



## Career Workshop for RPG Students

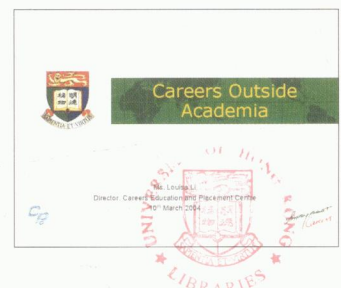
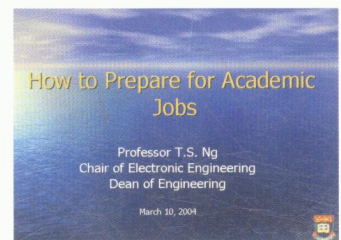


The Career Workshop for RPG Students had been successfully held on 10 March 2004 in T5 of the Meng Wah Complex. About 100 students had attended the event.

The first part of the workshop was about "How to Prepare for Academic Jobs". The speaker was Prof. T.S. Ng, Chair of Electronic Engineering and Dean of Engineering, as well as a member of the Committee for the Selection of Senior Teachers. Prof. Ng's presentation was very comprehensive and covered many aspects of academic job-hunting, from preparation, interview, negotiation to decision making.

The second speaker was Ms. Louisa Li, Director of the Careers Education and Placement Centre. Ms. Li's talk was about "How to Prepare for Non-academic Jobs", in which she had given the students a lot of useful advice with many inspiring examples about job hunting.

The PowerPoint presentations of the two speakers have been uploaded to the Graduate School website: <http://www.hku.hk/gradsch/news/career.htm>. Students who have missed the Workshop are most encouraged to take a look at the presentations and start planning their career as early as possible.



08 OCT 2004

## PGSA Executive Committee 2004-2005

The Annual General Meeting 2004-2005 of the Postgraduate Student Association had been successfully held on 7 April 2004. The new executive committee was formed at the same time:

<b>Chairperson</b>	<b>Mr. Kevin Liu Xin</b> <i>Department of Industrial &amp; Manufacturing Systems Engineering</i>
<b>Vice-Chairperson</b>	<b>Miss Amay Wang Ying</b> <i>School of Business</i>
<b>Secretary</b>	<b>Miss Cynthia Lau Suet Yee</b> <i>Centre of Urban Planning &amp; Environmental Management</i>
<b>Treasurer</b>	<b>Miss May Guo Man</b> <i>Department of Social Work &amp; Social Administration</i>
<b>External Relationship Officer</b>	<b>Mr. Richard Tan Junyi</b> <i>Department of Mechanical Engineering</i>
<b>Publication Officer</b>	<b>Miss Yolanda Mao Yue</b> <i>Department of Social Work &amp; Social Administration</i>
<b>Sports Program Officer</b>	<b>Mr. Henry Yu Chang</b> <i>Department of Electrical &amp; Electronic Engineering</i>
<b>Social Program Officer</b>	<b>Miss Anna Li Chunying</b> <i>Department of Civil Engineering</i>
<b>Academic Program Officer</b>	<b>Miss Teresa Wong Ka Wai</b> <i>Department of Psychiatry</i>
<b>Membership Officer</b>	<b>Mr. Jia Jianjun</b> <i>Department of Physics</i>



## Investigating the Skeleton

*University scientists and surgeons are leading a \$50 million project to investigate control of the development and growth of the skeleton and genetic links to degenerative skeletal disorders, such as lower back pain.*

Researchers believe certain genes may make some people more susceptible to back pain than others, particularly as they age.

Millions of people around the world suffer from skeletal disorders which cause long-term pain and physical disability, problems which have become more prevalent with longer life spans. A major proportion of these problems, such as degeneration of the discs in the spine, affect the lower back and can cause pain.

***“By the time you get to 60 years old, about 90 per cent of the people will have disc degeneration (DDD),”*** said Professor Kathy Cheah, Professor: Chair of Biochemistry and Head of the Department of Biochemistry. Professor Cheah is leading the multi-institution research project together with Professor Keith Luk, Professor: Chair of Orthopaedics & Traumatology.

One of the objectives of the programme, which is funded under the University Grants Committee's Areas of Excellence grants, is to identify genes which predispose to disc degeneration. Finnish scientists had previously identified genetic changes, called TRP2 and TRP3 in short, in two genes (COL9A2 and COL9A3 respectively) that were linked to disc degeneration. Previous studies by the HKU team had found that the prevalence of these genetic changes in Hong Kong Chinese was very different than for

the Finns, with the TRP2 being present in 20 per cent of the Southern Chinese population and the TRP3 was absent. But the genetic changes in the COL9 genes do not account for the full range predisposition to DDD. Rather DDD is a complex disease in which many genetic changes each contribute in part to increased risk and severity of degeneration.

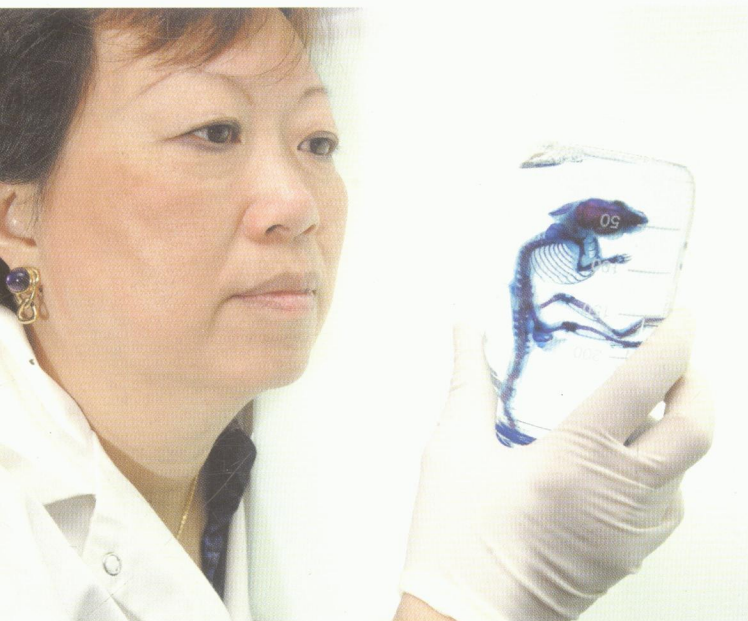
***“Not everyone with TRP2 will get this degeneration, but it increases the risk and severity of it happening. People with TRP2 are 2.4 times more likely to have this degeneration and it's more severe,”*** Professor Cheah said. Because many as yet unidentified genetic changes contribute to DDD, the challenge is to find the genes involved and assess their relative contribution to risk of developing disease. They will also look to find the genetic causes of premature disc degeneration which arises among young people, a problem that is inherited. The researchers will carry out magnetic resonance imaging (MRI) on the spines of 2,000 people and will use genomic technology and statistical genetics methodology to identify mutations in genes that are associated with predisposition to disc degeneration.

Professor Cheah said their findings could be useful in developing a living artificial disc, although treatment is not a direct goal of the project. Currently, treatment involves surgery, physiotherapy or pain relief and rest. In Hong Kong, degenerative low back disorders are the second most frequent reason for visits to physicians and the third most common reason for surgical procedures. In 2000 about \$200 million was paid out in workers' compensation for these disorders.

Another major objective for the project is to investigate how skeletons develop and are maintained. Irregularities can lead to dwarfism, malformed bones and other problems. The team will alter genes in mice to try and understand how the growth of the skeleton is regulated. Professor Cheah said they had already patented a mouse model showing abnormalities in skeletal growth which could result because the skeletal cells have made proteins that were not properly 'folded'.

A better understanding of skeletal growth could be useful in devising treatments for cartilage replacement, injuries, osteoarthritis and other conditions, she added.

The project will run for about five years. It marks a significant collaborative effort with other institutions as it involves scientists from the Hong Kong University of Science and Technology and Hong Kong Polytechnic University, as well as our University. Professor John Leong, our former Professor: Chair of Orthopaedics & Traumatology and currently President of the Open University, is also acting as collaborator on the project.



# Research on Spinal Deformity Correction

Congratulations to Mr. Kelvin Yeung, PhD student in the Department of Orthopaedics & Traumatology, and his supervisors on winning two external awards for their research on spinal deformity correction:

## Local award:

**Best Paper Award for Associate Fellow** from the Hong Kong Orthopaedic Association Annual Congress 2003

Title: Invention of a New Spinal Implant for Gradual Scoliosis Correction

Authors: Cheung KMC, Yeung KWK, Lu WW, Chung CY\*, Luk KDK, Leong JCY

## National award:

**Second-Prize Award** from the 8th National Challenge Cup Competition (第八屆「挑戰杯」競賽), which is a national competition of university students in extra-curricular academic, scientific and technological achievements, organized by the Communist Youth League of China (中國共青團), the China Association for Science & Technology (中國科協), the Ministry of Education (教育部), the People's Government of Guangdong Province (廣東省人民政府) and China's National Students Association (中華全國學生聯合會)

Title: 用於脊柱側凸矯形的新型超彈性鎳鈦記憶合金植入性器械  
(A New Super-elastic Spinal Implant for Gradual Scoliosis Correction)

Author: Yeung KWK

Supervisors: Cheung KMC, Lu WW, Chung CY\*, Luk KDK, Leong JCY

\*Department of Physics and Material Science, City University of Hong Kong



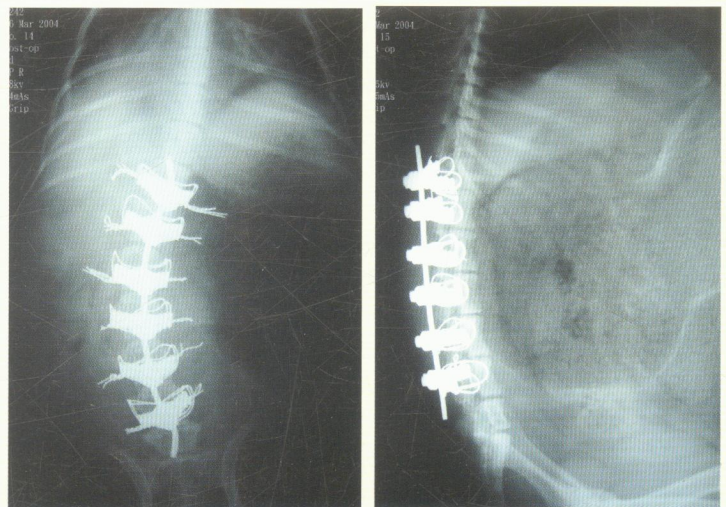
## The Research:

The surgical correction of scoliosis (curved spine) is currently unsatisfactory with a correction rate of only 60 to 70% because the spinal instrumentation systems at present do not take into account of the visco-elastic property of spinal tissues, which does not only limit the degree of correction, but may also cause some loss of correction after operation. The research team now suggests that this visco-elasticity of spinal tissues can be overcome by gradual distraction with the use of super-elastic nickel-titanium (NiTi) alloys. By implanting a super-elastic rod into the curved spine, a constant correction force can be gradually applied onto the spine until it becomes normal, without inducing neurological problems or compromise of the implant-bone interface.

## Major milestones of the research project are:

- US provisional patents to the new implant including the concept and the design, the manufacturing protocol of the spinal rod and the bone anchors;
- Collaboration with a renowned orthopaedic implant manufacturer, AO Foundation from Switzerland;
- Establishment of local clinical trial centers with Queen Mary Hospital and the Duchess of Kent Children's Hospital;
- Establishment of regional clinical trial centers with Peking Union Hospital in Beijing and Changhai Hospital in Shanghai.

Future plans of the research also include refinement of the prototypes, extensive clinical trials and commercialization of the new implant.



蒲飛路13至21號  
13-21 Pokfield Road

蒲飛路宿舍

Pokfield Road Residence

## Pokfield Road Residences

The Pokfield Road Residences is a recently refurbished residence to provide temporary accommodation for full time research postgraduate students.

The Residences can accommodate more than 100 students. The monthly rental ranges from HK\$1,700 to HK\$2,300. All rooms are fully furnished and come with en-suite bathrooms and domestic washing machines. Each room also contains a small kitchen and refrigerator.

Although priority is given to newly-admitted non-local research students, current students, including those moving out of the Graduate House after the maximum residential period of 2 years are welcome to apply for accommodation in the Pokfield Road Residences. For more information and the application form, please visit: [http://web.hku.hk/~pflac/student\\_residences/pokfield\\_road/pfr\\_main.htm](http://web.hku.hk/~pflac/student_residences/pokfield_road/pfr_main.htm)



## 2004 Young Scientist Awards

### Objective

To reward young scientists and engineers in Hong Kong who show great promise in their field of study, with the hope that this will nurture the growth of science and technology in the region.

### The Awards

Three awards will be given annually at the HKIS Annual Meeting (usually held in November), one in each of the following fields:

- (a) Physical / Mathematical science
- (b) Life science
- (c) Engineering science

Each award carries a cash prize of \$10,000 and a certificate of recognition. In addition, a plaque of recognition will also be given to the recipient's supervisor.

### Eligibility

All postgraduate research students who are pursuing an M.Phil, M.D.(Doctor of Medicine) or a Ph.D. degree in any of the tertiary institutions in Hong Kong. Students who have graduated recently (within 2 years of graduation) are also eligible.

### Selection Criteria

Evidence of research excellence in science or technology and the potential to become a good scientist or engineer is sought. Screening will first be made of papers submitted describing the applicant's respective work, and short-listed applicants will be asked to give an oral presentation of their work for the final selection.

A separate Selection Panel for each of the 3 fields will review the applications.

### Submission

Applicants are required to submit the following:

- (1) The Application Form (soft copy and hard copy), duly completed and signed, including an extended summary of the work (about 1,000 words) and a statement highlighting the significance of the work.
- (2) A paper (or a number of related papers) or a patent describing the work pursued. Preferably, the paper has been published, or accepted to be published, by an internationally-refereed journal. The applicant needs not be the first author of the paper but, obviously, priority counts and the applicant needs to specify (in the Application Form) the level of his or her contribution to the published work.
- (3) A letter of endorsement from the applicant's supervisor(s) of the submitted work.

Please send

the soft copy of the Application Form to: [ksleung@fehd.gov.hk](mailto:ksleung@fehd.gov.hk), and

the hard copy of the above (1)-(3) to: **Dr. K.S. Leung**  
Food Research Laboratory  
4/F Public Health Laboratory Centre  
382 Nam Cheong Street, Kowloon

All submissions should reach Dr. K.S. Leung, Hon. Secretary on or before 15th July, 2004

The Application Form is downloadable at:  
<http://www.science.org.hk/2004YoungScientistAwards.doc>

