

Graduate Studies & Research Newsletter

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CityU 2012-13 General Research Fund and Early Career Scheme Results

The Research Grants Council (RGC) recently announced the results of the General Research Fund (GRF) and Early Career Scheme (ECS) 2012-13 competitions. CityU had 389 participating faculty submitted their proposals, with 119 Principal Investigators (PIs) for the successfully bidding for funding.

This is the inaugural year for the ECS competition, which is designed exclusively for junior faculty early in their academic careers. This new programme recognises junior faculty's roles as emerging teachers/scholars, and hence they compete on the basis of integrated research and education proposals. With 26 funded proposals, CityU received more ECS grants than any of our sister institutions. This noteworthy performance is a tribute to the quality and creativity of CityU's young faculty.

The total number of CityU's GRF/ECS awards is up more than 20% from last year, and the total amount of funding of \$71.9 million represents a 21% increase on the previous year. Seventy CityU funded projects (59%) were assessed to be of high quality with overall ratings of 4.5 or 5. Twelve projects received 100% funding with no reduction in the requested budget.

For CityU, the new projects bring in substantial new financial investment for cutting-edge research and graduate student education. For each successful grant application, precious new direct resources will be brought to the PIs' research programmes, resulting in new capability for educating students and conducting scholarly inquiry.

CityU is ranked 1st in terms of the number of projects awarded and level of funding for GRFs in the Business Studies Panel. CityU's Department of Information Systems led the way with 11 awards out of 22 applications, a 50% success rate which is the highest among the departments at CityU. For the Engineering Panel, CityU is ranked 1st in both the number of ECS projects awarded and level of funding. CityU

is among the top three institutions in terms of the number of successful GRF/ECS applications in the following subject disciplines: Electrical and Electronic Engineering (2nd); Mechanical, Production and Industrial Engineering (3rd); and Computing Science and Information Technology (3rd).

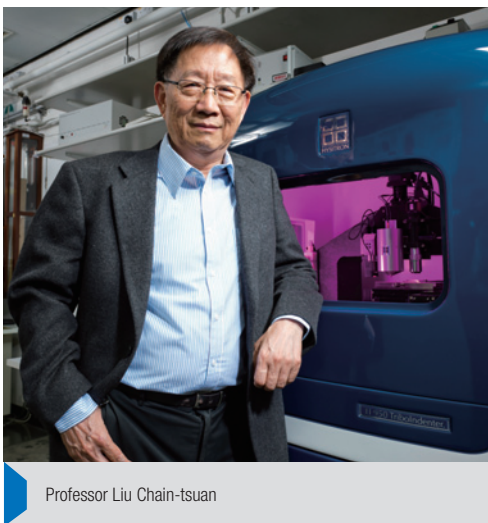
For individual achievements in the ECS category, Dr Antoni Bert Chan of the Department of Computer Science and Dr Liu Guangwu of the Department of Management Sciences were given Early Career Awards in recognition of their outstanding proposals, and both will receive the maximum funding of HK\$100,000 to undertake education activities to complement in the research funding, as well as honorary titles. Three faculty from the Department of Biology and Chemistry—Dr Ko Chi-chiu, Professor Ying Li and Dr Eddie Ma—received funding of over \$1 million, as did two faculty from the Department of Mathematics—Professor Sun Wei-wei and Professor Zhou Ding-xuan. Professor Zhou Ding-xuan has now been awarded a GRF each year since 1997, 16 times in a row. His colleague in the Department of Mathematics, Professor Yang Tong has been awarded a GRF each year since 1995, 18 times in a row. Dr Jessica Li of the Department of Applied Social Studies received both ECS and PPR (Public Policy Research) awards in this funding round. ●

CityU projects received over \$1 million GRF grants are listed as below:

Principal Investigator / Department	Project Title	Funding (HK\$)
Dr Ko Chi-chiu Department of Biology and Chemistry	Design and synthesis of dual emissive phosphorescent transition metal complexes	\$1,150,000
Professor Li Ying Department of Biology and Chemistry	The prefrontal cortex as a key target of the visceral pain processing in adult rats following maternal separation stress in infancy	\$1,104,588
Dr Eddie Ma Chi-him Department of Biology and Chemistry	Molecular determinants of critical period in peripheral nerve regeneration	\$1,030,520
Professor Sun Wei-wei Department of Mathematics	Numerical study for a class of nonlinear and strongly coupled parabolic systems from sweat transport	\$1,025,000
Professor Zhou Dingxuan Department of Mathematics	Learning theory approach to minimum error entropy criteria and approximation analysis of some learning schemes	\$1,025,000

Office of the Vice-President (Research and Technology)

CityU receives RMB1.5m in funding for development of advanced material



Professor Liu Chain-tsuan

“Titanium has been the most important metal to the world’s technological development over the last 20 years,” said Professor Liu Chain-tsuan, University Distinguished Professor and the project leader at CityU. “The higher the temperature that a material can withstand, the higher the thermal efficiency it will have. Scientists are working hard to develop metals that are light and resistant to high temperatures to reduce the weight of machines in order to save energy and lengthen the machines’ lifespans,” he said.

“Aluminium and titanium alloys are commonly used in industry, but aluminium alloy cannot withstand high temperatures whereas titanium alloys have high tensile strength and resistance to high temperatures and corrosion, making them suitable for various environments and temperatures. Therefore titanium alloy has become an important material in industrial development for the new generation,” he added.

Titanium alloy is widely used for building engines for spacecraft, aircraft and ships, as well as components for automobiles and bicycles, and building materials. It can also be used to make artificial joints for biomedical purposes and sports equipment like rackets and golf clubs.

City University of Hong Kong (CityU) has recently received funding worth RMB1.5 million (HKD1.85 million) from the Ministry of Science and Technology for the development of a new high-performance titanium alloy for the aeronautic, aerospace, transportation and biomedical engineering industries.

CityU will be responsible for developing the alloy and providing the relevant scientific data in this international collaboration project assigned by the Ministry. The production and performance tests on sample hardware will be conducted by the Precision Alloy Factory Co Ltd, the project partner based in Danyang City, Jiangsu Province. The project is expected to take two years.

The aim of the project was to improve the composition of the alloy and thermal processing technology, and increase the strength of titanium alloys from its current level of 1,000 MPa to range between 1,200 and 1,400 MPa, Professor Liu said. Another objective is to enhance its ductility from 5 to 10%. “Titanium alloys will become fragile when strengthened. Therefore we need to enhance its ductility and flexibility, and at the same time control production costs,” he added.

This is one of the projects spearheaded by the recently established Centre for Advanced Structural Materials at CityU. Professor Liu is a key member of the Centre. Five key research areas are highlighted in the Centre: pre-stressed engineering materials and devices, advanced bulk metallic glasses, radiation damage in reactor materials, advanced high-temperature metallic alloys, and new advanced composites. ●

Adapted from CityU NewsCentre

CityU scientist wins Shanghai Science and Technology Award



Professor Chu and the artificial plasma sprayed hip joint.

A chair professor in the Department of Physics and Materials Science at City University of Hong Kong (CityU) has won the First Class Award in the Shanghai Science and Technology Awards 2011 presented by the Shanghai Municipal People's Government.

Professor Paul Chu Kim-ho was commended for his achievements in using plasma technology for the surface modification of titanium alloy for making artificial pelvises, facilitating the growth of patients' bone cells, and reducing their recovery time.

His research concentrates on the study of fundamental theories of plasma ions and ion implantation as well as applications of plasma technology to semiconductor and biomedical materials. In his collaboration with the Shanghai Institute of Ceramics at the Chinese Academy of Sciences, he studied how to use plasma technology to improve the surface characteristics of titanium alloy for making artificial hip bones.

The human body sometimes rejects titanium alloys used for artificial joints if the bone tissue and the implant fail to combine. Professor Chu studied the surface characteristics of titanium alloy and found that the application of biological calcium silicate coatings of high-strength bonding to the surface of the alloy can facilitate the growth of new bones, making artificial pelvises more durable. His findings have boosted research on calcium silicon materials in biomedical applications.

His laboratory experiments showed that a six-micron layer of human bone tissue formed on the surface of titanium alloy that had been treated by plasma technology and immersed in simulated body fluid for two weeks. The layer of tissue had grown to 27 microns two weeks later.

Professor Chu's new method of nanocrystallisation for the surface of titanium alloy can enhance the surface characteristics of materials, improve the biological activity of the alloy, and reduce the chances of rejection.

His research findings have been cited by many renowned international scientists and researchers. Some of his projects have received funding from medical equipment corporations for further application development.

The annual Shanghai Science and Technology Awards were set up by the Shanghai Municipal People's Government in 2007 with five categories of prizes. Professor Chu, the only Hong Kong scientist to have won First Prize in the category of natural science, said he felt honoured to receive the prize.

"CityU encourages academic staff to conduct applied research for the well-being of society. I am delighted that my research has received recognition by Shanghai municipal government," he said.

Professor Chu has also developed a range of advanced technologies, including plasma-based orthopedic NiTi shape memory alloys for correcting spinal deformities, which has been used in clinical treatments.

In addition, he has improved the durability of satellite parts, reducing wear and tear, and produced the first silicon-on-insulator (SOI) wafers by plasma implantation. SOI increases the operational speed of computer notebooks and mobile telephones by up to 30%, and has been manufactured in the US.

Professor Chu, among his many accolades, has been ranked by the Web of Science as the number one researcher in Hong Kong every year since 2006. He is ranked 100 out of 400,000 people worldwide in materials science by Essential Science Indicators.

Under his leadership, the CityU Plasma Laboratory has published more than 1,000 international papers and holds 12, 7 and 1 patents in the US, the mainland and Europe, respectively. ◆

Adapted from CityU NewsCentre



◆ Inner and outer rings of a satellite ball bearing.



◆ Plasma-treated NiTi implant developed by Professor Chu.

Seminar promotes State Science and Technology Awards

Faculty members and research staff from CityU and local sister universities gathered at CityU on 1 June 2012 to attend a seminar conducted by Mr Zou Dating, Director of the National Office for Science and Technology Awards. The seminar was co-organised by CityU and the Beijing-Hong Kong Academic Exchange Centre to brief participants on the awards programme.

The State Science and Technology Awards are initiated by the State Council of the People's Republic of China to reward researchers who have made significant contributions in scientific and technological areas. The awards scheme includes five categories, but scholars in Hong Kong are eligible to apply for only three through the Innovation and Technology Commission and the Beijing-Hong Kong Academic Exchange Centre: the State Technological Invention Award, State Scientific and Technological Progress Award and State Natural Science Award.



The seminar on the State Science and Technology Awards attracted a full house audience.

In delivering his opening address, Professor Xue Quan, Associate Vice-President (Innovation Advancement and China Office), extended a warm welcome to the more than 100 seminar participants and thanked Mr Zou for providing CityU with the opportunity to organise the seminar.

Mr Zou then gave a 40-minute presentation on the categories and application criteria for the State Science and Technology Awards and praised Hong Kong scholars for their outstanding performance in a variety of research activities. He expressed his firm belief that they will receive even more awards in the future.

Professor Luk Kwai-man, Director of the State Key Laboratory of Millimeter Waves, who received a second-class honour in the 2011 State Technological Invention Award along with his research team, discussed his experience of submitting a successful application, highlighting the preparation that is essential prior to submission.

The seminar concluded with a question and answer session chaired by Professor Xue Quan. Mr Zou Dating, Mr Cao Guoying, Deputy Director-General of the Education, Science and Technology Department of the Liaison Office of the Central People's Government in the Hong Kong Special Administrative Region, Professor Luk Kwai-man, Mr Christopher Chow, Assistant Manager of the Innovation and Technology Commission, and Mr Colin Hong, Head of the Division of Science and Technology of the Beijing-Hong Kong Academic Exchange Centre, answered participants' enquiries during the session.



Mr Zou Dating encourages participants to apply for a State Science and Technology Award.



Professor Luk Kwai-man said that a research product has a greater chance of winning an Award if it has been granted many patents.

Office of the Vice-President (Research and Technology)



Speakers and guests at the seminar.

Steering Group on Shenzhen/Hong Kong Co-operation in Innovation and Technology visits CityU Shenzhen Research Institute

Ms Elizabeth Tse, Permanent Secretary for Commerce and Economic Development (Communications and Technology), Ms Janet Wong, Commissioner for Innovation and Technology, Dr Cheung Nim Kwan, Chief Executive Officer of the Hong Kong Applied Science and Technology Research Institute, and officials from the Education Bureau, Office of the Government Chief Information Officer and the University Grants Committee Secretariat visited City University of Hong Kong Shenzhen Research Institute (CityUSRI) and its Information and Communication Technology Centre, following a meeting of the Steering Group on Shenzhen/Hong Kong Co-operation in Innovation and Technology in Shenzhen on 18 May 2012.

The delegation received a warm welcome from Professor Xue Quan, Associate Vice-President (Innovation Advancement and China Office) and Director of the Information and Communication Technology Centre.



The HKSAR government delegation visits CityUSRI, where it is received by Professor Xue Quan, Associate Vice-President (Innovation Advancement and China Office) (first on the right).

During the visit, Professor Xue highlighted the CityUSRI mission and vision and introduced delegates to the nine existing research centres and their current research projects. CityU established a presence in Shenzhen at a relatively early stage, Professor Xue said, noting that the close relationship between the Hong Kong and Shenzhen governments has encouraged CityU's rapid development in Shenzhen and its participation in basic and applied research projects on the mainland. CityU would be delighted to hear more good news from the Hong Kong government about further support for Hong Kong universities to facilitate research activities on the mainland, he added.

During the visit to the Information and Communication Technology Centre, Professor Xue presented some of the recent research that has been undertaken at the Centre and the research output that has been transferred to practical use. The Centre is equipped with state-of-the-art facilities, and the delegation showed particular interest in the antenna measurement chamber.

The Steering Group on Shenzhen/Hong Kong Co-operation in Innovation and Technology is a platform for promoting exchange and collaboration in innovation and technology between the two cities. The establishment in Shenzhen of industry, academic and research bases by Hong Kong universities is one of the Steering Group's initiatives.

CityUSRI was officially opened in January 2011 as a permanent CityU base on the mainland for applied research, incubation and professional education. Since its establishment, the University's efforts in bidding for research grants and setting up research centres in Shenzhen have been fruitful. ◆



Ms Janet Wong expresses interest in how the antenna measurement chamber works.



Office of the Vice-President (Research and Technology)

Mr Li Zhongxiang, Deputy Inspector of Science, Technology and Innovation Committee of Shenzhen Municipality, and Ms Janet Wong, Ms Elizabeth Tse, Professor Xue Quan and Dr Cheung Nim Kwan (from left to right).

External grants

Funding Body	Project Title	Principal Investigator	Amount
University Grants Committee/Research Grants Council			
ESRC/RGC Joint Research Scheme 4th Round	What Calculations and Strategies Drive Young Migrants? An Investigation of the Traffic between London, Hong Kong and Beijing	Dr Ho Wing-chung Department of Applied Social Studies	HK\$350,000
	The Professionalization of Human Resource Management in Hong Kong and the United Kingdom	Dr Paul Higgins Department of Public & Social Administration	HK\$350,000
Government or Related Organisation			
Environment and Conservation Fund (ECF)	Study the Energy Saving Opportunities and Potentials of Using Wireless Sensors Network to Monitor the Indoor Climate of Large-scale Rooms in Hong Kong	Dr Huang Gongsheng Division of Building Science and Technology	HK\$442,000
	On the Resident Participation in Domestic Waste Recycling in a High-rise Residential Setting	Dr Yung Yau Department of Public & Social Administration	HK\$207,360
Innovation and Technology Commission – Innovation and Technology Fund	Enhancement of Hardness Property of Precious Metal of Various Purity for Jewellery Industry by Using Surface Nanocrystallization	Professor Jian Lu Department of Mechanical and Biomedical Engineering	HK\$1,589,990
	Development and Investigation of a High-energy Efficient Ozone-catalytic Oxidation Based Air Purifier	Dr Oscar Hui Kwan-san Department of Systems Engineering and Engineering Management	HK\$999,994
	Development of Quantative Immuno-chemiluminescence Kit for Biomarkers of Gastric Cancer, CEA, CA19-9, CA72-4 and CA50	Dr Lau Chi-kong Department of Biology and Chemistry	HK\$920,000
	Development of a Multi-enzyme Solution for the Valorisation of Industrial Food Co-products and Organic Food Wastes from Cafeteria	Dr Carol Lin Sze-ki School of Energy and Environment	HK\$517,500
	Develop a Rapid Testing Platform Based On Molecular Imprinting Technology	Dr Lam Hon-wah Department of Biology and Chemistry	HK\$399,997

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Funding Body	Project Title	Principal Investigator	Amount
Government or Related Organisation			
Planning Department, HKSAR Government	Social Impact Assessment of Urban Renewal Plan for Kowloon City	Dr Ho Wing-chung Department of Applied Social Studies	HK\$745,134
Department of Health, HKSAR Government	Hong Kong Chinese Materia Medica Standards (HKCMMS) Phase VII Project - <i>Dioscoreae Nipponicae Rhizoma</i> [穿山龍]	Dr Cheung Hon-yeung Department of Biology and Chemistry	HK\$676,273
	Hong Kong Chinese Materia Medica Standards (HKCMMS) Phase VII Project - <i>Mahoniae Caulis</i> [功勞木]	Dr Cheung Hon-yeung Department of Biology and Chemistry	HK\$676,273
	Hong Kong Chinese Materia Medica Standards (HKCMMS) Phase VII Project - <i>Ginseng Folium</i> [人參葉]	Dr Cheung Hon-yeung Department of Biology and Chemistry	HK\$618,760
	Hong Kong Chinese Materia Medica Standards (HKCMMS) Phase VII Project - <i>Verbanae Herba</i> [馬鞭草]	Dr Cheung Hon-yeung Department of Biology and Chemistry	HK\$618,760
Hong Kong Applied Science & Technology Research Institute Co Ltd (ASTRI)	3D Human Gesture Tracking based on Micro-IMU and Vision Sensor Fusion	Professor Li Wenjung Department of Mechanical and Biomedical Engineering	HK\$260,000
	Research and Development on Pairing-based Cryptographic Systems	Dr Duncan Wong Shek Department of Computer Science	HK\$250,000
Others			
The Mental Health Association of Hong Kong	Studies on Evidence-based Practices for Integrated Community Centres of Mental Wellness (ICMWS)	Professor Daniel Wong Fu-keung Department of Applied Social Studies	HK\$1,168,000
Croucher Foundation	Bio-manipulation and Bio-marking by Optically-induced Electrokinetics	Professor Li Wenjung Department of Mechanical and Biomedical Engineering	HK\$1,000,000
The Ocean Park Conservation Foundation	Conservation of Horseshoe Crabs in Ha Pak Nai, Hong Kong: Bridging Science and Community Participation	Dr Paul Shin Kam-shing Department of Biology and Chemistry	HK\$420,876
MTR Corporation Limited	Examination of Railroad Materials and Structures (Provision of Research Analysis Service of Rail-related Failures)	Professor Lawrence Wu Chi-man Department of Physics and Materials Science	HK\$360,000

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Funding Body	Project Title	Principal Investigator	Amount
Nanjing University of Aeronautics and Astronautics	Study on the Growth and Adhesion Strength of cBN Films and BDD Electrodes	Dr Zhang Wenjun Department of Physics and Materials Science	HK\$230,000
Hong Kong Maritime Museum	Multi-media Development in the New Hong Kong Maritime Museum	Professor Jeffrey Shaw School of Creative Media	HK\$220,000
Europeana Foundation	Producing Ecloud	Professor Jeffrey Shaw School of Creative Media	HK\$214,000
珠海寶豐堂電子科技有限公司	Optimized Antenna and Sample Stage Designs Based on 40KHz Pulse Generator for RF Plasma Cleaning Machine	Professor Paul Chu Kim-ho Department of Physics and Materials Science	HK\$198,050
Solidarity Center	Development of Labor NGOs and Labor Rights in China	Dr Chris Chan King-chi Department of Applied Social Studies	HK\$141,000
Microsoft Research Asia Windows Phone Academic Program	Large-scale Exploratory Video Search by Social Networking	Dr Ngo Chong-wah Department of Computer Science	HK\$116,700
Jacob Wallenberg Foundation	Surface Engineering for Advanced Manufacturing and Biomedical Purposes	Dr Lawrence Li Kwok-yan Department of Mechanical and Biomedical Engineering	SEK\$100,000
SKOLKOVO Institute for Emerging Market Studies	A Study of Entrepreneurs across Emerging Markets	Professor Leung Kwok Department of Management	USD29,500

(Note: Report on projects funded with HK\$100,000 or above.)

Symposium recognises CityU's efforts in non-tech knowledge transfer

The College of Liberal Arts and Social Sciences (CLASS) organised its first-ever Knowledge Transfer (KT) Symposium and KT Awards presentation ceremony on 25 April 2012. The symposium kicked off with welcoming remarks from Professor Kingsley Bolton, Acting Dean of CLASS. Also speaking at the opening ceremony was Professor Gregory Raupp, Vice-President (Research and Technology).

Two keynote speakers, Professor John Bacon-Shone and Dr Tse Ka Kui were invited to speak at the symposium. Professor Bacon-Shone is currently Associate Dean (Knowledge Exchange) of Social Sciences at the University of Hong Kong, and Dr Tse is chairperson of a number of social enterprise organisations, amongst them the Hong Kong Social Entrepreneurship Forum, Dialogue in the Dark HK Ltd, the Social Enterprise Book Hub and the Enspiral Community Interest Company.

During the symposium, three KT award winners – Dr Annis Fung Lai-chu, Professor Samuel Ho and Dr Kam Ping-kwong – were recognised for the impact of their work.

Dr Fung was the principal investigator for Project CARE (Children and Adolescents at Risk Education), a research and advocacy project targeting children and adolescents vulnerable to bullying at school. With the participation of about 77 secondary and primary schools, the scheme identified potential aggressors or victims for clinical intervention and raised public awareness of the bullying issue. Students, parents, social workers and teachers joined in research and training sessions designed to enhance their counselling and school bullying crisis intervention skills. As a result of clinical intervention, aggressive behaviour amongst aggressors was significantly reduced and the confidence and



Dr Lee Tak Yan, Professor Samuel Ho, Dr Annis Fung, Dr Kam Ping-kwong, Professor John Bacon-Shone, Professor Lo Tit Wing, Professor Daniel Wong and Mr Mak Hoi Wah (from left to right).

assertiveness of victims significantly bolstered. Project CARE won the Quality Education Fund Outstanding Project Award in 2008, and has received funding support worth about HK\$11 million in the past five years.

The aim of Professor Ho's Hospital Authority (HA) Resilience Project is to enhance the resilience of HA healthcare workers in the face of potential crises and boost their overall level of positive emotions. Research shows chronic stress to be amongst the top concerns of medical staff, and resilience building has been one of the most prominent stress management skills in the past decade. Educational materials, assessments, interactive exercises, educational workshops and individual psychotherapy treatments were the major deliverables of the project.

Dr Kam's winning project is entitled "Transferring and Promoting the Skills in Leading Group Games – A Collective Book Project with CityU Social Work Students". In the course of the project, Dr Kam and 43 students worked collaboratively to develop group games for use in Hong Kong. These games have been well received by both local and mainland social work practitioners. The book project was preceded by training workshops on the leading of group games, which culminated in the publication of a series of printed materials, including the book *Facilitation Skills for Group Games – from concept to practice*. The book was a bestseller in 2009 and 2010, and has undergone seven reprints since its initial publication.

The following projects, funded by KT earmarked grants, were also presented at the symposium.

- ◆ Action Counselling, by Professor Lo Tit-wing (Department of Applied Social Studies).
- ◆ An Interactive Human-Machine Dialogue System for Public Health in Hong Kong, by Dr Alex Fang (Department of Chinese, Translation and Linguistics).
- ◆ Capacity Building for Hong Kong-Shenzhen Collaboration in Qianhai, by Professor Linda Li (Governance in Asia Research Centre).
- ◆ Case Studies to Support Clinical Teaching in Counsellor Education: On Elicitation and Textual Re-presentation of "Clinical Knowledge" of Experienced Counsellors, by Dr Kwong Wai Man (Department of Applied Social Studies).
- ◆ Climate Policies: A Guide for Local Governments, by Dr Taedong Lee (Governance in Asia Research Centre). ◆



Dr Tse Ka Kui

Oxford experts share entrepreneurship tips

Thirty-seven students and researchers attended an entrepreneurship workshop organised by the Knowledge Transfer Office (KTO) on 17 May 2012. The workshop was led by two ISIS consultants, Mr Terry Pollard and Ms Shen Ya-hsin. ISIS is a technology transfer company established by Oxford University. The one-day workshop covered a variety of themes ranging from the evaluation of technology projects and marketing to the assessment of markets and clientele.

The morning session opened with a lecture on patents and intellectual property protection, followed by presentation of the success stories of Oxford-based entrepreneurs and useful tips on promotion via publications, multimedia and the Internet. The workshop ended with a session on how technologies can be evaluated for commercial viability.



Mr Terry Pollard and Ms Shen Ya-hsin of ISIS (from left to right).



Dr Mu Yuanyuan

Dr Mu Yuanyuan, Senior Research Assistant in the Department of Chinese, Translation and Linguistics, attended the workshop and expressed her appreciation of its relevance to her own research. "My field of research is translation and computer-aided translation and language teaching. Enriching my entrepreneurship skills will help me convert the intellectual property of my research into practical solutions or products that are effective means of knowledge transfer", Dr Mu said.



Ms Sylvia Rao

Another participant, Ms Sylvia Rao, admitted that although entrepreneurship is not closely related to her field of study, she has been set on becoming a successful entrepreneur since her younger years. "I think it is personally very useful to learn about the success stories of start-ups and ways to protect one's innovations. I also want to know what organisations lend support to budding entrepreneurs", said Ms Rao, an undergraduate in Quantitative Finance and Risk Management.

Knowledge Transfer Office

Technology transfer officers visit overseas universities

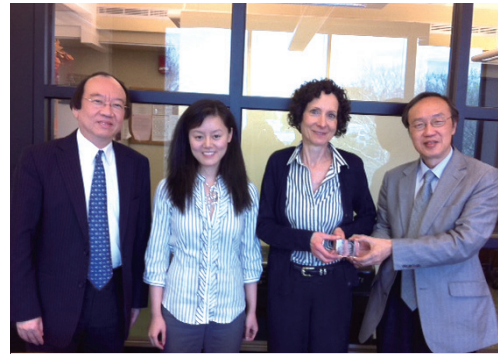
A CityU delegation recently visited the technology transfer offices of three universities in North America – the USC Stevens Institute for Innovation at the University of Southern California, the Office of Technology Licensing at Princeton University in New Jersey and the McMaster Industry Liaison Office of McMaster University in Ontario – to learn about best practices in knowledge transfer and commercialisation.

The CityU delegation was led by Mr Wong Hon-ye, Associate Vice-President (Knowledge Transfer), Mr David Cheung, Associate Director of the Knowledge Transfer Office, and Mr Tomson Lee, Senior Technology Transfer Officer.

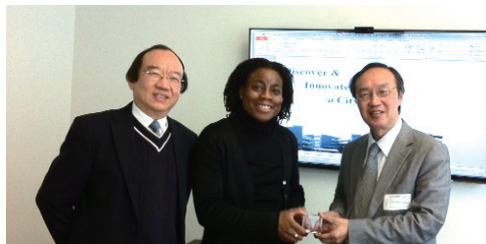
Commenting on the trip, Mr Wong Hon-ye said, "The visits to the three universities were very fruitful. We saw how they have cultivated a conducive environment for knowledge transfer that has had a positive impact on the communities they serve".

In addition to being informed of knowledge transfer strategies, the delegation also engaged in in-depth discussions on intellectual property management, industrial liaison and outreach.

Knowledge Transfer Office



Mr David Cheung, Dr Shan Wan and Ms Laurie Tzodikov of Princeton University, and Mr Wong Hon-ye (from left to right).



Mr David Cheung, Dr Karen Kerr of USC, and Mr Wong Hon-ye (from left to right).



Mr Wong Hon-ye, Dr Gay Yuyitung, Mr Glen Crossley and Mr Paul Grunthal of McMaster University, and Mr David Cheung (from left to right).

Seminar on US patent law

A seminar on US and Chinese patent laws held by the Knowledge Transfer Office on 24 May 2012 attracted 56 participants. Dr Albert Chan, Principal of the Law Offices of Albert Wai-kit Chan, the event main speaker, talked about patent law reform in the US and how inventors can protect their inventions through enforcement of the newly revised regulations.

The changes to the US patent law will be implemented later this year and in early 2013. Amongst the changes are the introduction of the "first to file" principle, an expanded definition of prior art and a new derivation proceeding.

Also present at the seminar was Professor Gregory Raupp, Vice-President (Research and Technology), who presented a souvenir to Dr Chan. ◆

Knowledge Transfer Office



Dr Chan (right) receives a souvenir from Professor Raupp.

Amoy research institute delegation visits CityU



Mr Xiao (left) presents a souvenir to CityU.

A delegation from the Amoy Institute of Technovation visited CityU's research facilities on 25 April 2012. The 18 members of the delegation from Xiamen, China, toured the laboratories of the Centre of Super-Diamond and Advanced Films (COSDAF), the Advanced Coatings Applied Research Laboratory (ACARL), the facilities of the Department of Systems Engineering and Engineering Management (SEEM) and the Department of Mechanical and Biomedical Engineering (MBE). The delegation was led by Mr Xiao Zhicong, Assistant to the Dean of the Institute and Vice-President of the Amoy Productivity Promotion Center. ◆

Knowledge Transfer Office



The Amoy delegation and CityU representatives gather for a group photo.

CityU scientists shed light on advances in environmental technology

Ingenious technologies designed to tackle pollution and food waste were disclosed at a recent technology transfer forum organised by the Knowledge Transfer Office (KTO). More than 80 people attended the forum, which was held on 15 June 2012. The following is a summary of the technologies introduced at the forum.



▶ Dr Oscar Hui

Ozone catalytic oxidation (OCO) technology for degradation of dye in water

Dr Oscar Hui
Department of Systems Engineering and Engineering Management

Dr Hui and his team have successfully demonstrated that dyes can be removed from waste water efficiently using nanoporous materials. Compared with alternative treatment methods, Dr Hui's OCO technology has better removal efficiency and can reduce energy consumption. The technology owes its strength to a combination of adsorption, ozonation and catalytic oxidation, the use of mesoporous materials and the capacity to convert dyes into carbon dioxide and water. In addition to investigating water pollution, Dr Hui also engages in air treatment research based on photocatalytic oxidation and plasma-assisted oxidation technologies, LED lighting, Li-batteries, supercapacitors and fuel cell electrodes.



▶ Dr Zhi Ning

Air pollution measurement and control: technologies to meet environmental challenges

Dr Ning Zhi
School of Energy and Environment

Dr Ning Zhi and his team have developed Hong Kong's first-ever mobile platform for chasing and analysing real-time vehicle emissions using the fuel carbon balance method. Their on-road plume chasing and analysis system (OPCAS) is distinguished by its adaptability and speedy analyses. It can be installed on a wide variety of vehicles and acquire target vehicle emission rates in just one to two minutes. These features enable the OPCAS to track down high emitters on the road and reflect the impact of road conditions on the dispersion of pollutants. The system is suitable for industrial, monitoring and research uses.



▶ Dr Carol Lin

Valorization of unconsumed bakery waste from Starbucks Hong Kong for the sustainable production of chemicals and materials

Dr Carol Lin
School of Energy and Environment

The aim of Dr Lin's Innovation and Technology Fund-funded project is to reduce food waste and facilitate biomass use in Hong Kong, thereby reducing the release of greenhouse gases and other airborne pollutants. The project explores the conversion of disposed coffee grounds and unconsumed bakery products into succinic acid and poly-3-hydroxybutyrate (PHB) through a bio-refinery process. Succinic acid, a high value-added fermentation product using sugar, has widespread applications in food production and pharmaceuticals, whereas PHB, which is similar to polypropylene, can be developed into biodegradable plastics. The successful implementation of this project could shed light on the transformation of food waste into useful chemicals and/or materials of high commercial and industrial value. ●

CityU innovations exhibited at ICT Expo 2012

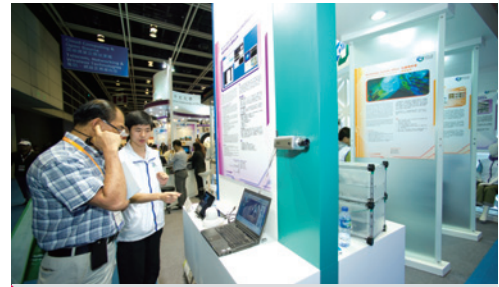
Fourteen CityU innovations were showcased at the International ICT Expo organised by the Hong Kong Trade Development Council from 13 to 16 April 2012. The technologies on display encompassed a wide range of fields, including power electronics, photonics, wireless communications, the Internet, telemedicine, video transcoding and video surveillance. Three CityU projects were also featured in the Technology and Innovation Zone of the Hong Kong Electronics Fair 2012, which was held concurrently with the ICT Expo at the Hong Kong Convention and Exhibition Centre. For details of the exhibits, please refer to the following table.

The ICT Expo is one of the leading trade shows in the Asia-Pacific region. In the 2011 expo, more than 580 exhibitors from Australia, Canada, mainland China, India, the Philippines and Taiwan attended the event, which attracted approximately 30,000 local and international visitors.

Mr Victor Lau, Technology Transfer Officer of the Knowledge Transfer Office (KTO), was present at the Expo and noted that visitors showed keen interest in CityU's technologies, "Some industrial and business executives approached me for more information, and their response was quite positive", he said.

The CityU technologies exhibited at ICT Expo 2012 are ripe for commercialisation, and individuals interested in their use should approach the KTO for more information. ●

Knowledge Transfer Office



A visitor looks at an exhibit as a demonstrator explains its characteristics.



Project Name	Principal Investigator	Department/Centre
A universal rate control scheme for video transcoding	Professor Sam Kwong	Department of Computer Science
Air purifier utilizing photocatalytic oxidation and plasma-assisted catalytic oxidation technologies*	Dr Oscar Hui	Department of Systems Engineering and Engineering Management
Industrialization and application of hard coatings and their preparation technique	Dr Lawrence Li	Advanced Coatings Applied Research Laboratory Department of Mechanical and Biomedical Engineering
LED replacement lamp driver with universal compatibility	Professor Henry Chung	Department of Electronic Engineering
Mobile video surveillance and cloud service*	Professor Jia Weijia	Department of Computer Science
Nanoporous materials for oil spill cleanup and filtering	Professor Lee Chun-sing	Department of Physics and Materials Science
Ozone catalytic oxidation-based wastewater treatment technology	Dr Oscar Hui	Department of Systems Engineering and Engineering Management
Reconfigurable beam steering active antennas for broadband communications*	Professor Chan Chi-hou	Department of Electronic Engineering
SiteWatcher – an efficient and effective phishing detection solution	Dr Liu Wenyin	Department of Computer Science
Stress testing simulator for wireless networks	Dr Wang Jianping	Department of Computer Science
Transparent white OLED for lighting	Professor Lee Shuit-tong (ex-CityU staff)	Centre of Super-Diamond and Advanced Films
Use-IT-Easy: a low-cost high-performance mobile RFID platform	Professor Andrew Lim	Department of Management Science
ZigBee advanced metering infrastructure and energy management	Dr Tsang Kin-fung	Department of Electronic Engineering
ZigBee telemedicine ICT infrastructure	Dr Tsang Kin-fung	Department of Electronic Engineering

*Projects marked with an asterisk were displayed in the concurrent Hong Kong Electronics Fair

Industrial executives visit CityU's bioengineering facilities

About 20 members of the Hong Kong Medical and Healthcare Device Industries Association visited CityU's newly established Mechanical and Biomedical Engineering (MBE) department on 9 March 2012.

The delegation was received by Professor Ning Xi, Head of MBE, who delivered a 15-minute presentation on the department's developments and major research areas. At the MBE laboratory, the delegates were shown several of the innovative research projects undertaken by MBE researchers.

The following is a brief description of the presentations made during the visit.

Professor Ning Xi

Electrogastragram measurement system

The Electrogastragraphy (EGG) Analysis System developed by Professor Xi records and analyses EGG and supports diagnosis of functional gastrointestinal disorders.

Professor Dong Sun

Robot-aided optical manipulation of biological cells

A variety of manipulation tools with optical tweezers have been developed for the manipulation of cells at the single-cell level.

Dr Zuankai Wang

Development of a microfluidic device for point-of-care CD4+T cell counting

This project involves the development of a portable microfluidic device that provides semi-quantitative measurements through a simple read-out, with no need for complex electrical or optical equipment.

Label-free microfluidic platform for circulating tumour cell (CTC) isolation and enumeration

This proposed integrated microfluidic-electrical platform supports label-free CTC isolation and enumeration from unprocessed whole blood.

Development of hierarchical hybrid surfaces for enhanced condensation heat transfer

The bio-inspired surfaces to be developed may lead to the creation of novel materials for use in thermal and energy systems.

Dr Raymond Lam

New generation of cell-based assays

This technology provides better control of the critical cellular environment compared to conventional cell-based assays.

User-friendly cell isolation chip

Use of this technology allows freshly extracted cells from human blood to be isolated at defined locations in a microfluidic chip for further analysis.

Dr Xinrui Niu

Biomechanics of biomedical devices

This project investigates contact damage in biomedical devices with the principles of biomechanics. ●

Knowledge Transfer Office

HKGCC delegation visits ALiVE

Members of the Hong Kong General Chamber of Commerce (HKGCC) visited CityU's Applied Laboratory for Interactive Visualization and Embodiment (ALiVE) on 17 February 2012 with support from the KTO's CityU Business and Industrial Club.

Located at the Hong Kong Science and Technology Parks Corp, ALiVE is a 1,000 m² laboratory run by the School of Creative Media to support interdisciplinary research and showcase innovation in creative media. The laboratory, which was officially opened in June 2010, is equipped with advanced apparatuses and installations to support research on new modes of immersive interactive experience relevant to culture, entertainment, education and industry. ●

Knowledge Transfer Office



Visitors experience the wonder of multimedia art first-hand.

Granted patents

Method for encoding a plurality of video signals into a single video signal

China patent number: ZL200910204667.2

Inventor: Dr Peter Tsang (Department of Electronic Engineering)

The technology presented in this patent supports the encoding of a plurality of video signals into a single signal in such a way that multi-view 3D signals can be distributed, compressed and recorded in the way that 2D video signals are. Compared with the alternative N-tiles format, the new method can preserve the full resolution of content that is either stationary or slow-moving over a certain period. However, the remaining content containing heavier motion components is represented with the N-tiles format, based on the assumption that viewers are less attentive to fine details in motion pictures.

Organic electroluminescence device

US patent number: 8048541

**Inventors: Professor Lee Shuit-tong (ex-CityU staff)
Professor Lee Chun-sing (Department of Physics and Materials Science)
Professor Wang Peng-fei (ex-CityU staff)
Dr Xie Zhi-yuan (ex-CityU staff)**

Professor Lee Shui-tong and his research team have developed an electroluminescence (EL) device that employs neutral red and its derivatives as the guest material of a dopant. The invention is superior to many red-emitting OLEDs, which display a significant reduction in efficiency as the current density or dopant concentration increases. The present dopant is particularly suitable for passive-matrix displays, which require a high excitation density. The materials provided by this invention are easy to prepare and hence cost-effective.

Wideband antenna

China patent number: ZL200610139681.5

**Inventors: Professor Edward Yung (Department of Electronic Engineering)
Dr Wong Hang (State Key Laboratory of Millimeter Waves)
Ms Lau Pui-yi (ex-CityU staff)**

The new technology described in this patent relates to a compact wideband patch antenna that is compatible with a wide range of wireless communication technologies, including 2G, 3G, wireless LAN, Bluetooth, ZigBee and WiMAX. The new antenna emits omni-directional radiation and is vertically polarized. Its critical components include a square disc feed, four shorting strips and an upward folded wall. The antenna's patented design will facilitate its use in automobiles.

Magnetolectric coupling device

China patent number: ZL200610068282.4

**Inventors: Dr Xu Zheng-kui (Department of Physics and Materials Science)
Dr Lu Sheng-guo (ex-CityU staff)
Mr Guo Shi-shang (ex-CityU staff)**

This novel magnetolectric (ME) coupling device comprises a flexensional cymbal located between two magnetostrictive $\text{Tb}_x\text{Dy}_{1-x}\text{Fe}_2$ (Terfenol-D) plates. It is the first ME device to be equipped with a piezoelectric cymbal, and it displays a more significant ME effect than similar products owing to the coupling between the large magnetostriction of Terfenol-D and the strong piezoelectric response of the cymbal. The device can be used in current and magnetic field sensors, transformers, gyrators, memories and microwave devices. ●

CityU Distinguished lecture on “The Nano-Gold Rush”

Professor Jochen Feldmann, Chair Professor of Photonics and Optoelectronics and Director of Nanosystems Initiative Munch at Ludwig-Maximilians-Universität in Germany, delivered a lecture titled “The Nano-Gold Rush” at the CityU Distinguished Lecture Series held on 12 June 2012.

In this lecture, Professor Feldmann shared with CityU faculty and students the latest advancements in the top-down and bottom-up strategies for nanoscale fabrication, single molecule detection, enhanced interdisciplinarity and pioneering experimental and theoretical contributions have led to a scientific “nano-gold rush”. The lecture has attracted over 100 attendees and wrapped up with a question and answer session. ●

Office of the Vice-President (Research and Technology)



Professor Jochen Feldmann

Prestigious awards recognise IT achievements at CityU

Information technology at CityU has received global recognition for making its online presence more accessible to greater numbers of people.

CityU was named a 2012 Computerworld Honors Laureate for its barrier-free website and contributions to reducing the digital divide. The University is the only organization from Hong Kong to receive a Laureate this year. Dr Andy Chun Hon-wai, CityU’s Chief Information Officer, received the Computerworld Honors Laureate medallion at the historic Andrew W. Mellon Auditorium on 4 June in Washington D.C. on behalf of CityU. In addition, Dr Chun received the Hong Kong CIO Award at the Hong Kong Convention and Exhibition Centre on 20 June.

CityU was acknowledged for its University-wide Web Redesign Project, an innovative mobile web technology platform that makes CityU’s entire public web, i.e. 100 websites and half a million pages, more mobile-friendly and more accessible to people with disabilities. ●

Adapted from CityU NewsCentre



Dr Andy Chun (right), receives the Computerworld Honors Laureate medallion from Mr Scot Finnie, Editor-in-chief of *Computerworld*, in Washington D.C. on behalf of CityU.

Seminar to discuss the challenges and opportunities in operations research / management in healthcare

A seminar titled “Operations Research / Management in Healthcare: Challenges and Opportunities” delivered by Professor David D. Yao from Columbia University, was held on 13 August 2012 at Connie Fan Multi-media Conference Room. This seminar was organised by the Office of the Vice-President (Research and Technology) which attracted over 80 CityU faculty and students to participate.

Operation Research / Management (OR/OM) as an applied science concerned with quantitative decision problems which can address problems arise in the field of healthcare operations. In this seminar, Professor Yao highlighted the challenges and opportunities for OR technologies such as hierarchical production planning, revenue management, supply chain management data science and engineering, and business analytics on hospital resource management. He also shared with audience the latest OR/OM development in the U.S. and his opinion on Hong Kong’s OR/OM future development in healthcare delivery. The seminar was wrapped up with a dynamic question and answer session. ●

Office of the Vice-President (Research and Technology)



Professor Raupp (left) presents a souvenir to Professor Yao (right)

Honours awarded to members of CityU community

The Chief Executive of Hong Kong SAR has accorded awards to several members of the CityU community in the 2012 Honours List in recognition of their significant contributions to Hong Kong or for their dedicated public and community service.

Dr Peter Woo Kwong-ching, a recipient of an Honorary Doctor of Business Administration from CityU in 2004, has been awarded the Grand Bauhinia Medal for his long and distinguished public service in trade promotion and the medical and health service.

CityU Council member Mr Yeung Ka-sing has been awarded the Gold Bauhinia Star for his distinguished public and community service, particularly in helping the Hong Kong Housing Society provide quality and affordable housing to meet the needs of the community.

Professor Nora Tam Fung-ye, Chair Professor of the Department of Biology and Chemistry, has been awarded the Bronze Bauhinia Star for her valuable contributions to promoting scientific research and education, as well as environmental conservation.

CityU Council member Ms Maggie Chan Man-ki has been awarded the Medal of Honour for her outstanding and dedicated community service in Wong Tai Sin district.

Yip Siu-keung, a current-year graduate and Leung Ki-ho, Year 2 student, in the Department of Asian and International Studies, received the Chief Executive's Commendation for Community Service. ◆

Adapted from CityU NewsCentre



Dr Peter Woo Kwong-ching, Mr Yeung Ka-sing, Ms Maggie Chan and Professor Nora Tam Fung-ye (clockwise from top left).

Honorary fellowships on four distinguished persons

CityU is to confer the title of Honorary Fellow on four distinguished persons in recognition of their significant contributions to the development of, and service to, the University. The honorary fellowships, to be presented at a ceremony on 16 October 2012, will go to:

- ◆ Dr Chiang Lai-wan, Chairman of C & L Holdings Ltd
- ◆ Mr Herman Hu Shao-ming, Chairman of Ryoden Development Ltd
- ◆ Mr Kenneth Koo, Group Chairman and Chief Executive Officer of TCC Group
- ◆ Mr Lau Ming-wai, Vice-Chairman of Chinese Estates Holdings Ltd ◆

Adapted from CityU NewsCentre

CityU will confer honorary doctorates on three distinguished leaders

CityU will confer honorary doctorates on three prominent individuals at the Honorary Awards Ceremony to be held in November 2012, in recognition of their achievements and contributions to the well-being of society.

The three outstanding persons are Professor Bai Chunli, President of the Chinese Academy of Sciences (CAS), will receive an Honorary Doctor of Science; Mr Hu Fa-kuang, Honorary Chairman of Ryoden Development Limited, will receive an Honorary Doctor of Social Science and Dr Allan Zeman, Chairman of the Ocean Park Corporation and Chairman of Lan Kwai Fong Holdings Limited, will receive an Honorary Doctor of Business Administration. ◆

Adapted from CityU NewsCentre

Postgraduate Forum 2012 Cross Disciplinary Research: A Prominent Way to Success

The challenges that society faces in the 21st century are beyond the scope of any single discipline. To deal with the increasing complexity of global challenges, cross-disciplinary research is playing an increasingly prominent role. As one of Hong Kong's leading research universities, CityU sees cross-disciplinary research as a new and promising way of meeting complex new challenges and broadening research frontiers. In the Postgraduate Forum held on 19 April 2012, CityU researchers and a PhD student told real-life success stories and discussed their experiences, thus giving attendees an opportunity to gain insight into the world of cross-disciplinary research, including ways to achieve fruitful research outcomes through effective cross-disciplinary research tactics.

In his welcoming address, Professor Gregory Raupp, Vice-President (Research and Technology) and Dean of Graduate Studies, said that "real world problems that include everything which require all disciplines for a complete workable solution". He highlighted the importance of implementing a cross-disciplinary approach that can create an entirely new discipline, and recounted his earlier research work he was doing in the United States. Professor Raupp discussed recent breakthroughs in innovative cross-disciplinary research and noted that the new discipline of chemical engineering is actually a fusion of mechanical engineering and chemistry.

The three speakers who discussed their research experience at the forum, which was entitled "Cross Disciplinary Research: A Prominent Way to Success", were Professor Jonathan Zhu of the Department of Media and Communication, Professor Dong Sun of the Department of Mechanical and Biomedical Engineering, and Mr Hai Liang, a PhD student in the Department of Media and Communication.



► Professor Dong Sun

Key to Cross-disciplinary Research

In a presentation entitled "Towards Cross-disciplinary Research: A Personal Experience", Professor Sun noted that "the gap between different majors is smaller, and the current disciplinary definitions may be renewed in 20 years. Cross-disciplinary research can lead to breakthrough outcomes in a relatively easy way". He pointed out that the key to cross-disciplinary success is "choosing the right research topic, which is 9/10 of the game in achieving an impact in our research". In order to find a good research topic, Professor Sun explained that it is important to "choose an area that has current and future robust funding. Match an area with your expertise, knowledge and research experience to be greatest extent possible, and both the topic and solution can be cross-disciplinary in nature". When it comes to cross-disciplinary research, Professor Sun said his experience suggests that researchers in different fields have different ways of thinking about and approaching complex problems, and hence a common language may be needed. It is beneficial to learn something new with a collaborator, to be a good and tolerant team player in cross-disciplinary research and to understand the different rewards that motivate researchers in different disciplines.



▶ Mr Hai Liang

Crossroads of Cross-disciplinary Research

Mr Liang, who has a cross-disciplinary background, holds two Bachelor degrees from Shanghai Jiao Tong University, one in Media and Communication and the other in Mathematics. He discussed his journey of self-exploration during the course of his cross-disciplinary research studies.

In a presentation entitled “A Problem of Self Identity: My Experience of Cross-disciplinary Research”, Mr Liang said that he has experienced confusion and difficulties in his cross-disciplinary studies. “Why did I learn mathematics when I majored in Media and Communication? What do others think that I do? Where can I publish my studies?” These are just a few of the questions that Mr Liang has asked himself throughout his studies. He told the audience that although he embarked on cross-disciplinary study by accident, the experience has taught him that “truth has no disciplinary boundaries, but researchers do”. His cross-disciplinary background has empowered him with the knowledge necessary to bridge the gap between science and social science, he said. Once Mr Liang was able to position himself as a communication scholar (who carries out research on communication phenomena and interprets meanings in a socially scientific way) with a mathematics background and knowledge of basic algorithms in computer science (and can thus use computer programmes to collect and analyse the massive amount of data on the Web), he found that actually many individuals share the same interests. He eventually located his research direction at the crossroads of cross-disciplinary research.



▶ Professor Jonathan Zhu

Interdisciplinary Collaboration

The final speaker, who was also the forum’s facilitator, was Professor Zhu. In a presentation entitled “Necessity, Desirability, and Difficulty in Interdisciplinary Collaboration”, Professor Zhu outlined the rewards and difficulties of interdisciplinary research and suggested appropriate attitudes for dealing with interdisciplinary collaboration.

As a social scientist by training with a strong interest in interdisciplinary research, Professor Zhu’s ongoing research projects include social computing, e-Social Science, and cross-disciplinary research in science and social science. In his talk, he emphasised the importance of interdisciplinarity, which offers a good platform for tearing down the walls of complex problems. Interdisciplinarity is also rewarding in itself, Professor Zhu said, as it facilitates discoveries, breakthroughs, innovation, knowledge, skills, insights, patents, publications and awards. However, he reminded participants that interdisciplinarity also presents challenges and may “turn out to be far more difficult than expected”. He posed the question “What is social computing?” and then discussed whether a “Computerized Society” in which computer scientists upgrade the working platforms used by the society at large, or “Socialized Computing” in which social scientists and the general public participate in the development of science research tools, is better placed to answer the question. Difficulties in cross-disciplinary collaboration are often due to territorial disputes, mutual misunderstandings, and different perspectives and norms, Professor Zhu said, stressing that communication is essential to interdisciplinary collaboration success: “Let’s start a dialogue, recognise the fundamental differences amongst us, understand one another’s traditions, identify one another’s strengths and respect one another’s positions”.

The forum concluded with a lively question and answer session during which a number of students sought advice on particular issues relating to cross-disciplinary research. ●

Office of the Vice-President (Research and Technology)



Professor Zhu, Mr Liang, Professor Raupp and Professor Sun (from left to right).

Joint PhD programme student enrolled in Endeavour Awards programme

Mr Patrick Neumann, an Australian student of the joint PhD programme between CityU and the University of Sydney, recently enrolled in the Endeavour Awards programme offered by Austraining International. This internationally competitive, merit-based scholarship programme allows participants to undertake study, research and professional development. Here, Mr Neumann discusses his learning experiences.

We are told that every journey begins with a single step, and my own first steps were to where most intelligent children discover a world beyond their immediate environment: the school library. It was by reading some books on astronomy at a young age that I settled on science and engineering as the paths I wanted to follow in life. Thus, my own journey began in a place you have never heard of, Lesmurdie, which is on the outskirts of Perth, the capital city of Western Australia, the most isolated major city on the planet and situated near one of the most sparsely populated regions on Earth.

After completing high school, I won a scholarship to study physics and aerospace engineering at the University of Sydney, arguably the premier venue for such studies in Australia. It was there that I decided to specialize in spacecraft propulsion systems, specifically those that involve the production and control of plasmas using electromagnetic fields. For the past few years, I have worked closely with Professors Marcela Bilek and David MacKenzie, striving to adapt a pulsed cathodic arc plasma source commonly used in industry for materials deposition and thin film applications to a workable spacecraft thruster. After completing my Master in this area and starting my PhD as a continuation of my earlier work, my supervisors suggested that I could try out the student exchange programme at CityU, where I would work with Professor Paul Chu with whom they have collaborated on other pulsed arc applications.

Having done some research into Professor Chu's work, I was enthusiastic about the idea, but had the issue common to students everywhere: funding. Luckily, I was able to resolve this problem, as I was granted one of the 20 Prime Minister's Asia Australia Awards given to postgraduate students last year. Thus, I am proud to be supported by the Australian government while I continue my studies and forge stronger international partnerships in Asia. This award is one of several that are part of the Endeavour Awards programme, several of which are open to foreign nationals interested in studying in Australia. More information can be obtained from <http://www.deewr.gov.au/International/EndeavourAwards/Pages/Home.aspx>.

Although I have been at CityU for only a couple of months, I have found it possesses a welcoming environment and a sense of community. I am sure this will be magnified once the new semester begins, and all of the various student societies start up their events again! I hope to take part in some of the activities run by these clubs in between working to further my understanding of the various processes inherent in pulsed arc operation and control.

As for what I intend to do after I have finishing my PhD, that is still a blank page. I would like to work in research or in a dual teaching/research position, but I have also considered going to work in industry as an industrial physicist in any of the various applications that plasma physics has in this amazing and complex world that we live in.

Although I have taken quite a few steps on my journey, I know that there are many more left ahead of me. Some of them will take me around corners to junctions that I cannot yet see, but that is part of the fun of being a researcher: there is always something new waiting to be discovered. ◆



Mr Patrick Neumann

*Patrick Neumann, PhD student
Department of Physics and Materials Science*

Interview with recipient of Outstanding Thesis Award in Anhui Province


Writing a thesis is a huge challenge for most PhD students. The aim of the Outstanding Thesis Award in Anhui Province, which is granted by the Academic Degree Evaluation Committee of Anhui Province, is to select excellent doctoral dissertations so as to improve the quality of postgraduate training and promote outstanding students with an innovative spirit in scientific study. A recent winner of the award is Mr Qui Jianbin, a student of CityU's joint PhD programme in Suzhou, who won for his thesis entitled "New Approaches to a Robust Filtering Design for Uncertain Dynamical Systems with Time Delay".

Mr Qiu earned a Bachelor degree in mechanical and electrical engineering from the University of Science and Technology of China (USTC) in 2004. In the same year, he joined the five-year PhD programme at USTC and then began studying on the Department of Manufacturing Engineering and Engineering Management joint PhD programme offered by USTC and CityU in 2005. Under the supervision of Professor Gary Feng of CityU and Professor Yang Jie of USTC, he chose to study a robust filtering design for uncertain dynamical systems with time-delay, particularly for the fuzzy model-based nonlinear systems.

The joint USTC-CityU PhD programme in Suzhou attracted Mr Qiu for two main reasons. First, the Suzhou Research Institute was jointly founded by and is jointly directed by USTC and CityU, thus combining the educational systems of mainland China and Hong Kong and allowing him to broaden his horizons. Second, Professor Feng is an internationally renowned scholar in Mr Qui's research area, and he was thus keen to work under Professor Feng's guidance.

What impressed Mr Qiu most during his studies in Suzhou was the open and free academic and learning environment in the USTC-CityU Joint Advanced Research Centre. This learning environment enabled him to devote himself to his research wholeheartedly. He has learnt how to conduct world-class research after four years of training and nurturance in an academic arena of international standards.

Mr Qiu said that his Outstanding Thesis Award has boosted his confidence in his ability to carry out further scientific research: "I felt quite happy when I learnt that I had received this award. It means that my thesis has been recognised by the peer reviewers and award committee members".

"I would like to express my utmost gratitude to my supervisors, Professor Gary Feng and Professor Yang Jie, for their valuable advice and support during my PhD study", Mr Qui said. "I would also like to thank Professor Dong Sun, Professor Li Youfu, and Professor Dang Chuangying for their great support and help. I acknowledge all of the technicians and general office staff in the Department of Manufacturing Engineering and Engineering Management (currently has re-organised to the Department of Mechanical and Biomedical Engineering) at CityU and the Department of Precision Machinery and Precision Instrumentation at USTC. Finally, I wish to express my deepest gratitude to my parents, my wife and my sister". Mr Qiu said he also appreciated the open academic atmosphere and international perspective of CityU and believes that CityU will become a world-class research university. 

Office of the Vice-President (Research and Technology)



Mr Qui Jianbin

Sixth PhD Student Workshop held in Hefei

The 6th PhD Student Workshop, jointly organised by the Chow Yei Ching School of Graduate Studies and the Graduate School of University of Science and Technology of China (USTC), was held on the USTC campus in Hefei from 10 to 11 April 2012. This is the first time for the workshop to be held in Hefei, an ancient city in Anhui Province with more than 2,000 years of history and famous for its political, economic and cultural heritage.

This annual workshop was well received by the participation of 137 Hong Kong and mainland PhD students under CityU's mainland collaboration schemes. It is an ideal platform for the dissemination of the latest research findings and the exchange of academic achievements. Students benefit from the interactive learning methods of the presentations and discussions.

Professor Gregory Raupp, Vice-President (Research and Technology) and Dean of Graduate Studies, who was paying his first visit to USTC's Hefei campus, officiated at the event's opening ceremony along with USTC Vice-President Professor Zhang Shulin.

In his welcoming address, Professor Raupp noted that "the establishment of the USTC-CityU Joint Advanced Research Centre [中國科學技術大學—香港城市大學聯合高等研究中心] in Suzhou in 2004 was a milestone in the development of CityU's mainland collaboration schemes with reputable universities in the mainland. Over the years, the relationship and friendship between USTC and CityU have been strengthened in the belief that it is important for both universities to provide joint academic exchanges and nurture outstanding research students".

Vice-President Zhang, in her opening remarks, said "we are pleased that seven years of the USTC-CityU Joint PhD programme have borne substantial fruit, with many high-standard research papers published and scores of graduates beginning to contribute to society in academia. The annual PhD student workshop has proved to be a magnificent event, and past workshops have also created wonderful memories full of friendships and inspiration to all of those who attended them".

An award presentation ceremony for the Peter Ho Conference Scholarship programme [何稼楠學術會議獎學金], which recognises and rewards students demonstrating outstanding academic performance, was also held in conjunction with the workshop. Fifteen awardees received RMB15,000 each to sponsor their participation in an overseas academic conference, which will help widen their academic exposure and strengthen their research writing and presentation skills. Professor Raupp and Ms Zhang presented the award certificates on behalf of Mr Peter Ho. ◆

Chow Yei Ching School of Graduate Studies



The 6th PhD Student Workshop was well received and supported by participating research students and scholars from CityU and USTC.



Professor Raupp welcomes participants and thanks USTC for its support at the opening ceremony.

Recipients of Peter Ho Conference Scholarships in 2011–2012

Name	Department
Cai Peijie	Biology and Chemistry
Feng Yunlong	Mathematics
Li Hui	Physics and Materials Science
Liu Lili	Information Systems
Liu Wei	Biology and Chemistry
Lu Wangtao	Mathematics
Lu Yao	Computer Science
Lv Jingsong	Computer Science
Song Cheng	Mechanical and Biomedical Engineering
Wang Cuihong	Physics and Materials Science
Wang Xuegui	Civil and Architectural Engineering
Yan Jianwei	Civil and Architectural Engineering
Yang Jianyu	Mechanical and Biomedical Engineering
Zhang Huan	Physics and Materials Science
Zhong Xuepan	Information Systems

2012 Taught Postgraduate Student Orientation

New beginnings are always exciting and challenging. To help new taught postgraduate students enjoy the new beginning at CityU and provide a solid start on their first semester, the Chow Yei Ching School of Graduate Studies (SGS) organised a Taught Postgraduate Student Orientation on 1 September 2012 at the Chan Tai Ho Multi-purpose Hall. This orientation aimed to get the new students familiarised with the University, its environment, people and resources, which had attracted more than 1,000 students to attend. This enthusiastic response could be shown by the record of 48% increase in the number of participants as compared to 2011.

The event was kicked off by a warm welcome from Professor Gregory Raupp, Vice-President (Research and Technology) and Dean of Graduate Studies. Professor Hui Yer-yan, Associate Dean of SGS, then gave a presentation highlighting the key issues related to taught postgraduate studies at CityU. Mr Joseph Chan, Director of Student Development Services (SDS), told students how they could benefit from the services offered by his office, and Mr Matthew Peng, Vice President of the CityU Postgraduate Association (CUPA), introduced their activities and services to the audience. Lastly, Miss Phobe Cheng of the Mainland and External Affairs Office (MEAO) gave a tailor-made arrival briefing to the non-local students. In addition to the informative presentations, students had the opportunity to meet the Deans and Programme Leaders, and mingle with their fellow classmates during the tea reception. Representatives of CUPA, the Library, MEAO, SDS and SGS also set up enquiry desks to provide additional information and assistance to the students. ●

Chow Yei Ching School of Graduate Studies



Professor Gregory Raupp extends a warm welcome to the new students.



A full house at the Chan Tai Ho Multi-purpose Hall.

Orientation for Research Degree Students cum Awards Presentation Ceremony 2012

On 5 September 2012, the Chow Yei Ching School of Graduate Studies (SGS) organised an orientation cum awards presentation event on the CityU campus which attracted more than one hundred new research students and almost 90 award recipients to attend.

Professor Gregory Raupp, Vice-President (Research and Technology) and Dean of Graduate Studies extended a warm welcome to the new students on behalf of the University. In his welcome address, Professor Raupp encouraged the students by quoting the outstanding researchers who received the Shaw Prize as the examples. He said that “success is built upon failures” and commended that the award recipients who were able to achieve their success because of perseverance and hard work. He reminded the students have to be humble and be prepared to face failure. Following the welcome address, a presentation by Professor Hui Yer-yan, Associate Dean of SGS, gave the students an overview on the research studies at CityU.



Professor Raupp delivers his welcome address at the ceremony.



Professor Raupp (left) presents the Chow Yei Ching School of Graduate Studies Entrance Scholarship to one of the awardees.

Dr Mike Yao, a representative from the Student Residence Office, gave a talk entitled “Striving for a Study Life Balance”, encouraging the students to have a balanced life and should try to expand their social life outside their research study. Meanwhile, Mr Wang Fei, External Programme Leader of CityU Postgraduate Association (CUPA), introduced CUPA’s services and activities to the audience and advised students to expand and develop their social life on campus.

The Outstanding Academic Performance Award (2011/12), the Outstanding Research Thesis Awards (2011/12), the Chow Yei Ching School of Graduate Studies Entrance Scholarship (2012), and the Chow Yei Ching School of Graduate Studies Scholarship (2012) were also presented at the event. Certificates and prize awards were conferred to students with outstanding academic performance. ●

Chow Yei Ching School of Graduate Studies

CUPA Executive Committee 2012-2013

The following students have been elected as executive committee members of the CityU Postgraduate Association (CUPA) for a period of one year from 1 April 2012.

Position	Name	Profile	Department/School
President	Louis Chen Xiaofeng	Taught Programme	Law
Vice President	Peng Yu	Research Programme	Electronic Engineering
General Secretary I	Eric Lou Hong	Taught Programme	Law
General Secretary II	Meng Yuxin	Research Programme	Computer Science
Internal Programme Leader	Wang Ning	Research Programme	Management Sciences
External Programme Leader	Wang Fei	Taught Programme	Management Sciences
Sports and Recreation Leader	Mike Ng Ka Ho	Research Programme	Electronic Engineering
Career Development Leader	Rose Luo Jiaqi	Taught Programme	Law
Publication Leader	Nickey Cheng Sidi	Taught Programme	Asian and International Studies
Public Relations Leader	Trevor Tong Lok-ting	Taught Programme	Marketing
Welfare Leader	Jannette Tang Jie	Taught Programme	Creative Media
Recreation Leader	Tan Tian	Taught Programme	Law
Internet and Promotion Leader	Wu Weiqin	Research Programme	Civil and Architectural Engineering

Joint PhD Movie Night

On 24 April 2012, CUPA joined the "PhD Movie Night" held by the Postgraduate Student Association of The Chinese University of Hong Kong (CUPSA) on CUHK's central campus. All CUPA and CUPSA members in attendance enjoyed the film very much.

The film is highly relevant to those engaged in post-graduate study, delving into the unique and humorous culture of academia and following four graduate students (Cecilia, Mike, Tajel and the 'Nameless Grad Student') as they struggle to find a balance amongst their research, teaching and personal lives. ●

Executive committee membership of HKMUC

In June 2012, CUPA members were offered a golden opportunity to become executive committee members of the Hong Kong Model United Club (HKMUC), a non-profit tertiary student body committed to raise young people's awareness of international issues, sense of global citizenship and social responsibilities.

By participating in HKMUC activities, members could broaden their horizons and gain knowledge of global affairs and the United Nations in addition to leadership, problem-solving and communication skills. ●

Newsletter Advisory Board

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