially cash) from being misappropriated, and encourage staff adherence to prescribed managerial policies. Frequently, controls are not implemented because they are perceived as time consuming or as indicating management's mistrust of the staff. On the contrary, internal controls allow management to monitor process, rather than employees, which is more secure and efficient and actually increases trust of the staff. They prevent or detect errors and efforts to circumvent the established policies and procedures of the organization.

Objective: Understanding the risks that arise when sufficient controls are not in place will help administrators to understand that controls critical to the health of a practice are often very straightforward to implement.

Senior Instructor(s): Andrew Wang

YO A Doctors and Administrators: Working Together to Make Sound Financial Decisions

Course: 195 Sunday
 Room: 288 2:00 - 4:15 PM
 Education Level: INT Target Audience: ALL

Synopsis: The dramatic changes in healthcare that are affecting ophthalmology practices make financial decisions more critical than ever. This course is designed to help doctors and administrators work together more effectively as they make major financial decisions. Discussion and case studies will focus on both capital investment and operational expense decisions and will address the tension between clinical needs and financial realities.

*Senior Instructor(s): Derek A Preece MBA**

*Instructor(s): Robert E Wiggins MD MHA**

SO A How to Monitor and Maintain an Efficient Practice

Course: 211 Sunday
 Room: 294 3:15 - 4:15 PM
 Education Level: INT Target Audience: ALL

Synopsis: This course will provide examples of how to evaluate practice efficiency in models that all size/sub-specialty practices should benefit from. These models will be demonstrated by a Physician and his administrator. Concepts will include: review of RVU's, general productivity utilizing RVU's/pt counts, staffing allocation, monitoring growth, identifying practice's own benchmarks.

Objective: To provide practices with formulas and tools to measure doctor's efficiency in relation to staffing productivity.

*Senior Instructor(s): Steven V L Brown MD**

Instructor(s): Nicole E Kesten OCS

NEW A Strategic Planning by Fact

Course: 212 Sunday
 Room: 293 3:15 - 4:15 PM
 Education Level: INT Target Audience: ALL

Synopsis: Many practices struggle when assessing practice growth opportunities because they have little upon which to base their decisions, other than their impressions. Today's digital society has amassed information that can inform decisions, for those who know where to find it.

A American Society of Ophthalmic Administrators. **C** American Academy of Professional Coders. **J** JCAHPO. **EHR** Electronic Health Records.

SO Endorsed by Senior Ophthalmologist Committee. **YO** Endorsed by Young Ophthalmologists committee. * The presenter has a financial interest.

** The presenter has not submitted financial interest disclosure information as of press date. No asterisk indicates that the presenter has no financial interest.

AAOE Instruction Courses

Objective: Participants will learn what information is available within their practice and from outside sources, and how to use that information to inform practice development. They will come away with an understanding of data sources, key demographic characteristics and ratios, and mapping techniques to visualize the information.

*Senior Instructor(s): Michael J Parshall**

YO A Financial Analysis and Reporting

Course: 225 Sunday
Room: 283 4:30 - 5:30 PM
Education Level: INT Target Audience: ALL

Synopsis: This course is designed to provide tools and techniques for prospectively and retrospectively analyzing an ophthalmology practice's financial performance.

Objective: By the conclusion of this course, attendees should be able to (1) describe the range of analyses to be done, (2) present the methodologies for each analysis, (3) present the reporting for each analysis, (4) provide the tools for the methodologies to be applied to other analyses, and (5) describe the actions to be taken based on the results of the analyses.

*Senior Instructor(s): Ron Rosenberg PA MPH**

NEW A Financial Benchmarking for the Retina Practice

Course: 230 Sunday
Room: 296 4:30 - 5:30 PM
Education Level: BAS Target Audience: ADMIN

Synopsis: This course will highlight the numerous changes and trends in retina practices over the last few years as they relate to the financial health of the practice. This course will also serve as an introduction to financial benchmarking for the retina specialist, including recommendations and healthy ranges for what specific productivity and efficiency ratios to track. Case studies will be used throughout the presentation to provide real-world examples to attendees.

Objective: At the conclusion of this course, the attendee will be able to (1) define benchmarking and understand how to use healthy ranges to set goals for practices, (2) understand how the evolution of retina practices in recent years has increased the need for organizations to regularly analyze their benchmarking results, (3) have a working knowledge of how current and future market trends will impact retina practices, and (4) use benchmarking results to create goals and action plans to foster practice improvement.

*Senior Instructor(s): Andrew Maller MBA**

YO A Ophthalmology Practice Buy-In and Pay-Out Arrangements

Course: 236 Sunday
Room: 294 4:30 - 5:30 PM
Education Level: BAS Target Audience: ALL

Synopsis: Learn how to structure fair and reasonable financial, legal, and practical arrangements for ophthalmology practice buy-ins and pay-outs from attorneys consultants who have more than 50 collective years of experience and have done thousands of practice buy-ins and pay-outs. This course will describe and explain appropriate buy-in arrangements for associates as well as customary pay-out arrangements for owners leaving a practice. This course will cover the valuation and goodwill of an ophthalmology practice as well as the factors affecting the entry or exit of an ophthalmologist from a practice.

Objective: By the conclusion of this course, participants will learn how to structure buy-in pay-out arrangements that are fair and reasonable both to practice owners and to joining or departing ophthalmologists. Participants will also gain an understanding of ophthalmology practice values and learn about the practical considerations, limitations, and protections needed when establishing buy-in pay-out arrangements.

*Senior Instructor(s): Mark E Kropiewnicki JD LLM**

*Instructor(s): Daniel M Bernick JD**

NEW A Creating a Clinical Trial Unit

Course: 303 Monday
Room: 297 9:00 - 10:00 AM
Education Level: BAS Target Audience: ALL

Synopsis: The attendees at this course will have an understanding of what it takes to create and manage a clinical trial unit within the physician office or as part of a hospital,

health system, or institution. The materials will include the necessary parties and their roles, delineation of responsibilities, negotiating the clinical trial agreement including the budget, getting through institutional review board and informed consent issues, enrollment of study subjects, reporting of adverse events, completing an analysis of third party payer billing requirements and policies for study subjects, and monitoring the study through its conclusion.

Objective: At the conclusion of this course, attendees will know what they need to create a clinical trial unit, negotiate a clinical trial agreement and budget, and manage the study to its conclusion.

Senior Instructor(s): Brenda Laigaie JD

NEW A Advanced Ophthalmology Billing

Course: 317 Monday
Room: 296 9:00 - 10:00 AM
Education Level: INT Target Audience: ALL

Synopsis: This course will provide the tools and techniques to move billing and collection performance from acceptable to outstanding.

Objective: At the completion of the course, attendees will have the knowledge and tools to (1) achieve optimal collection performance, (2) successfully appeal denied claims, (3) manage the administration of insurance contracts, (4) keep up to date on coding changes, including procedures, diagnoses, modifiers, Correct Coding Initiative, and frequency filters, (5) use the most advantageous coding for maximum reimbursement, (6) manage physician behavior on coding and documentation, (7) ensure that all services are captured as charges, and (8) manage staff performance.

*Senior Instructor(s): Ron Rosenberg PA MPH**

*Instructor(s): Donna Connolly**

SO A Securing Access in the Age of ACOs

Course: 324 Monday
Room: 286 9:00 - 10:00 AM
Education Level: INT Target Audience: ALL

Synopsis: Access to our current and future patients will become more complex. Ophthalmology groups must collaborate with payers, ACOs and other health systems. Attendees to this course will learn how to identify sources of referrals and strategies to continue and/or create new referrals sources. Attendees will learn how to position an ophthalmology practice to remain independent while participating in ACOs. The risks for an ophthalmology practice in an era of powerful, large integrated health systems will be discussed. Finally, some tips for cultivating mediation skills will be presented. The format of the course will be interactive and discussion will be encouraged.

Senior Instructor(s): Ruth D Williams MD

*Instructor(s): David B Dopp***

NEW A Key Performance Indicators: Numbers Can Lie

Course: 327 Monday
Room: 283 9:00 - 10:00 AM
Education Level: INT Target Audience: ADMIN

Synopsis: Using information from real practices, this course will describe (1) the key practice performance and financial indicators that every practice owner or administrator should understand, (2) how these indicators should be tracked / monitored, (3) how to use the benchmarks to improve performance, (4) how to compare an individual practice with others, (5) how numbers (benchmarks) can be misleading and lead to the wrong management decisions, and (6) how to avoid the pitfalls of misleading benchmarks.

Objective: By the conclusion of this course, attendees will be able to (1) use key performance indicators, such as profit margin, return on equity, facilities expense ratio, practice expense ratio, etc., to make management decisions, (2) use "healthy ranges" for each benchmark and compare themselves to these "healthy ranges" (4) use key performance indicators to improve their practices, spot problem areas, and create strategic plans, and (5) avoid being misled into poor decisions (or into making no decision) by "following misleading numbers."

*Senior Instructor(s): Jeff Grant**

NEW | A Budgeting for the Ophthalmology Practice

Course: 329 Monday
 Room: 294 9:00 - 10:00 AM
 Education Level: BAS Target Audience: ADMIN

Synopsis: This course will provide a practical and simple approach for implementing a practice budget. Specific methods will be introduced related to examining historical and current results, assessing future changes in the practice, forecasting future results, and integrating the results with financial reporting efforts.

Objective: At the conclusion of this course, the attendee will be able to (1) understand the process of budgeting and how to get started, (2) use current practice results to accurately predict future performance, (3) perform a thorough review of practice goals and initiatives for the coming year that will assist in forecasting results, and (4) integrate budget results into comparative monthly and annual management and benchmarking reports.

Senior Instructor(s): Andrew Maller MBA*

A Income Division for Group Practices: Structuring Appropriate Physician Compensation Arrangements

Course: 338 Monday
 Room: 296 10:15 AM - 12:30 PM
 Education Level: BAS Target Audience: ALL

Synopsis: This course will explore different models for dividing income in a group practice, with emphasis on creating incentives, responses to incentives, legal and regulatory concerns, and modeling different structures. A case study will be employed to illustrate the process.

Objective: To provide an understanding of the variety of income division models available to choose from, the equities of each and their legal and regulatory concerns (Stark fraud and abuse), and the process of developing the right model for one's group.

Senior Instructor(s): Robert J Landau JD

Instructor(s): Robert A Wade JD

NEW | A Strategic Planning for Ophthalmology Practices

Course: 342 Monday
 Room: 294 10:15 - 11:15 AM
 Education Level: BAS Target Audience: ALL

Synopsis: Many factors are combining to make the future more perilous for ophthalmology practices while at the same time opening up new opportunities. Proper decision making is paramount for success. This course will describe the basic elements of strategic planning in order to help ophthalmologists and administrators plan for the future. It will explain the differences between objectives, strategies, and tactics and how to use them to position your practice for the future. SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) and PERT analysis (Program Evaluation and Review Technique) will be discussed. A real-life example will be used to describe some of the challenges faced and opportunities available.

Objective: At the conclusion of this course, attendees will be able to understand the steps involved in ordered decision making along with how to perform SWOT and PERT analysis. They will be able to apply these concepts to develop practice goals and properly position themselves in their local market.

Senior Instructor(s): Peter Wasserman MD*

NEW | A Step 1 to Running on Time: Scheduling

Course: 343 Monday
 Room: 291 10:15 - 11:15 AM
 Education Level: INT Target Audience: ADMIN

Synopsis: This course will look at historic methods for scheduling and make recommendations for scheduling by type. We will review the steps of conducting a thorough evaluation of doctor and patient behavior patterns. Examples of time flow studies and how they are used to develop scheduling systems will be reviewed. Dual scheduling in order to manage tech and equipment resources will also be discussed. Sample scheduling templates will be discussed and set up during the course.

Objective: Upon completion of this course, attendees will be able to: 1) Understand "type" scheduling, 2) Understand time-flow studies and how to use them in creating a

schedule, 3) Based on the examples, create appointment types for their own practice, 4) Account for emergencies and no show rates, and 5) Set up a variety of schedules to meet patient and doctor demands.

Senior Instructor(s): Maureen Waddle MBA*

A Going Lean: Tools for Efficiency and Effectiveness in the Ophthalmology Practice

Course: 345 Monday
 Room: 283 10:15 - 11:15 AM
 Education Level: INT Target Audience: ALL

Synopsis: Concerns about health care quality and cost have moved to the forefront in discussions on the evolution of the U.S. health care system. It is no longer a question of whether health care organizations should focus on these issues, but rather how to do so in order to ensure their survival. The purpose of this course is to expand on the lean approach to quality improvement and efficiency, which has been introduced in prior courses. Specific examples will be given that can be applied to the attendees' practices to reduce waste and that will demonstrate the value of this methodology in improving both quality and efficiency.

Objective: At the conclusion of this course, the participant should have an understanding of Lean Healthcare and of tools that can be applied in an ophthalmology practice to improve both quality and efficiency.

Senior Instructor(s): Robert E Wiggins MD MHA*

Instructor(s): Denise C Fridl COT COE, Susie Winterling

A Tracking Your Dollars: Financial Policies to Avoid Fraud and Embezzlement

Course: 346 Monday
 Room: 293 11:30 AM - 12:30 PM
 Education Level: INT Target Audience: ALL

Synopsis: In times of increasing costs and decreasing reimbursement, it is crucial that physician owners and administrators keep a finger on the pulse of practice finances. This course will share a financial policy written to help physicians, administrators, and staff in understanding, monitoring, and following all the various financial flows in today's practices.

Objective: Upon completion of this course, the participants will understand the revenue cycle process of an ophthalmic practice, have the tools and knowledge to write their own financial policies, and have an understanding and knowledge of what is important in making financial information transparent, available, and understandable.

Senior Instructor(s): Albert Castillo

NEW | A Yes, It Can be Done ... Creating a Workable Master Schedule

Course: 383 Monday
 Room: 296 2:00 - 3:00 PM
 Education Level: BAS Target Audience: ADMIN

Synopsis: This course will examine the elements to be considered when creating or changing a master schedule template. The areas to address are space, staff, and other fixed and variable resources.

Objective: At the conclusion of this course, the attendee should be able to (1) list the major considerations for building an ophthalmic schedule, (2) discuss the relationship between clinical staffing and patient load, (3) discuss diagnostic testing as it pertains to schedule creation, and (4) explain the impact of multiple providers, scheduled simultaneously, on patient flow.

Senior Instructor(s): Jane T Shuman COE COT MSM OCS*

Instructor(s): Jeri R Screnci MBA

NEW | A The Art of Benchmarking

Course: 384 Monday
 Room: 295 2:00 - 3:00 PM
 Education Level: INT Target Audience: ADMIN

Synopsis: This course will review the most commonly used national benchmarks and their formulas. The course will focus on making practical use of the information to improve your individual practice. Case studies will be used to help sharpen analytical skills and understand the importance of customizing benchmark reports for your practice.

AAOE Instruction Courses

Objective: At the conclusion of this course, the attendee will be able to (1) calculate financial, productivity, and staffing benchmarks, (2) use benchmarking information to identify opportunities, (3) recognize potential pitfalls in looking at benchmarking data, and (4) create goals and action plans to improve practice performance.

*Senior Instructor(s): Maureen Waddle MBA**

A How to Run a Lean, Mean Refractive Practice in Today's Tough Economic Times

Course: 385 Monday
Room: 297 2:00 - 3:00 PM
Education Level: INT Target Audience: ALL

Synopsis: In this course you will learn whether to buy your own equipment or take advantage of the lease options available. You will learn how to price yourself in the marketplace today. We will discuss what your retained earnings after market share calculation should be. We will discuss what you should be paying for your full-time equivalents. You will find out if you are competitive in the marketplace.

Objective: This course will help you to (1) make sure your practice is competitive, (2) make sure you are getting the most profit you can out of your refractive practice, and (3) make sure you are making the right business decisions.

*Senior Instructor(s): Michael D Brown**

NEW A Capital Budgeting Basics: Can I Afford This New Piece of Equipment?

Course: 391 Monday
Room: 293 2:00 - 3:00 PM
Education Level: INT Target Audience: ALL

Synopsis: Capital investment decisions are among the most important financial decisions in which a practice administrator will participate. Whether the purchase under consideration is an OCT, femtosecond laser, or electronic health records system, a capital budget should be developed. This course will introduce the participant to the basic concepts necessary to understand and develop a capital budget and analyze the profitability and break-even point for any expensive equipment purchase. Examples of how this information can be used in an ophthalmology practice will be presented.

Objective: At the conclusion of this course, each participant will be able to conduct and understand a capital budget analysis prior to the purchase of a major piece of equipment. The participant will be able to state the benefits and limitations of such an analysis and understand the key factors that impact the profitability of a new piece of equipment in his or her own organization.

*Senior Instructor(s): Robert E Wiggins MD MHA**

Large Practice Executive Forum

Course: 397 Monday
Room: 293 3:15 - 5:30 PM
Education Level: INT Target Audience: ALL

Synopsis: Managing a practice with ten or more doctors presents unique challenges not shared by those from smaller practices. In this informal and interactive discussion, you will have the opportunity to share your experiences and insights with participants from other large practices. Attend this workshop and come away with new ideas to solve your HR, patient flow, optical, ASC, EMR, satellite offices, financial management, or other practice challenges. Seating is limited.

Senior Instructor(s): Tim Couch

A Getting Clean Data: Practice Management Software Setup

Course: 400 Monday
Room: 295 3:15 - 4:15 PM
Education Level: INT Target Audience: ALL

Synopsis: This course will provide tools and techniques for setting up practice management software to enable accurate and cogent management reporting.

Objective: By the conclusion of this course, attendees will learn to (1) establish the fee schedule, (2) develop the procedure table, (3) develop the insurance tables, (4) categorize insurances into classes, (5) develop a set of journal codes, and (6) design management reports.

*Senior Instructor(s): Ron Rosenberg PA MPH**

NEW A Step 1 to Running on Time: Scheduling

Course: 419 Monday
Room: 286 4:30 - 5:30 PM
Education Level: INT Target Audience: ADMIN

Synopsis: This course will look at historic methods for scheduling and make recommendations for scheduling by type. We will review the steps of conducting a thorough evaluation of doctor and patient behavior patterns. Examples of time-flow studies and how they are used to develop scheduling systems will be reviewed. Dual scheduling in order to manage tech and equipment resources will also be discussed. Sample scheduling templates will be discussed and set up during the course.

Objective: Upon completion of this course, attendees will be able to (1) understand "type" scheduling, (2) understand time-flow studies and how to use them in creating a schedule, (3) based on the examples, create appointment types for their own practices, (4) account for emergencies and no show rates, and (5) set up a variety of schedules to meet patient and doctor demands.

*Senior Instructor(s): Maureen Waddle MBA**

NEW A Big Practice Problems: What the Experts Recommend

Course: 502 Tuesday
Room: 295 9:00 - 11:15 AM
Education Level: INT Target Audience: ALL

Synopsis: This course will cover many areas of concern in a medical practice. We will talk about staffing, overhead, expenses, collections, number of work hours per week, managed care contracts, etc. We will involve the audience and ask for specific problems they have in their offices. We will cover standard protocol and what your office policies should be. We will give recommendations on how to negotiate with third-party carriers.

Objective: Attendees will get to see what their office problems are compared to other offices. We will show you how to alleviate or reduce your problem areas. We will give you guidelines to put in place in your practice to make sure it is successful.

*Senior Instructor(s): Michael D Brown**

A Tools and Tips to Build a Budget for a Dynamic Practice

Course: 528 Tuesday
Room: 283 9:00 - 10:00 AM
Education Level: BAS Target Audience: ALL

Synopsis: With continual changes in the health care climate, medical practices need to develop more effective business practices. Planning and developing a budget is one way to develop strong financial controls within your organization. We will look at key elements of budget development and budget control, with an eye to meeting the plan and goals of the practice. Participants will be introduced to new ways to use benchmarks in budget development and maintenance. The presentation will examine the budget in terms of how it can help with the effects of growth and expansion opportunities.

Objective: The goal of this presentation is to enable practices to transform the budget planning cycle into an evolutionary process, bringing both intangible and tangible returns to the organization and allowing management leadership to own the results of the budgeting process. Concepts and ideas of the presentation are designed to help practices building their first budget as well as groups looking to evolve their current budget.

Senior Instructor(s): Mark S O'Conner MBA

NEW YO A Billing for Beginners

Course: 529 Tuesday
Room: 296 9:00 - 10:00 AM
Education Level: BAS Target Audience: ALL

Synopsis: This course will introduce physicians and administrators without any billing experience to the essential concepts of billing for ophthalmology services.

Objective: At the completion of this course, attendees will (1) know what components must be in place to bill and receive payments, (2) have a basic understanding of the components, and (3) know what resources are available to gain in-depth knowledge of each component.

*Senior Instructor(s): Ron Rosenberg PA MPH**

*Instructor(s): Donna Connolly**

A Optimizing Patient and Staff Efficiency and Satisfaction Through Facility Design

Course: 535 Tuesday
 Room: 286 10:15 - 11:15 AM
 Education Level: BAS Target Audience: ADMIN

Synopsis: This course will show how to best address the key services of clinic, optical, laser vision correction, and ambulatory surgery in a state-of-the-art ophthalmic facility. Design methodologies that enhance patient and staff efficiency and satisfaction will be discussed in detail. The course will also show how to best incorporate key subspecialties like pediatrics, retina, oculoplastics, and even hearing services.

Objective: By the conclusion of this course, attendees will understand the design implications of combining the typical services present in a state-of-the-art full-service ophthalmic center. The attendees will be able to recognize and appropriately address various design environments that should be present in any well-organized ophthalmic facility, new or old. These methodologies will help attendees improve their patient and staff efficiency and satisfaction. The pearls of over 30 years of ophthalmic center design development will be discussed.

Senior Instructor(s): John A Marasco*

A Let's Make a (Practice) Deal: A Step-by-Step Approach

Course: 545 Tuesday
 Room: 297 10:15 AM - 12:30 PM
 Education Level: INT Target Audience: ALL

Synopsis: Many ophthalmologists fail to sell their practices because they do not know how to correctly go about a practice sale, or because they believe there are no buyers. This course teaches a proven method developed over 20 years that has resulted in many practice sales.

Objective: At the conclusion of this course, participants will understand the process involved in successful practice sales, what information to provide, how to attract qualified buyers, buyers' motivations and fears, valuation methods, and the different types of transactions. They will come away with an understanding of common terms and conditions, negotiation tactics, and most importantly, what to say and what not say to bring a sale to closure.

Senior Instructor(s): Michael J Parshall*

NEW SO A Valuing, Buying, Selling, and Transitioning Your Practice

Course: 558 Tuesday
 Room: 286 11:30 AM - 12:30 PM
 Education Level: INT Target Audience: ALL

Synopsis: Considering retirement? Selling or wanting to buy a practice? Making such a transition requires planning and sufficient time to accomplish this effectively for your patients, staff, and family. Learn creative strategies to help you accomplish your goals. This seminar will discuss the options, including bringing in an associate, recruiting, or selling the practice. Also included will be the latest information on valuation methodology for selling, divorce, or estate planning.

Senior Instructor(s): Debra L Phairas

A Financial Decision Making in the Eye Care Practice

Course: 567 Tuesday
 Room: 290 11:30 AM - 12:30 PM
 Education Level: INT Target Audience: ALL

Synopsis: In this course attendees will have a chance to see accounting basics, ration analysis and benchmarking, overhead and expense management, cost analysis and contracting and accounts receivable management. We will cover the different accounting methods. Critical financial statements will be discussed. We will cover benchmarks for your practice. This course will cover all of the financial areas of your practice to help you run as lean, mean, and effective as possible.

Objective: This course is designed to help you (1) obtain benchmarks and ratios to compare your practice to other practices, (2) make sure you are operating efficiently and effectively, (3) ensure you understand your financial statements, (4) make sure your accounts receivables are where they should be.

Senior Instructor(s): Michael D Brown*

SO A Buying or Selling a Practice: Creating Win-Win Transactions

Course: 554 Tuesday
 Room: 288 12:45 - 3:00 PM
 Education Level: INT Target Audience: ALL

Synopsis: Using some real-life examples (names and some other information changed to protect the innocent), this course will present the prospective buyer and seller of a practice with a rubric that helps ensure that each gets what they need. The course will look at where to find sellers and buyers, how to price a practice, what is included in the sale, and the art of negotiating, as well as crafting letters of intent, exclusivity or "no-shop" clauses, and the salient deal points and legal issues to be covered in a practice sale / purchase. Also to be covered are due diligence, financing, post-sale transition, employment of the seller, office staff, patient notifications, and restrictive covenants.

Objective: Through lecture and Q&A, participants will learn how to craft "win-win" practice sales and purchases.

Senior Instructor(s): Robert A Wade JD

Instructor(s): Mark D Abruzzo JD, Caroline Patterson

Coding & Reimbursement

C J A Audits: It's Not a Matter of If, but When

Course: 180 Monday
 Room: 288 9:00 - 11:15 AM
 Education Level: BAS Target Audience: ALL

Synopsis: Being the subject of an audit is stressful and time consuming for physicians and staff. Given the way audits are conducted, both by Medicare Part B as well as all other third-party payers, most physicians will be audited by some payer at some time during their careers. This course will present real-life audit scenarios of Focus Medical Review, Comprehensive Error Rate Testing, Recovery Audit Contractors (RACs), Zone Physician Integrity Program (ZPIC), and Office of Inspector General (OIG) Investigations.

Objective: Upon completion of this course, the participant should be able to (1) recognize that there are numerous types of audits conducted by all payers as well as government agencies, (2) understand the variety of audits to which physicians are subject, and (3) learn the steps to take when one receives the request for documentation.

Senior Instructor(s): Sue J Vicchilli COT OCS

Instructor(s): Stephen A Kamenetzky MD OCS*, Cherie McNett

NEW C J A ICD-10-CM: Simplifying the Complex

Course: 238 Sunday
 Room: 291 4:30 - 5:30 PM
 Education Level: INT Target Audience: ALL

Synopsis: ICD-10-CM represents the largest reorganization of the diagnostic code set in its history. On Oct. 1, 2014, we move from approximately 13,000 codes to over 68,000. There is an entirely new alpha-numeric code set. The codes have been reorganized, and the nomenclature updated. But there is also good news: the underlying basic coding principles remain as the foundation of diagnostic coding. This course will (1) provide an overview of ICD-10-CM, (2) explore what is new and what is the same as ICD-9-CM, (3) review the basic underlying coding principles, and (4) help prepare the way to move from ICD-9-CM to ICD-10-CM.

Objective: Upon completion of this course, the attendee will better understand the organization of ICD-10-CM, its principles, and where it is similar and where it is different from ICD-9-CM. The attendee will be better prepared to make a seamless transition into ICD-10-CM.

Senior Instructor(s): Gordon Johns MD*

C J A When to Use E/M and When to Use Eye Codes

Course: 307 Sunday
 Room: 283 2:00 - 4:15 PM
 Education Level: BAS Target Audience: ALL

Synopsis: When do you bill an E/M, and when do you bill an eye code? Physicians tend to code far more exams than tests or surgical procedures, but for the financial success of the practice, it is vital to clear up the confusion. This course will explain the rules and distinctions. Medical vs. wellness and vision coverage will also be addressed.

AAOE Instruction Courses

Objective: Upon completion of this course, the participant should be able to (1) distinguish the differences between medical, vision, and wellness exam documentation, (2) understand Medicare and non-Medicare payer documentation rules, and (3) recognize the importance of the chief exam and patient expectations.

Senior Instructor(s): Sue J Vicchilli COT OCS

*Instructor(s): Joy Woodke COE OCS**

C J A Making the Most With Modifiers

Course: 361 Monday
 Room: 288 11:30 AM - 12:30 PM
 Education Level: INT Target Audience: ALL

Synopsis: Understanding modifiers and their appropriate use impacts reimbursement significantly. This course will walk you through some common everyday scenarios to help you understand the concepts of modifiers and apply this understanding in your practice.

Senior Instructor(s): Elizabeth D Cottle CPC OCS

Instructor(s): Heather Hambrick Dunn COA

NEW C J A Coding for Ophthalmic Testing Services

Course: 370 Monday
 Room: 294 2:00 - 3:00 PM
 Education Level: BAS Target Audience: ADMIN

Synopsis: Coding and billing for diagnostic testing is a major part of the work of any ophthalmic practice, but more so for subspecialties such as retina, cornea, and glaucoma. Many practices are not sufficiently aware of current Medicare regulations that guide the reimbursement of these tests. This presentation will include information on documentation requirements, unilateral vs. bilateral payment, multiple testing reimbursement policies, recognition of which tests can be billed together on the same day, diagnosis coverage, and supervision rules for ophthalmic testing services.

Objective: Upon completion of this course, the participant should be able to (1) identify proper code selection for each test performed, (2) recognize documentation requirements, including what is meant by interpretation and report, (3) understand the impact of the Correct Coding Initiative, (4) learn that common sense does not always equal a covered diagnosis, and (5) identify situations where an Advance Beneficiary Notice should be used.

*Senior Instructor(s): Joy Woodke COE OCS**

Instructor(s): Michell Miller-Ballard OCS CPC

C J A Surgery Billing Made Easy for All Specialties

Course: 382 Monday
 Room: 291 2:00 - 4:15 PM
 Education Level: BAS Target Audience: ALL

Synopsis: Most of the revenue generated by the ophthalmic practice is from surgery. Accurate surgery coding and understanding of the various rules is essential.

Objective: Attendees will learn the various aspects of surgical coding and how to access the right tools for correct reimbursement.

Senior Instructor(s): Elizabeth D Cottle CPC OCS

C J A Comprehensive Cataract Coding

Course: 404 Monday
 Room: 296 3:15 - 5:30 PM
 Education Level: INT Target Audience: ALL

Synopsis: What are visual acuity requirements (if any)? What makes cataract surgery complex? Is the postop complication separately billable even when performed in my office? What is the impact of Correct Coding Initiative edits on combined cataract, retina, cornea, and/or glaucoma cases? End the confusion about pre-, intra-, and postoperative care for the number 1 surgery performed in the United States.

Objective: Upon completion of this course, the participant should be able to (1) distinguish between Medicare and non-Medicare payer documentation rules prior to surgery, (2) understand what makes the surgery complex, (3) code correctly for combined cataract, retina, cornea, and/or glaucoma cases, and (4) recognize which complications are separately billable and which are considered postop.

Senior Instructor(s): Sue J Vicchilli COT OCS

*Instructor(s): Kristin Carter MD**

C J A Medicare Postoperative Cataract Eyewear: Coding, Billing, and Supplier Compliance

Course: 415 Monday
 Room: 295 4:30 - 5:30 PM
 Education Level: ADV Target Audience: ALL

Synopsis: The Affordable Care Act has had a major impact on durable medical equipment (DME) suppliers of eyewear for use after cataract surgery. This course will cover supplier enrollment or revalidation, enrollment in the Provider Enrollment, Chain and Ownership System (PECOS), surety bonds, electronic funds transfer, par provider agreement, Provider Transaction Access Number (PTAN), National Provider Identifier (NPI), passing DME inspection, required patient documentation (ABN, etc.), Common Electronic Data Interchange (CEDI) processing, billing, coding, and modifiers. The course content will include tips on filling out the 1500 form. The instructor is the optical industry representative on the Provider Outreach and Education Advisory Committees of three of the nation's regional Centers for Medicare and Medicaid Services DME Medicare Administrative Contractors: NHIC, National Government Services, and Noridian.

Objective: By the conclusion of this course, attendees will have learned how to enroll as a DME supplier or how to pass the revalidation process, how to make a practice DME supplier compliant, and how to undertake the process of coding, billing, and maximizing patient reimbursement.

Senior Instructor(s): Pamela Fritz

J A CodeFest

Course: 503 Tuesday
 Room: 291 9:00 - 10:00 AM
 Education Level: BAS Target Audience: ALL

Synopsis: Join your physician, technician, administrator, biller, and coder colleagues in the first-ever live coding challenge. In game format, two teams will be selected, each including a physician, an administrator, a technician, and a biller / coder. The moderator will present the prewritten coding questions with multiple answer options. Through an automated response system, audience members will be able to play against the two teams.

Objective: Upon completion of this course, the participant should be able to (1) determine the appropriate level of history, exam, and medical decision making for exams and (2) identify the correct modifier in exams, tests, and surgical cases that ophthalmology practices face daily.

Senior Instructor(s): Sue J Vicchilli COT OCS

NEW J Ophthalmic Coding Specialist Prep Course

Course: 541 Tuesday
 Room: 296 10:15 - 11:15 AM
 Education Level: INT Target Audience: ALL

Synopsis: Demonstrate your coding competency by passing the Ophthalmic Coding Specialist (OSC) Exam. The OCS exam is an open-book, 100-question, multiple choice, online exam. Everyone in the office who is involved in chart documentation and claim submission should demonstrate their coding competency. This one-hour course will prepare physicians, technicians, administrators, and billers to test in 18 content areas of ophthalmic coding. This is the best way to learn and subsequently appropriately code for proper reimbursement.

Objective: Upon completion of this course, the participant will be able to (1) identify and discuss the value of the OCS designation, (2) pass 10 questions with 80% proficiency, (3) identify the appropriate study guides necessary to pass the OCS exam, and (4) identify appropriate online tools to assist in passing the OCS exam.

Senior Instructor(s): Jennifer Carol Ar buckle

C J A Steps for Successful Retina Coding

Course: 584 Tuesday
 Room: 295 12:45 - 3:00 PM
 Education Level: INT Target Audience: ALL

Synopsis: The revenue cycle of the retina practice can be quite complex. Multiple factors impact a successful practice. This course will teach attendees what impacts their reimbursement the most and how to apply tools in their own practices for success.

Senior Instructor(s): Elizabeth D Cottle CPC OCS

Compliance and Risk Management

NEW SO A Compounding Pharmacies: Legal and Regulatory Issues

Course: 182 Sunday
 Room: 291 2:00 - 3:00 PM
 Education Level: INT Target Audience: ALL

Synopsis: This course will give an overview of the legal and regulatory issues around compounding pharmacies. Materials will include a look at the lessons learned from the New England Compounding Center meningitis outbreak, current regulations in the United States, including those from the FDA and congress, and the effect of Supreme Court decision in "Thompson v. Western States Medical Center". Additional materials will look at the role of the states and issues in contracting with compounding pharmacies.

Objective: At the conclusion of this course, attendees will have a better understanding of this complicated issue and its current state of affairs. Attendees will be able to recognize and respond to the issues in contracting with compounding pharmacies and liability exposure for the physician and practice.

Senior Instructor(s): Brenda Laigaie JD

Instructor(s): Robert A Wade JD

A A Physician's Guide to Avoiding Embezzlement

Course: 205 Sunday
 Room: 295 3:15 - 4:15 PM
 Education Level: ADV Target Audience: ALL

Synopsis: It has been estimated that one in six doctors will experience embezzlement at some time during their practice years. A busy doctor is an easy target for embezzlement, and in a down economy, a doctor may be even more at risk. The importance of education, credit checks, and drug screening will be covered, as well as practice policies and procedures implementation. Savvy embezzlers can fool even the most experienced employers, so learn how to protect yourself. Real-life case examples will be discussed.

Objective: At the conclusion of this course, physicians will have learned how to protect their practices from employee embezzlement by instituting accounting controls and effective screening and management techniques.

Senior Instructor(s): Debra L Phairas

A Independent Contractors vs. Employees: The Risks of Misclassification

Course: 331 Monday
 Room: 295 9:00 - 10:00 AM
 Education Level: BAS Target Audience: ALL

Synopsis: This course is intended to educate the attendee on the commonly misunderstood laws regarding employee / independent contractor classification and on the risks and potential consequences of misclassification.

Objective: To educate attendees on the commonly misunderstood laws regarding employee vs. independent contractor classification, including the factors cited by the Internal Revenue Service and Department of Labor and used to determine worker classification. The course will focus primarily on classification of specialist and nonspecialist physicians and optometrists by group practices and on the risks and potential consequences of misclassification (and, in some cases, the consequences of correct classification!).

Senior Instructor(s): Jill S Garabedian JD

Instructor(s): Mark D Abruzzo JD

NEW YO A Social Media and Social Networking in the Physician Office

Course: 340 Monday
 Room: 293 10:15 - 11:15 AM
 Education Level: BAS Target Audience: ADMIN

Synopsis: More than a billion people around the world use social media daily. It is imperative that providers and business managers learn how to manage and utilize this communication channel, particularly as it relates to them as employers, health care providers, and business owners. This course will discuss the use of social media in the physician practice and how best to address certain issues, including HIPAA and confi-

dentiality, reputation control, using social media to conduct informal background checks, and looking at employee use of social media in and out of the workplace from a legal standpoint.

Objective: At the end of this course, participants will have a basic understanding of the various social media and social networking sites and the laws involved with their use in their practices so that they will be able to draft effective policies, monitor the Internet for reputation management, and successfully promote and market their practices.

Senior Instructor(s): Jill S Garabedian JD

Instructor(s): Caroline Patterson

NEW A Getting Ready for 2014: Compliance! Compliance! Compliance!

Course: 373 Monday
 Room: 288 2:00 - 4:15 PM
 Education Level: BAS Target Audience: ALL

Synopsis: Government efforts to get money back from providers (or even avoid paying it out) is a good way to close budget gaps. Recently loosened rules concerning what constitutes a false claim, who can bring whistleblower actions, and knowledge requirements for liability, plus even more aggressive data mining before payments are made, increased audit activity, and aggressive fraud and abuse and program integrity activity, should make compliance a huge concern for all practices. This course will review the basic areas of concern, highlight recent changes in the law, and hone in on how to avoid getting caught in the crosshairs of an investigation and what to do if investigated.

Objective: Participants will leave this course knowing the basic areas of concern with regard to compliance, how recent changes in the law increase the need for stepped-up compliance efforts, and strategies to employ to stay out of trouble.

Senior Instructor(s): Robert A Wade JD

Instructor(s): Brenda Laigaie JD, Mark D Abruzzo JD, Jill S Garabedian JD

NEW A HIPAA Privacy and Security: Trends, Developments, and Issues

Course: 423 Monday
 Room: 291 4:30 - 5:30 PM
 Education Level: BAS Target Audience: ALL

Synopsis: This course will provide an update on the Health Insurance Portability and Accountability Act (HIPAA), the Health Information Technology for Economic and Clinical Health (HITECH) Act, as well as cover developments in new enforcement efforts. Materials will include a look at the HIPAA statute, the HITECH Act, and privacy and security rules, and the course will provide strategies for effective compliance. Material will include the breach notification rule and recent developments in enforcement.

Objective: At the conclusion of this course, attendees will have a greater understanding of HIPAA and the HITECH Act, as well as the privacy and security rules and breach notification rules. Participants will leave the course with strategies for compliance in the face of new developments in enforcement activities.

Senior Instructor(s): Brenda Laigaie JD

Instructor(s): Robert J Landau JD

NEW A Analyzing Medical Legal Tools: The Key to Lawsuit Prevention and Tax Reduction

Course: 504 Tuesday
 Room: 294 9:00 - 10:00 AM
 Education Level: INT Target Audience: ALL

Synopsis: This course is about proper structuring of medical professionals' legal entities (living trusts, family limited partnerships, C and S corporations, and LLCs).

Objective: To enable participants to accomplish the following: (1) understanding correct legal deductions of each entity and correct partnership structuring for lawsuit prevention and tax reduction, (2) structuring the practice for maximum tax reduction and malpractice protection and prevention, (3) maintaining the focus of their practice on improved patient care rather than malpractice defense, (4) ensuring 100% protection of their personal and professional assets from lawsuit through applied risk management, (5) reducing malpractice insurance costs and taxes, and (6) keeping the focus on patients (not legal defense, taxes, etc.) while keeping medical practice costs and patient costs down.

Senior Instructor(s): Carol Foster*

NEW SO A Compounding Pharmacies: Legal and Regulatory Issues

Course: 532 Tuesday
 Room: 288 10:15 - 11:15 AM
 Education Level: INT Target Audience: ALL

Synopsis: This course will give an overview of the legal and regulatory issues around compounding pharmacies. Materials will include a look at the lessons learned from the New England Compounding Center meningitis outbreak, current regulations in the United States including the FDA, Congress, and the effect of Supreme Court decision in *Thompson v. Western States Medical Center*. Additional materials will look at the role of the states and issues in contracting with compounding pharmacies.

Objective: At the conclusion of this course, attendees will have a better understanding of this complicated issue and its current state of affairs. Attendees will be able to recognize and respond to the issues in contracting with compounding pharmacies and liability exposure for the physician and practice.

Senior Instructor(s): Brenda Laigaie JD
Instructor(s): Robert A Wade JD

Electronic Health Records

NEW A Meaningful Use Stage 2 and How to Survive a Meaningful Use Audit

Course: 210 Sunday
 Room: 291 3:15 - 4:15 PM
 Education Level: INT Target Audience: ALL

Synopsis: Recently the U.S. Department of Health and Human Services announced the release of the meaningful use Stage 2 and updated certification criteria. Starting as early as 2014, physician practices will be required to achieve more difficult

Objective: to demonstrate meaningful use of electronic health records to earn federal bonuses and prevent future penalties. The final rule mandates that doctors meet a larger number of core—and stricter guidelines for some of those already in place—during the next part of the 3-stage program. Physicians also must adopt and demonstrate meaningful use of EHR systems by Oct. 1, 2014, or be assessed a 1% penalty by Medicare. In addition to the announcement of new meaningful use rules, Stage 2 also brings audits and additional requirements for certified EHR vendors. With a ton of cash, up to \$44,000 per eligible provider, scrutiny is sure to follow.

Senior Instructor(s): Jeffery Daigrepoint
Instructor(s): Kelsey A Lang MPP

NEW A EHR Top 10 Success Tips for Your EHR Implementation

Course: 215 Sunday
 Room: 288 4:30 - 5:30 PM
 Education Level: BAS Target Audience: ALL

Synopsis: Attending this course, participants will identify some of the lessons learned from electronic health record (EHR) implementations. This course will demonstrate the most valuable tips, using examples of workflow changes, positive employee transition, communication techniques, training and assessment tools, and more. This personal and animated approach to sharing real-life experiences will allow the participants to envision the adoption of EHR technology in their own practices, using these proven techniques and management tools.

Objective: By the completion of this course, participants will be able to (1) recognize the value of EHRs for the ophthalmic practice, and identify resources that can streamline the process, (2) analyze some of the steps involved in an electronic conversion and identify a strategy for conversion, based on their own unique practice needs, (3) identify tools to increase efficiency during and after the ophthalmic EHR implementation, and (4) develop workflow and process improvement protocols for training and for post-EHR adoption.

*Senior Instructor(s): Joy Woodke COE OCS**
Instructor(s): Brittney Wachter CPC OCS

NEW SO A Impact of Electronic Health Records on Malpractice Claims Against Ophthalmologists

Course: 228 Sunday
 Room: 295 4:30 - 5:30 PM
 Education Level: INT Target Audience: ALL

Synopsis: This course will review the professional liability risks and benefits when implementing an EHR system and will focus on the role and responsibility of scribes and privacy issues.

Objective: By the conclusion of this course, attendees will be able to identify different types of EHR systems available, identify potential professional liability risks related to electronic documentation, and implement risk management strategies to mitigate professional liability risks.

Senior Instructor(s): Paul Weber JD
Instructor(s): Sharon Brown

A EHR Electronic Health Records Implementation: Overcoming Resistance to Change

Course: 347 Monday
 Room: 291 11:30 AM - 12:30 PM
 Education Level: BAS Target Audience: ALL

Synopsis: Several barriers to the adoption of electronic health records (EHRs) exist. The resistance to change is one obstacle facing ophthalmic practices during transition periods. In reviewing the process of change and recognizing the factors that contribute to resistance, leaders can develop tools to manage and minimize this potential barrier. This course will review how personnel from various generations may respond to change, and how their technological preferences may contribute to your successful transition. The instructors are ophthalmologists and an administrator with personal experience in change management during an EHR implementation.

Objective: By the conclusion of this course, attendees will (1) recognize common difficulties associated with EHR implementation and related to resistance to change, (2) understand effective change management techniques, (3) recognize phases of change and their effect on personnel, and (4) appreciate generation-specific skills and perspectives and how they impact and can be beneficial to transition.

*Senior Instructor(s): Joy Woodke COE OCS**
*Instructor(s): Michele C Lim MD, Colin McCannel MD**

NEW A EHR Questions About EHR Implementation? Ask Us!

Course: 394 Monday
 Room: 294 3:15 - 4:15 PM
 Education Level: BAS Target Audience: ALL

Synopsis: Migration to electronic health records (EHR) requires careful thought and planning by physician practices. Given the complexities involved, questions inevitably arise as to such issues as IT infrastructure and data backup, ophthalmic device interfaces, managing existing paper charts, and transitional workflow. This panel will feature different practices (small, large, academic) with mature EHR experience to share tips and answer questions from attendees in an interactive format. Attendees with specific questions about different aspects of EHR implementation will obtain guidance, tips, and strategies for success.

Senior Instructor(s): Julia Lee JD OCS
Instructor(s): Joy Woodke COE OCS, Robert E Wiggins MD MHA**

NEW A EHR Questions About "Meaningful Use" EHR Incentives? Ask Us!

Course: 412 Monday
 Room: 288 4:30 - 5:30 PM
 Education Level: BAS Target Audience: ALL

Synopsis: The electronic health record incentives being offered by the Medicare and Medicaid programs are now in the third year of Stage 1, with Stage 2 requirements soon to take effect. As more and more ophthalmologists seek to satisfy "meaningful use" requirements, specific questions about how to report and submit various measures

inevitably arise. This panel will feature different practices (small, large, academic) with mature EHR experience to share tips and answer questions from attendees in an interactive format. The panel will also include the Academy's health policy manager.

Objective: Attendees with specific questions about the EHR incentive programs will obtain guidance, tips, and strategies for successful reporting.

Senior Instructor(s): Julia Lee JD OCS

Instructor(s): K David Epley MD, Kelsey A Lang MPP, Denise C Fridl COT COE, Joy Woodke COE OCS**

NEW A EHR Electronic Health Records: "Great Expectations"

Course: 544 Tuesday
 Room: 291 10:15 - 11:15 AM
 Education Level: INT Target Audience: ALL

Synopsis: Expectation setting can be the difference between a very good electronic health record (EHR) system implementation and a poor implementation. This course will discuss an approach to expectation setting that is critical to stakeholder buy-in and eventual EHR deployment success.

Objective: After attending EHR: "Great Expectations" audience members will have a game plan for attaining buy-in in their practices through expectation setting.

Senior Instructor(s): Jonathan Lohr

Human Resources

NEW A Quit Writing Policies: Create a Culture Using Core Values

Course: 200 Sunday
 Room: 294 2:00 - 3:00 PM
 Education Level: BAS Target Audience: ADMIN

Synopsis: Managing personnel continues to challenge managers. Managers may find success by helping staff members be better thinkers through definitive expectations rather than trying to "lay down the law" This course takes the foundation of core values and gives practical application to daily management to create the right culture. Using audience examples we will review the development of core values and their practical application in managing people, including the steps for approaching difficult employee situations. The audience will participate in finding the best approaches to handling daily challenges.

Objective: Attendees will be able to (1) develop core values with owners, (2) understand the importance of core values in creating the work environment, (3) undertake a different approach when faced with disciplining difficult employees, (4) identify and hire people who match your culture / core values, and (5) coach other practice leaders about the practical management application of core values.

*Senior Instructor(s): Maureen Waddle MBA**

A Forecasting Staffing Needs: A Volume-Based Model

Course: 209 Sunday
 Room: 296 3:15 - 4:15 PM
 Education Level: INT Target Audience: ADMIN

Synopsis: This course will introduce a tool to help owners and managers answer one of the most common practice questions: "Do I have the right number of staff members?" The course will provide an overview of industry staffing benchmarks and the pros and cons of that information. It will discuss the importance of time and flow studies to help improve operational efficiency and to predict staffing needs. After giving background on the development of the Excel Workbook, the tool will be reviewed using a case study. All attendees of the course will receive a copy of the Excel Workbook to use in their own practices.

Objective: Upon completion of this course, attendees will be able to (1) understand the challenges of predicting staffing needs, (2) develop measures and benchmarks that are customized to their practices, (3) create a quantitative formula for predicting staff needs, and (4) forecast when to add staff count according to volume/demand.

*Senior Instructor(s): Maureen Waddle MBA**

NEW A Payer Contracting and Payer Relations: What You Need to Know to Improve Your Rates and Contract Language

Course: 337 Monday
 Room: 286 10:15 AM - 12:30 PM
 Education Level: BAS Target Audience: ALL

Synopsis: Payer contracting is difficult, with decreasing reimbursement rates, bundling of key codes, and moves toward performance-based pay arrangements. However, through the creation of a payer relations committee within the practice, it is possible to contact the payer to create a relationship while improving the practice rates and contract language. Course materials will include strategies for presenting the practice in a favorable light for the payer, contracting language and rate issues, and strategies for policing your contract once concluded.

Objective: At the conclusion of this course, the attendees will have new strategies for negotiating with payers and new strategies for policing their contracts effectively in order to get the benefit of their negotiated arrangement.

Senior Instructor(s): Brenda Laigaie JD

Instructor(s): John Dummel

NEW A Managing Difficult Employees and Reducing Conflict in the Practice

Course: 341 Monday
 Room: 295 10:15 - 11:15 AM
 Education Level: INT Target Audience: ALL

Synopsis: Few medical schools teach physicians hands-on human resources management skills and techniques. Consequently, physicians depend on medical office managers to manage challenging employees and reduce conflict in the office environment. This information-packed workshop will teach you the secrets of how to lead, coach, and manage difficult employees; set practice values; and create the teamwork and morale needed for harmony in the medical office.

Senior Instructor(s): Debra L Phairas

A Smile ... Even If It Kills You: Training for Excellent Customer Service

Course: 363 Monday
 Room: 295 11:30 AM - 12:30 PM
 Education Level: BAS Target Audience: ADMIN

Synopsis: This course is geared toward training the entire staff for five-star, excellent customer service with a goal of creating a good work environment, a happy customer base, and a busy, healthy practice.

Objective: This course is designed to help participants identify the strengths and weaknesses in their practices and to learn ways to change a problematic culture. Attendees will also be able to identify a practice's mission statement and learn how the entire team can improve by changing a few common yet undermining attitudes and habits.

Senior Instructor(s): Nancy Baker

NEW SO A Managing Generation Y Employees

Course: 380 Monday
 Room: 286 2:00 - 3:00 PM
 Education Level: BAS Target Audience: ADMIN

Synopsis: Generation Y employees can be looked at as the most frustrating, self-involved generation in history, or they can be regarded as the most educated, informed, and "plugged-in" workers we have ever had the privilege to hire. In either case, managing these employees brings a new set of challenges to the workplace. In order to hire, train and retain Generation Y employees, managers must employ completely different management techniques, which will be the focus of this course.

Objective: At the conclusion of the course, managers should understand that, with the right management approach, Generation Y employees should be the most sought-after employees in the workforce.

Senior Instructor(s): Bonnie Callahan Parker

AAOE Instruction Courses

NEW | A Training the Front Office Staff

Course: 398
Room: 286
Education Level: INT
Monday
3:15 - 4:15 PM
Target Audience: ADMIN

Synopsis: Your front office team is the face of the practice and sets the tone for each patient's visit. Learn to set the right tone and maximize the leverage of the nonclinical staff.

Objective: At the conclusion of this course, attendees will be able to (1) hire the right people for the front office, (2) begin (and end) each visit on a positive note, (3) provide seamless service, and (4) utilize the front office team to grow patient base and revenue.

Senior Instructor(s): Brandi Allen

NEW | A Employee Discipline for the Smaller Practice: The New Manager, the Seasoned Manager, and the Doctor

Course: 405
Room: 283
Education Level: BAS
Monday
3:15 - 4:15 PM
Target Audience: ALL

Synopsis: Small practices may not have the luxury of an in-house human resources representative, and in many cases the task is left to a manager / supervisor or physician who has no experience in this area. Without proper training and documentation, human resource / discipline issues can be costly to the practice and devastating to morale. This course will provide education, tools, and ideas for how to address discipline / performance issues, from the verbal warning through termination.

Objective: At the conclusion of this course, attendees will have strategies (and examples) to implement in their practices as well as an understanding of the legalities involved in the discipline process. Interactive sharing will allow the group to discuss and work through potential situations.

Senior Instructor(s): Elise Levine MA CRC OCS

A Employment Law Basics for the Small Ophthalmology Practice

Course: 500
Room: 286
Education Level: BAS
Tuesday
9:00 - 10:00 AM
Target Audience: ADMIN

Synopsis: Large practices often have access to expertise on human resources issues that small practices, with fewer than 30-35 employees, may not. Because of fiscal restraints, small practices often simply adopt, without modification, policies/procedures that don't make sense, given their size. However, being a practice or solo practitioner does not exempt you from laws. This course will identify the most common law issues facing small practices today clarify how to minimize exposure in areas like employment discrimination, wage hour violations (especially overtime), paid time off, drug alcohol use, confidentiality, privacy, email, Internet, and social media use.

Objective: By the conclusion of this course, participants will learn about the issues they face as employers, the laws governing those issues, and as a result, what kinds of provisions they should (or shouldn't) put into their employee manuals.

Senior Instructor(s): Robert A Wade JD

Instructor(s): Jill S Garabedian JD, Caroline Patterson

A Do I Look Like Your Mother?! Or, How to Manage the Difficult Employee

Course: 536
Room: 283
Education Level: INT
Tuesday
10:15 AM - 12:30 PM
Target Audience: ADMIN

Synopsis: The course is a humorous guide to dealing with noncompliant, subversive, or passive-aggressive employees, emphasizing the importance of a strong and clear employee manual as well as a policy and procedure manual.

Objective: The attendee should be able to leave the course with a list of tools and strategies to better address the problems of managing difficult employees. They should be able to set limits and establish clearly defined rules and codes of conduct for their practices, giving them more confidence in their own authority. Highlights will include addressing the "pot stirrers" passive-aggressive employees, the "skaters" around the edge of compliance, and the unique challenge of "inherited" employees. We will emphasize the importance of clear and complete documentation, knowledge of relevant state labor

laws, having a complete employee manual reviewed by an attorney, as well as current policy and procedure manuals and job descriptions and understanding the difference between them.

Senior Instructor(s): Nancy Baker

Instructor(s): Elise Levine MA CRC OCS, Nancy L LaVergne OCS CPC

Information Technology

NEW | A Enhancing Your Practice With Mobile Technology and Social Media

Course: 387
Room: 290
Education Level: INT
Monday
2:00 - 4:15 PM
Target Audience: ALL

Synopsis: The majority of patients, physicians, and practice administrators own a mobile device. The appropriate use of a mobile device can assist an administrator in marketing a practice through social media, the Internet, and the app market. These devices will help practices be increasingly organized and efficient. Mobile technology enables your practice to be more connected with your wired patient. This course will help you enhance patient satisfaction and education while making your practice more efficient.

Objective: At the conclusion of this course, the attendees will understand and be able to use their mobile device not only as a powerful communication device and personal digital assistant but also for office efficiency, practice branding and marketing, and patient care.

*Senior Instructor(s): Vinay A Shah MD**

Instructor(s): Judith Lee, Rohit Krishna MD*, Ron K Lord MD*, Alex W Cohen MD PhD*

NEW | A Toward the Electronic Practice

Course: 426
Room: 297
Education Level: INT
Monday
4:30 - 5:30 PM
Target Audience: ALL

Synopsis: This course will describe and detail the current state of the art of practice management automation and present where the future might take us in further automation. Specific practice examples will be used.

Objective: Attendees will learn about tools they can use to improve the efficiency of their practice, about how to review and choose vendors of these tools, and about how to successfully implement these automation tools.

*Senior Instructor(s): Jeff Grant**

Marketing & Business Development

YO | A Website 101: Three Steps to Creating Your First Website

Course: 188
Room: 295
Education Level: BAS
Sunday
2:00 - 3:00 PM
Target Audience: ALL

Synopsis: Learn the basics of creating any website. While creating a website may seem an overwhelming task for the first-timer, this course will simplify the process. Creating and hosting your own website can be simple, inexpensive, and fun, and it is a great way to market yourself, or your practice, build relationships with your patients, attract new patients, and provide patient education.

Objective: At the conclusion of the course, attendees will be able to choose a domain name, implement software, and choose a hosting service in preparation to launching their first website. The attendee will also learn to avoid the most common mistakes made by the first-timer.

*Senior Instructor(s): Randall V Wong MD**

*Instructor(s): Amy Wong***

A Website Design and Marketing Fundamentals

Course: 332
Room: 297
Education Level: INT
Monday
10:15 AM - 12:30 PM
Target Audience: ALL

Synopsis: This course will provide step-by-step instruction for implementing a successful medical website marketing plan, including strategies that focus on new business development and reducing overhead expenses.

Objective: To identify website design and marketing strategies that transform the ophthalmology practice website from an overhead cost into a revenue-producing asset.

Senior Instructor(s): David Swink*

A Success Traits of Market Leaders

Course: 334 Monday
 Room: 290 10:15 - 11:15 AM
 Education Level: BAS Target Audience: ALL

Synopsis: This course will present the common traits of successful practices gathered over 20 years spent observing over 500 practices. These management traits can be assimilated into any practice, regardless of size or location, and are the hallmarks of market leading practices.

Objective: Participants will learn the importance of developing a winning business strategy that informs patient care, practice location, service mix, staff selection and organization, and performance monitoring. Participants will learn how to compete more effectively by adopting market leaders' tactics.

Senior Instructor(s): Michael J Parshall*

NEW YO A How to Be Seen: A How to Guide to Medical Marketing

Course: 416 Monday
 Room: 290 4:30 - 5:30 PM
 Education Level: BAS Target Audience: ALL

Synopsis: This course will offer insight into the marketing side of a medical practice. Whether in a solo or group practice, a new or established practice, marketing is the epicenter in this technological age. We will cover a wide variety of practices and options tailored to each individual scenario and will tackle the major questions, like how to get referrals, how to be recognized in the community, and how to understand your individuality as a practice. We will combine a mixture of grassroots methodology with the most cutting-edge technology and give you guidelines on how to take advantage of social networking with just the "right amount" of involvement.

Objective: Proper marketing strategies can be highly effective without having to be highly expensive. We will take an in-depth look at a variety of options, varying from no-budget to high-budget approaches, that are effective in establishing market visibility. By the end of the session you will be able to understand and build a marketing plan.

Senior Instructor(s): Donna W Howell JD

A Content Marketing: Getting Your Web Page Ranked

Course: 511 Tuesday
 Room: 288-289 9:00 - 10:00 AM
 Education Level: BAS Target Audience: ALL

Synopsis: Want your website to rank highly? Social media, email campaigns, banner ads, AdSense / Adwords are not sustainable methods and are of little use to your medical practice. The only way to achieve, and maintain, high rankings for your Web page is to understand content marketing. Applying search engine optimization (SEO) techniques to the content of your website will boost your Search Engine Results Page rankings.

Objective: At the conclusion of this course, the attendee will be able to understand the relationship between SEO and content marketing and how to achieve high Web page rankings.

Senior Instructor(s): Randall V Wong MD*

Instructor(s): Amy Wang**

Optical Dispensing

NEW A Optical Dispensing: Is It Financially Feasible for Your Practice?

Course: 232 Sunday
 Room: 290 4:30 - 5:30 PM
 Education Level: INT Target Audience: ADMIN

Synopsis: The continued threat of managed-care reimbursements has inspired many practices to consider expanding their scope of services. For some, optical dispensing has proven to be a financially rewarding addition. However, adding an optical dispensary is not a guarantee of success for every practice. Before making the investment to set up an optical dispensary, it is important to evaluate the feasibility of this new endeavor. Do you

have the patient volume to support an optical? Do you have the necessary space? And what operational steps are vital to ensuring success? This course will review the feasibility of adding optical services and the initial steps required for success.

Senior Instructor(s): Carolyn Salvato*

A How to Create an Effective Dispensary Website Tab That Gets Results

Course: 328 Monday
 Room: 290 9:00 - 10:00 AM
 Education Level: INT Target Audience: ALL

Synopsis: Most ophthalmology websites devote woefully little space to their optical dispensaries, yet those dispensaries will generate about 30% of practice revenues. By contrast, the nation's largest optical retailers devote as many as 40 website pages to eyeglass and contact lens issues. This course will look at the Web pages that every dispensing ophthalmology practice should consider adding to their website and discuss why most ophthalmology practices should consider building them.

Objective: At the end of this course, the attendee will be able to (1) describe why their dispensing ophthalmology practice should have a robust optical dispensary tab and a comprehensive series of pages devoted to dispensing, (2) name the most important pages the practice should consider having on its website, and (3) describe why adding the recommended pages will encourage dispensary sales and increase dispensary customer satisfaction.

Senior Instructor(s): Arthur L De Gennaro*

NEW A How To Diagnose a Sick Dispensary

Course: 354 Monday
 Room: 290 11:30 AM - 12:30 PM
 Education Level: INT Target Audience: ALL

Synopsis: Many ophthalmologists are not satisfied with the sales and profit their dispensaries generate. This course looks at the key areas of practice and dispensary life that affect the growth of dispensary sales and retention of profits. Participants will estimate their dispensaries' potential by viewing an actual pro forma and completing a worksheet in class. Emphasis will be placed on developing a written plan of action.

Objective: Upon completion of this course, the attendee will be able to (1) recognize the signs of a "sick" dispensary, (2) know how to "make a diagnosis" (3) explain the importance of integrating the dispensary and the practice, (4) name the 3 factors that affect revenue, and (5) name the 4 factors that affect profitability.

Senior Instructor(s): Arthur L De Gennaro*

NEW A Opening an Ophthalmology Optical Dispensary

Course: 409 Monday
 Room: 297 3:15 - 4:15 PM
 Education Level: ADV Target Audience: ALL

Synopsis: Here are the basics of how to open an optical dispensary, from the ground up! What are the project management tips you need to know? This course will cover a check-list of items not to miss if your optical dispensary is to achieve financial and operational success: Working with contractors, designers, architects, and dispensary furnishings. Setting timetables. Financial projections and budgets. Capture rate logistics: servicing your patient demographics. Hiring optical staff. Negotiating with lab and frame vendors. Optical software options. Optical management and operations basics: policies, procedures, and protocols. Accepting insurance.

Objective: At the conclusion of this course, the attendee will have all the basic tools needed to open an optical dispensary.

Senior Instructor(s): Pamela Fritz

Instructor(s): Patrick Boys Smith

A Optical Shops: Sales Strategies for Today's Economy

Course: 526 Tuesday
 Room: 293 9:00 - 10:00 AM
 Education Level: INT Target Audience: ADMIN

Synopsis: Today's consumers have more information at their disposal than ever before. The options for prescription eyewear are limitless. Because of ubiquitous advertising from retail chains, private optical offices frequently must overcome preconceived opinions about price, quality, and service. Advertisements promoting deep discounts are intensifying the perception that the private optical is more expensive. The sales train-

AAOE Instruction Courses

ing, techniques, and strategies pervasive in the private sector have not been updated in decades, nor have they been modified to meet today's current economic climate. This course will review sales strategies and techniques designed to entice and encourage patients to purchase from the private optical office.

Objective: This course will enable participants to initiate new sales techniques designed to uncover the patient's top priorities, establish low-cost package options as an added offering, and implement internal marketing strategies to promote the optical business.

*Senior Instructor(s): Carolyn Salvato**

A Detecting and Preventing Fraud and Abuse in the Optical Dispensary and Medical Practice

Course: 538
Room: 293
Education Level: ADV

Tuesday
10:15 AM - 12:30 PM
Target Audience: ALL

Synopsis: Learn the methods of detection and prevention before fraud and abuse happen. Set up systems of accounting and financial management with the right system of checks and balances. Topics covered in this course include identifying types of fraud in the business practice and optical dispensary, the warning signs that fraud exists, steps to take to combat fraud and abuse, what to do if you suspect employee theft, software security, establishing operational protocols, and security systems and methods to deter external theft in the optical dispensary.

Objective: By the end of this course, attendees will have become aware of the internal and external signals that can mean fraud and abuse are occurring in their medical practice or optical dispensary. They will have learned the steps to take to correctly handle the situation if fraud and abuse do occur, and how to set up policies, procedures, and protocols that will prevent fraud and abuse from happening in the optical dispensary and medical business practice.

Senior Instructor(s): Pamela Fritz

Instructor(s): Patrick Boys Smith

Professional Growth

YO A A Practical Guide to Understanding and Negotiating Your First Employment Agreement

Course: 202
Room: 297
Education Level: BAS

Sunday
2:00 - 4:15 PM
Target Audience: COMPSUB

Synopsis: This course will address the various practical, business, and legal aspects of reviewing and negotiating an initial employment agreement. Issues covered in the course include understanding the business and legal terms of the proposed employment arrangement, the fundamentals of a contract, and tips on how to negotiate the deal with the prospective employer.

Objective: This course will leave attendees with an understanding of the entire employment and contracting process so that they approach their first contract experience with knowledge and confidence.

Senior Instructor(s): Robert J Landau JD

Instructor(s): Mark D Abruzzo JD

NEW C J A

Ophthalmology for Non-Clinical Personnel

Course: 204
Room: 293
Education Level: BAS

Sunday
2:00 - 3:00 PM
Target Audience: ADMIN

Synopsis: This course will help administrative personnel, especially those new to ophthalmology or the medical field, navigate the clinic better through a greater understanding of what occurs in the exam room, testing areas, and ASC. Attendees will learn basic eye anatomy and medical terminology used in the ophthalmic practice, with some discussion of common eye diseases and triage. The course will be lecture style with interactive discussions raised by audience questions.

Senior Instructor(s): Dooho Brian Kim MD

NEW YO A How to Become a Better Leader

Course: 213
Room: 290
Education Level: BAS

Sunday
3:15 - 4:15 PM
Target Audience: ALL

Synopsis: The ability to effectively lead is an essential skill for anyone running a high-performing private or academic practice. Leadership training is part of the core curriculum in all business schools; however, it is overlooked in medical school. As the practice of medicine becomes increasingly influenced by business culture, it is critical that physicians and practice managers understand basic leadership principles in order to help their organization achieve goals and successfully navigate change.

Objective: The goal of this course is to give learners (1) an overview of why leadership is important and (2) practical insights and tips on how to become a better leader.

Note: Attendees are advised to download and review the course handout from presenter central PRIOR to attending the course to facilitate case study discussion

Senior Instructor(s): Bernard F Godley MD PhD FACS MBA

*Instructor(s): James C Tsai MD MBA**

NEW YO A Transition From Training to Practice

Course: 231
Room: 293
Education Level: BAS

Sunday
4:30 - 5:30 PM
Target Audience: ALL

Synopsis: This workshop is presented because most medical schools, internships, and residency and fellowship programs do not offer courses or guidance to help the individual physician make successful choices for the practice opportunity that best fits that doctor's needs. This workshop will give the physician practical tools to assess the various practice options, learn about the common practice structures, salary, benefits, buy-ins, and common contract terms, and learn how to navigate the road to partnership.

Senior Instructor(s): Debra L Phairas

YO A The First Few Years of Practice: Some Key Concepts for Young Ophthalmologists

Course: 233
Room: 297
Education Level: BAS

Sunday
4:30 - 5:30 PM
Target Audience: ALL

Synopsis: In residency and fellowship programs, ophthalmologists are well trained in the practice of medicine, but not in the business of medicine. All too often they are not exposed to information that focuses on how to be successful in business. This course is designed for a broad spectrum of participants, from those in the first few years of private practice to those transitioning to private practice from academic medicine. Topics will include patient satisfaction and customer service, the importance of state licensure and managed care credentialing well in advance of practicing, negotiating an employment contract, understanding managed care plans and fee schedules, knowing your numbers, and maximizing use of the Internet.

Objective: By the conclusion of this course attendees will (1) know the factors to consider in deciding whether to start their own practice or join a practice, (2) understand the issues associated with each option, (3) understand insurance and setting up a fee schedule, and (4) recognize strategies for building a practice.

*Senior Instructor(s): Lawrence Geller MBA**

A Managing Up!

Course: 315
Room: 293
Education Level: BAS

Monday
9:00 - 10:00 AM
Target Audience: ADMIN

Synopsis: This course will focus on the challenging role of the middle manager, who is called upon to manage in both directions: up and down. It will teach middle managers to successfully supervise staff, or "manage down" and to achieve results by successfully presenting recommendations to their physician bosses by "managing up"

Objective: At the conclusion of this course, managers will have a better working relationship with their physicians based on clear expectations and defined, agreed-upon goals and performance measurements.

Senior Instructor(s): Debra L Phairas

A Hanging a Shingle in the 21st Century: Is a Start-up Solo Practice Possible in 2013?

Course: 352 Monday
 Room: 294 11:30 AM - 12:30 PM
 Education Level: BAS Target Audience: ALL

Synopsis: This course will detail the challenges faced by physicians wishing to open a solo practice in the 21st century and how these challenges can be overcome. The presenters, who have all opened solo practices in highly competitive markets, will share their experiences, from strategy to tactical execution of planning, financing, building, credentialing, opening, and growing a practice built from scratch.

Objective: Attendees will understand the hurdles involved in starting a solo practice from scratch and walk away with a road map of how this can be done today.

Senior Instructor(s): Edwin S Chen MD

Instructor(s): Ajit Nemi MD, Ravi D Patel MD

A American Academy of Ophthalmic Executives Book Club: Professional Growth and Development

Course: 364 Monday
 Room: 283 11:30 AM - 12:30 PM
 Education Level: INT Target Audience: ALL

Synopsis: As a practice administrator or ophthalmologist, it is easy to get caught up in the day-to-day tasks of running a practice. Often not enough time is given to personal and professional development. One way to nurture our own development is through reading, but many busy professionals lack the time to sort through or read the business literature. Books reviewed in 2012 by a spectrum of leaders in the field of ophthalmology included Flipping the Switch, If Disney Ran Your Hospital, What Every Doctor Should Know but Was Never Taught in Medical School, Not Everyone Gets a Trophy, Predictably Irrational: The Hidden Forces That Shape Our Decisions, and Likeable Social Media.

Objective: At the conclusion of this course, the participant will have actionable ideas from top business books that can be applied to his or her professional development.

Senior Instructor(s): Robert E Wiggins MD MHA*

Instructor(s): David A Durfee MD, K David Epley MD*, Tamara R Fountain MD*, Timothy J Padovese**, Ron W Pelton MD PhD*

NEW SO A Incorporating the Four Agreements Into Your Practice

Course: 378 Monday
 Room: 283 2:00 - 3:00 PM
 Education Level: BAS Target Audience: ALL

Synopsis: The Four Agreements by Don Miguel Ruiz is a book about personal effectiveness that can also be used in the medical practice to develop employees and increase efficiencies while removing obstacles to success.

Objective: At the conclusion of this course, attendees will have learned what the Four Agreements are and how to apply them personally and professionally. Examples of how to utilize them in day-to-day practice will be given, and group interaction will focus on problem solving and barriers to implementation.

Senior Instructor(s): Elise Levine MA CRC OCS

NEW SO A Seeking Shelter Under the Hospital Umbrella: From Employment Agreements to Professional Services Agreements

Course: 422 Monday
 Room: 294 4:30 - 5:30 PM
 Education Level: INT Target Audience: ALL

Synopsis: Physician hospital integration is back -- with a vengeance. Uncertainties associated with healthcare reform, the near monopoly power of many managed care plans, changes in Medicare reimbursement and increased healthcare regulation are driving ophthalmologists to consider ways to partner with hospitals. Perhaps the most obvious of those options is to become a hospital employee, although that can come with a loss of autonomy. A professional services agreement (PSA) is another model that provides many of the benefits of physician-hospital integration while avoiding some perceived downsides. This course addresses the latest industry trends in hospital employment and PSAs.

Objective: Attendees will be able to articulate the keys to success & avoid potential mistakes in physician hospital integration, explore the latest trends in compensation under the employment PSA models and determine the appropriateness of each model and the best way to structure it.

Senior Instructor(s): Lawrence Geller MBA*

YO A Negotiating Your Buy-In

Course: 516 Tuesday
 Room: 297 9:00 - 10:00 AM
 Education Level: INT Target Audience: ALL

Synopsis: This course will address, from the young doctor's perspective, the negotiating, practical, business, and legal aspects of the buy-in to a solo or group practice and other associated entities.

Objective: To leave attendees with an understanding of how to negotiate and evaluate a buy-in offer from a financial and legal perspective, including the various other "partnership" terms that comprise a buy-in offer, including but not limited to terms pertaining to purchase price and payment, management and voting rights, partnership compensation, buy-sell arrangements (ie, "buy-outs") and "senior doctor" rights and preferences.

Senior Instructor(s): Mark D Abruzzo JD

Instructor(s): Richard C Koval MPA CMPE*, Robert J Landau JD

NEW A Associate Employment Contracts: How to Avoid Signing a Bad Contract

Course: 542 Tuesday
 Room: 294 10:15 - 11:15 AM
 Education Level: BAS Target Audience: ALL

Synopsis: What are the current "normal" employment agreement terms for an associate joining a practice? Are these norms changing in light of health care reform and changing economics? The employment contract an associate signs is important. You need to make sure that your contract protects your interests and is competitive. The employment contract should also outline future buy-in arrangements to address your long-term expectations and concerns. Learn what is a fair and reasonable new associate employment arrangement from experienced attorneys / consultants with more than 50 years combined experience who have done thousands of new associate employment contracts.

Objective: This course will provide participants with the range of terms presently being offered to associates by practices. Learn national norms for salary, incentive bonus, benefits, and business expenses, as well as other standard contract terms. Also learn what should be said in the contract about future buy-in and partnership.

Senior Instructor(s): Mark E Kropiewnicki JD LL.M.*

Instructor(s): Daniel M Bernick JD*

NEW SO YO A Hiring an Ophthalmologist for Your Practice: Avoiding the Pitfalls

Course: 548 Tuesday
 Room: 294 11:30 AM - 12:30 PM
 Education Level: INT Target Audience: ALL

Synopsis: Adding an associate to the practice requires careful planning and attention to detail. Whether or not you are hiring your first associate, this course will provide an understanding of the steps that should be taken in a practice to have a successful outcome.

Objective: At the conclusion of this course, the attendee will understand the process and issues to address in adding an associate to the practice. Attendees will learn the key elements of a good employment agreement, how to design a reasonable compensation package for the associate, and how to structure a model for an associate's buy-in. Participants will also learn how to use an Excel spreadsheet to set up an incentive bonus model.

Senior Instructor(s): Lawrence Geller MBA*

AAOE Special Meetings & Events

Saturday, Nov. 16

A The Profitable Practice: Managing Your Billing Operations

Event No: SPE06 8:00 AM - 12:00 PM

Fee: \$345

Room: 286

*Sr. Instructor(s): Ron Rosenberg PA MPH**

Instructor(s): Donna Connolly, Curt P Hill

Learn all of the steps involved in billing and receivables management. Also, how to monitor collections performance, deploy and manage billing staff, identify and correct operational problems that cause rejected and/or delayed claims, and obtain benchmarks for staff and cost of billing.

A Whiz Through Excel — Your Data Management Wizard

Event No: SPE03 8:30 AM - 12:30 PM

Fee: \$345

Room: 290

Presenter(s): Andrew Maller

Learn how to get the most out of Excel and efficiently create quality, real-time reports that monitor monthly and year-to-date revenue, expense, and productivity key indicators. Once developed, these reports can be used to effectively communicate results to business owners, allowing them to make better business decisions and drive practice results.

This Microsoft Excel training is designed specifically for the ophthalmology practice. The instructor will walk attendees through some of the most commonly used Excel functions and introduce some easy, but powerful tools such as the Physician Productivity Dashboard, Staffing Efficiency Report by Department, and New Equipment Purchase Feasibility Analyzer. **NOTE: Each attendee is required to bring a computer (laptop or netbook) to this class. Bring a mouse for ease of use. Participants will receive sample documents and workbooks prior to the course.**

A Keeping Your Practice Out of Legal Hot Water: An HR and Compliance Workshop

Event No: SPE04 9:00 AM - 4:00 PM

Fee: \$495

Room: 283

Sr. Instructor(s): Robert A Wade JD

Instructor(s): Mark D Abruzzo JD, John Duemmel, Jill S Garabedian JD, David Laigaie, Brenda Laigaie JD, Robert J Landau JD, Caroline Patterson

Enhance your knowledge about regulatory compliance and human resource law at this intensive one-day workshop. The morning session will cover the regulatory landscape and challenges facing practices and its intersection with compliance and human resources concerns. The afternoon will consist of break-out sessions, allowing participants to select from several in-depth discussions on topics presented earlier in the day. The program will be a combination of lecture and moderated panel discussion. There will be questions and answers, interactive dialogue using case studies, role-playing and other hands-on techniques.

Bending the ASC Performance Curve

Event No: SPE07

12:00 - 4:00 PM

Fee: FREE

Room: 288

Presenter(s): Bradley C Black MD, Regina Boore RN BSN MS**, Kevin J Corcoran*, Kent L Jackson**, Bruce S Maller*, Mike Romansky***

This hands-on symposium is designed for surgeons, owners, administrators, clinical staff and other industry experts committed to shaping the trajectory for ophthalmic ASC performance.

NOTE: Although this event is complimentary, space is limited.

Sunday, Nov. 17

AAOE General Session: Creating the Ultimate Patient Experience and Patients for Life!

Event No: SPE09

10:00 AM - 12:00 PM

Fee: FREE

Room: 291

You may not realize that your practice is a 'brand.' Many organizations spend millions of dollars every year to develop their brand and increase sales and customer retention. An ophthalmology practice, no matter how large or small, IS a brand. Your patients ARE customers. What do they think of when they see or hear your name? In other words — how powerful is your brand? AAOE is pleased to present Scott Deming to help you create the **Ultimate Patient Experience**. Scott will show you how to engender the most loyal patients and the most powerful brand in your area — helping your practice thrive in a continually changing healthcare world.

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Harry A Zink MD

OMIC-Ophthalmic Mutual Insurance Company; C,L



CME & CE Credit

CME Mission Statement

The purpose of the American Academy of Ophthalmology's Continuing Medical Education (CME) program is to present ophthalmologists with the highest quality lifelong learning opportunities that promote improvement and change in physician practices, performance or competence, thus enabling such physicians to maintain or improve the competence and professional performance needed to provide the best possible eye care for their patients.

The American Medical Association has determined that non-U.S. licensed physicians who participate in this CME activity are eligible for *AMA PRA Category 1 Credits™*.

Attendees registered as exhibitors, spouses or guests are not eligible to receive CME credit.

2013 Annual Meeting CME Credit

The American Academy of Ophthalmology is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The American Academy of Ophthalmology designates this live activity for a maximum of *33 AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Portions of the meeting identified for credit include Annual Meeting scientific sessions, instruction courses, Skills Transfer courses, Breakfast With the Experts, AAOE Saturday Program, Scientific Papers and Posters, the Video Program, and the Jackson Memorial Lecture at the Opening Session.

Portions of the meeting not eligible for credit include, but are not limited to, committee meetings, viewing exhibits, attending Special Meetings & Events, the AAOE General Session, social networking and any affiliate event.

2013 Annual Meeting Learning Objectives

Upon completion of this activity, participants should be able to:

- Identify recent advances in the diagnosis and treatment of eye diseases.
- Identify major advances in key areas of cutting-edge research and technology in ophthalmology.
- Incorporate skills and techniques from the hands-on Skills Transfer courses into their daily practice.
- Integrate practice management strategies to address critical business and operational tasks in the ophthalmologist's practice.
- Develop strategies to identify and address their own individual professional practice gaps.

2013 Annual Meeting Target Audience

This activity has been designed to meet the educational needs of ophthalmologists, nurses, ophthalmic technicians and other allied health personnel who are engaged in the diagnosis and treatment of eye diseases, as well as business managers responsible for managing the business aspects of an ophthalmic practice.

2013 Subspecialty Day CME Credit

The American Academy of Ophthalmology is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Subspecialty Day Activities for Retina and Refractive Surgery

The American Academy of Ophthalmology designates this live activity for a maximum of *14 AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Subspecialty Day Activities for Cornea, Glaucoma, Neuro-Ophthalmology, Oculofacial Plastic Surgery, and Pediatric Ophthalmology

The American Academy of Ophthalmology designates this live activity for a maximum of *7 AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Self-Assessment Credit

Portions of these activities meet the Self-Assessment CME requirements defined by the American Board of Ophthalmology (ABO). Please be advised that the ABO is not an accrediting body for purposes of any CME program. ABO does not sponsor this or any outside activity, and ABO does not endorse any particular CME activity. Complete information regarding the ABO Self-Assessment CME Maintenance of Certification requirements are available at: <http://abop.org/maintain-certification/part-2-lifelong-learning-self-assessment/cme>.

This year's Subspecialty Day meetings (Cornea, Glaucoma, Neuro-Ophthalmology, Oculofacial Plastic Surgery, Pediatric Ophthalmology, Refractive Surgery and Retina) as well as the Cataract Spotlight within the Annual Meeting have been pre-approved as self-assessment credit.

NOTE: Credit designated as "self-assessment" is *AMA PRA Category 1 Credit™* and is also pre-approved by the ABO for the Maintenance of Certification (MOC) Part II CME requirements.

2013 AAOE Coding CME Credit

The American Academy of Ophthalmology is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Coding Sessions

The American Academy of Ophthalmology designates this live activity for a maximum of *3 AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Teaching at a Live Activity

Teaching instruction courses, or delivering a scientific paper or poster are not *AMA PRA Category 1 Credit™* activities and should not be included when calculating your total *AMA PRA Category 1 Credit™*. Presenters may claim *AMA PRA Category 1 Credit™* through the American Medical Association. Please contact the AMA to obtain an application form at www.ama-assn.org.

Scientific Integrity and Disclosure of Financial Interest

The American Academy of Ophthalmology is committed to ensuring that all continuing medical education (CME) information is based on the application of research findings and the implementation of evidence-based medicine. It seeks to promote balance, objectivity and absence of commercial bias in its content. All persons in a position to control the content of this activity must disclose any and all financial interests. The Academy has mechanisms in place to resolve all conflicts of interest prior to an educational activity being delivered to the learners.

Attendance Verification for CME Reporting

Before processing your requests for CME credit, the Academy must verify your attendance at Subspecialty Day and/or the Annual Meeting. In order to be verified for CME or auditing purposes, you must either:

- Register in advance, receive materials in the mail and turn in the *Final Program* and/or Subspecialty Day Syllabus exchange voucher(s) onsite;
- Register in advance and pick up your badge onsite if materials did not arrive before you traveled to the meeting;
- Register onsite; or
- Scan the barcode on your badge

Session Scanning – What Does It Mean?

New this year: There will be a bar code on your Annual Meeting badge. Staff stationed at each course room will scan your badge. At the end of each day, an e-mail will be sent confirming the instruction courses at which your badge was scanned, with links directly to their evaluations. Your participation in the evaluation process is critical for maintaining a high-quality program.

What about CME? Getting your badge scanned does not automatically grant CME. You still need to record your own educational activities. You can do so either in New Orleans at a designated CME Reporting station or online after the Annual Meeting. Please note: You should claim only the credit commensurate with the extent of your participation in the activity.

CME Credit Reporting

Lobby B2, Lobby G & Academy Resource Center, Booth 3239, Hall G

Attendees whose attendance has been verified at the 2013 Annual Meeting can claim their CME credit online during the meeting. Registrants will receive an email during the meeting with the link and instructions on how to claim credit. Onsite, you may report credits earned during Subspecialty Day and/or the Annual Meeting at the CME Credit Reporting booth.

Note: If you prefer to complete a paper CME form, copies will be available at the Membership Booth in the Resource Center (Hall G, Booth 3239) and the Meetings Office (Room 265).

Academy Members

The CME credit reporting receipt is not a CME transcript. CME transcripts that include 2013 Annual Meeting credits entered onsite will be available to Academy members on the Academy's website beginning Dec. 10, 2013.

NOTE: CME credits must be reported by Jan. 15, 2014. After the 2013 Annual Meeting, credits can be claimed at www.aa.org/cme.

The Academy transcript cannot list individual course attendance. It will list only the overall credits spent in educational activities at Subspecialty Day and/or the Annual Meeting.

Nonmembers

The Academy will provide nonmembers with verification of credits earned and reported for a single Academy sponsored CME activity, but it does not provide CME credit transcripts. To obtain a printed record of your credits, you must report your CME credits onsite at the CME Credit Reporting booths.

Proof of Attendance

The following types of attendance verification will be available during the Annual Meeting and Subspecialty Day for those who need it for reimbursement or hospital privileges, or for nonmembers who need it to report CME credit:

- CME credit reporting/proof-of attendance letters
- Onsite Registration
- Instruction Course Verification

Visit the Academy's website for detailed CME reporting information.

AAPC Continuing Education Credit

The American Academy of Professional Coders (AAPC) reviews and selects courses towards the maintenance of CPC, CPC-H and CPC-P certification. Approved courses are identified in the Annual Meeting

programs with a **C**. Granting of prior approval in no way constitutes endorsement by the AAPC of the program content or the program sponsor. A certificate of completion is included in the Coding Sessions Workbook for AAPC and JCAHPO attendance verification. Visit www.aapc.com for more information.

NOTE: AAPC credits cannot be claimed on the Academy's online CME system.

NBCOE Continuing Education Credit

The National Board for the Certification of Ophthalmic Executives (NBCOE) reviews the American Academy of Ophthalmic Executives (AAOE) program for COE Category A credit hours. Approved courses are identified in the Annual Meeting programs by a **A**. In 2013, all AAOE instruction courses (AAOEIC) are eligible for NBCOE credit, except AAOEIC 541. All Category A activities yield a 1:1 credit ratio for hours spent to hours earned. Visit www.asoa.org for more information.

JCAHPO Continuing Education Credit

The Annual Commission on Allied Health Personnel in Ophthalmology (JCAHPO) reviews courses for continuing education credit toward certification or recertification in ophthalmic medical assisting for COA, COT and COMT levels. Approved courses are designated in the Annual Meeting programs by a **J** and classified as either Group A or Group B. Though JCAHPO may award continuing education credit for specified courses, JCAHPO does not sponsor these or any other review course. A certificate of completion is included in the Coding Sessions Workbook for AAPC and JCAHPO attendance verification. Visit www.jcahpo.org for more information.

NOTE: JCAHPO credits cannot be claimed on the Academy's online CME system. Attendees completing JCAHPO approved courses will receive their credit certificate onsite.

Future Meeting Dates & Locations

AAO 2014

Chicago

Oct. 18 – 21

Subspecialty Day

Oct. 17 & 18

*In partnership with the
European Society of
Ophthalmology (SOE)*

AAO 2015

Las Vegas

Nov. 14 – 17

Subspecialty Day

Nov. 13 & 14

AAO 2016

Chicago

Oct. 15 – 18

Subspecialty Day

Oct. 14 & 15



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THE CATARACT REFRACTIVE SUITE BY ALCON

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INDICATION: The CENTURION[®] Vision System is indicated for emulsification, separation, irrigation, and aspiration of cataracts, residual cortical material and lens epithelial cells, vitreous aspiration and cutting associated with anterior vitrectomy, bipolar coagulation, and intraocular lens injection. The AutoSert[®] IOL Injector Handpiece is intended to deliver qualified AcrySof[®] intraocular lenses into the eye following cataract removal.

The AutoSert[®] IOL Injector Handpiece achieves the functionality of injection of intraocular lenses. The AutoSert[®] IOL Injector Handpiece is indicated for use with the AcrySof[®] lenses SN6OWF, SN6AD1, SN6AT3 through SN6AT9, as well as approved AcrySof[®] lenses that are specifically indicated for use with this inserter, as indicated in the approved labeling of those lenses.

WARNINGS: Appropriate use of CENTURION[®] Vision System parameters and accessories is important for successful procedures. Use of low vacuum limits, low flow rates, low bottle heights, high power settings, extended power usage, power usage during occlusion conditions (beeping tones), failure to sufficiently aspirate viscoelastic prior to using power, excessively tight incisions, and combinations of the above actions may result in significant temperature increases at incision site and inside the eye, and lead to severe thermal eye tissue damage.

Good clinical practice dictates the testing for adequate irrigation and aspiration flow prior to entering the eye. Ensure that tubings are not occluded or pinched during any phase of operation.

The consumables used in conjunction with ALCON[®] instrument products constitute a complete surgical system. Use of consumables and handpieces other than those manufactured by Alcon may affect system performance and create potential hazards.

AEs/COMPLICATIONS: Inadvertent actuation of Prime or Tune while a handpiece is in the eye can create a hazardous condition that may result in patient injury. During any ultrasonic procedure, metal particles may result from inadvertent touching of the ultrasonic tip with a second instrument. Another potential source of metal particles resulting from any ultrasonic handpiece may be the result of ultrasonic energy causing micro abrasion of the ultrasonic tip.

ATTENTION: Refer to the Directions for Use and Operator's Manual for a complete listing of indications, warnings, cautions and notes.

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