



Graduate Studies & Research Newsletter

研訊

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KNOWLEDGE TRANSFER
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GRADUATE STUDIES
CUPA NEWS



CityU 2013-14 General Research Fund and Early Career Scheme Results

The Research Grants Council (RGC) recently announced the results of the 2013-14 General Research Fund (GRF) and Early Career Scheme (ECS) funding allocation exercise.

The Early Career Scheme (ECS) was first introduced by the UGC last year. The scheme aims to recognise junior faculty members to conduct outstanding research project and compete amongst themselves on the basis of integrated research and education proposals to get the RGC's funding.

Proposals were submitted by 440 CityU faculty members, with 154 Principal Investigators (PIs) receiving total funding of \$87.7 million. The 2013-14 results represent a 29% increase in successful applications and a 22% increase in funding compared to last year. CityU also continued to attract the largest volume of ECS funding across the University Grants Committee (UGC) sector, receiving 37 ECS grants, up from the previous year's 26 grants, and a total of \$21.4 million in funding. The 2013-14 figures represent 25% and 22% of the sector-wide total grants and funding, respectively. Overall, CityU's ECS success rate of 45.1% is 3.6% above the sector-wide ECS success rate of 41.5%.

The following are highlights of College/School, Departmental and individual research funding achievements.

ECS achievements:

- A. For the Business Studies Panel and the Engineering Panel, CityU ranked 1st in both the number of ECS projects approved and level of ECS funding.
- B. For the Physical Sciences Panel, CityU ranked 1st in the number of ECS projects awarded.
- C. Under the Business Studies Panel, Dr Li Bing (Department of Accountancy) received \$696,000, which is the single largest ECS grant across the sector in this Panel.
- D. Under the Engineering Panel, Dr Zhou Qiang (Department of Systems Engineering and Engineering Management) received \$1.02 million, which is one of the two largest ECS grants across the sector in this Panel.
- E. Dr Wen Na (Department of Marketing) and Dr Zhuang Xiaoshang (Department of Mathematics) received 100% funding for their research projects, with no reduction in the requested budget.
- F. Four young faculty members received Early Career Awards in recognition of their outstanding proposals: Dr Wen Na (Department of Marketing), Dr Zhuang Xiaosheng (Department of Mathematics), Dr Lu Yang (Department of Mechanical and Biomedical Engineering) and Dr Zhou Qiang (Department of Systems Engineering and Engineering Management). In addition to their project funding and receiving the award title, they will receive the maximum award of \$100,000 to undertake education activities.

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GRF achievements:

- A. CityU had a total of 117 GRF applications approved, with total funding of \$66.3 million. This is a significant increase over the previous year's corresponding figures of 93 applications (a 26% increase) and \$54.6 million (a 21% increase) in funding.
- B. CityU is amongst the top three institutions in terms of grant numbers and funding through the Engineering Panel and each of its 4 subject disciplines.
- C. In the Computer Science and Information Technology discipline, CityU jointly ranked 1st with the Hong Kong University of Science and Technology in terms of GRF grant number, and a close second in terms of level of funding.
- D. Eight Principal Investigators (PIs) received the largest grant of \$836,450 awarded to GRF projects under the Engineering Panel, and three PIs received the largest grant of \$974,193 under the Physical Sciences Panel.
- E. Six PIs received 100% of their requested funding: Professor Leung Kwok Wa and Dr Yuen Shiu Yin (Department of Electronic Engineering), Dr Wang Junbo (Department of Economics and Finance), Dr Han Sang Pil (Department of Information Systems), Dr Peter Tse (Department of Systems Engineering and Engineering Management) and Dr Sylvia Kwok (Department of Applied Social Studies).
- F. This year, Professors Yang Tong and Zhou Ding Xuan of the Department of Mathematics received their 19th and 17th successive GRF applications, respectively, since joining CityU. ◆

Office of the Vice-President (Research and Technology)

CityU scholar wins major royal meteorological society award

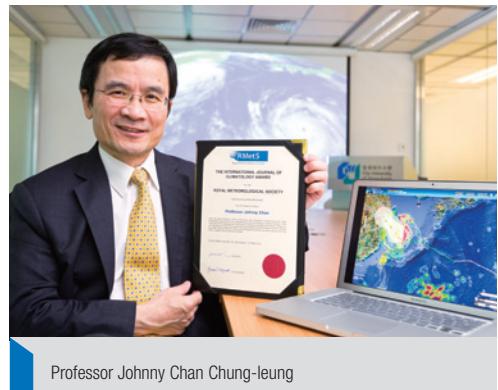
An internationally renowned expert in atmospheric sciences at City University of Hong Kong (CityU) has been awarded the International Journal of Climatology Award by the Royal Meteorological Society, signifying international recognition for CityU academics.

Professor Johnny Chan Chung-leung, Chair Professor of Atmospheric Science and Dean of the School of Energy and Environment (SEE) at CityU, is the first Chinese scholar to earn this prestigious honour.

The award was given in recognition of Professor Chan's substantive contributions to an understanding of the climatology of tropical cyclones in the northwest Pacific Ocean, especially in relation to the variability mechanisms and frequency and intensity trends over a range of time scales, and the characteristics of the East Asian monsoon. It also acknowledged Professor Chan's strong support for the journal over the past 19 years, as he has provided and reviewed papers that have offered great insight and constructive views.

Professor Chan, a leading expert in typhoons and monsoons, studies global climate change and its relationship with typhoon activity. He also studies tropical cyclone and monsoon climates, especially in East Asia. He collaborated with Shanghai meteorologists on a mammoth 3-year project to study the variability of tropical cyclones on the east coast of China over the past 500 years.

Professor Chan's research has predicted the number of tropical cyclones in the East Asia region every year. He has established theoretical relationships between the motions of tropical cyclones and atmospheric flow fields, notably the linear and non-linear effects of their potential vorticity (or spin) and of the latitudinal variation of the Coriolis parameter, which refers to Earth's rotation. Applications of this theory have led to significant improvements in predicting tropical cyclone behaviour.



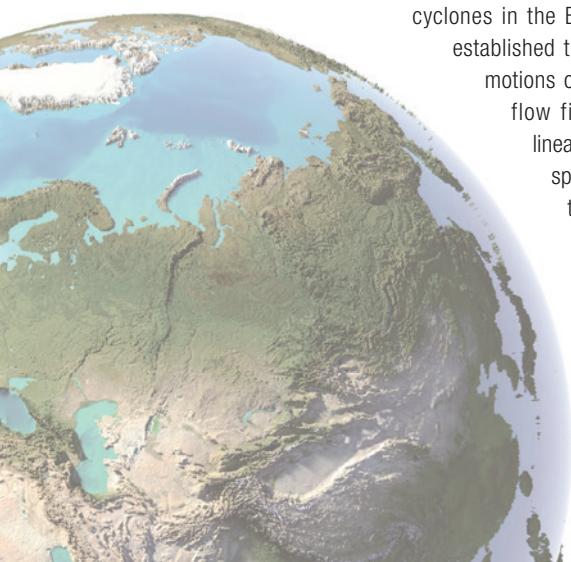
Professor Johnny Chan Chung-leung

'On the one hand, these research projects satisfy my intellectual craving. On the other, they work for the benefits of societies and help local governments take necessary precautions. Prediction is helpful and necessary for industries such as agriculture, insurance, shipping and so forth,' said Professor Chan.

The northwest Pacific Ocean is the most active basin for tropical cyclone activity in the world, accounting for 1/3 of all global tropical cyclone activity. The tropical storms in this region affect mainland China, Hong Kong, Japan, Korea, the Philippines and Taiwan among other areas, or nearly 1/3 of the world's population.

Professor Chan's research is essential for the region. His contributions have been recognised by various professional institutions. He was elected Fellow of the American Meteorological Society and named Distinguished Meteorologist by the Hong Kong Observatory. ◆

Adapted from CityU NewsCentre



Expanding Sphere of Innovation@CityU

CityU's first-ever research showcase, entitled 'Expanding Sphere of Innovation@CityU', was held on 7-10 May 2013 at the newly built Academic building to exhibit the latest achievements in applied science, product development and advanced technology.

The 32 research centres at CityU, the CityU Knowledge Transfer Office and the CityU Shenzhen Research Institute showcased their research outcomes. In addition, the directors of CityU research centres and laboratories hosted five seminar sessions that contributed to this event. In his opening remarks at the Expanding Sphere of Innovation@CityU kick-off ceremony, Professor Horace Ip Ho-shing, Acting Vice-President (Research and Technology), noted that the event was purposely aligned with the opening ceremony of the new Academic 3 building to signify not only 'the additional physical space' but also 'the addition of infinite virtual space for CityU researchers to explore their innovative ideas and venture into their knowledge creation and knowledge transfer'.

The event was an eye-opening experience for visitors and a good example of how to exhibit knowledge transfer. The event showed that knowledge should not be kept in an ivory tower, but transformed for visitors to see, touch and use. Visitors learned about how robots can simulate human movements and function in hazardous environments at the exhibition counter of the Centre for Robotics and Automation, and experienced the 3D effects created by reflected images when they stepped into the spherical mirrors in the iDome. The exhibition also showed the advanced pollutant-testing methods



Participants are excited to experience the 3D effects at the iDome booth.

developed by the State Key Laboratory in Marine Pollution, and the latest compact antenna developed by the State Key Laboratory of Millimeter Waves.

The Expanding Sphere of Innovation@CityU kick-off ceremony ended with a plaque-unveiling ceremony officiated by Professor Horace Ip Ho-shing; Professor Arthur Ellis, Provost of CityU; Ir Raymond Chan Kin-sek, Senior Vice President of the Hong Kong Institution of Engineers; Mr Herman Lam Heung-yeung, Chief Executive Officer of Hong Kong Cyberport Management Company Limited; Mr Anthony Tan, Chief Executive Officer of Hong Kong Science and Technology Parks Corporation and Professor Yue On-shing, Science Advisor of the Innovation and Technology Commission.

A series of seminars were held during the event at the Multi-purpose Hall in the Academic 3 building, featuring various topics such as Strive for Excellence in Applied Mathematics by Professor Roderick Wong Sue-cheun, Director of the Liu Bie Ju Centre for Mathematical Sciences; Research and Development in Microwaves, Millimeter Waves & TeraHertz Wave Technology by Professor Luk Kwai Man, Director of the State Key Laboratory of Millimeter Waves (CityU); Applications of Nanomaterials by Professor Lee Chun Sing, Director of the Center of Super-Diamond and Advanced Films; Development and Achievement of SKLMP by Professor Paul Lam Kwan-sing, Director of the State Key Laboratory in Marine Pollution (CityU) (SKLMP) and An Innovative Gateway to China – CityU Shenzhen Research Institute by Professor Xue Quan, Deputy Director of the CityU Shenzhen Research Institute.

People from all walks of life, from university professors to researchers, technical officers, even secondary school students, attended this research showcase to learn about the latest research outcomes of CityU. About 10 members of the CityU Business and Industrial Club of the Knowledge Transfer Office attended a guided tour of the exhibition on 8 May 2013. ◆

Office of the Vice-President (Research and Technology)



Dr Howard Leung of Department of Computer Science demonstrates a learning game called 'Paper Saver' to the visitors.



Group photo of officiating guests with CityU research centre representatives.

External grants

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

Funding Body	Project Title	Principal Investigator	Amount
University Grants Committee/Research Grants Council			
ESRC/RGC Joint Research Scheme 5th Round	Alpha Territoriality in Hong Kong and London: The Local Implications of Transnational Real Estate Investment by the Super-rich	Dr Willem Lubert Wissink Department of Public Policy	HK\$350,000
Government and Related Organisation			
Department of Health, HKSAR Government	Hong Kong Chinese Materia Medica Standards Project (Phase VIII) – Plantaginis Herba [車前草]	Dr Cheung Hon-yeung Department of Biology and Chemistry	HK\$679,023
	Hong Kong Chinese Materia Medica Standards Project (Phase VIII) – Plumbaginis Zeyleanicae Radix [白花丹]	Dr Cheung Hon-yeung Department of Biology and Chemistry	HK\$664,023
	Hong Kong Chinese Materia Medica Standards Project (Phase VIII) – Panacis Japonici Rhizoma [竹節參]	Dr Cheung Hon-yeung Department of Biology and Chemistry	HK\$664,023
	Hong Kong Chinese Materia Medica Standards Project (Phase VIII) – Lobeliae Chinensis Herba [半邊蓮]	Dr Cheung Hon-yeung Department of Biology and Chemistry	HK\$664,023
Environment and Conservation Fund (ECF)	Investigation of Primary PM and NO ₂ Emissions from On-road Vehicles and their Impact on the Roadside and Ambient Air Quality in Hong Kong	Dr Zhi Ning School of Energy and Environment	HK\$499,000
Innovation and Technology Commission – Innovation and Technology Fund	60 GHz RFIC Transceiver for Short Range Instant Massive Data Sharing	Professor Xue Quan State Key Laboratory of Millimeter Waves	HK\$17,999,614
	Development of Zero Defect Coating Technology for the Watch Industry	Dr Lawrence Li Kwok-yan Department of Mechanical and Biomedical Engineering	HK\$5,339,565
	Multibit Printed Lowcost Flexible Flash Memory	Dr Arul Lenus Roy Vellaisamy Department of Physics and Materials Science	HK\$2,028,600
	Development of Bio-inspired Dental Adhesive	Dr Niu Xinrui Department of Mechanical and Biomedical Engineering	HK\$999,350
	Superior-Performance Supercapacitor Electrodes via Convenient Electrochemical Techniques	Dr Li Yangyang Department of Physics and Materials Science	HK\$995,900
	Development of Osmium-based Compounds as Anti-Cancer Drugs	Professor Lau Tai-chu Department of Biology and Chemistry	HK\$970,945
	Sustainable Biorefinery Concept Based on Microalgal Biomass Produced from Mixed Food Waste Hydrolysate	Dr Carol Lin Sze Ki School of Energy and Environment	HK\$897,575
	Development of Testing Platforms and Standard Protocols for Performance, Nanoparticles Emission and Health Impact of Self-cleaning Nano-coating Textile Products	Dr Walid Daoud School of Energy and Environment	HK\$886,167
	A Mobile, Parallel and Scalable Platform for Multi-User EEG Recording and Analysis	Dr Rosa Chan Ho Man Department of Electronic Engineering	HK\$478,952
	The Anti-wear Robustness Research on Thermal Assistant Magnetic Recording (TAMR) Based Head Disk Interface (HDI) by Prognostics and System Health Management (PHM) Technology	Professor Tommy Chow Wai-shing Department of Electronic Engineering	HK\$180,032

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Funding Body	Project Title	Principal Investigator	Amount
Others			
Bayer MaterialScience AG	Synthesis of ¹³ C-labelled Alkyl- and Aryl-isocyanates and Their Use in Mechanistic Studies of Oligomerization of Alkyl- and Aryl-isocyanates in the Presence and Absence of Carbon Dioxide	Professor István Tamás Horváth Department of Biology and Chemistry	Euro\$15,000
Bestforme Industrial Ltd.	Advanced Materials for Waste Heat Recovery	Dr Arul Lenus Roy Vellaisamy Department of Physics and Materials Science	HK\$150,000
The Boeing Company	Development of Bi-level Weibull Model for Two-level Failure Data	Professor Xie Min Department of Systems Engineering and Engineering Management	USD6,000
Construction Industry Council (CIC)	Formulation of Sustainable Trigeneration System Design for High-rise Commercial Buildings in Hong Kong	Dr Square Fong Kwong-fai Division of Building Science and Technology	HK\$879,000
Croucher Foundation	Characterization of Three-Dimensional Cell Growth Using Microengineered Substrates	Dr Raymond Lam Hiu-wai Department of Mechanical and Biomedical Engineering	HK\$500,000
	International Conference on Computer-Aided Design and Computer Graphics	Professor Horace Ip Ho-shing Department of Computer Science	HK\$100,000
King Abdulaziz University (KAU)	Properties and Applications of Nanomaterials	Professor Tjong Sie-chin Department of Physics and Materials Science	USD72,000
Oak Ridge National Laboratory (ORNL)	In-situ Neutron Scattering Study of Advanced Metallic Materials	Professor Wang Xun-li Department of Physics and Materials Science	USD105,000
Shandong Province Analysis and Testing Centre	Physical and Biological Sensing and Materials Failure	Professor Lawrence Wu Chi-man Department of Physics and Materials Science	RMB1,000,000
Tung Wah Group of Hospitals (TWGHs)	Anxiety Among Primary School Students: The Perspective of Parents and Teachers	Professor Daniel Wong Fu Keung Department of Applied Social Studies	HK\$100,000
華為技術有限公司 (Huawei)	Software-defined Information-centric Networks, SD-ICN 內容網絡	Dr Wang Jianping Department of Computer Science	HK\$948,310
惠州華陽通用電子有限公司	無線智能車載服務系統與產品的研發與產業化 - 面向“事件”的多媒體數據檢索和管理技術及車載通信接口規範研發	Professor Li Qing Department of Computer Science	RMB500,000

CityU State Key Laboratory Spin Kid Project promotes research and community services

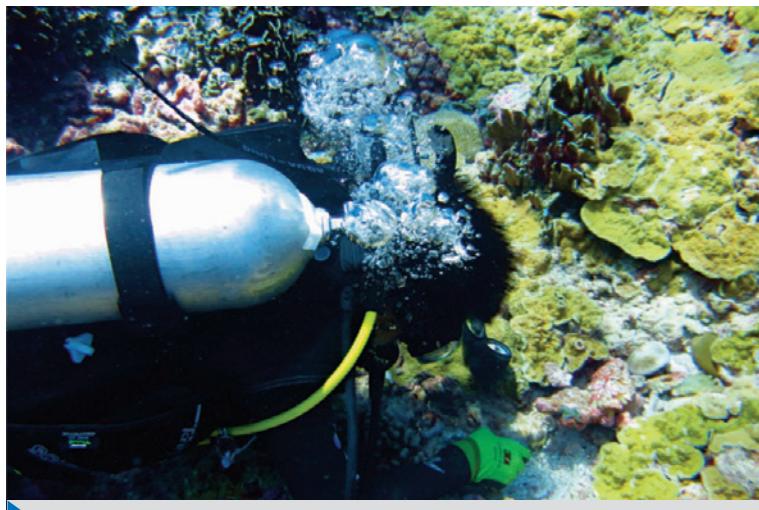
Despite their proximity to the urban centres of the Pearl River Delta, the waters of Hong Kong are home to over 80 species of coral, which are usually found off the eastern shore around Sai Kung. Coral not only livens up the seabed, but also offers living space for marine organisms, forming the nexus of a complex ecology. Essential to coral research, scuba diving allows students and scientists to see for themselves the actions and proceedings in the natural habitats of sea organisms.

The State Key Laboratory in Marine Pollution (SKLMP) set up its scuba dive team and diver training programme, known as the Spin Kid Project, in September 2012 to promote scuba diving among CityU's marine science researchers and students. The project is a good example of how knowledge transfer can contribute to community services and research. Spin Kid was the brainchild of Dr Wai Tak-cheung and Dr Leo Chan of SKLMP, who are also the president and coordinator of the project, respectively. Since its inception in September 2012, the project has already trained about 30 people, including both researchers and postgraduate students.

The SKLMP dive team participated in the annual Reef Check 2012 run put on by the Agriculture, Fisheries, and Conservation Department, and helped to survey the coastlines and waters around Sham Wan and Tung O Wan after 150 tons of plastic resin pellets were spilled from a capsized cargo vessel in July 2012.

In October of the same year, Dr Chan and Dr Wai led two team members to the Republic of Kiribati for a 14-day visit to collect required fish samples for the investigation of ciguatera, one of the SKLMP's research areas. Kiribati is an island nation in the Central Pacific Ocean east of the Indonesian archipelago. Compared with other areas in the Pacific, Kiribati carries a much higher ciguatera risk.

The research team was tasked with identifying how toxicity is related to species and location. Dr Maggie Mak of the SKLMP, who was on the Kiribati trip, said, 'Diving gives my research a new dimension. Of course, I can



A diver surveys the seabed.

conduct experiments on a dead coral fish without ever visiting its habitat, but then I shall have missed the opportunity to witness how coral bleaching reduced the food sources of the hungry fish, which had to nibble at dead coral'.

The underwater fish surveys conducted by the team shed new light on popular assumptions about the effect of ciguatoxins on fish. While the literature has suggested that ciguatoxins do not harm fish, the team found that many species of carnivorous fish indigenous to the non-contaminated areas were absent in the contaminated areas. This may indicate that fishes are as susceptible to ciguatoxins as humans.

The romance of idyllic coral islands as portrayed by adventure novels has been tarnished by massive coral bleaching, pollution, global warming and military activities. Dead bleached coral provides surfaces for toxic dinoflagellates or plankton to settle on, and coral fish become contaminated by feeding on the dead coral. Over 400 fish species such as groupers, snappers, mackerels and moray eels are thought to accumulate ciguatoxins, meaning that contaminated coral fish could easily find their way into the human food chain.

Over 50,000 people are affected by ciguatera each year, and because coral fish is considered a delicacy, such a trend should continue to rise. Although ciguatera is endemic to tropical regions, the trading of coral fish has brought it to other parts of the world. The preceding figures may not reflect the true extent of ciguatera poisoning, as minor cases are probably not reported or misdiagnosed.

One of the difficulties hampering ciguatera research is an insufficient supply of the required commercial ciguatoxin standards. At present, ciguatoxin standards can only be extracted from contaminated fish samples rather than artificially synthesised. To date, only a few research groups in the world can prepare a wider range of ciguatoxins of 95% purity. Over the past 2 years, the SKLMP has successfully processed a handful of high-purity ciguatoxins, laying the groundwork for advanced ciguatera research of regional and international significance. The research team seeks to identify the mechanism by which the biotoxins present in marine environments are transformed into ciguatoxins. Please see the following text box for more information on the SKLMP's latest developments in ciguatera research.

Founded in December 2009, the SKLMP aims to protect the marine environment of Hong Kong and South China by identifying major threats such as algal toxins and contaminants of emerging environmental concern.



A Kiribati fisherman helps the research team collect fish samples.

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CityU breaks new ground in ciguatera research

Using the ciguatoxin standards developed on campus, Professor Li Ying, Department of Biology and Chemistry, and his neurobiology group at CityU successfully showed that P-CTX-1, one of the main ciguatoxins prevalent in the Pacific Ocean, was capable of invoking brain cortex neuronal excitotoxicity *in vivo*, supporting the notion that neuron and astroglia signals may play a role in acute ciguatera poisoning.*

Because ciguatoxins are lipid-soluble toxins, they could accumulate and become stored in various important organs (e.g. the brain) in the bodies of seafood consumers.

There is currently no mandatory inspection on the baseline concentration of ciguatoxins in imported live reef food fish, which could be contaminated. To protect human health, the laboratory is pressing ahead with further studies related to the baseline concentration of ciguatoxins in common imported reef fish and the chronic effects on human consumers of sub-lethal ciguatoxin exposure via the dietary pathway.



Students get ready for the plunge.

Previous studies conducted by the SKLMP suggested that the distribution of ciguatoxin-contaminated reef fishes was location and site-specific. Building on its research strengths, the laboratory plans to propose a Global Ciguatera Fish Poisoning (CFP) Watch Programme, an initiative to support traceable live reef food fish trade through Geographical Information System-Radio Frequency Identification (GIS-RFID) technology. Each live reef fish harvested would be tagged by a GIS-RFID label that would record the details of its capture, such as the date and location. Along with the findings from ecological surveys on causative dinoflagellates and epidemiological information, such information would allow the laboratory to map the global occurrences of CFP. The Global CFP Watch Programme would contribute tremendously to global and regional CFP strategies and fisheries management. ◆



Reef Check volunteers pose for a group photo.

*Li, Ying et al., *Neurotoxicity and Reactive Astrogliosis in the Anterior Cingulate Cortex in Acute Ciguatera Poisoning*, published online by NeuroMolecular Medicine in March 2013, <http://link.springer.com/article/10.1007/s12017-013-8220-7>.

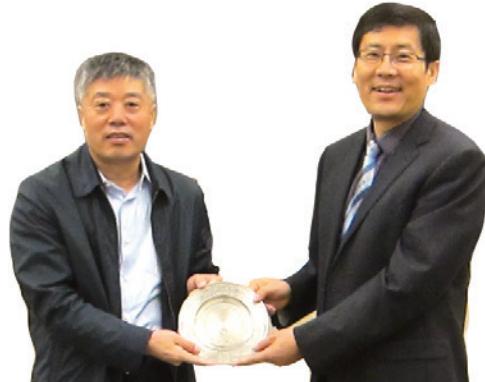
Knowledge Transfer Office



Shenzhen research authority visits CityU

The Science, Technology and Innovation Commission of Shenzhen Municipality is an administrative department in Shenzhen to coordinate and promote technological and innovative developments. It is responsible for planning and managing the national and provincial major science and technology projects, supporting high-tech enterprises in technology transformation and developments. A delegation led by Mr Li Zhongxiang, Deputy Inspector of the Science, Technology and Innovation Commission of Shenzhen Municipality, visited CityU on 25 April 2013 and held a seminar on Shenzhen's science and technology development and policies related to the Shenzhen Science and Technology Funding Programs.

In 2012, CityU faculties obtained a total of RMB6.62 million from the Shenzhen Science and Technology Funding Programs. The number of granted projects increased by 500% compared with the number in 2011. The Shenzhen authority is very supportive of basic research and knowledge transfer activities. Nearly 50 faculty and staff members attended the seminar to learn about the committee's recent strategic plans and important research areas to increase their chances of receiving more research funding and to contribute to the development of China.

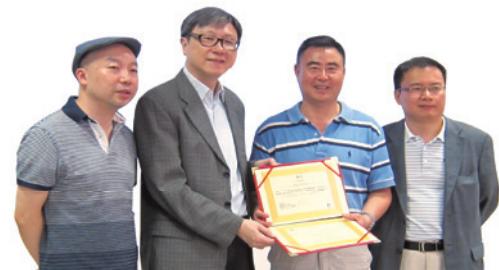


Professor Xue Quan, CityU's Associate Vice-President (Innovation Advancement and China Office) presents a souvenir to Mr Li Zhongxiang, Deputy Inspector of the Science Technology and Innovation Commission of Shenzhen Municipality.

Following the 2-hour seminar, the delegation visited the Centre for Robotics and Automation and the Centre of Super-Diamond and Advanced Films, which will soon establish a branch in the CityU Shenzhen Research Institute, to discover the strengths of the University's research. ◆

Office of the Vice-President (Research and Technology)

CityU delegation visits Wuhan University and Soochow University to promote research activities and knowledge transfer



Professor Horace Ip (second from left) presents the certificate to appoint Professor He Yanxiang (third from left) as the co-chair of MERC's Technical Advisory Committee with Professor Li Qing, Director of MERC (first from right).

A City University of Hong Kong (CityU) delegation led by Professor Horace Ip Ho-shing, Acting Vice-President (Research and Technology) and Acting Dean of Graduate Studies, visited the Wuhan University (Wuhan U) on 24 and 25 June 2013 to facilitate academic exchange among faculties of the CityU Multimedia Software Engineering Research Centre (MERC) and researchers and students of the National Engineering Research Center for Multimedia Software (NERC-MS) of the Wuhan University, and to attract its PhD students to apply for the joint PhD programme between CityU and Wuhan U.

During the visit, two academic seminars were organised and faculties from MERC presented their latest research projects and achievements. At the seminars, Professor Ip expressed that CityU is fully supportive of developing close relationship between NERC-MS and the newly established CityU's university-level research centre named Multimedia Software Engineering Research Centre. Future activities between the two centres include a joint workshop on multimedia data and other academic exchanges.

Taking this opportunity, MERC had invited Professor He Yanxiang, ex-Director of NERC-MS, to act as the co-chair of its Technical Advisory Committee to provide his professional advices to MERC.

Professor Ip also visited the Soochow University on 27 June 2013 to sign a technology transfer agreement with the Soochow University to promote the dissemination and technology transfer of the research outputs of CityU to industries and research institutes in Suzhou so as to increase the collaboration opportunities between CityU and the local units. ◆



Professor Horace Ip (right) signs the technology transfer agreement with Professor Lu Jianmei, Vice-President of the Soochow University (left).

Office of the Vice-President (Research and Technology)

Intellectual property training for CityU staff and students

The Knowledge Transfer Office organised an intellectual property (IP) training workshop on 1 March 2013 for CityU staff and students to promote IP protection and management. The 1-day workshop attracted about 25 participants.

Patent searches are essential to research and business development because they provide useful information for monitoring or avoiding patent infringement, assessing an invention's patentability and gauging technological trends. Both free and paid patent search websites are available. The session on patent searches also touched on how citation maps, i.e., visual representations of the relationships between patents, support R&D and business decisions.

The workshop was supported by the University Grants Committee Knowledge Transfer Grant. ♦

Knowledge Transfer Office



Government boost for technology transfer

In March 2013, the government announced that during the triennium beginning in 2013-2014, the Innovation and Technology Fund (ITF) will allocate up to HK\$12 million to each of six designated local institutions, with an annual maximum of HK\$4 million. Although the grant is to be distributed by the ITF, the recipient universities are allowed to use the funds to support technology transfer activities arising from non-ITF projects. CityU is one of the six institutions to benefit from the extra funding. The ITC press release states that 'the government is firmly committed to promoting innovation and technology development in Hong Kong, and strives to create a vibrant ecosystem for all key players'.

The funding aims to enhance technology transfers, realise R&D results, build up support services for technology transfers and facilitate liaisons and collaborations between research institutes and industry. The funds may be used as follows:

- ◆ Professional services for technology transfers, including the hiring of internal staff and external service providers.
- ◆ Promotion of technology transfers, such as organising and participating in technology transfer activities.
- ◆ IP support such as patent searches and IP evaluations.
- ◆ Staff training on technology-transfer-related matters such as entrepreneurship.

However, recurrent expenses such as rentals, overheads, office equipment and other consumable items are not covered. ♦

Knowledge Transfer Office

Entrepreneurship seminar for CityU staff and students

The Knowledge Transfer Office commissioned Isis Innovation Limited (Isis), which is wholly owned by the University of Oxford, delivered a 1-day technological entrepreneurship seminar for CityU staff and students on 9 April 2013. About 25 participants attended the course presented by Dr David Baghurst and Dr Xiaowei Hu of Isis.

The seminar began with an introduction to intellectual property rights (IPR). While the mention of IPR brings to mind patents, there are other forms of protection available. In fact, different forms of IP protection are applied to one product. For example, in addition to patents, a new electronic product is more often than not protected through a combination of copyrights, trademarks, designs and trade secrets. Patent strategies aside, Dr Baghurst talked about the key methods of protecting products and software tools through trademarks and copyrights.

Dr Baghurst also addressed the role played by a technology transfer officer in assessing the commercial potential of technologies or proposals submitted by staff or students. He pointed out that proof-of-concept plays a pivotal role in the technology transfer value chain, and a sound proof-of-concept fund can go a long way in moving an invention up the value chain. Other issues covered included the structures of licensing agreements and business plans, and the development of start-ups in China. ♦

Knowledge Transfer Office



Dr David Baghurst and audience

Knowledge Transfer Office

CityU forums on new technologies

Two technology forums were held from January to June 2013. The first forum focused on air pollution solutions, and the second offered a glimpse at some research projects funded under the Innovation to Realization Funding Scheme (I2RF).

Forum on tackling air pollution held in CityU Shenzhen Research Institute (CityUSR)

In a forum held on 18 January 2013 at the CityUSR, two CityU scientists and two industrialists talked about the latest strategies and technologies for tackling air pollution. The forum was organised by the CityU Business and Industrial Club (CUBIC) of KTO with the support of the Shenzhen Technology Transfer Promotion Center, Shenzhen Virtual University Park and Hong Kong Trade Development Council.

Dr Oscar Hui from the Department of Systems Engineering and Engineering Management of CityU, proposed an effective approach to improving indoor air quality known as ozone catalytic oxidation technology (OCO). Volatile organic compounds (VOCs) are removed via a catalyst to bring on a chemical reaction whereby the pollutants can be decomposed. In Dr Hui's model, plasma-generated ozone is decomposed in nanoporous sites to give off atomic oxygen, which in turn reacts with the VOCs to form carbon dioxide and water. OCO operates at room temperature and does not require frequent filter replacement, thus saving on power and maintenance costs.

To facilitate the monitoring of airborne particles, Dr Zhi Ning from CityU's School of Energy and Environment, developed a novel method in which particles are enlarged via condensational growth and subsequently collected by a swirling sampler for analysis. Combined with this new technology, the particles can also be removed via corona charging with high efficiency. Dr Ning also developed the on-road plume chasing and analysis system (OPCAS) to tackle fossil fuel emissions. OPCAS is the first mobile platform for online vehicle emission tests in Hong Kong which can be installed on a variety of vehicles, and can acquire the target vehicle's emission rates within 1-2 minutes to effectively identify the heavy emitters and clean the traffic emissions.

Aerosol particles are hazardous, and it is not difficult to recognise the importance of lowering automobile pollution. Mr Joseph Cheung, Vice-president of Hing Yu Metal Works Ltd, explained how better designed automobile parts such as three-way catalytic converters and exhaust and emission systems can alleviate on-road air pollution. The other external industrialist speaker, Mr Benjamin Lau, General Manager of Nonox Asia Ltd, talked about the use of selective catalytic reduction solutions to decrease harmful substance emissions.

Research projects supported by the Innovation to Realization Funding Scheme (I2RF)



The forum held on 14 June 2013 assembled four CityU scientists who were awarded I2RF grants over the past 2 years. The I2RF aims to promote prototyping or the commercialisation of useful technologies. Four grant recipients invited to speak at the forum to share their research developments.

Professor Cheng Shuk-han of the Department of Biology and Chemistry, developed a rapid identification kit for meat ingredients in processed foods. The DNA-based testing platform requires as few as five picograms of DNA to detect the presence of target species, and up to seven species of meat can be tested simultaneously in a single sample. Upon detecting the DNA of target species, the corresponding probes emit a fluorescent glow that is visible to the naked eye. Another outstanding feature of the platform is its ability to test cooked or processed foods, such as microwaveable and frozen food products. The time required for testing is significantly shorter than that of DNA barcoding. The invention has captured wide media coverage and attention.

Dr K F Tsang of the Department of Electronic Engineering, combined the deliverables of two I2RF sponsored projects into an integrated ZigBee telehealth and automation system. Technologies in advanced metering and ZigBee for telemedicine contribute to this end-to-end telehealth system, which supports two-way communication between patients and healthcare professionals. Data on patients' vital signs are sent via an interface to the telehealth platform and subsequently to the healthcare provider. The system is suitable for nursing homes and hospitals, and provides a safe home monitoring solution.

Dr Jonathon Chong of the Department of Physics and Materials Science, has developed a superelastic knee support with flexible hinges, which addresses the problem of patellofemoral pain syndrome. While orthopaedic support braces are used to support weakened joints, the braces may limit active plantar flexion. The superelastic knee support, made of nickel titanium (NiTi), can offer support to knee joints without limiting their flexibility. In an experiment conducted by Dr Chung, superelastic NiTi SMA rods displayed an elasticity of 135° and stainless steel rods deformed permanently at 30°. The superelastic NiTi rods also had an almost uniform recoil force capable of 60-135° deflections.

By combining cutting-edge preparation and surface coating technologies, Dr Lawrence Li of the Department of Mechanical and Biomedical Engineering, attempted to improve the productivity and reliability of cutting tools. Working with industrial partners, he aimed to develop a versatile edge preparation method, fine-tune the brushing process, synthesise the physical vapour deposition hard coatings on the cutting tools using new sputtering techniques and evaluate the tools' performance. The edge preparation method, known as 'abrasive-filled nylon filament brushing', was proven to be effective and cost efficient. His research team found that by using the right edge preparation and hard coatings, the tool life of high-speed steel small drills could be improved by a factor of four. ♦

Innovation to Realization Funding (I2RF) Scheme awardees

The Spring 2013 round of I2RF grants awarded three research projects up to HK\$200,000 each. The names of the awardees and their projects are as follows.

Dr Lam For Kwok (Department of Computer Science)

The development of an enhanced filter mechanism prototype for signature-based network intrusion detection systems.

Dr Chen Xianfeng (Department of Physics and Materials Science)

Transdermal delivery of growth factors by mechanically strengthened polymer microneedle arrays.

Professor Paul K Chu (Department of Physics and Materials Science)

Forging of a metal liner into SCWG vessels by plasma nitriding enhanced by hollow cathode discharge.

Knowledge Transfer Office

Knowledge Transfer Office

CityU technologies licensed to industry

Three licensing deals were closed in the first half of 2013, transferring the following technologies to industry:

- The deliverable of a contract research project conducted by Dr Lawrence Li of the Advanced Coatings Applied Research Laboratory.
- Professor Henry Chung's LED lighting technology, which facilitates the substitution of a fluorescent lamp tube with an LED lamp tube without any need for alteration.

Patents recently granted to CityU

System and method for 3D measurement and surface reconstruction

US patent number: 8213707

Principal Investigator: Dr Li Youfu

Department of Mechanical and Biomedical Engineering

The invention provides a method and system for the measurement and 3D reconstruction of an object surface. A light pattern is initially projected onto the surface to be imaged, which produces a distortion in the image of the pattern by the surface. The distortion is converted into a distance representation that corresponds to the shape of the surface. The target object can be sliced into a number of cross sectional curves, which are individually reconstructed by a closed curve. Using the information gain of every curve model, the next best views can be planned to obtain the maximal information gain and achieve a 3D reconstruction of the whole surface of the target object.

Knowledge Transfer Office

Method and apparatus to provide active cancellation of the parasitic elements in capacitors

US patent number: 8264270

Principal Investigator: Professor Henry Chung

Department of Electronic Engineering

Phase shifters are widely used in wireless communications; however, errors in the signal phase may lead to reductions in maximum gain and power efficiency. This invention facilitates the automatic alignment of variable phase shifters so as to prevent accumulation of the signal-phase error. A phase shifter (either analog or digital) can be controlled electrically, magnetically, or mechanically. This apparatus can be installed with a controller to control the switch and calibrate one or both of the variable phase shifters so that they can be controlled on the basis of the output of the phase comparator. The invention can be used in devices such as antenna arrays, circularly polarized antennas, image rejecting mixers, and quadrature phase shift keying receivers to improve their performance.

Knowledge Transfer Office

Distinguished lecture on hunting the target of biologically relevant molecules

Professor Herbert Waldmann, Director of the Department of Chemical Biology at the Max-Planck-Institute of Molecular Physiology and Full Professor of Organic Chemistry at University of Dortmund, delivered a distinguished lecture at City University of Hong Kong entitled 'Hunting the Targets of Biologically Relevant Small Molecules' on 25 March 2013.

During the lecture, Professor Waldmann outlined the work that he and his research team developed on the concept of Biology Oriented Synthesis (BIOS), which builds on relevance in nature to inspire compound synthesis. Investigations of BIOS-compound collections can help reveal naturally occurring substances that may benefit human cells. Investigations of synthetic bioactive substances can also help to fight some common diseases. The lecture was held at CityU Peter Ho Lecture Theatre and ended with a lively question-and-answer session. ♦



Professor Herbert Waldmann

Office of the Vice-President (Research and Technology)

Renowned UK green chemist delivers enlightening lecture at CityU



Professor Martyn Poliakoff

On 23 May 2013, Professor Martyn Poliakoff, Research Professor in Chemistry at the University of Nottingham and Foreign Secretary and Vice-President of Royal Society, delivered an enlightening lecture entitled 'Engineering a Better World through Green Chemistry'.

'What is green chemistry? It is a cleaner way to make chemical materials and materials,' said Professor Poliakoff, who during the lecture outlined the basic background of green chemistry and talked about sustainable development. Professor Poliakoff pointed out that the world is changing. Populations and consumption are increasing. In a global sense, we are more interconnected than ever, yet over a billion people remain in poverty. Professor Poliakoff was inspired to find ways to address these problems from a green chemistry perspective, and to find ways to make more products from the same amount of available materials. During the lecture, he shared the results of the green research he and his team conducted in Ethiopia on creating cleaner and more efficient ways to extract oil from plants to make drugs that combat malaria. He also discussed the concept of 'cloud chemistry' as an alternative method of executing green chemistry, including its advantages, disadvantages and solutions.

Professor Poliakoff is a green scientist working to gain insights into fundamental chemistry and develop environmentally acceptable chemical processes and materials. His YouTube video series, entitled 'The Periodic Table of Videos', has been viewed by millions of people and is promoting popular science to the general public. ♦

Office of the Vice-President (Research and Technology)

CityU Distinguished Lecture on Chinese-style democracy by former Premier of Executive Yuan of Taiwan

Mr Hau Pei-tsun, former Premier of Executive Yuan of Taiwan delivered a lecture entitled "Peaceful Unification or Unification by Force? The Characteristics of Chinese-style Democracy" at the CityU Distinguished Lecture on 19 July 2013.



Mr Hau Pei-tsun

Mr Hau, aged 95, is one of the few surviving military officers who experienced the eight years Sino-Japanese War and other events during World War Two. "The Sino-Japanese War showed that a weaker, less-developed country could win a stronger more advanced nation. We should let our younger generation to know this historical fact," Mr Hau said. In the lecture, Mr Hau shared his viewpoints on future development of Chinese-style democracy, unification between Taiwan and the mainland and the days he served as the Chief Aide to Mr Chiang Kai-shek, President of the Republic of China. Mr Hau's enlightening lecture attracted around 600 attendees to a full-house audience at Academic 3. ♦

Office of the Vice-President (Research and Technology)

PUBLISH! CityU Students in Master of Fine Arts (MFA) in Writing Beat the Odds Worldwide

What does it mean to publish in the international literary world? Or to win an award for a story or poem in a literary contest open to all?

The prominent short story journal *Glimmer Train* regularly offers awards to discover new writers. In their 2012 new writers contest, they received over a thousand entries. To enter you must send a completed short story. The top 5% (or 43 stories) received an honorable mention, including a story by Ciriaco Offeddu, one of our Master of Fine Arts (MFA) students who has just graduated. More remarkably, one of our current students, Robert Powers, will have his first story published by this journal; it won first place in their 2013 new writers' award. The editors were surprised it was his first publication because for a story to be noticed by editors who routinely see thousands of fiction submissions each year, it has to be not just well written and original, but outstanding. Clearly, his was, even beyond the journal's expectations.

What about poetry? Since poems are generally shorter than stories or essays, many journals might publish twenty or more poems in one issue but only two or three stories. As a result, the volume of poetry submitted to literary journals worldwide is more like tens of thousands than merely a few thousands. It is startling how many people yearn to write poetry as a way of expressing feelings, experiences, moods, or to reflect on beauty, war, life in general. As you can imagine, publishing individual poems in journals is definitely not easy, never mind trying to make a name for yourself as a poet. Yet the first MFA student in our program to receive a book contract was a poet, Nicholas Y.B. Wong. His first collection of poems was released last year by a small literary press in New York. He was a student in the first 2010 cohort, and has just recently received a book contract for a second book with an even more prestigious New York press. His literary star is definitely on the rise.

The volume of work received at the more noteworthy and long-established literary journals or contests is comparable to the numbers for *Glimmer Train*. Examples of such where our students have succeeded include the *Australia Book Review's Calibre Essay Prize*, *The Iowa Review*, the Commonwealth Short Story Prize, *Saturnalia Books Poetry Prize*, *Salamander Fiction Contest*, *Cream City Review*, *Missouri Review* and *New Letters Poetry Award*. These are among the more prominent journals or prizes that have recognized and published our students' work. However, we're pleased to say that our students have also published in a range of other journals as well, and we're just as proud of those achievements.

Many of our students also aim to publish novels or story collections, and the competition here is just as fierce. Unless you're already a famous author such as Stephen King, Amy Tan or J.K. Rowling, no major publisher will even look at your manuscript unless it's a completed book, and in some cases, represented by an agent. Junot Diaz, the Pulitzer-winning writer who visited our university in 2011, took around 10 years to finish his first story collection and several more to finish his second book, the novel *The Brief Wondrous Life of Oscar Wao*, which won the Pulitzer. Our other Pulitzer visitor Robert Olen Butler had his first novel rejected by 21 publishers before it was accepted for publication. He then wrote and published five more books of fiction before his seventh book, the story collection *A Good Scent from a Strange Mountain* won the Pulitzer.

Given this very competitive marketplace for fiction, our MFA students have done well. One graduate, Adnan Mahmutović, recently published his collection of stories, some of which he wrote and revised in our program. His book was released last year by a small but reputable literary press in Wales. A current student Verena Tay released a debut collection of stories with a new Singapore press. Yet another recent graduate Lavanya Shanbhogue has just received a book contract from a major press in India for her novel, one she began and completed in the program.

Among our creative non-fiction students, many hope to publish an essay collection or memoir. In this genre, it is sometimes possible to win a book contract with sample chapters, or, if you have just done something outrageous, like Edward Snowden perhaps, publishers might offer you money for your experience and assign a ghostwriter to complete the book as quickly as possible. However, real writers write, as opposed to courting notoriety, and writing well requires effort and time. For example, one current MFA student, Amanda Skelton Webster, had already been working on a memoir about her son's anorexia when she joined our program, and our faculty worked with her on some of the chapters. This was a painful and difficult personal experience that she had to reflect upon deeply, and the writing happened after she and her family had already gone through a long process of years working to cure her son's condition. Happily, she has now published her memoir with a good press in Australia to excellent reviews and has begun her second book.

(continued on next page)

Why do our MFA students compete in a field where the odds are stacked against them? What drives creative writers? The rewards are generally not financially lucrative. While a major literary prize or book contract can be great, this usually represents many years of unpaid work (you probably earn much more in any other job) and is no guarantee of even the next book contract. A quick scan of the lists of winners of the Pulitzer or Booker or even the Nobel Prize for literature will startle you by the number of writers you have never even heard of or read, which suggests that continued success beyond the prize is not necessarily a given. And that represents only the very, very few who make it to the top.

Yet there is the need for creative expression in human beings, and this is something our MFA program serves. It is all about the dream, the rich satisfaction that writing well brings (which is often more important than money or a job), spurred on by the idea that one day there will be readers for your words. We tell our students how difficult it is to publish, and that they need to focus on not just writing well, but writing to the highest literary standards if they wish to compete. The best writing means taking a risk, testing ideas you believe in and baring your heart on the page. It is often a slow process, because only revision and more revision and the continued practice of writing will produce quality work. It is a grand challenge, but it does make life worth living.

Since the program was established in 2010, our students and graduates of the first three cohorts have honored us by some extraordinary achievements in publishing. To date, 26 out of the 68 enrolled students have reported their publications or literary awards to us. We're extremely proud of their accomplishments. Keep in mind that they've done this despite whatever full time job or life they manage, as our students are mostly mature professionals who come from many fields and walks of life including teaching, journalism, engineering, public relations, medicine, politics, finance, law, performing arts, full-time parenting, among others.

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Below is a list of a few of MFA students' publications, awards and honors in literary publishing. This represents approximately 15% of our students' publishing successes to date, and is a shortlist of some of the more prestigious. In brackets after each name is the cohort year and major genre of study, namely CNF (Creative Non-fiction), F (Fiction) and P (Poetry). Where available, we've included the issue/volume number & date for reference. The genre of the published or winning piece is included, along with the title of book or individual piece and the award level (if applicable).

Year	Student (Cohort/Genre), Country of Residence	Publisher, Anthology, Journal or Award	Title & Award Level (if applicable)
2011	Denis Wong (2010 F), New York, USA.	<i>Glimmer Train</i> , Oregon. Short Story Award for New Writers.	"The View from Huangpu River" finalist
	Claire Noble (2010 CNF), Geneva, Switzerland.	<i>Missouri Review</i> , web broadcast, USA. Audio Contest Prose Essay Category.	"State Sponsored Sex" finalist
	Lavanya Shanbhogue (2010 F), Mumbai, India	Commonwealth Short Story Competition. International.	"The Crystal Snuff Box & Papadum" first place
	Peter Phillips (2010 F), Hong Kong.	<i>Indiana Review</i> . ½ K Short Story Prize.	"Dynamic Busan" finalist
	John Francis Smith (2010 F), Hong Kong.	<i>South China Morning Post/RTHK</i> , Hong Kong. Short Story Contest.	"A Special Gift" first place
2012	Nicholas YB Wong (2010 P), Hong Kong.	Desperanto Press, New York, USA. Book (poetry collection).	<i>Cities of Sameness</i>
	Amanda Skelton Webster (2011 CNF), Sydney, Australia.	Text Publishing, Melbourne, Australia. Book (memoir).	<i>The Boy Who Loved Apples</i>
	Adnan Mahmutović (2011 F), Stockholm, Sweden	Salt Publishing, Cromer, UK. Book (story collection)	<i>How To Fare Well and Stay Fair</i>
	Verena Tay (2012 F), Singapore.	Math Paper Press, Singapore. Book (story collection)	<i>Spectre</i>
	Keane Shum (2011 CNF), Hong Kong.	<i>The Iowa Review</i> , Vol. 42 No. 3, Winter 2012-13. Essay.	"My Short American Decade"
	Jenn Chan Lyman (2010 F), Shanghai, China.	<i>Salamander</i> , Vol 8 No 1, Suffolk Univ., Boston, Massachusetts. Fiction Contest. Short Story.	"Two Old Fools" honorable mention
	Nicholas YB Wong (2010 P), Hong Kong.	<i>New Letters Poetry Award</i> , Missouri. Poems	Finalist
2013	Ciriaco Offeddu (2011 CNF), Hong Kong.	<i>Glimmer Train</i> , Oregon. Dec 2012 Fiction Open Competition.	"S'infurcau, the Devil's First Move" top 25 list
	Hayley Katzen (2012 CNF), Ewinger, Australia.	<i>Australia Book Review's Calibre Essay Prize</i> , May 2013. Essay	"The Lonely Death" Shortlist.
	Robert Powers (2012 F), Shenzhen, China	<i>Glimmer Train</i> , Oregon. Feb 2013 Short Story Award for New Writers.	"Maghreb and the Sea" First Place.
2014	Robert Powers (2012 F), Shenzhen, China	<i>Glimmer Train</i> , Oregon. Spring/Summer 2014 Issue. Short Story.	"Maghreb and the Sea"
	Lavanya Shanbhogue (2010-F), Mumbai, India	ROLI Books, New Delhi, India. Book (novel). Forthcoming.	<i>The Disposition of Fortitude</i> (working title only)
	Nicholas YB Wong (2010 P), Hong Kong.	Kaya Books, New York, USA. Book (poetry collection). Forthcoming.	<i>Minor Bodies</i> (working title only)

CityU postgraduate research exhibited in ACM SIGGRAPH Conference

A multimedia system invented by a CityU postgraduate student was exhibited at the 2012 SIGGRAPH conference held in Los Angeles. Mr Andy Li, a PhD student from the School of Creative Media (SCM), designed an installation known as Air Drum that makes use of Kinect and a half-silvered mirror to support virtual drumming.

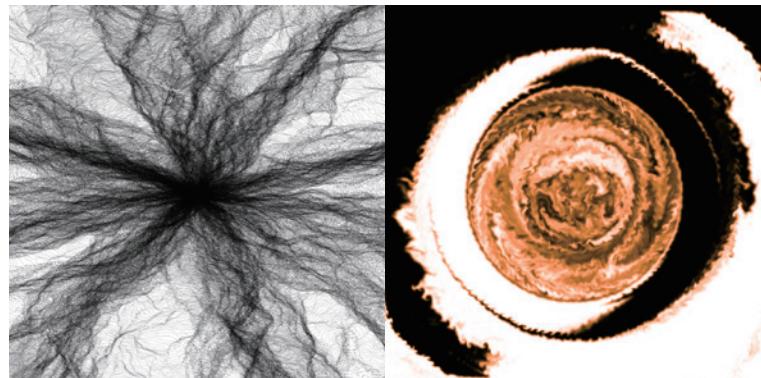
Air Drum stands out from other similar interactive systems due to its natural user interface that responds to movements. Standing in front of a half-silvered mirror, the viewer sees a collage of his own reflection and the reflection of drums projected from the bottom of the installation. A Kinect movement-sensing system mounted directly above the viewer detects his head and hand movements. Sounds are elicited when the viewer 'hits' the drum reflections floating in front of him with a stick.

When asked what initially led him to the idea of virtual drumming, Mr Li said, 'I browsed the Internet and was amazed to find people using half-silvered mirrors to set up a multitouch table. I thought it would be fantastic if I could "touch" the reflected images in the air instead of physically touching images on a static screen.'

To achieve that purpose, Mr Li relied on Kinect, a Microsoft product that supports the Xbox, to allow the computer to respond to kinetic cues. He also set about solving the depth perception problem. To give the reflected drums a three-dimensional quality, he devised algorithms to synchronise the movements of the drummer and the drums. As the drummer moves, the drums (which vary in size) also appear to move forwards and backwards, creating motion parallax and kinetic depth perception.



A visitor tries drumming at the SIGGRAPH exhibition.



Two examples of Mr Li's digital artwork.

Air Drum is a good example of a long-time sustained effort rather than a serendipitous surprise. Mr Li has been a computer enthusiast since his early teens. Upon graduating from secondary school he applied for CityU's Bachelor of Science (BSc) in Creative Media, which offered him solid training in computer science and multimedia art. His goal was, and still is, to use programming to create a more natural mode of interaction between computers and users.

'Air Drum evolved from my BSc final-year project, jointly supervised by Dr Fu Hongbo and Professor Horace Ip Ho-shing of Department of Computer Science. The final-year project was a digital artwork project called "Mind-Body Interaction". I continued to improve the system in my PhD programme and eventually came up with Air Drum,' Mr Li said.

Mr Li and Dr Fu, his PhD supervisor, subsequently submitted Air Drum to the SIGGRAPH conference and exhibition, a major international event in the field of digital art. The 2012 conference was held in Los Angeles on 5-9 August, and drew more than 20,000 multimedia professionals from around the world.

Mr Li met many like-minded researchers and volunteers at the conference, and was particularly impressed by the way the organisers and volunteers cooperated to carry out such a large-scale exhibition. His experience at SIGGRAPH was invaluable to the young researcher, who regularly participates in exhibitions on and off campus. In addition to SIGGRAPH, Air Drum was also displayed at Playful Media in 2012, the annual exhibition held by the SCM to showcase student works.

When asked about his future career goals, Mr Li replied, 'I want to work in the R&D department of a corporation that develops multimedia products. Of course, I also want to become an entrepreneur and create my own interactive artwork'.

Air Drum's application is not limited to entertainment; it also has the potential to be developed into body-fitting or telemedicine equipment. ●

Knowledge Transfer Office



Mr Andy Li

CityU PhD student wins Best Paper Award for new image search method

A CityU student has proposed a new data processing method that allows users to search through billions of pictures, photos and images on the Web at a faster rate.

The innovative technique won Tao Liang, a PhD student from Department of Computer Science, the Best Paper Award at an academic conference on multimedia, beating out more than 80 other research papers presented at the event.

A user can currently search for images by uploading an image to a search engine and looking for pages that include visually similar images. Such an image search is normally completed in the blink of an eye. Tao Liang aimed to improve this already high level of search efficiency. He combined two different approaches, the ‘image hashing’ and ‘Cauchy graph’ methods, to propose a new data processing technique for enhancing large-scale data analysis to achieve a higher image retrieval speed. ‘The search time is measured to the microsecond,’ said Tao Liang.

‘This technique could prove useful to software or search engine companies. It also has the potential to be extended to the searching of text, audio, video and other multimedia formats,’ he added.

The image search method could provide users with a different way to solve problems. Tao Liang cited an example of how he used the method to identify a potted plant: ‘I simply took a picture of the plant and searched for web pages that included pictures similar to that of the plant’.

Tao Liang presented a paper on this technological breakthrough at the 2012 Pacific-Rim Conference on Multimedia. ‘After the presentation I received several requests for a copy of the presentation slides. Both my supervisor and I are happy that the audience was interested in our work,’ said Tao Liang.

Tao Liang thanked his supervisor, Professor Horace Ip Ho-shing, Acting Vice-President (Research and Technology) and Acting Dean of Graduate Studies, for his encouragement and guidance. ‘Professor Ip’s remarks that there are no shortcuts to doing research have given me a lot of inspiration,’ said Tao Liang. ●

Adapted from CityU NewsCentre



Tao Liang wins the Best Paper Award at an academic conference on multimedia.

CityU establishing close tie with the University of Chinese Academy of Sciences in PhD training

As part of CityU’s strategic move to jointly supervise quality research students from key mainland universities, a delegation from the Chow Yei Ching School of Graduate Studies, led by Professor Horace Ip Ho-shing, Acting Vice-President (Research and Technology) and Acting Dean of Graduate Studies, recently visited the University of the Chinese Academy of Sciences (UCAS) in Beijing.

Founded in 1978, Graduate University of the Chinese Academy of Sciences (GUCAS) was the first graduate school in China to receive the approval of the State Council. In 2012, GUCAS was renamed UCAS with the approval of the Ministry of Education. UCAS is headquartered in Beijing, where it has four campuses, with another five regional centres in Shanghai, Chengdu, Wuhan, Guangzhou and Lanzhou. All of the major scientific disciplines are represented at UCAS, including science, technology, and engineering. UCAS is backed by the more than one hundred member institutes of the Chinese Academy of Sciences (CAS), which are located in over 20 cities throughout China. The University graduated China’s first doctoral student in science, first doctoral student in engineering, first female doctoral student and the first student with double doctoral degrees in China.

The purpose of the visit was to explore the possibility of collaborating in offering a joint CityU-UCAS PhD programme. During the visit, representatives from the two universities shared their experience and exchanged ideas on the initiative. Positive feedback was received from UCAS and an agreement for a joint programme is currently being prepared. ●

Chow Yei Ching School of Graduate Studies

7th PhD Student Workshop held in CityU Shenzhen Research Institute (CityUSRI)

The 7th PhD Student Workshop, jointly organised by the Chow Yei Ching School of Graduate Studies and the Graduate School of the University of Science and Technology of China (USTC), was held at the City University of Hong Kong Shenzhen Research Institute (CityUSRI) on 9-10 April 2013.

This marked the first time the workshop was held at the newly established CityUSRI, which has been a permanent base for applied research, incubation and professional education on the mainland since its opening in 2011. Professor Horace Ip Ho-shing, Acting Vice-President (Research and Technology) and Acting Dean of Graduate Studies, officiated at the event's opening ceremony with Professor Gu Jibao, Associate Dean of the USTC Graduate School.

The annual workshop was well received by the participation of 62 Hong Kong and mainland PhD students under CityU's mainland collaboration schemes. It served as an ideal platform for sharing the latest research findings and exchanging academic achievements. Students were able to benefit from the interactive learning methods showcased in the presentations and discussions.

The USTC-CityU Joint PhD Programme has successfully trained more than 100 graduates over the past 8 years. The two universities have jointly cultivated high-level research talents and facilitated societally beneficial research collaborations through their dynamic partnership.

An award presentation ceremony for the Peter Ho Conference Scholarships [何稼楠學術會議獎學金] was held in conjunction with the workshop. These scholarships

recognise and reward students who exhibit outstanding academic performance. Nineteen awardees received sponsorships of RMB15,000 each for participating in an overseas academic conference that helped to widen their academic exposure and strengthened their research writing and presentation skills. Professor Ip and Professor Gu presented the award certificates to the awardees on behalf of Dr Peter Ho. ⚡

Chow Yei Ching School of Graduate Studies



2012-2013 Peter Ho Conference Scholarship Awardees (Students under Mainland Collaboration Schemes)

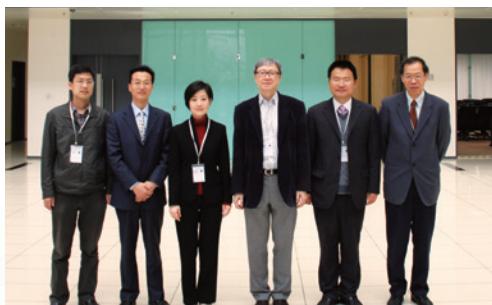
Student Name	Department	Supervisor
Guo Yingying	Physics and Materials Science	Dr Robert Li Kwok Yiu
Li Yu	Physics and Materials Science	Professor Zhang Ruiqin
Zhang Qingtian	Physics and Materials Science	Professor Chan Kwok Sum
Zheng Binw	Biology and Chemistry	Dr Lam Hon Wah
Dai Kang	Civil and Architectural Engineering	Dr Yuen Kwok Kit
Qian Xiaodong	Civil and Architectural Engineering	Dr Yuen Kwok Kit
Shan Xueying	Civil and Architectural Engineering	Professor Lo Siu Ming
Shi Wenxi	Civil and Architectural Engineering	Professor Lo Siu Ming
Wang Lei	Civil and Architectural Engineering	Dr Yuen Kwok Kit
Zhang Jiaqing	Civil and Architectural Engineering	Dr Richard Yuen Kwok Kit
Chang Yanan	Computer Science	Professor Jia Xiahua
Shi Liang	Computer Science	Dr Jason Xue Chun
Yan Tao	Computer Science	Dr Rynson Lau
Zhang Lin	Electronic Engineering	Dr Leung Shu Hung
Gao Qing	Mechanical and Biomedical Engineering	Professor Gary Feng Gang
Shen Changqing	Systems Engineering and Engineering Management	Dr Peter Tse Wai Tat
Cao Xiongfei	Information Systems	Professor Douglas Vogel
Huang Liqiang	Information Systems	Professor Wei Kwok Kee
Bian Junsong	Management Sciences	Professor Lai Kin Keung



Peter Ho Conference Scholarships recipients, with Professor Ip (fifth from left) and Professor Gu (fourth from left).



Professor Ip, Professor Gu and faculty members from the USTC tour around the CityUSRI.



The 7th PhD Student Workshop is well received and supported by research students and scholars from CityU and the USTC.

CityU School of Graduate Studies promotes internationalisation of graduate studies

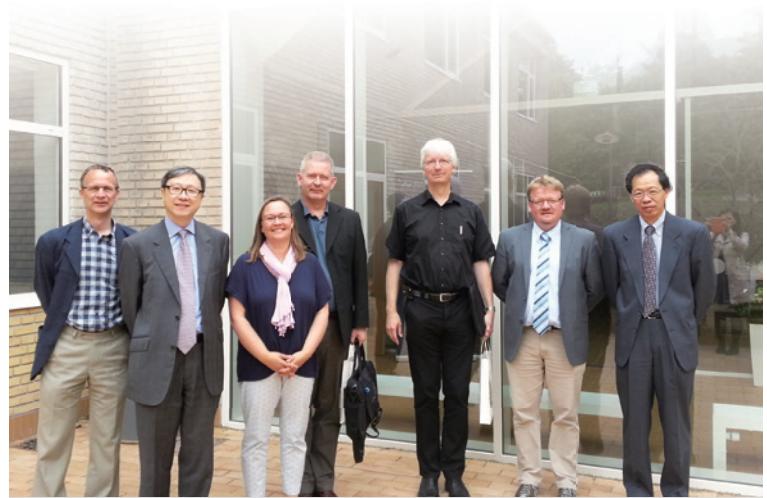
CityU is continuously dedicated to its internationalisation. One of its strategic goals is to expand its global outreach by developing academic partnerships with world-leading institutions and offering joint postgraduate programmes. With a view to these goals, a delegation from the Chow Yei Ching School of Graduate Studies (SGS) visited Denmark in mid-June 2013.

The delegation led by Professor Horace Ip Ho-shing, Acting Dean of Graduate Studies, visited three major institutions in Denmark including the University of Copenhagen, Copenhagen Business School and University of Aarhus, to explore the possibilities of developing collaboration schemes between well-known Asian and European universities. CityU believes that by building on the strengths of the universities, top-level education and research opportunities can be provided to attract high quality research students. ◆

Chow Yei Ching School of Graduate Studies



Meeting between CityU delegation and the representatives from the University of Aarhus.



The delegation visits the University of Aarhus.

CUPA Executive Committee 2013-2014

The following students were elected as executive committee members of the CityU Postgraduate Association (CUPA) for a period of 1 year from 1 April 2013.

Position	Name	Profile	Department/School
President	Peng Yu	Research Programme	Electronic Engineering
Vice President	Wang Fei	Research Programme	Management Sciences
Treasurer	Shang Lu	Taught Programme	Accountancy
General Secretary I	Xu Sha	Research Programme	Electronic Engineering
General Secretary II	Wei Jinjin	Taught Programme	Law
Internal Programme Leader	Wang Ning	Research Programme	Management Sciences
External Programme Leader	Sun Meng	Taught Programme	Asian and International Studies
Sports and Recreation Leader	Cao Shan	Research Programme	Mechanical and Biomedical Engineering
Career Development Leader	Sng, Ban Chuan Gordon	Research Programme	Law
Publication Leader	Chow Yu Ting	Research Programme	Mechanical and Biomedical Engineering

CUPA afternoon tea – career sharing on media and communications

One of the major focuses of CUPA's Executive Committee for 2013-2014 is the career development of CUPA members. In the coming year, a series of CUPA career events will be held to strengthen the employability, interview skills and industry knowledge of CUPA members. The afternoon tea/career sharing session (Media and Communication) held on 1 June 2013 was one of such events. At this career sharing session, we invited two keynote speakers, Mr Chai from the Renaissance Foundation and Ms Leung, editor of one of the largest local newspapers, to talk about the media and communications industry and share their career paths with CUPA members. In addition, about 10 junior guests from outlets such as Phoenix TV, TVB and ATV were invited to sit with the CUPA members and share their work experiences in an informal setting. CUPA will organise similar career sharing events related to different industries to members in the coming year. ◆

CUPA co-organised 'School's Out' TEDxHongKongED



In a world where people are becoming increasingly competitive and parents are scrambling to fill their children's minds with information, have we lost sight of true education? In this year's TEDxHongKong event, CUPA (as a co-organiser) cooperated with the TEDxHongKong team to bring Hong Kong the Asia-Pacific region's first TEDx educational (ED) event. TEDxHongKongED aimed to showcase the current state of education both in Hong Kong and around the world, to inspire teachers and students alike and to explore unconventional ways to nurture a lifelong education. As the only student organisation among the TEDxHongKongED 2013 co-organisers, CUPA recruited student helpers and members to assist in the organisation of this meaningful event. Meanwhile, a 50 HKD discount was provided to all of the members who participated. On 15 June 2013, over 1,000 people converged to hear about the most exciting developments in education at TEDxHongKongED. Educators, parents, innovators and students from all walks of life came together to share and learn about the future of education and learning. The event consisted of not only lectures, but also opportunities for synergy. Curated discussions were held on community building, dialogue promotion and meaningful networking opportunities. Every CUPA member joined in, and student helpers and audiences alike spoke highly of the ideas they heard and the experiences they had. ◆

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