



# The Graduate School Newsletter

Vol 1 No 1

September / October 1998

## Welcome

Mrs. A. Yan  
Reader Services Librarian (x2)  
Main Library

Dear Colleagues and Students:

It gives me great pleasure to address you in this inaugural issue of the Newsletter for the newly established Graduate School of the University of Hong Kong.

The new Graduate School, which formally came into being on September 1, 1998, replacing the former School of Research Studies, signifies commitment on the part of the University to reform research postgraduate education; and in so doing, to provide the best possible postgraduate education for its students.

The Graduate School, with its well-conceived governance structures (including, most notably, a Policy Board, a Board of Graduate Studies, and a Board of Examination for Graduate Studies) is intended to ensure that there is a centrally-driven mechanism, not only to determine consistent policies, and processes, for implementation across the board, but also to ensure these are effectively monitored and evaluated, with a view to providing the highest possible standard and quality of research postgraduate education. The presence of a strong, central initiative for the purposes of quality assurance does not mean that legitimate faculties' concerns are neglected. The governance structure will ensure that the Graduate School works closely with faculties and departments to provide an intellectually stimulating environment that will be beneficial to postgraduate students and supervisors alike.

From the above, you will have discerned that the Graduate School will be the focal point and the locus of research postgraduate education. It will co-ordinate all matters relating to such education, including student admission, progress assessment, the vetting of academic program content, the provision of counselling and guidance for students, and other appropriate forms of service. It will ensure the dissemination and adoption of good practices throughout the University.




The creation of the Graduate School envisages the setting up of a Deanship and one or more Associate Deanships to administer the School. The administrative arrangements regarding the selection of the most appropriate persons for the positions are underway. However, given the present urgency in instituting all the new developments, the Council has approved that an interim Deanship be created and that the position be filled by the Pro-Vice-Chancellor (Research) for the time being.

The Graduate School exists to serve all members of the University. It always welcomes suggestions, comments, ideas, and enquiries. Colleagues and Students can always contact the Graduate School for service.

*Professor Felix Wu  
Interim Dean  
Graduate School  
24 August 1998*

“..Graduate  
School  
works closely  
with faculties  
and  
departments  
to provide an  
intellectually  
stimulating  
environment  
that will be  
beneficial to  
postgraduate  
students  
and  
supervisors  
alike.”

inside ...

-  *Induction Programme, Graduate School Courses, Graduate School Handbook, Forum ... Page 2 - 4*
-  *The Profile ..... Page 5 - 7*
-  *Conference Grants for Research Students, Postgraduate Student Association News ..... Page 8*



**“The Graduate School arranges a variety of courses which are designed to help them be more effective and efficient..”**

## **Research Student Induction Programme 1998**

The Induction Programme for all newly registered research students will take place on Saturday September 26 at 9.15 a.m. in Lecture Theatre 7, Meng Wah Complex, Phase VI. It will begin with a welcome from the Interim Dean of the School.

The programme is designed to provide an introduction to the University's facilities and services - including the courses organized by the Graduate School - that are designed to help research students conduct their research, complete their theses, and develop their personal skills. It will also provide an opportunity for new students to meet fellow students in faculties other than their own, the staff in charge of various University units, and to attend the Information Fair, which will be held during lunch time.

The Programme will finish by 12:30 pm, immediately followed by lunch and Information Fair, which will take place in the Games Room, Rm 105, Chong Yuet Ming Amenities Centre. Refreshments and lunch are provided free!

All new research students should receive a personal invitation during September, if they do not, they should contact the Graduate School.

For those who have received the invitations, please let us know if you are attending, by returning the reply card to the Graduate School or by : telephone 2857-3470, Fax: 2857-3543, email <research@hkucc.hku.hk>

## **Graduate School Courses**

The Graduate School arranges a variety of courses for postgraduate students which are designed to help them be more effective and efficient in their course of study and research.

In most cases the courses are free (the costs being met by the Graduate School). Leaflets describing course content and

arrangements, together with application forms, are available from departmental and faculty offices as well as the Graduate School. Certificates of Attendance are issued to those who complete a specified proportion of the courses.

## **Computer Induction Programme**

A good working familiarity with personal computers and the University computer network is now an essential skill for anyone undertaking research.

The Computer Centre will be running its next course, specifically aimed at postgraduates, in October 1998, dealing with Network Services, Windows, Excel, Word and Powerpoint:

- Thursday October 8  
9:30 am - 12:30 pm
- Tuesday October 13  
2 - 5 pm
- Thursday October 15  
9:30 am - 12:30 pm
- Tuesday October 20  
2 - 5 pm
- Thursday October 22  
9:30 am - 12:30 pm

Places are limited to 25.

The closing date for applications is:

**Thursday September 24**

## **Teaching and Learning**

This programme is designed to provide postgraduate students, as well as demonstrators and other teaching assistants, who are required to assist with undergraduate teaching with an introduction to teaching and an opportunity to explore and discuss issues and concerns about their teaching role. The programme will provide participants with a framework for understanding teaching and learning and will focus on effective teaching techniques for working with small groups of undergraduate students in tutorials and seminars. There is a special session in Designing Computer



**You must  
apply early:  
courses  
will be  
cancelled  
if there are  
no  
applicants  
by 5 pm  
on the  
closing  
dates.**

Mediated Presentations. The sessions in the programme will be presented by staff from the Centre for the Advancement of University Teaching (CAUT).

The sessions are scheduled in September and October as follows:

- Designing Computer Mediated Presentations  
*Wednesday, September 30,*  
*Part I 10 am - 12 noon*  
*Part II 2 - 4 pm*
- Tutorials and Student Learning  
*Tuesday, October 13, 9:30 am - 11:30 am*
- Cooperative Learning: Ways to Manage Group Interactions  
*Wednesday, October 14, 2 - 4:30 pm*
- Preparing and Delivering Effective Presentations  
*Tuesday, October 20, 10 am - 12:30 pm*
- Giving Constructive Feedback to Students  
*Friday, October 30, 9:30 am - 11:30 am*

The closing dates for applications are:

**September 21,  
October 5 & 12, 1998**

### **Thesis Writing**

The English Centre will be running a series of six three-hour workshops designed to help postgraduate students realize the demands of thesis writing.

The workshops focus on such aspects of writing as how to make the purpose of the research clear to an appropriate audience, how to organize ideas coherently, how to place one's own research within the present field of knowledge, and how to use language effectively and appropriately.

These workshops have proved very popular in the past and the next series, which will be limited to 36 participants, will be held on Monday and Thursday afternoons between 4.00 and 7.00 and Saturday mornings between 9.30 to 12.30 on October 8, 10, 12, 15, 17 & 19, 1998.

The closing date for applications is:

**Thursday September 24**

### **Oral English for Academic Purposes**

The course will concentrate on the oral interaction skills required for successful communication within the academic community, with an emphasis on a seminar presentation and participation and will also cover skills needed to lead tutorials in English and to communicate with academics in a more informal setting. The course will attempt to meet the specific needs of the participants and aspects of grammar, vocabulary and pronunciation will be covered as required.

Places are limited to 12 and the course is scheduled for Monday and Friday mornings between 9:30 a.m. and 12:30 p.m. on October 26, 30 and November 2, 6, 9, 13, 16 & 20.

The closing date for applications is:

**Monday October 19**

### **Writing Support Service**

Students (and their supervisors) are reminded of the existence of this service, offered by the English Centre, which is complementary to the above workshops. Feedback can be provided, on a one-to-one basis, on writing being undertaken in connection with their research. A sample of 10-20 pages of writing must be submitted to the English Centre, which will then arrange an appointment to discuss the submission.

There are no closing dates for this service, which is offered throughout the year, but there are certain conditions imposed on work undertaken; these are described in a leaflet available from the English Centre or the Graduate School Office.

### **Statistics for Research Students in the Arts and Social Sciences**

The Department of Statistics will run two 12-hour modules this semester aimed at research students in the social sciences, arts and humanities. These courses will be quite intense and fast paced, in keeping with mature student's capabilities and their wish to acquire knowledge quickly!



**Module 1** aims to bring students with no prior training in statistics up to a basic standard and is roughly equivalent in standard to the undergraduate course *Elementary Statistical Methods*, so students who have already taken this course would not need to take this module.

The schedule of **Module 1** is as follows:

Dates: September 28, 30  
October 5, 7, 12, 14, 1998  
Time: Monday 2 - 4 pm  
Wednesday 10:30 am - 12:30 pm

**Closing Date : Monday September 21**

**Module 2** is more advanced, providing examples in multivariate statistical analysis and exposure to computer packages. In this module, each student is welcome to contribute to the course by bringing his/her research problems to the lecturer, who will in turn try to incorporate this material into the lectures. This second module will therefore be much more interactive than the first. The lecturer will demonstrate the use of statistical packages, and students would have some 'hands-on' experience with the computer. There is no limit on places.

The schedule of **Module 2** is as follows:

Dates: November 2, 4, 9, 11, 16 & 18,  
1998  
Time: Monday 2 - 4 pm  
Wednesday 10:30 am - 12:30 pm

**Closing Date : Wednesday October 21**

Fuller details of these courses are available in a descriptive leaflet which is obtainable from the Graduate School Office or the Department of Statistics.

### Statistical Advice Centre for Students (STACS)

Postgraduate students who need assistance with statistical problems may contact STACS, a service offered by the Department of Statistics with financial assistance from the Graduate School.

Prospective users will need the consent of their supervisor and will need to provide a brief description of the problem(s) that they have encountered.

There are certain guidelines for the use of this service, all of which are described in a leaflet available from the Graduate School Office.

## Graduate School Handbook 1998

The new Graduate School Handbook has been dispatched to all currently registered research students and academic staff.

If you have not received your copy, please contact the Graduate School Office.  
Tel.: 2857-3470

**Forum** is open to members of the University, including teachers, administrators and students, who wish to voice their views on postgraduate research education in HKU.

The theme for the coming issue is

#### *Why Pursuing PhD: Expectations and Realities*

To recognize your contribution, the Graduate School will grant HK\$2,000 to each participant whose essay is published. The bursaries should be used for teaching, research, or study purposes. We welcome any essay on the theme and please send your essay both hard copy and a Word 6 diskette file, together with your full name, university/staff number, contact telephone number, and email address, to the Graduate School. The deadline for the November/December issue is *October 12, 1998*.



## The Profile

Ms. A. Jones of our External Relations Office has talked to Professor Allan Chwang, Professor I. J. Hodgkiss and Professor Daniel Chan on the University's pioneering work in predicting the coming of red tides and measures to avoid its devastating effects.

### Red Tides

The University of Hong Kong hopes to establish a Centre of Excellence in Harbour and Water Environmental Engineering. The Centre will incorporate the cross-disciplinary expertise of scientists and engineers and will look, in part, at the problem of red tides in Hong Kong. In this article The Newsletter speaks to three professors on the research that's making waves.

Professor Allan Chwang, of the Department of Mechanical Engineering is working on developing a model that will predict the movement of a red tide once it has been detected. He says: "We can detect the initial appearance of red tide and if we know the likelihood that red tide is going to appear we can try to stop the process and predict the movement."

His most pressing task is to stop the initial formation of red tides. "We have not accomplished this yet, it's still part of our research. The biologists can identify which species is responsible for red tide and they can test the water for an increase in the number of species. After that it is up to the engineers to stop it and predict movement."

In order to do this the teams are pooling their cross-disciplinary expertise. "We want to be able to predict exactly when a red tide will appear and then how to stop it before it has formed. Thirdly we want to predict its movement," says Chwang. "We have a lot of hydrodynamical data, we know the current, the wave situation and the wind direction so we can predict how the red tide will move. If we know that it's going to take three days to move from Tolo Harbour to Lamma Island then the farmers have three days to move their fish cages."

Supporting Professor Chwang in his research is Professor Hodgkiss of the Department of Ecology and Biodiversity. He started looking at red tides about 20 years ago and since then he has studied the individual species that make up the red tides

and tried to analyse their particular environmental requirements for growth.

He says: "Basically red tides are a natural phenomenon. They occur all the time but usually in small concentrations of algae and not lasting for very long periods of time. The conditions that have resulted in them becoming much more prevalent everywhere in the world are conditions whereby what they need for growth - reasonable temperature, good light, fairly still water and nutrients - are becoming increasingly available."

Nutrients, he says, are the key to red tide growth. "People ask whether pollution can cause red tides. It can but it's not necessarily so because red tides occur even in what one would consider to be unpolluted waters. If there is an input of nutrients, whether that is pollution or natural rainfall or whatever, then red tides can occur. The reason, probably, why we are getting so many more red tides on a worldwide basis now is because more nutrients are going into the sea. Some are what one might call pollution but the rest can't be categorised as pollution. If you chop down a tropical rainforest then the soil gets eroded and is washed into the sea. That adds nutrients to the water but it's not classic pollution. Climatic conditions can do the same thing. If you get a sudden typhoon that causes water to upswell so materials come up from the bottom then it causes lots of nutrients to be released into the water."

Unfortunately no-one has ever been able to put their finger on exactly what causes red tides. "We can tell you the series of conditions that result in red tide and we can predict, therefore, more-or-less that they are going to occur if the conditions are right but we can't say exactly when," explains Hodgkiss. "Worse still we can't say exactly how big and even worse we can't say whether they are going to be dangerous or non-dangerous species. That is the big problem."

**"The University of Hong Kong hopes to establish a Centre of Excellence in Harbour and Water Environmental Engineering."**



**“If we  
can  
come up  
with a  
predictive  
model  
we will be  
the  
first ones  
in the  
world  
to do so.”**

When these red tides do occur the greatest concern is over the level of their toxicity.

“We know that in Hong Kong, from March through to May conditions are right for red tides but I can not tell you precisely on what day it is going to occur or what species is going to occur. So red tide prediction is still a problem.

“What we have been doing is looking at individual species and trying to find out what that particular species requires so that we can predict what species will occur in given conditions. There is an overall increase in the number of species occurring. Over the last few years we have been suddenly finding species new to Hong Kong. As the number of species occurring in Hong Kong increases so does the number of toxic ones. We can expect to get bigger blooms, ones that last longer and are more extensive in their appearance and are more diverse in terms of the species that are occurring.” This year’s red tide was the worst in many seasons and killed thousands of fish.

Says Hodgkiss: “The answer is to find a way of predicting them so that you can take measures to try and avoid the effects. In some countries they have their fish pens in deep water areas and they are constructed in such a way that they can be towed away at a moment’s notice or can be raised or lowered in the water to avoid the algae. That can be used as a preventive measure but to do that you have to be able to predict when the tides are coming.

“If we can come up with a predictive model we will be the first ones in the world to do so. We are confident but on the other hand we are not over-confident because there are so many variables it is a very complicated model. But we feel confident that we can because there is so much data on red tides in Hong Kong.”

Much of that data comes from the University’s Zoology Department where Professor Daniel Chan has been studying the actual toxins that the dinoflagellates produce.

The major neurotoxins found in local seafoods include Paralytic Seafood Poisoning (PSP), Neurotoxic Shellfish Poisoning (NSP) and ciguatera toxins. NSP was first found

in Hong Kong this spring and was associated with massive fish kills. Ciguatera has occurred sporadically since coral reef fish were imported from outside Hong Kong waters.

He has been able to culture toxic organisms in the lab so that he can determine the conditions under which they grow.

Chan and his team have looked at the level of nutrients that can promote population growth as well as toxin reduction. “This organism can live in sea water that does not contain nitrate, it will be limited if nitrate is not present but it will not be eliminated. It has a very distinct cell cycle which is then controlled by photoperiod. In other words they will start dividing in the late afternoon or early evening when they go into what we call S-phase, the phase when they start synthesising DNA and then go into cell division early in the morning.

“So they have a distinct cell cycle which is controlled by photoperiod or light and darkness. When they start producing the DNA then they are also producing the toxin so the level of toxin in the cell fluctuates. It is at its highest at night and lowest during the daytime. So if you get your samples at the wrong time of the day you think there’s nothing there.

“Secondly, because it’s producing this toxin at the same time as it’s producing DNA when nitrogen is in short supply it can make use of the PSP to produce DNA, they don’t need to take nitrogen from the water. So you may say that a lot of nitrogen in the water stimulates production but it doesn’t actually make a difference.”

Chan has been able to create situations where the dinoflagellates can reproduce, divide and grow in large number with or without the toxin. “It comes in clean water rather than dirty water. So pollution does not necessarily create red tides.”

Toxic red tides occur in Hong Kong in March and April, then return in September and October. The reason for this, says Chan, is because the toxic red tide comes in from the east moving through to the west. By mid-March or so it will reach Hong Kong and continue its way west until it reaches Hainan Island at the end of May.



"It's moving because of the changing monsoon. There is a main oceanic current that goes along the equator and then starts to move north along the continental shelf up past Taiwan. In about February or March it will reach a point where it swings around and passes through the Taiwan channel. This water, because it's oceanic brings in certain types of nutrients that we don't normally get in inshore waters. In fact at a depth of about 100-200 metres there are more nutrients than those being discharged into the water from land because when the organisms that live on the top die they sink and become mineralised by the bacteria. So nutrient concentration at about 100-200 metres suits dinoflagellate growth.

"This water current brings with it a lot of silt and because it's cooler water it will have an undercurrent loaded with nutrients. I have data to show that this year we had a very strong undercurrent coming in around March. The surface water starts to warm up by about February or March so we get thermal stratification.

"Dinoflagellates can move up and down vertically. Every day at around 5pm they sink to the bottom, stay there overnight and the next morning about 9am they start rising up. By mid-afternoon they will be quite near the surface. This vertical migration is very important because the surface water does not provide the nutrients for dinoflagellates to flourish. The oceanic current brings the nutrients in. It is clean water but loaded with nutrients. The dinoflagellates can then go down, pick up the nutrients at night and come back up.

"If we have overcast skies during that time - March and April - and calm waters the green algae and diatoms will not flourish and the dinoflagellates will then stand the chance of moving up during the daytime to catch the sunshine and moving down at night to catch the nutrients and they start to bloom and become the dominant species. It is this that causes the red tide," says Chan.

Dinoflagellates are also temperature sensitive. If the temperature rises to 20 or 25 degrees Celsius they can produce a lot of toxins and will also have good cell divisions. If the temperature rises or drops below that the population will increase faster but it will not produce toxins. Its toxicity is temperature dependent.

Says Chan: "Although we have these ocean currents coming in as undercurrents from time to time, in March and April the water reaches optimal temperature of 20-25 degrees. So every year we have this red tide and it always starts from the north east end in places like Kat O. This year it was a relatively dry year so the Pearl River run off was very low. So when the red tides started occurring in Kat O at around the 17th of March this year it bloomed and died down at the end of March. Then we had overcast skies and it started up again in April, then it started moving along and by about April 6 it moved around Picnic Bay and Lamma Island and then it really bloomed and killed hundreds and hundreds of fish. In normal years they don't reach that far because the waters will be diluted by the Pearl River, but this year was a dry year and the bloom went as far as Lantau.

"The whole area is very clean water. If it had been due to pollution you would see it in Victoria Harbour and Kai Tak nullah and you never see it in these places. This year Tolo Harbour has been cleaner than it has been for many years because of the new sewage treatment plant but we had the worst red tides in many years."

Chan says. "But normally there are many types of toxins associated with seafood. This year we saw something that we have never seen before. We had a toxin that killed fish but did not contaminate them. The pharmacological tests show that this is a neurotoxic shellfish poisoning. PSB paralyzes nerves. This one stimulates nerves. It kills the fish in broad daylight when oxygen is in full supply. The fish die so quickly that there is no chance of this ever getting to the meat. So of all the samples we analysed there was only very low levels of the toxin in the meat - so low that it doesn't make much difference. But the loss to the fishermen was enormous."

Chan, who is also a toxicological consultant to the government, said: "If you have local pollution it aggravates the situation but the high nutrient level does not always mean you get red tides. If you can promote diatoms so much the better because when the diatoms flourish you don't get red tides. It's only when the diatoms fail that you get red tides, it causes an ecological imbalance."



"The maximum amount of the award which a research student may claim is HK\$15,220.."

## Conference Grants for Research Students

Students registered for the M.Phil or the Ph.D degree at the University may apply to the Committee on Research and Conference Grants (CRCG) for a conference grant to attend one academic conference (or other academic meeting of similar standing and status) in the course of his/her registration for the degree.

The maximum amount of the award which a research student may claim is HK\$15,220, out of which not more than HK\$4,220 can be claimed for the conference registration fee, accommodation (room cost only), and/or travel insurance for a period beginning not earlier than one day before the start of the conference and ending not later than one day after the end of the conference. Meals, laundry and telephone charges cannot be claimed against the grant.

Applications are considered in each financial year (1 July - 30 June) on a first-come-first-served basis. Applications must be accompanied by documentary evidence that at least one paper or poster which the applicant has (co)-authored has been accepted for presentation at the conference (applications without such firm acceptance issued by conference organizers will not be processed).

Applications must be completed on the requisite form, endorsed by the research student's supervisor and Head of Department, and must reach the Research Services Section of the Registry not later than 14 days before the first day of the conference.

No student may receive more than one conference grant during their candidature for a degree. The award of the grant is conditional upon the availability of funds in the conference grants budget for the financial year concerned. Also, awardees must submit a report on the conference, using the standard form, within 30 days of the end of the conference.

The regulations governing the conference grants, the application form and the report form on the conference can be downloaded from the Research Services website at <<http://www.hku.hk/rss/crcg/main.htm>>.

## Postgraduate Student Association News

The Postgraduate Student Association organized a local trip on June 20 1998. About 106 members participated, many of whom are also members of the Chinese Students and Scholars Association. The itinerary includes The New Airport Exhibition Centre, the Tsing Ma bridge and the visit of the Big Buddha via Tung Chung, the Tung Chung Fort and the grand Lucky Draw. All participants enjoyed the trip for its subsidized rate of charge, beautiful scenery, and the opportunity to know other students from various faculties.

The PGSA Executive Committee is planning more activities, e.g. Sports Day, parties, lectures and an OVERSEAS TRIP. Watch for details in your department notice boards, the Graduate School's Office and the PGSA web page: <http://www.hku.hk/pgsa>.

The new Postgraduate Common Room in the Graduate House is now open to all postgraduate students. Situated in room P4-08 Basement area, the room has a small pantry, social area and an office with photocopying facilities. Come and join the PGSA as a member or non-member. Application forms for membership and a flyer detailing the aims and objectives of the Association are available from the Graduate School Office and the PG Common Room.



Visit of the big Buddha

