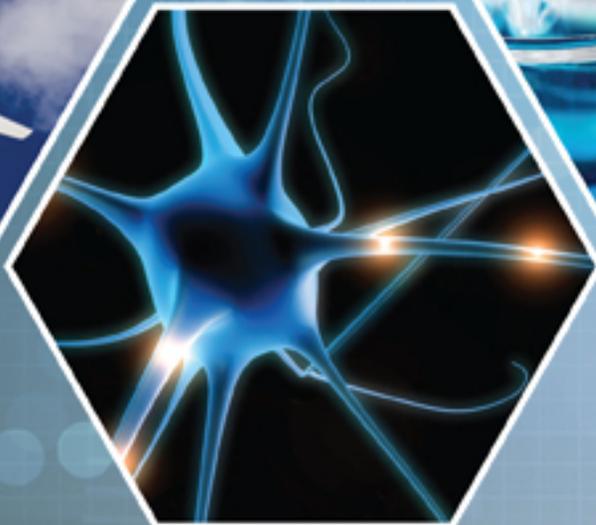


# CHINESE UNIVERSITY BULLETIN

No. 2, 2014

Scientists,  
Muses and  
their Labs







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# Scientists, Muses and their Labs

**A**lbert Einstein once said, 'Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution.'

Knowledge, its creation and dissemination, is the business of any university. Yet while popular culture readily associates the imagination with art, music and literature, it often stops short of the engineering workshop, the biology laboratory, or the psychology lecture hall. This is misleading because the bespectacled computer scientist straining her eyes over data drizzling down a screen or the archaeologist calculating where next to stick his shovel needs a Muse as much as the tortured novelist striving to write another masterpiece—at least the very best of them do.

At the Chinese University, much of the research that leads to real advancements in knowledge owes its existence to brilliant minds as creative as they are intelligent, whether it is the discovery of a function of a certain gene or bodily organ, an ability to envision future scenarios, tackling climate change on new and different fronts, or finding innovative ways to foil criminal activity. Many of these projects are undertaken by research centres and institutes that have recently been established—units characterized by their interdisciplinary approach to the creation of knowledge and connections with notable partners from China, the region and the world.



The background of the page is a lush green tea plantation. The tea leaves are vibrant and detailed, with some in sharp focus and others blurred in the background. A decorative graphic of white dots forms a large, irregular shape that frames the central text. The overall color palette is various shades of green, from light lime to deep forest green.

## Environment and Heritage

Environment and heritage are high on the agenda of any 21st century city worth its salt—on the one hand, how to address urgent problems related to climate change and make the living environment more livable for all concerned; and on the other, how to protect our cultural heritage against the wrecking ball of renewal and understand the intricate workings of our culture so as to better preserve it.



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## Salt-Tolerant Wild Soybean

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Prof. **Lam Hon-Ming**, professor in the School of Life Sciences and director of the Center for Soybean Research, has succeeded in identifying the gene that makes soybeans salt tolerant after over 10 years of rigorous research and field work. The research, conducted via the Center for Soybean Research under the State Key Laboratory of Agrobiotechnology (Partner Laboratory at CUHK), is a milestone in the mass production of high-quality salt-tolerant soybeans, and will benefit agriculture in China and worldwide.



This has two implications. First, it means we can protect plants from salt at a cellular level. Second, it means we can influence the accumulation of sodium ion. Sodium ion is one of the major components of salt, and it is toxic. Once it enters a plant cell, it affects physical function. We discovered that the target gene was able to lower the level of sodium ion in the plant.'

Professor Lam's present research is built on a significant discovery he made when he and his team decoded 31 soybean genomes in 2010—wild soybeans have much higher biodiversity than cultivated ones and they may have retained genes that help them to fend for themselves in the natural environment. By contrast, plants pampered by humans may have lost the genes that enable them to cope with adverse conditions.

Through collaborations with BGI-Shenzhen and the Chinese Academy of Agricultural Sciences, Professor Lam and his team extracted the salt-tolerance gene from wild soybeans using the latest technologies in genomics, genetics, and molecular biology. The researchers managed to identify the positions of the main genes in 11 of the traits they observed. They also found an area in chromosome 3 that specifically controls salt tolerance. However, there are dozens of genes in that area. Using a variety of methods, the team finally found their target gene.

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## Global Food Security & Climate Change

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Food production is highly vulnerable to climate change and air pollution with implications for global food security. Climate change adaptation and ozone regulation are important strategies for safeguarding food production, but little is known about how climate and ozone pollution interact to affect agriculture, nor the relative effectiveness of these two strategies for different crops and regions.

Prof. **Amos P.K. Tai**, assistant professor in the University's Earth System Science Programme, has succeeded in using a computer simulation of future climate and air quality to present an integrated analysis of the individual and combined effects of climate change and ozone trends between 2000 and 2050 on the production of four major crops worldwide: wheat, rice, maize and soybean, based on historical observations and model projections. The study was the first to consider the interactive effects of climate change and air pollution on agriculture.

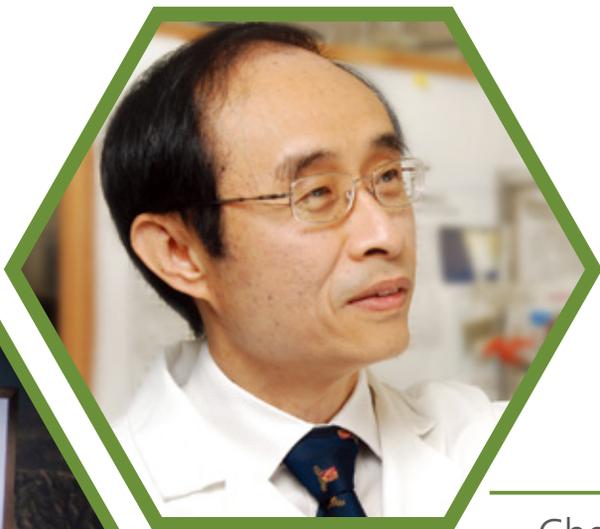
The agricultural impact of climate change and air pollution will worsen the malnutrition problem in developing countries, and entail greater fluctuations in food prices that will affect developed regions, including places like Hong Kong that import most of their food items.'

Professor Tai's computer model projected that the global average temperature of the growing season will rise by 1 to 2°C from now to 2050 in all scenarios considered. It also projected that the rise in temperature will reduce global food production by over 10% and increase undernourishment rates by over 30% in all scenarios.

By further investigating the impact of ozone air pollution, Professor Tai observed that uncontrolled pollution may exacerbate the effects of climate change. However, he also found that the damaging impact can be potentially offset by the cultivation of more heat-tolerant crop varieties and the adoption of aggressive ozone regulation. Controlling the emission of hydrocarbon and nitrogen oxide, for example, can curb the rise in undernourishment by about 50%.

The findings have important implications for environmental and agricultural policy-making and call for greater collaboration between farmers, agricultural policy planners and air quality managers.





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## Chemist's Quest for Clean Fuel

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A large, vibrant blue image showing the ripples of water, likely representing clean energy or the water-splitting process.

A discovery by Prof. **Jimmy Yu**, professor in the Department of Chemistry and associate director of the CUHK Institute of Environment, Energy and Sustainability, may have brought progress to the quest for clean energy. Professor Yu and his team discovered that when exposed to sunlight, red phosphorous—the most stable and common kind of phosphorous, emits bubbles of hydrogen gas, a clean fuel. Phosphorous is abundant (it makes up about 0.1% of the earth's crust) and can be extracted fairly easily. It works across the spectrum of natural sunlight, making it ideal for use in the generation of clean power. The light acts as an irradiation source that stimulates the catalyst and induces chemical reactions.

Professor Yu's water-splitting process functions at room temperature, with the phosphorous separating the individual elements in H<sub>2</sub>O. Hydrogen has a very high fuel capacity, meaning it creates more energy than any other chemical fuel. Unlike petrol-based fuels, there is no greenhouse-gas byproduct when it burns, with only water left at the end of the reaction.

The researchers are now experimenting with various crystal forms of red phosphorous, since different crystals vary in their effectiveness in generating hydrogen.

‘The final goal is to develop an environmentally friendly way to generate clean fuel. We hope to offer some possible solutions.’

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## CASS-CUHK Chinese Archaeology Joint Research Base

Director: Prof. **Tang Chung**

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The research base, inaugurated in 2014, is jointly established by CUHK and the Chinese Academy of Social Sciences (CASS). It is Hong Kong's first research unit dedicated to combining archaeological expertise from mainland China and Hong Kong. It will study early civilizations in China through a global perspective, conduct in-depth investigations of ancient cultures in Hong Kong and Macau, explore new research areas in Chinese archaeology, and train professionals in Hong Kong archaeology.

The establishment of the research base has important cultural and historical significance as Hong Kong currently has few archaeologists and no tertiary education programmes in archaeology, despite the known existence of over a hundred ancient cultural sites.

The research base connects up various disciplines and units across CUHK, such as the Centre for Chinese Archaeology and Arts (CCAA),

the Institute of Chinese Studies, and the Departments of History, Anthropology, Fine Arts and Physics, in its strive to push the global frontiers of Chinese archaeology, jointly with the Institute of Archaeology (IA) of the CASS.

The base marks a culmination of two decades of collaboration between the IA and the CCAA, a partnership that has had great impact on studies on the ancestry of Austronesian populations in Southeast Asia, and the origins of early jade cultures in East Asia.

‘The study of Hong Kong history should not be confined to local findings. For a balanced picture, it was important to weave the different threads of East Asian history.’





## Institute of Environment, Energy and Sustainability

*Director:* Prof. **Gabriel Ngar-cheung Lau**

A contemporary challenge for humanity is the assessment, adaptation and mitigation of anthropogenically induced environmental changes. Tackling it requires concerted effort to bridge traditional academic disciplines, and close collaboration between the research, industrial, commercial and governmental sectors. The Institute of Environment, Energy and Sustainability (IEES), established in 2011, strives to foster these interactions by assembling scholars with diverse intellectual backgrounds, launching educational and outreach activities aimed at raising awareness of advances in our understanding of the Earth System. Special emphasis will be given to issues relevant to the environment of Hong Kong and the nearby region.

The IEES serves as a platform for collaboration among different departments and units to conduct cross-disciplinary research on the environment. It also continues the research on meteorology in regions including East Asia. Besides, it offers the Earth System Science programme. The CUHK Jockey Club Initiative Gaia at IEES promotes knowledge to the wider public through the establishment of the Jockey Club Museum of Climate Change and the organization of a carbon reduction project as well as conferences and exhibitions.'

The institute has six interrelated research programmes that adopt cross-disciplinary and integrated approaches to investigating topics related to the environment, energy technology and sustainable development. These include exploring the impact of climate change, monitoring environmental changes and providing pertinent information for planning, policy making, and formulation of strategies in tackling the challenges of climate change; developing new energy technologies and intelligent energy-saving strategies; investigating the flow of heat, air, water, sound and wastes in cities with the aim of finding innovative solutions to problems related to urban design, and assessing the impact of climate change on public health; and developing strategies in public engagement, environmental and social movement to facilitate environmental policy formulation and implementation.

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# Institute of Future Cities

Director: Prof. **Leung Yee**

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Over half of the global population now live in urban areas, yet dramatic urban expansion and industrialization are often accompanied by challenges to the environment, natural resources, mobility and accessibility, public health and housing provision, and employment; as well as problems such as social and economic polarization and ageing. Solving these urban challenges requires an interdisciplinary approach that makes possible a more sustainable pathway of development which respects natural, social and economic capital.

The Institute of Future Cities (IOFC) links up urban researchers at CUHK and international organizations involved in research on cutting-edge urban development, as well as national research units focusing on urban issues in the evolving socialist market economy. The objective is to disseminate research findings locally, nationally and beyond.

The IOFC has four centres and a programme, which form a solid base from which its research, teaching and other activities evolve.

The research interests of the Centre of Land Resource and Housing Policy include the effects of an ageing population on housing choice; and the effects of policy, community mix and community connectivity on housing price. The Centre of Community and Place Governance undertakes studies



It is an institute that triangulates research, teaching and learning, and knowledge transfer.'



and arts advocacy activities to learn about the needs, aspirations and visions of various members in communities, and identifies the strengths and weaknesses of existing modes of place governance within and beyond Hong Kong.

The Centre of Urban History, Culture and Media explores how cultural diversity benefits creativity and innovation in cosmopolitan cities and addresses the problems of marginalization and stigmatization of minority groups in the current socio-political environment. The Centre of Urban Sustainability seeks to improve the living quality in urban areas by learning about the environmental dynamics of city living; assessing the risk and impact of the urban environment on health; and guiding actions and policies.

The Urban Informatics Programme conducts interdisciplinary research based on state-of-the-art software and information technology, urban and social informatics, and big data analytics.

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## CUHK-Peking University-University System of Taiwan Joint Research Centre for Language and Human Complexity

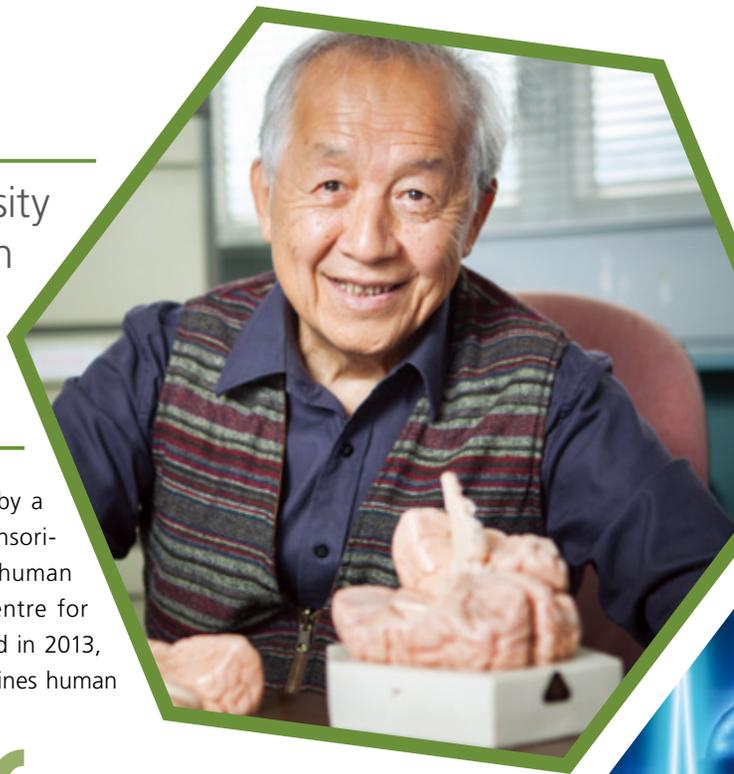
Director: Prof. **William Shiyuan Wang**

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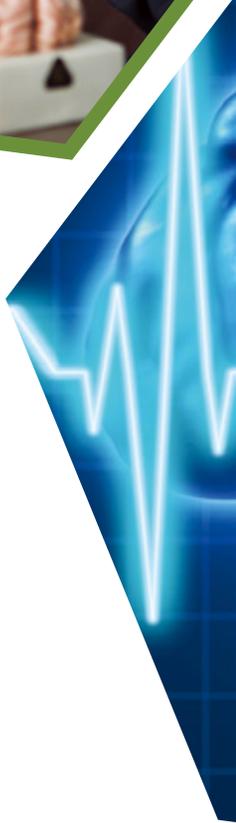
Language is a highly complex system constructed by a combination of various cognitive, memorial and sensori-motor skills, and it lies at the very foundation of human behaviour—both individual and collective. The Centre for Language and Human Complexity (CLHC), established in 2013, is the first cross-strait joint research centre that examines human complexity from the perspective of language.

Scholars from Peking University, the University System of Taiwan (UST) and CUHK have been collaborating closely for the past few years in promoting the development of language studies. Building on their strengths, the joint centre will strive to construct a more systematic and solid research base straddling the strait. It will conduct field work and laboratory experiments to examine human nature, with the aim of deepening understanding of the biological basis of language and the acquisition of native and second languages, and contributing to the treatment of language disorders.

All three partners of CLHC are interested in the course of language through the human life cycle—from acquisition in infancy, through the learning of reading and writing and foreign languages, to the loss of linguistic fluency caused by disorders and normal ageing. The CLHC works closely with Peking University to investigate the diverse languages and peoples of China in order to understand how these are related to each other structurally and historically, and examine how culture, language, and literacy interact among the many ethnic groups. The centre also teams up with the UST to explore human cognition using brain imaging technology, with the purpose of elucidating how the brain enables language and other cognitive behaviours.



‘The establishment of the joint research centre has great historical significance; it is a major milestone in the development of leading-edge research on language in Greater China.’





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## CUHK-UU Joint Centre for Language, Mind and Brain

*Co-Director:* Prof. **Patrick Wong**

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This joint centre between CUHK and Utrecht University (UU) in the Netherlands was established in 2014 to provide an international platform for the promotion of interdisciplinary and multidisciplinary research in language, mind and brain, by pooling and consolidating the strengths of CUHK and UU in relevant areas.

The centre is strongly interdisciplinary in its orientation, connecting the humanities with biomedical sciences, life sciences, and social science, and covering areas such as linguistics, cognitive neuroscience, psychology, genetics and speech-language therapy. In particular, the language learning and development theme at CUHK echoes and complements the Youth and Identity focus area at UU where youth covers the age range from infancy to adolescence and beyond.

The centre will pursue three parallel focus areas of research, namely the biological basis of language learning and development; cognitive neuroscience; and speech-language therapy. Anchored in linguistics as a focus area of research, the joint centre will nurture disciplines at CUHK that have a shared interest in language structure, language learning, communicative and literacy disorders, as well as cognitive neuroscience.

A key component of the centre is a Genetic Core housed in the CUHK School of Biomedical Sciences in the Faculty of Medicine which supports cross-faculty and interdisciplinary collaboration in genetic research related to language, mind and brain, fostering academic exchanges on and between the two campuses.





## Medicine and Beyond

The University's latest medical research projects and research institutes specialize in widespread health conditions, diseases with special relevance to Asia, the training of professionals for the region, and the use of innovative approaches in the treatment of traditional illnesses. In particular, there is a centre devoted to studying the ethical philosophy underlying medical practice.



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## Tackling the Problem of Male Infertility

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Infertility affects around 10% to 15% of couples worldwide, and male infertility contributes to approximately 50% of these infertile cases. Male infertility is attributed to multiple factors. Reduced sperm motility is a common cause of infertility and accounts for approximately 18% of male subfertility and infertility cases. Another common cause of infertility, seminal tract infection, is observed in roughly 11% of infertile male patients. Interestingly, sperm with reduced motility is often associated with genital tract infection; however, the underlying cause and possible association between the two disorders remain largely unexplored.

A collaborative research jointly conducted by the University's Epithelial Cell Biology Research Centre and Shenzhen Second People's Hospital revealed that deficient human  $\beta$ -defensin-1 (DEFB1) underlies male infertility associated with poor sperm motility and genital tract infection.

Prof. **Chan Hsiao-chang**, director of the centre and professor of physiology at CUHK, led the research. It was found that the amount of DEFB1 in sperm from infertile men exhibiting either genital tract infection or reduced sperm motility is much lower compared to that in normal fertile sperm.

Interference with DEFB1 function also decreases both motility and bactericidal activity in normal sperm.

The study further demonstrates that treatment with recombinant DEFB1 markedly restores DEFB1 expression, bactericidal activity, sperm quality, and egg-penetrating ability in sperm from infertile patients exhibiting poor sperm motility and genital tract infection, suggesting a feasible therapeutic approach for related male infertility.

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## Hong Kong's First Institute of Integrated Medicine

Director: Prof. **Justin Wu**

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The simultaneous use of Chinese and Western medicine in treating illness is a tradition in Hong Kong. Many patients consult both Chinese and Western doctors in their attempt to get better results. However, a safe and proven treatment model of integrative medicine, and a standard communication channel between Western and Chinese medical practitioners, had yet to be developed. In the area of research, while there had been studies on integrative medicine, results were scattered among different institutions. In view of the rising demand for integrative medicine, CUHK established in September 2014 the Hong Kong Institute of Integrative Medicine (HKIIM), Hong Kong's first university-run institute that encompasses research, clinical care and education in the integration of Chinese and Western medicine.

Through an evidence-based approach, HKIIM aims at understanding and assessing the effectiveness of integrative medicine in treating individual diseases. In addition, it applies research results in clinical practice in order to construct a safe and effective integrative medical care system that will be a model for the local and international community.

The institute's East-West Research and Training Centre for Integrative Medicine actively collaborates with the School of Chinese Medicine, the Institute of Chinese Medicine, and local and overseas institutions in research projects on integrative medicine. Its Integrative Medical Centre operates as a one-stop outpatient clinic that provides quality service to the public.

To prepare our students to be capable professionals ready for the global trend of integrative medicine, the University will join hands with the University of Toronto (UT) to launch a student exchange programme on integrative medicine, commencing in 2015–16. Every year, two to five undergraduate students from Chinese Medicine, Medicine or Pharmacy at CUHK will be shortlisted for a placement of between four and 10 weeks at The Centre for Integrative Medicine, jointly established by the UT and The Scarborough Hospital.



The research focus of HKIIM is chronic diseases such as chronic pain condition, functional gastrointestinal disorder, and stroke rehabilitation, whose management by Western medicine alone could be limiting; but for which Chinese medicine could provide alternative treatments. HKIIM will also raise the safety standards of herb-drug interaction in order to set a standard risk management model for interaction between Western and Chinese medicine.'



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## Lui Che Woo Institute of Innovative Medicine

*Director:* Prof. **Francis Chan**

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The Lui Che Woo Institute of Innovative Medicine integrates multiple disciplines in clinical medicine and combines the strengths of basic research and clinical studies with the aims of exploring innovative methods of diagnosis and treatment, and bringing new hope to patients. The institute is a platform for CUHK and overseas experts from disciplines including medicine, bioengineering, psychology and linguistics, to collaborate and innovate in the areas of basic science, translational medicine and clinical medicine.

The institute, established in 2012, is dedicated to the advancement of three focused initiatives, namely BRAIN (Brain Research and Innovative Neuroscience), SMART (Sports Medicine and Regenerative Technology), and CARE (Cardiovascular Advancement, Research and Education).

BRAIN involves the development of novel interventions against neurological and neuropsychiatric diseases such as stroke, dementia, neurocognitive disorders, language impairments, and autism. The novel techniques include counterpulsation, transcranial magnetic stimulation, and robotic arm therapies. State-of-the-art multi-modal imaging and electrophysiological techniques, coupled with genetic testing and the study of new peripheral biomarkers, will also be used to unravel the mechanisms of these diseases.

SMART features, among other things, the introduction of minimally invasive surgery in the treatment for sports injuries, and the application of regenerative technologies on challenging sports injuries, such as cartilage and ligament repair.

CARE focuses on developing innovative treatment for heart failure, coronary heart diseases and cardiac arrhythmia. It aims at improving the technology of ultrasonic imaging of the heart and major blood vessels, so that predictive markers in heart failure could be detected at an early stage to raise the survival rate of patients. It also endeavours to optimize coronary angioplasty, with the introduction of innovative optical coherence tomography scan to assist in coronary artery intervention therapy, and assist in stent implantation in patients with arteriosclerosis obliterans.



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## CUHK-University of British Columbia International Centre on Nursing Leadership

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Director: Prof. **Diana Lee**

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This centre is committed to grooming senior nurses in Hong Kong and its neighbouring regions to become capable leaders and managers who will render effective support to care delivery and sustainable health care development, and tackle the challenges faced by the nursing profession. It will launch an array of educational initiatives, such as the advanced diploma programme in nursing management and leadership, as well as leadership seminars, workshops and forms covering a wide range of topics on nursing management delivered by local, national and international experts. It will also undertake leadership research projects with national and international partners, and establish an internet leadership resource centre to foster networking and collaboration.

The centre will serve as a learning platform for potential nurse leaders as well as a knowledge hub for developing and translating research results into real practice. It will also encourage local, national and international collaborations in nursing leadership development.'



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## State Key Laboratory of Digestive Disease (Partner Laboratory in CUHK)

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Director: Prof. **Joseph J.Y. Sung**

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Approved for establishment in 2013 at CUHK by the Ministry of Science and Technology of the PRC, this state key laboratory was founded in partnership with the Fourth Military Medical University (FMMU). The laboratory carries out basic, translational and clinical research on the gastrointestinal cancer, peptic ulcer bleeding, chronic liver disease and inflammatory bowel disease in Hong Kong and mainland China.

The University has once again gained state approval to establish a state key laboratory here in Hong Kong, which shows commendation on and recognition of our research endeavours. By teaming up with FMMU, we can complement each other and maximize our respective strengths in digestive disease research.'





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## Centre for Bioethics

*Interim Director: Prof. T.F. Fok*

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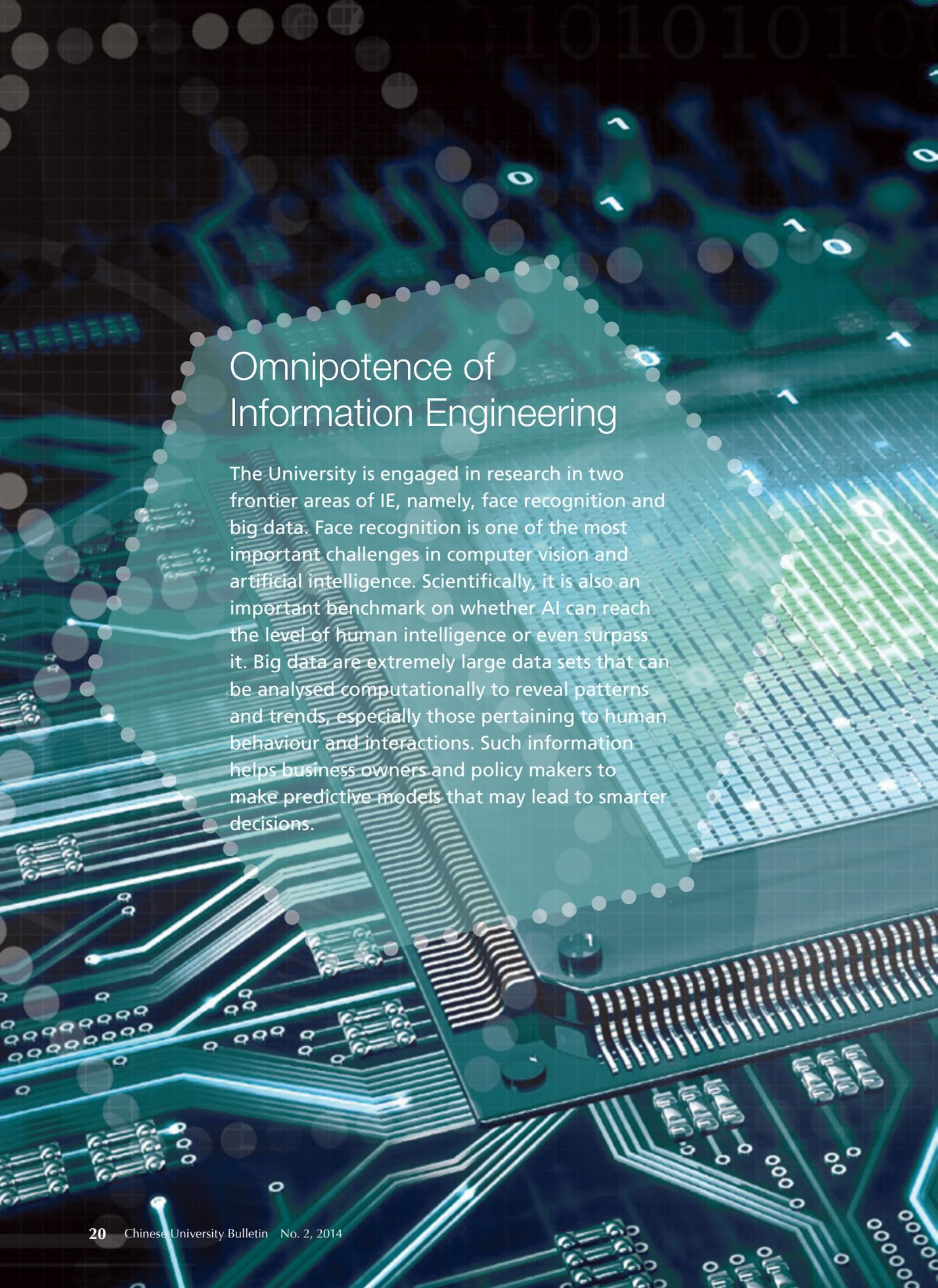
The universal principle behind bioethics is respect for persons, defined broadly. Hong Kong's two medical schools have always taught ethics education, but it was not offered systematically. Many staff are doing research on ethics, but we haven't been able to integrate their work. The centre brings together ethics education and research. It serves as a platform for the Faculty of Medicine, for other disciplines, and for interested parties outside the University to work toward a common goal.'

The bold new world of biotechnology has created profound and challenging ethical, legal, and social issues for educators, researchers, healthcare workers, policy makers and the public. To rise to these challenges, the University established Hong Kong's first interdisciplinary centre for bioethics.

The Centre for Bioethics, which will be formally launched in January 2015, will work with one of the world's leading institutes for bioethics, the Hastings Center, as well as the Centre for Biomedical Ethics at the Yong Loo Lin School of Medicine at the National University of Singapore, to establish best practice in mission development, educational approaches, and recruitment.

One of the centre's core aims is to raise awareness of biomedical ethics in Hong Kong, and not just within the medical field. The centre is hiring a teaching team of scholars and researchers from a variety of disciplines working on bioethics, such as philosophy, sociology, anthropology, psychology, media studies and life science. The target students are not limited to the Faculty of Medicine, as part of the course will be included in University General Education which is open to all undergraduate students.





## Omnipotence of Information Engineering

The University is engaged in research in two frontier areas of IE, namely, face recognition and big data. Face recognition is one of the most important challenges in computer vision and artificial intelligence. Scientifically, it is also an important benchmark on whether AI can reach the level of human intelligence or even surpass it. Big data are extremely large data sets that can be analysed computationally to reveal patterns and trends, especially those pertaining to human behaviour and interactions. Such information helps business owners and policy makers to make predictive models that may lead to smarter decisions.



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## Taking Face Recognition to New Levels

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Prof. **Xiaoou Tang** (top), professor in the Department of Information Engineering, and Prof. **Xiaogang Wang** (middle), assistant professor in the Department of Electronic Engineering, have built a novel facial recognition

The key challenge of face recognition is to develop feature representations that reduce intra-personal variations and enlarge inter-personal differences. Deep learning enables our system to handle the two types of variations effectively,' said Prof. Xiaogang Wang.

system that has the highest accuracy in the world. While human beings generally recognize faces with an accuracy rating of 97.53% on Labeled Faces in the Wild, a database of face photographs designed for studying the problem of unconstrained face

recognition, the CUHK-developed system is observed to recognize faces with an accuracy of 99.15%, regardless of changes in lighting, make-up and camera angles.

The project was carried out by the CUDA Research Centre, Hong Kong's first NVIDIA CUDA Research Centre, which prepares engineers and computer scientists to conduct potentially groundbreaking research using GPU (graphics processing units) accelerators. NVIDIA is an American global technology company that manufactures GPUs.

The system developed by the professors and their team has benefited from deep learning, one of the biggest breakthroughs in artificial intelligence in recent years. Simply put, deep learning is a sophisticated 'machine learning' algorithm with abilities to recognize syllables and images. It provides the CUHK system with powerful tools to improve the accuracy of face recognition.

The system has many potential applications. For example, it can help law enforcement and security agencies seek out individuals among a crowd of thousands. Traditional video surveillance can only focus on a small number of objects in a very simple environment, but the new system allows its users to target thousands of objects in very complex environments.

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## Big Data Decision Analytics Research Centre

Director: Prof. **Helen Meng**

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Many companies and government offices are now expanding their traditional data sets with social media data and browser logs as well as text analytics and sensor data. Big data is applied heavily in security and law enforcement, for example, to foil terrorist plots, spy on individuals, and prevent cyber attacks. Police forces use big data tools to catch criminals and predict criminal activity, while credit card companies use them to detect fraudulent transactions.

‘The insights can support optimal decision making that incorporates the human dimension, with rapid adaptability to changing environments.’

Big data allows supermarket chains to predict what products will sell, and online dating sites to find appropriate matches for their users. It also enables governments to monitor and predict the development of epidemics, and cities to optimize traffic flow based on real-time traffic information, as well as social media and weather data.

The Big Data Decision Analytics Research Centre has six areas of focus. They are: Healthcare and Genomics, Earth System Sciences, Social Networks, Economics and Finances, Logistics and Supply Chain Management, and Digital Learning.

Its ongoing projects include ‘Air Pollution and Health’, which is undertaken by an interdisciplinary research team from the Faculty of Engineering, the Faculty of Social Science and the School of Public Health and Primary Care. A project completed by the centre scrutinizes cardiovascular mortality in hypertensive patients who were newly prescribed perindopril versus those prescribed Lisinopril. It was a five-year cohort study involving 15,622 subjects.





The University's research undertakings are solidly grounded in thorough data collection, well substantiated observations, and research methodologies beyond reproach, but the flutter of the imagination is never far away. It could be present in the conceptualization of an idea or the bringing of an idea to fruition. If knowledge is the bread and butter of research, imagination gives it wings. 🦋

# Thirteenth Honorary Fellowship Conferment Ceremony



Mr. Chan Chun-wing Terence



Mr. Chu En-yue David



Dr. Koo Ti-hua



Mr. Lam Wing-tak Bill

CUHK held its Thirteenth Honorary Fellowship Conferment Ceremony on 12 May. Seven distinguished persons closely associated with the University were conferred Honorary Fellowships in recognition of their contributions to the University and the community.

## Mr. Chan Chun-wing Terence

Mr. Chan served the University for 23 years. He assumed the position of Bursar in 1996 and introduced a new management philosophy to the Bursary. He changed the Chinese name for the Bursary, to one that reflects the nature of its work more appropriately. He also changed the office from an accounting office to a strategic financial hub of the University. Mr. Chan helped the Bursary to overcome several unprecedented challenges, including reduction in government funding, and played an important part in building up a healthy financial reserve for the University.

## Mr. Chu En-yue David

Mr. Chu, a prominent industrialist and philanthropist, is the founder and Managing Director of Regatex Manufacturers, Guangzhou Likang Garment Co. Ltd. and Suzhou Liqiang Garment Co. Ltd. He has provided financial aid for

students from Hong Kong and the mainland to pursue education through the C.W. Chu Foundation founded by his late father Dr. Chu Ching-wen. Mr. Chu has made generous donations to support the development of the C.W. Chu College. He has served as a member of the Planning Committee for the College and is currently chairman of the College's Committee of Overseers.

## Dr. Koo Ti-hua

Dr. Koo is an eminent entrepreneur, who founded the multinational business enterprise Novelact Limited. He is also a great Kunqu performer who is devoted to promoting the art. He has published numerous books and produced DVDs as well as established the Koo Ti Hua Foundation for the Promotion of Kunqu Opera. Dr. Koo supported the Chinese Music Archive of the Department of Music of CUHK to publish a book on traditional Chinese music, and he organized, sponsored and performed in various events promoting Chinese opera.

## Mr. Lam Wing-tak Bill

Mr. Lam is the Chief Executive Director and Executive Director of Pacific Textiles Holdings Limited. Graduating with a degree of Bachelor of Business Administration from CUHK, he has been a



Dr. Leung Fung-yee Anita



Dr. Wang Chi



Dr. Wong Kwai-lam

staunch supporter of his alma mater and a member of the Board of Trustees of New Asia College since 2008. In addition to supporting numerous scholarships, exchange and internship programmes, Mr. Lam has made magnanimous donations of key development projects to the College. He is also an active alumnus who helped organize several 50th anniversary alumni celebratory events.

**Dr. Leung Fung-yee Anita**

Dr. Leung is the founder of Qin Jia Yuan Media Services Company Limited. She is a renowned and prolific novelist with over 100 publications, several of which were adapted into TV dramas and movies. Dr. Leung has served as a member of the Board of Trustees of Chung Chi College, chairman of the Committee of Overseers of Lee Woo Sing College and a member of the CUHK 50th Anniversary Celebration Organizing Committee. She has made generous donations in support of the activities of the University and the Colleges, and the establishment of numerous scholarships.

**Dr. Wang Chi**

Dr. Wang, former University Librarian of CUHK, has been working at the Library of Congress in the US for nearly 40 years. During his time as the Chinese

Section Chief, the Chinese collection expanded from 300,000 to over one million volumes. Dr. Wang has devoted significant effort to promoting greater dialogue and understanding between the US and China. He helped the US Department of State to establish a liaison office in Beijing. He is one of the founders of the National Committee on US-China Relations and is currently the President of the US-China Policy Foundation.

**Dr. Wong Kwai-lam**

An eminent investment banker, Dr. Wong is currently the chairman of IncitAdv Consultants Limited. He has over 30 years of experience in the commercial and investment banking industry. Graduating with a degree of Bachelor of Arts from CUHK in 1972, Dr. Wong has given ardent support to his alma mater. He is the vice-chairman of the Board of Trustees of New Asia College and a member of the Taskforce on Private Teaching Hospital. He generously supported the establishment of exchange scholarships. 📖

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Citations of the honorary fellows can be viewed at [www.cpr.cuhk.edu.hk/resources/press/pdf/5370556a3c62e.pdf](http://www.cpr.cuhk.edu.hk/resources/press/pdf/5370556a3c62e.pdf)

# Donning White Coats to Pledge Medical Professionalism





The Faculty of Medicine and the School of Chinese Medicine hosted their first White Coat Ceremonies in 2014–15 for about 300 medical and Chinese medicine freshmen. The students took the oath to uphold the highest professionalism, accountability, responsibility and integrity.

The inaugural White Coat Ceremony for medical students was held on 6 September (top left). Over 200 newly admitted medical students, under the witness of their parents, friends and teachers, were conferred white coats which represent their entrance into the medical profession. Prof. **Joseph J.Y. Sung**, Vice-Chancellor of CUHK and Mok Hing Yiu Professor of Medicine, said the ceremony signified a turning point in the students' life, 'When you put on your white coat for the first time, you become a different person. You are no longer simply a student. You are a future doctor, joining the ranks of a noble profession that will shape your perspective, your principles and your sense of value for the rest of your days.'

Led by Prof. **Francis Chan** (centre, left), Dean of the Faculty of Medicine, the students took the oath and committed to maintaining the highest standards of professional conduct to care for patients and to contribute to society. Professor Chan hoped the students would bear in mind the words—'practice with integrity, honesty, respect and compassion' as these are the essential qualities of a medical practitioner.

During the ceremony for the Chinese medicine freshmen on 24 September (top right), the officiating guests presented white coats and wrist-cushions to the 61 freshmen, and the students pledged to confirm their untiring pursuit of knowledge, observance of the code of ethics and professional conduct, and commitment to the community.

In his opening remarks, Dr. **Ko Wing-man** (6th right), Secretary for Food and Health, HKSAR Government, said that medical students are different from other university students as they are required not only to develop independent and critical thinking, but also to shoulder the important responsibilities of a doctor. He encouraged students to always act in the best interest of their patients, and to uphold the highest professionalism, accountability, responsibility and integrity. Prof. **Leung Wing-nang Albert** (2nd right), Director of the School of Chinese Medicine, encouraged students to persistently maintain professional attitudes and behaviours.

By accepting the white coat, a symbol of the medical profession's importance to the community, students make a solemn pledge to accept the responsibilities of being medical students. 📷

# Vigilance Against Diabetes



CUHK diabetes research team

## Debunking Common Misconceptions about Diabetes

Diabetes is generally associated with old age and being overweight. A research conducted by the Hong Kong Institute of Diabetes and Obesity at the Chinese University reveals that people of young age and normal body weight may also be at risk of having diabetes. Dr. **Wing-ye So** (1st left, front row), Honorary Clinical Associate Professor of the institute, called for members of the public to closely

monitor their blood glucose level. 'Regular checkup is also important to allow early diagnosis and timely treatment within the 5-Year golden period.'

The institute analysed 10,000 diabetes cases from 1995 to 2009. Results showed that 20% of cases are young-onset, with an average onset age of 30. Among them, 30% have normal body weight.

The number of diabetes patients in Hong Kong has experienced a sharp increase to one in 10 in the population. Dr. **Andrea O.Y. Luk**, Associate

### Latest WHO data shows that:

- 347 million people worldwide have diabetes
- In 2012, an estimated 1.5 million deaths were directly caused by diabetes
- WHO projects that diabetes will be the 7th leading cause of death in 2030

Professor of the institute remarked, 'Family history of diabetes and personal lifestyle are important risk factors of the disease. About 50% to 60% of young-onset patients have immediate family history. Rapid lifestyle changes, uncontrolled diet and lack of physical exercise all account for the rising prevalence of diabetes among the young.' It is projected that young-onset diabetes cases will double by 2030.

According to Prof. **Juliana C.N. Chan** (3rd left, front row), Professor of Medicine and Therapeutics and Founding Director of the institute, 'About 50% of young people with diabetes have high blood pressure and 75% have high cholesterol level. When compared to older-onset diabetes, young-onset diabetes is associated with 48% increased risk of cardiovascular disease and 35% increased risk of kidney disease.' Diabetes is a chronic disease without obvious symptoms at early stage. Complications of the disease will cause irreversible damage to the body. Regular checkup is important to allow early diagnosis and timely treatment. The latter includes blood glucose control, emotional management and medication, and is crucial for reducing the risk of complications such as blindness, kidney failure, diabetic leg amputation and most cancers.

Led by Professor Chan, the CUHK diabetes research team has been engaged in research on diabetes for over 20 years and developed comprehensive assessment. The institute was founded in 2005 and has since provided affordable assessment service for the community through its Yao Chung Kit Diabetes Assessment Centre for over 15,000 people.

### Advocating New Approach for Diabetes Care in China

Besides serving Hong Kong, the institute also attends to the diabetes management in China. It has engaged in a recent collaboration with the Shanghai Jiao Tong University School of Medicine and The Third Affiliated Hospital of Sun Yat-sen University to research on the future diabetes scenario in China.

Ageing population, dietary changes, reduced physical activity, and exceptionally high rates of smoking have contributed to the diabetes epidemic in China. In 1980, less than 1% of adults had diabetes. It had increased to almost 12% (113.9 million adults) by 2010. Latest estimates indicate that around half of the Chinese adults have prediabetes. Prof. **Ronald C.W. MA** (2nd left, front row) of the institute pointed out that the potential economic and health burden associated with this epidemic is very alarming, 'In 1993, the cost of diabetes treatment in China was 2.2 billion RMB. The projected cost for 2030 is 360 billion RMB.' The findings have recently been published in *The Lancet Diabetes & Endocrinology*.

The study further pointed out that Chinese people are particularly susceptible to type 2 diabetes compared to Caucasians, and tend to develop the disease at a much lower body mass index (BMI). The average BMI of Chinese patients with diabetes is 25kg/m<sup>2</sup>, compared with 30kg/m<sup>2</sup> in non-Asians.

Prof. Juliana C.N. Chan remarked, 'While we await the results of long-term strategies from the China National Plan for Non-Communicable Disease Prevention and Treatment (2012–15) including tobacco control and universal screening for gestational diabetes, we advocate the use of a targeted proactive approach to identify people at high risk of diabetes for prevention, and private-public community partnerships that make care more accessible, sustainable, and affordable via registry, empowerment, and community support.' 

# Yao Ling Sun Professor of Architecture Shares Quest for 'Right' Answers

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Prof. **Ng Yan-yung Edward** delivered his inaugural lecture on 21 October 2014 as Yao Ling Sun Professor of Architecture. In the lecture entitled 'The Right Is To Be Done', he revisited his journey of the past 15 years, with the aim of finding an answer to the question 'What should be done to improve lives?'

Professor Ng remembered very well how Prof. **Peter Tregenza**, who taught him lighting design at the University of Nottingham, put forth the question 'What should be done?' when showing the poor living conditions of the British people after World War II.

When Professor Ng returned to Hong Kong in 1999, he was surprised to find that many people still lived in poor and over-crowded conditions, without a suitable amount of daylight and proper air ventilation. Following in his teacher's footsteps, he established an International Daylight Monitoring Station atop the water tower of New Asia College and formulated guidelines for daylighting design for the buildings of Hong Kong.

After the outbreak of SARS in 2003, it became known that over-crowded urban conditions and lack of daylight and air ventilation exacerbated the epidemic. He was invited by the Planning Department of the HKSAR Government to look into the issue. The result was the Air Ventilation Assessment (AVA) methodology that he completed in 2006. His recommendations were adopted by the Government and all governmental projects now have to be assessed by the AVA system, including the redevelopment of what used to be Kai Tak Airport and the design of the new Government Headquarters.

After the AVA project, Professor Ng was commissioned by the Government to conduct an indepth study on Hong Kong to achieve better urban planning. He completed the study in 2012 and produced the urban climatic map. He said, 'I'm confident that we now have a better analytic tool to design our city better and to improve lives.' Professor Ng and his team were then invited by various cities in the world, including Singapore, Ho Chi Minh City and Kaohsiung, to conduct studies to improve their urban environments.

Recently during his travels, Professor Ng was saddened by the lives of wretched children living in poor and remote villages without electricity, running water, and access to modern amenities. These youngsters do not have knowledge of the outside world and their future seems bleak. Professor Ng initiated the 'One University, One village' rural sustainable development assistance programme. He said, 'I firmly believe that if we from the universities cannot change lives for the better, we're not doing what's right. I don't believe that with the knowledge, resources, people and talent of a university, we cannot make a difference to the lives of people living in a village.' Together with teachers and students from Peking University, Stanford, Cambridge, and Kunming University of Science and Technology, Professor Ng set out to improve the livelihood of rural villages and bring villagers a better future. 🌱

# The Best and the Brightest



## CUHK Joins Top Nuclear Research Team of CERN

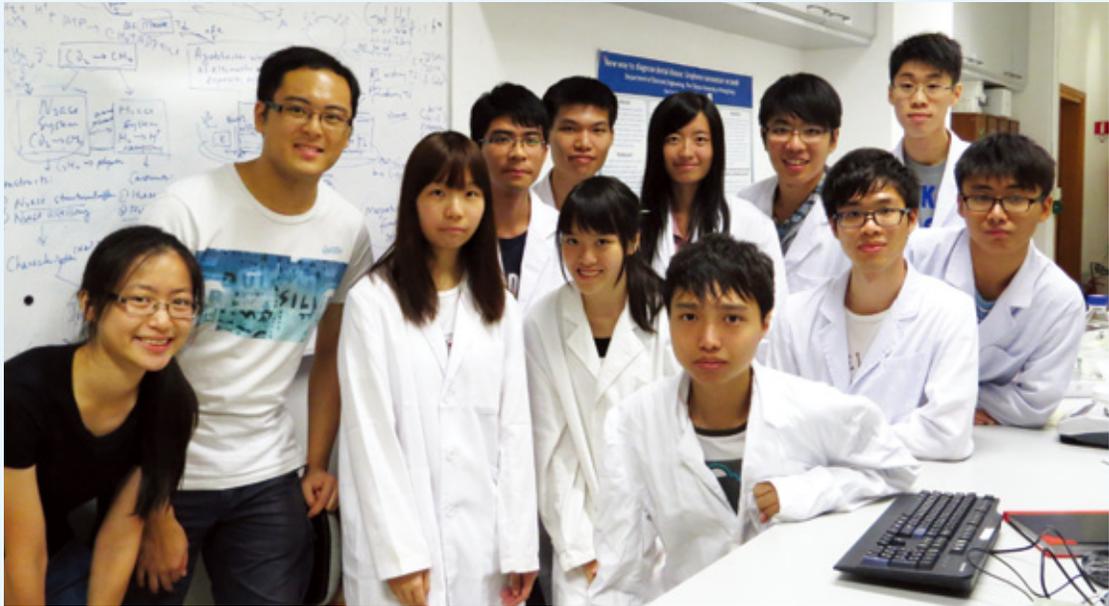
A team of physicists from Hong Kong led by Prof. Chu Ming-chung (1st right), Department of Physics, CUHK, has joined one of the most prestigious physics experiments in the world—the ATLAS (A Toroidal LHC Apparatus) Collaboration under the European Organization for Nuclear Research (CERN). Other than Professor Chu, members from CUHK included Luis Flores Castillo, assistant professor in the Department of Physics, two undergraduate students Tam Pok-ho (2nd left) and Chow Yun-sang (3rd left), two postgraduate students Tsui Ka-ming (3rd right) and Lu Haonan (1st left), and two research assistants Kwan Kin-keung and Chan Yat-long (2nd right). They worked as interns at CERN in Switzerland during the period from May to November 2014.

CERN is one of the world's largest and most respected centres for scientific research and co-discovered the Higgs boson aka the 'God Particle'.

## Fresh Graduates Receive French Scholarships



Chan Hoi-lun Lune (centre), majoring in Cultural Studies, has been awarded the Studialis Group Graduate Program Scholarship to pursue a master's degree in contemporary art: sales, display & collecting, at the Institut d'Études Supérieures des Arts (IESA) in Paris in 2014–15. In the same academic year, Lam Hoi-ming (left), a physics student, is going to read the two-year Erasmus Mundus MSc in marine environment and resources in Universités de Bordeaux 1 with financial support from the Alexandre Yersin Scholarship.



## Genetic Engineering Team Wins Gold in iGEM

A genetic engineering team formed by 10 CUHK undergraduate students of science and engineering participated in the International Genetically Engineered Machine (iGEM) 2014 Giant Jamboree held in Boston this fall. They competed with 243 teams and walked away with a gold medal.

The winning project was named ABCDE (AzotoBacter vinelandii Cluster-transformable & Deoxygenated protein Expression system). *Azotobacter vinelandii* is a bacterium that naturally exists in soil. By mutating its gene, the CUHK team developed an intracellular anaerobic protein expression system, in which different oxygen sensitive proteins or enzymes are able to function. By adding remodelled nitrogenase and hydrogenase, the bacteria can covert carbon dioxide into methane, which can be used as a biofuel, and other carbon compounds in a natural aerobic environment.

## Medical Student Awarded Runner-up for Neurobiology Prize

With research on synaptic connections in the neocortex, Dr. Ko Ho Owen, Year 5 medical student, is selected as one of the runners-up in this year's Eppendorf & *Science* Prize for neurobiology.



Being the first Hong Kong scientist to snatch this honour, Owen's winning entry concluding his research achievement has been published in the prestigious scientific journal *Science*.

Eppendorf & *Science* Prize for Neurobiology, established in 2002, is a global prize awarded annually to young scientists below age 35 for the most outstanding neurobiological research based on methods of molecular and cell biology

Owen's research provides experimental ground for scientists to comprehend how the brain functions. By investigating the functionality of each neuron in brain and their connectivity, he hopes to find ways to fix the malfunction whenever aroused.



## Engineering Students Recognized for Creativity

An outstanding team comprising Ting Sin-hang (5th right), Yeung Chi-ling (3rd right), Evelyn Julipalas (2nd right), Chan Chung-ho (5th left) and Cheung Kai-hung (3rd left) from the Department of Mechanical and Automation Engineering won the championship of the third Greater China Design Competition with their innovative and robust material transporter. Hosted by the Institution of Mechanical Engineers (North East Asia Region), the competition was held in the South China University of Technology, Guangzhou, on 22 and 23 March.



## CUHK Team Shines in Shakespeare Festival

CUHK beat 11 teams from mainland China, Taiwan, Macau, and Hong Kong universities to become the winner in the 10th Chinese Universities Shakespeare Festival Performance finals held from 26 to 28 May. Jocelyn Choi (left), who played Lady Capulet in *Romeo and Juliet*, was awarded outstanding actress. The festival was co-organized by the Department of English and the Office of the Arts Administrator.



## CUHK Rowers Clinch 13th Championship in a Row

Organized by the committee of the Hong Kong Universities Rowing Championships, the 'Jackie Chan Challenge Cup Hong Kong Universities Rowing Championships 2014' was held on 16 and 17 August at Shatin Rowing Centre.

CUHK rowers participated in 11 events, winning four golds, five silvers and three bronzes. The CUHK team also captured the men's overall and women's overall championships, and bagged the overall championship for the 13th consecutive year.



## National Universities Badminton Championship

The University Badminton Team took part in the 18th National Universities Badminton Championship at Beijing Technology University from 5 to 10 August. The event attracted over 900 athletes from 94 tertiary institutions from all over China, including the CUHK team. The CUHK ladies' team secured third place while the men's team finished 13th in team competitions. Lam Pok-fung (2nd left) and Lam Suet-ting (2nd right) won gold in Division A mixed doubles. 🏆

# NEWS *in Brief*

## APPOINTMENTS

### New/Reappointed Council Members

- Ms. Lina H.Y. Yan (right) has been elected by the Board of Trustees of United College as a Council member, succeeding Mr. Anthony Y.C. Yeh, for three years from 25 August 2014.
- Mr. Hamen S.H. Fan has been re-elected by the Board of Trustees of Shaw College as a Council member for three years from 10 September 2014.
- Dr. Chan Chi-sun has been re-elected by the Convocation, as a Council member for three years from 1 September 2014, by virtue of his capacity as chairman of the Convocation.



### New Dean of Graduate School

Prof. Lutz-Christian Wolff, Professor of Law, has been appointed as Dean of the Graduate School on a concurrent basis for a period of three years with effect from 1 September 2014.

### New Faculty Deans

- The University appointed Prof. Chan Ka-lok (left) as Dean of Business Administration with effect from 4 November 2014.
- The University appointed Prof. Chiu Chi-yue (right) as Dean of Social Science with effect from 11 November 2014.



### Reappointment of College Head/Master

- Prof. Chan Chi-fai Andrew, Professor in the Department of Marketing, has been reappointed as Head of Shaw College for a further period of three years from 1 July 2014.
- Prof. Sun Sai-ming Samuel, Research Professor of Biology in the School of Life Sciences, has been reappointed as Master of S.H. Ho College for a further period of two years from 1 August 2014.

### Joseph Sung Named Hong Kong Fulbright Distinguished Scholar

Prof. Joseph J.Y. Sung (left), Vice-Chancellor and Mok Hing Yiu Professor of Medicine, has been awarded the 2014 Hong Kong Fulbright Distinguished Scholar Award and will make a lecture tour of major US universities.



The Fulbright Program is the flagship international education exchange programme run by the US Government. It operates in more than 155 countries worldwide and has provided approximately 310,000 participants with the opportunity to study, teach, or conduct research in each other's countries. The award is bestowed on an eminent scholar every year to foster academic exchange between Hong Kong and the US.



### Fanny Cheung Honoured for Distinguished Contributions to Psychology

Prof. Fanny M.C. Cheung, Pro-Vice-Chancellor and Choh-Ming Li Professor of Psychology of CUHK, was presented the 2014 Award for Distinguished Scientific Contributions to the International Advancement of Applied Psychology by the International Association of Applied Psychology (IAAP) at the International Congress of Applied Psychology held in Paris. This is the first time an Asian psychologist has won this quadrennial award. So far, there have been a total of 10 award recipients.

### Wang Jun Wins Neural Networks Pioneer Award

Prof. Wang Jun (left) from the Faculty of Engineering received the Neural Networks Pioneer Award for his outstanding achievements in neurodynamic optimization in the biennial IEEE World Congress on Computational Intelligence held in Beijing from 6 to 11 July. Started



in 1991, the award is considered the highest honour in the field of neural networks. An IEEE fellow and editor-in-chief of the IEEE *Transactions on Cybernetics*, Professor Wang is the third Asian to receive this honour.

## HONOURS AND RECOGNITION

### CUHK Green Efforts Widely Recognized

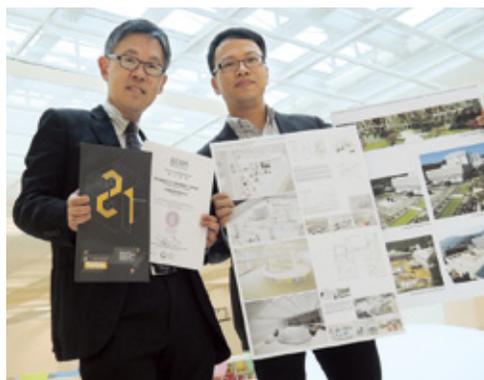


CUHK was honoured for the second time with the Gold Award for the Public Organizations and Utilities Sector of the Hong Kong Awards for Environmental Excellence (HKAEE). With a participation of close to 900 institutions, the competition held its award ceremony on 2 May.

The key factors of the assessment criteria are green leadership, programme and performance, and partner synergy. CUHK staff and students have made remarkable achievements in energy conservation, water conservation, waste reduction, ecology preservation and environmental improvement, and collaborated closely with suppliers and canteens in green purchasing, promotion of a low-carbon diet and reduction of food waste. Apart from its all-out efforts on campus, CUHK reaches out to the community to raise awareness of sustainability.

### University Library Wins Interior Design Award

The University Library was awarded the Hong Kong Institute of Architects Annual Awards 2013: Special Architectural Award—Architectural Interior for its spatial re-organization project.



The University Library underwent structural extension from 2009 to 2012. It's once dark basement was turned into a 2,500m<sup>2</sup>, colourful Learning Garden, with lights coming through the glass ceiling under the pool of the Roman-style garden 'Forum'. There is also an s-shaped table featuring different heights and widths along its length to serve different functions.

## Fine Arts Graduates Recognized for Achievements



A number of graduates from the Department of Fine Arts were bestowed accolades in art for their remarkable achievements. Mr. Wong Sau-ping Adam (left), fine arts graduate, was awarded the Best New Director in the Hong Kong Film Awards with his film *The Way We Dance*. He also won the Best Artist (Film) in the Hong Kong Arts Development Awards 2013 organized by the Hong Kong Arts Development Council. Other fine arts graduates honoured were Mr. Lam Tung-pang (right) (Best Artist: Visual Arts) and Ms. Au Hoi-lam (bottom right) (Award for Young Artist: Visual Arts).



Mr. Siu Wai-hang, graduate of the Master of Fine Arts programme, won the WYNG Masters Award with his photo series 'The Roadsider', which features pictures of roadside plants. With the theme 'Air', the competition was aimed at raising public awareness of social issues through photography.



## Architecture Alumna Honoured for Innovative Design

The 'Art Community': Revitalization Project at Mallory Street/ Burrows Street, Wan Chai (currently named 'Comix Home Base'), of which architecture alumna Ms. Karen Kiang was in charge as an architect of Aedas Ltd., received a number of prestigious awards, including the HKIA Medal of the Year of Hong Kong, and Special Architectural Award—Heritage and Adaptive Re-use of the HKIA Annual Awards 2013, as well as the Merit Award of Hong Kong Building (Renovation/Revitalization) Category of Quality Building Award 2014. The Centre of Architectural Heritage Research of School of Architecture, CUHK, is the heritage consultant of the project.

The project is engaged in conserving a rare and intact Tong Lau (Chinese tenement building) ensemble (Grade 2 Historic Building) dating from the 1910s and revitalizing the old district of Wan Chai. By adopting best



The winning project 'Comix Home Base'  
(Photo credit to Winson Ma)

practices in conservation and innovative architectural designs, it has achieved the three key objectives of providing public open space within a tight urban site, preserving historic buildings and upgrading them to meet modern building regulations, and revitalizing them into a community-based arts and cultural centre.

## RESEARCH

### Novel Gene Mutation Causing Spinocerebellar Ataxia Identified

A multi-disciplinary research team led by Prof. H.Y. Edwin Chan (2nd left) of the School of Life Sciences has identified a novel genetic mutation that leads to spinocerebellar ataxia (SCA). The team started their study in 2011. By means



of next-generation sequencing, they first tracked down candidate disease-causing polymorphisms in the patients' genomes. They then confined the SCA mutation to the coiled-coil domain containing the 88C (CCDC88C) gene. The work has been published in the *Journal of Medical Genetics*. The Human Genome Organization Gene Nomenclature Committee also approved the use of 'SCA40' to describe this new type of SCA. This important finding has put Hong Kong on the world map of SCA research, and also shed new light on finding therapeutic directions.

### New Anticoagulant More Effective in Stroke Prevention for Asian Patients with Atrial Fibrillation

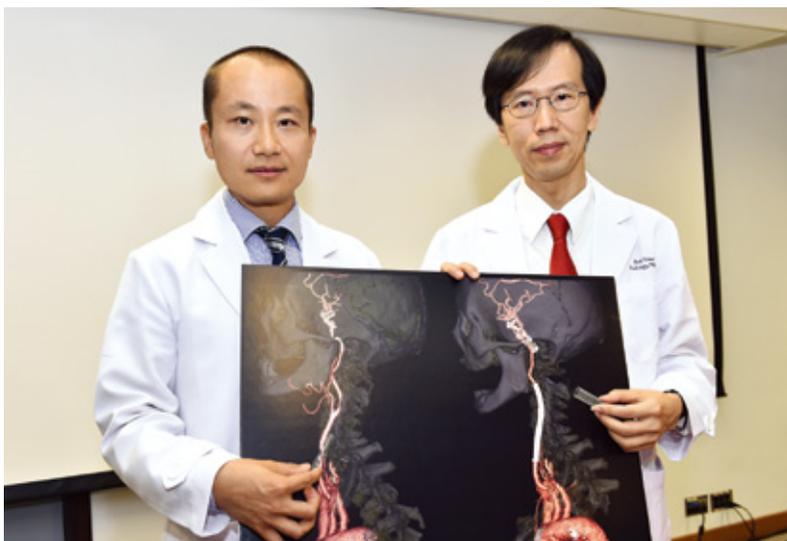


A research led by Prof. Lawrence K.S. Wong (left), Mok Hing Yiu Professor of Medicine and Chief of Neurology, revealed that the new oral anticoagulant, Rivaroxaban, could

reduce the risk of stroke by 32% among Asian patients with atrial fibrillation (AF) but only 11% in non-Asians. It is also more effective than the traditional Warfarin in stroke prevention.

Professor Wong studied the data of 932 Asian patients from mainland China, Hong Kong, Taiwan and South Korea participating in the international large-scale study, ROCKET AF, which involved a total of 14,262 AF patients from 45 countries worldwide. In his study, half of the patients were treated with Rivaroxaban, and the rest were prescribed Warfarin. The results were then compared to those of non-Asian patients.

## Effectiveness of Carotid Angioplasty and Stenting Proven



Dr. Thomas Leung (left), Lee Quo Wei Associate Professor of Neurology, Department of Medicine and Therapeutics, and Prof. Simon Yu of Department of Imaging and Interventional Radiology

A study conducted by the Department of Medicine and Therapeutics and Department of Imaging and Interventional Radiology reveals that head and neck cancer patients receiving radiotherapy are more likely to develop severe vascular diseases and even occlusions, leading to higher risk of stroke.

From October 2006 to April 2010, the Department of Imaging and Interventional Radiology performed Carotid Angioplasty and Stenting (CAS) on 194 patients with carotid stenosis and evaluated them at a four-year follow-up. Among them, 65 were patients with radiation-induced carotid stenosis (RIS) and 129 were cases of atherosclerotic stenosis.



CAS is an image-guided and minimally invasive way of vascular reconstruction, in which the diseased vascular segment is lined with a stent endovascularly and dilated with balloon angioplasty, without a surgical wound at the neck. CAS is found to be an effective treatment for RIS with 100% procedural success rate in 65 studied cases, reducing the annual risk of ipsilateral stroke to 1.2%. It is also proven to be a safe treatment with 1.5% risk of peri-procedural stroke or death. CAS has similar effectiveness on atherosclerotic stenosis cases.

### Ortho-K Lens Can Cause Microbial Keratitis in Children



The Department of Ophthalmology and Visual Sciences has investigated cases in the past 10 years in which patients aged 18 or below were diagnosed with microbial keratitis, a corneal disease that can result in blindness. Results

indicated that about 40% of the cases were directly related to the use of Orthokeratology (Ortho-K) lens—corneal reshaping lenses that are used to control myopia—reflecting the potential risk of using such lenses.

Dr. Alvin L. Young (right), clinical associate professor (honorary) in the department, pointed out that wearing Ortho-K lens might cause abrasions on the corneal epithelial layer, thus weakening the cornea. Bacterial infection in the area of abrasion will occur if proper cleaning and hygiene procedures are not adhered to when using Ortho-K lens. Delayed treatment will lead to irreversible corneal scarring, endophthalmitis, or corneal perforation, resulting in devastating long-term effects.

### Effectiveness of TEA for Treating Liver Cancer Revealed

A research led by Prof. Simon Yu, professor of the Department of Imaging and Interventional Radiology and Director of Vascular & Interventional Radiology Foundation Clinical Science Centre, revealed that, compared with conventional Transarterial chemoembolization (TACE),



the new Transarterial Ethanol Ablation (TEA) is more effective in killing cancer cells and has a 70% chance of completely destroying the tumour. This pioneering research was presented with the Best Paper Award in the Congress of Interventional Oncology in 2013 and published in an international medical journal, *Radiology*, in 2014.

Professor Yu has started his research on the use of TEA for treating liver cancer since 2001. According to his research, treatment-related mortality was 0%. The median overall survival rate of patients after treatment was 26 months, much longer than the six months median overall survival in patients without treatment. To compare the safety and effectiveness of TEA versus TACE, the research team conducted a randomized controlled trial from 2007 to 2012, TEA was found to be more effective in completely eradicating tumour cells within the tumour, compared with TACE.

## HKJC Mega Donation for Teaching Hospital and Institute of Ageing



CUHK has received a donation of HK\$1.3 billion from the Hong Kong Jockey Club (HKJC) Charities Trust for the development of the territory's first not-for-profit and self-financed teaching hospital. This is the largest single donation ever made by the HKJC to a medical project in Hong Kong, and is also the greatest single donation ever received by CUHK. The HKJC will further donate HK\$12 million to support the establishment of the CUHK Jockey Club Institute of Ageing. The club's CADENZA Project director Prof. Jean Woo will serve as the director of the institute. The donation ceremony was held on 21 August.

## Establishment of Yao Ling Sun Professorships

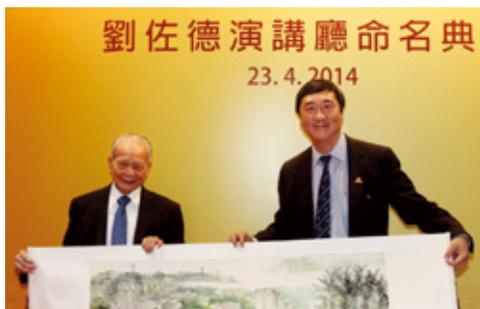
CUHK has received a generous bequest of about HK\$27.6 million from the late Mr. Yao Ling Sun to set up two Yao Ling Sun professorships, one in architecture and one in surgery. A cheque presentation ceremony was held on 23 June to acknowledge the generous support from the Yao family.



CUHK has appointed Prof. Ng Yan-yung Edward and Prof. Lau Yun-wong James to be the first incumbent of the Yao Ling Sun Professor of Architecture and the Yao Ling Sun Professor of Surgery, respectively. The interest generated from the endowment funds will provide additional and stable annual funding to the incumbent professors' research activities in perpetuity.

## ACTIVITIES AND EVENTS

### Naming Ceremony of Lau Chor Tak Lecture Theatre



In appreciation of the generous donations made by Mr. Lau Chor-tak, Hong Kong entrepreneur and philanthropist, CUHK named Lecture Theatre 1 on the ground floor of the Yasumoto International Academic Park 'Lau Chor

Tak Lecture Theatre'. Officiated by Mr. Lau Chor-tak (left) and Prof. Joseph J.Y. Sung (right), Vice-Chancellor of CUHK, the naming ceremony was held on 23 April.

Last year, Mr. Lau Chor-tak made important donations to establish the 'Lau Chor Tak Distinguished Lecture on Global Economics and Finance' at the Institute of Global Economics and Finance (IGEF) of CUHK. This year, Mr. and Mrs. Lau donated to the University another generous gift-in-kind—a commercial property, of which the proceeds will be used to support the development of IGEF.

### Pi Centre Launched to Boost Student Entrepreneurship

CUHK has launched a new university-wide student entrepreneurial initiative—the Pre-incubation Centre (or Pi Centre)—to stimulate creativity and entrepreneurship among students. The centre will offer working space, facilities and mentoring services for free for up to one year to teams of students who are looking to establish companies to commercialize technologies and implement innovative business models both for profit and for the benefit of society. It will collaborate with different regional resources, including investor networks, incubators, business and industrial mentors.



From left: Prof. Fanny Cheung, Pro-Vice-Chancellor; Prof. Joseph J.Y. Sung, Vice-Chancellor; Mr. Allen Yeung, vice-president, Hong Kong Science and Technology Parks; Mr. Mingles Tsoi, project director, Centre for Entrepreneurship, CUHK; and Mr. Kelvin Wu, principal partner, AID Partners Capital Limited; hosting the opening ceremony of the CUHK Pre-incubation Centre.

Students can apply for admission to the Pi Centre by submitting an initial execution plan, which will be assessed by a panel comprising external business and industrial experts.

## Seven Hundred Students Participate in Social Service Programme



In the 2013–14 academic year and this past summer, around 700 CUHK students initiated or participated in over 30 student-led social service projects supported by the I•CARE Social Service Programme. Both the numbers of participants and service projects have doubled over the previous year. Since its launch in 2011, the programme has extended its aid to more than 20,000 disadvantaged individuals. The students have also shown higher spontaneity in observing the needs of the unprivileged and developed solutions or service plans with higher originality and a wider perspective.

## Sculpture Unveiled in Golden Jubilee Alumni Garden

The unveiling ceremony of the sculpture 'The Integration' was held on 20 September at the Golden Jubilee Alumni Garden. Designed and crafted by renowned contemporary sculptor Prof. Wu Weishan, the sculpture was made of bronze and stainless steel to symbolize the founding mission of CUHK: to combine tradition with modernity, and to bring together China and the West. Installed at the centre of the garden, the three-metre tall sculpture takes the form of a young man on one side and an old man on the other, symbolizing the inheritance of knowledge and the spirit of humanity at CUHK.



**Workshop on Medical and Health Care in Hong Kong**



The 2014 Annual Workshop of United College entitled 'Medical & Health Care in Hong Kong—Review and Development' was held on 3 April at Yasumoto International Academic Park, attracting over 500 students and staff. The session of individual speech was followed by an open forum in which the speakers exchanged ideas with the audience on the review and development of medical and health care in Hong Kong.

**Conference on Social Welfare in Chinese Societies**



The International Conference on Social Work, Social Welfare and Social Policy in Chinese Societies: Cross Cultural Experiences was held at CUHK from 28 to 30 May. Around 40 presentations by renowned speakers from overseas countries, Taiwan, mainland China and Hong Kong were conducted to share research output in knowledge development in the fields of social welfare, social policy, as well as social work education and practice in Chinese societies worldwide.

## International Symposium Promotes LGBTI Rights



Local and overseas experts discussed the protection of equal rights of lesbian, gay, bisexual, transgender and intersex (LGBTI) persons in Hong Kong and the European Union (EU) on 29 August at Hong Kong's first ever 'Working Together for an Inclusive Society: LGBTI Rights in Comparative Perspective' International Symposium. Co-organized by the Gender Research Centre of the Hong Kong Institute of Asia Pacific Studies, the Equal Opportunities Commission, and the European Union Office to Hong Kong and Macao, the conference featured the exchange of practical experience of the EU and Hong Kong on introducing legislation to protect LGBTI rights, and its potential impact on business, education, religious organizations and the wider society. Reputed academic and legal professionals from Europe and the US participated as speakers in the conference, including Rev. Duncan Dormor, President and Dean, St. John's College of the University of Cambridge; Prof. Holning Lau, Professor of Law, University of North Carolina School of Law; and Prof. Aileen McColgan, Professor of Human Rights Law, the Dickson Poon School of Law, King's College London.

## South African Minister of Health on Ebola Epidemic



Invited by the Centre for Global Health of the Jockey Club School of Public Health and Primary Care, Dr. Pakishe Aaron Motsoaledi, Minister of Health of the Republic of South Africa, delivered a lecture 'Impact of Ebola Epidemic in South Africa and the African Continent' on 8 September. Dr. Motsoaledi provided in-depth information and an analysis

regarding the situation of the Ebola epidemic, its spread and preventative measures in West Africa, and addressed the indirect impact of Ebola on South Africa and the African continent as a whole.

**Shaw Prize Laureate on Beauty of Math**

Prof. George Lusztig, Shaw Laureate in Mathematical Sciences 2014, spoke on 'Algebraic and Geometric Methods in Representation Theory' at Shaw College on 25 September. Professor Lusztig demonstrated how representation theory of finite groups of



Lie type has evolved in the years since its foundation in 1896. He explained how methods from outside of group theory, such as cohomology theories of algebraic varieties in characteristic  $p$ , have played a key role in progress towards understanding the representations of finite groups of Lie type. Lusztig is Abdun-Nur Professor of Mathematics at the Massachusetts Institute of Technology. He was awarded for weaving algebra, algebraic geometry, and representation theory together to solve old problems and reveal beautiful new connections.

**Christopher A. Pissarides on New Normal in China**



Prof. Sir Christopher A. Pissarides, 2010 Nobel laureate in Economic Sciences, gave a talk on 'The New Normal in China: Lessons from Europe in the Transition to a Post-Industrialized Society' on 16 October at CUHK. He talked about the structural transformation in Europe

during the 20th century and how the social and economic policies made impact on economic development. These issues included welfare support for disadvantaged groups, dealing with inequalities and managing an economic union. Many of these questions are now relevant to China and Professor Pissarides highlighted the lessons that can be learned about such policies and the action that needs to be taken to avoid the mistakes made in many European countries. 





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