



# Knowledge Exchange

The University of Hong Kong

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NEWSLETTER



While HKU has a long tradition of serving the community, Knowledge Exchange (KE) was formally recognized as the third mission of the University in 2009, alongside Teaching and Research. In this issue, Professor John Bacon-Shone, Associate Director of the Knowledge Exchange Office, looks at the KE landscape that has since become a “natural” part of the University’s core activities.

In this issue there are also interesting stories on entrepreneurship – both by our students and academics. They are excellent examples of creativity and passion to serve society, which we want to nurture in every HKU student.

Professor Paul K H Tam  
Vice-President and Pro-Vice-Chancellor (Research) &  
Director, Knowledge Exchange Office

## Maximising Our Impact

Knowledge Exchange (KE) has firmly become the third mission of HKU – it cuts across all disciplines and is the “natural” process in the University’s interactions with the community, from licensing inventions to developing models to address social problems to engaging the public in culture and the humanities. But rewind a few years back and the KE management was facing the challenge of a much narrower focus in the local higher education sector.

The benefits of “Knowledge transfer”, as it is called by the University Grants Committee (UGC), were assessed by both the UGC and most of the institutions based on financial indicators, such as patent numbers, licensing income, contract research and spinoffs. To Professor John Bacon-Shone, who was appointed Associate Director of the KE Office in 2009, this was a very limiting approach.

“Of course if you have a brilliant idea and you patent it, you want to license it as far as possible. But even in the context of a patent, the objective is not always to maximise the amount of money earned. Sometimes you want to maximise the usage of your idea in society. Financial indicators cannot encompass everything that a comprehensive university like HKU does,” he said.

The University took on board this concept and set out to embed KE activities in all disciplines. Each Faculty now has a faculty KE unit led by an Associate Dean with dedicated support staff. Competitive funding for KE projects has been introduced to enable staff members to undertake projects that are underpinned by HKU knowledge and have potential impact on non-academic sectors. KE is also now a factor in the yearly faculty resource allocation process and has been included in academic staff performance reviews.

Since the beginning Professor Bacon-Shone has emphasized that KE must be based on strong research or teaching and learning in HKU, dispelling any scepticism that KE is only for those who do not excel in either.



The result of these measures is that HKU now hosts a rich variety of KE activities. Some are University-wide, such as the HKU Scholars Hub (see page 2) and 3MT Competition (see page 7), while many are initiated by individual academics or faculties and by students. Examples of these projects can be found at the KE website ([www.ke.hku.hk](http://www.ke.hku.hk)). KE Awards have also been introduced since 2011 to reward those that achieved significant impact, which are honoured at the annual award presentation ceremony together with teaching and research awards.

“The value of these awards is that they show people how broad the scope is of KE activities across the University,” Professor Bacon-Shone said. “Indeed, we encourage and recognize impact not only on the economy, but also on society, culture, public policy, health, the environment and quality of life. With persistence we have been making this point to the UGC, and I am glad that in 2012 the UGC adopted some of the non-financial performance indicators that we have been using since 2009. Locally we are probably the first one with a universal, broad strategy across the whole university. I have given talks to other institutions and we are happy to share our experience.”

Some of HKU’s initiatives have been inspired by ideas from universities overseas, such as 3MT from the University of Queensland. “We can learn from others and do a lot more, such as building an entrepreneurial culture on campus,” Professor Bacon-Shone said.

Looking ahead, the University has been closely following the 2014 Research Excellence Framework exercise in the UK, which gave 20% weighting to impact beyond academia. Whether the future research assessment exercise in Hong Kong follows this path, impact will become an important focus of HKU’s KE strategy. [KE](#)

### IN THIS ISSUE...

Welcome Note	1
Front Page	
Maximising Our Impact	1
Features	
A University at Your Fingertips	2
Domestic Helpers Get an Alternative	3
Start it Up with TSSSU@HKU	3
• From Student Club to Start-Up	3
• Matters of the Heart	4
Panorama	
Own the Process	4
Technology Corner	
An Improved Tool for Spinal Cord Monitoring	5
Next Generation Anti-inflammatory Drug	5
Something New and Blue for Display and Lighting Applications	5
Breakthrough in Treating Cancers	5
News in Brief	
Celebrating Knowledge Exchange Achievements 2014	6
KE Videos	6
HKU at InnoCarnival 2014	7
HKU Three Minute Thesis (3MT®) Competition 2015	7
Leeds-HKU Conference: Moving Beyond Research to Engagement and Impact	8

# A University at Your Fingertips

The HKU Scholars Hub puts more than 1,000 scholars and their outputs and expertise within easy reach of potential industry partners, research postgraduates, other academics and the media, enabling them to engage at the most fundamental level in the sharing of knowledge.

With more than 1,554,400 view counts in 2013/14, the Scholars Hub has also become an important tool for academics to raise and sustain their profiles.

It was developed in its current form by David Palmer of the University Libraries, who, with support of Knowledge Exchange (KE) funding, has transformed it from an internal repository into a rich asset for both the University and the community.

“If you’re a world class research institution, you need something like the Scholars Hub. Other top universities in the world have something similar. We are the first university in Hong Kong to provide this kind of visibility and access,” he said.

Every academic at the University has a page that lists their biographical details, publications, patents, external involvements such as journal editorships and advisory committee memberships, KE activities, their responsibilities at the University (such as supervising research postgraduate students), and research grants received.

The information is based on recent information extracted from HKU databases (such as the Research Outputs System and Community Service System) and external sources such as Scopus, the bibliographic database for academic journal articles.

Visitors to the Scholars Hub ([hub.hku.hk](http://hub.hku.hk)) can search for someone based on such things as topic of interest, purpose (to find a publication, a research collaborator, a thesis supervisor or a media commentator) or name of the academic.

For example, a recent search on “housing” turned up 801 publications, seven academics open to research collaboration, 62 theses by research postgraduate students and their named supervisors, and 11 academics willing to speak to the media on this topic.


The Scholars Hub also provides contact details and links to academics’ home pages, although it is often more up to date than those pages because it does not require the academics themselves to find time to input the new data – it does this itself automatically.

“Academics in the University input information on their research outputs, KE activities and external committee memberships, etc. to the central databases as part of their yearly performance review process. The Scholars Hub consolidates vast amount of such information, so the academics get their profiles updated automatically. We consider this to be an extremely useful and valuable tool not only for external users, but also for making research and researchers more visible,” Professor John Bacon-Shone, Associate Director of the Knowledge Exchange Office, said.

Another interesting feature is the bibliometrics data, which show the number of publications indexed and the number of citations per researcher on such sites as Scopus, Web of Science and Google Scholar. There are also data on the number of visits made to a researcher’s page and where those visits came from, by region, country, city and time of visit.

The Scholars Hub has also been configured so that it appears at or near the top of search engines when an academic’s name is being searched. Links from department and faculty pages can help to push it up higher.

Mr Palmer likened the Scholars Hub to a directory, where external parties such as government or industry can find a suitable research expert to take on a project, scholars in other faculties or outside the University can find suitable partners to collaborate with, and potential research postgraduate students can find the most appropriate academic to supervise their thesis.

“One of our objectives with knowledge exchange is to share our research and expertise with the outside community in order to realise mutual benefit. The Scholars Hub is one way that we can do this. It makes information easy to find and consistent across the University.” 

## HOW THE HKU SCHOLARS HUB HELPS THEM

*“The HKU ResearcherPage team did an amazing job. I now have a full account of my publications and other accomplishments online that I can share with anyone who might be interested in my research. Best of all, I know that this information is in the safe hands of trained professionals so I don’t need to worry about updating and can spend more time on research.”*

*Professor Hao Quan,  
Department of Physiology, HKU*

*“An excellent portal for the world to find out about the work of our colleagues, and for us to know about the reach and access to our work.”*

*Professor Nancy Law,  
Faculty of Education, HKU*

*“Thanks again for handling all these issues in the Scholars Hub - which is very time consuming and ever changing.”*

*Dr Angela Leung,  
School of Nursing, HKU*

*“Many thanks for your work! Based on the information of my ResearcherPage, I was chosen as an editor for a new book.”*

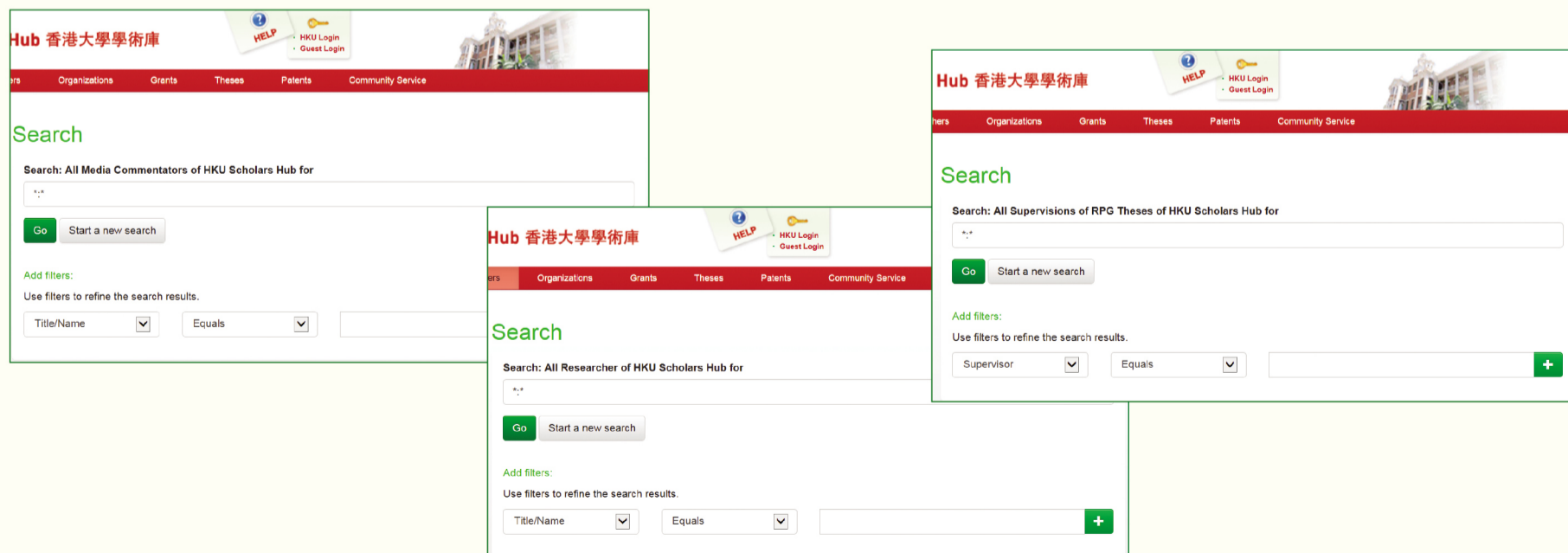
*Researcher in the Department of  
Clinical Oncology, HKU*

*“It’s such a great service and saves such an enormous amount of data entry time.”*

*Dr Iain Doherty, Director,  
Learning and Teaching Innovation at Navitas,  
Sydney, Australia*

*“The HKU Scholars Hub incorporates a very impressive impact management system (one of the best I’ve seen).”*

*Pasquale Loria, Associate Librarian,  
Client Services, University of Western Sydney*



Quick search at the HKU Scholars Hub: find a research collaborator, find a thesis supervisor, or find a media contact

## Domestic Helpers Get an Alternative

Foreign domestic workers in Hong Kong come from developing Asian countries in pursuit of jobs to help support their families at home. Unfortunately, to secure these jobs the workers often have to pay significant and often illegal placement fees, which leave them deep in debt and reluctant to walk away, even if abused by their employers. In Hong Kong alone, foreign domestic workers pay approximately HK\$700,000,000 each year in placement fees.

A new social enterprise co-founded by David Bishop of the Faculty of Business and Economics is seeking to change that situation by removing those placement fees.

“There are a lot of NGOs doing amazing work to help domestic workers after they have problems. I wanted to start a business that would stop the problems from occurring in the first place,” he said.

Working with Tammy Balz, an expert on domestic helper exploitation issues, and Scott Stiles, a recent finance graduate from an American university, Mr Bishop set up the non-profit Fair Employment Agency (FEA). The former Asia Regional CEO of Grameen Foundation, Jennifer Meehan, has also come on board.

FEA’s business model is simple: it follows the

International Labour Organization’s guidelines to never charge a placement fee to the migrant worker. Instead, FEA only charges the employers. This means workers arrive without this burden of debt. The agency looks after paperwork, finds suitable candidates, and arranges interviews between employers and workers. The match between an employer’s needs and worker’s abilities is important because mismatches can end in poor relationships and terminated contracts.

The agency also receives donations which are invested back into its operations. Undergraduate students in Mr Bishop’s social venture internship course help to staff the agency and provide leadership input on such things as business development, marketing and human resources.

“We’re trying to provide a platform that is not only a successful social business but also shows that you don’t have to focus only on the bottom line, because the aim of business is to make society better,” he said. This is strengthened by the fact that FEA does not have to charge employers a premium for its services. FEA’s placement fees are market rate for employers, making it easy for them to choose to do the right thing by working with FEA.

The agency has been targeting multinational corporations in particular, which see benefits for their corporate social responsibility agendas. Governments are also in its sights, and representatives of the Hong Kong, Indonesian and Philippine governments attended the official launch in February this year (the soft launch started last September).



David Bishop (back row, left) and his team together with Legislative Council member Emily Lau and members of local NGOs and United Nations International Labor Organization at the launch event of the Fair Employment Agency in February 2015

The government originally admitted foreign domestic workers in the 1980s to help boost Hong Kong’s economy, particularly to help more women enter the work force. Their plan worked, dramatically increasing dual income families, and contributing significantly to Hong Kong’s economic development. But economists forecast that the need for foreign labour will only increase, as Hong Kong’s population is aging rapidly. “Domestic workers will play an increasingly important role in Hong Kong’s economy over the next twenty years. More migrant labours are needed to fill the looming labour gaps,” Mr Bishop said.

The Fair Employment team hopes to expand FEA’s focus to include other migrant workers in the region and to other countries that import or export labour. “Workers’ rights is something that a lot of governments are looking at and want to see improved as badly as I do. This also represents one of the most serious women’s rights issues in Asia right now. FEA can’t change things by itself but we hope we can initiate change,” he said.



Domestic workers are excited to learn about FEA and its mission.

## Start it Up with TSSSU@HKU

Here’s a golden opportunity for the entrepreneurial-minded to translate their new technologies and inventions into business opportunities. TSSSU@HKU is a new award programme with an annual budget of HK\$4 million, and the HKU edition of the Technology Start-up Support Scheme for Universities (TSSSU) launched by the Innovation and Technology Commission in October 2014. It provides funding support to technology startup companies formed by HKU students, staff and alumni. Applications can be made through the Technology Transfer Office which, for 2014-15, received 29 applications. Eight were awarded TSSSU@HKU funding, including Passber Limited and NovoHeart Limited, who share their stories here.

### FROM STUDENT CLUB TO START-UP

A firm started by university students, for university students, mushrooms into a social network and a multi-billion dollar enterprise. Sound familiar? The success of Facebook may be a distant dream, but Andy Leung and Ivan Law are taking a page from its book to launch their own service to students that has potential for much wider application.

Their startup, Passber (Passport for Membership), aims to make it much easier for clubs to manage their membership, for members to use club services, and for relevant external businesses and firms to reach these members.

It is premised on a simple idea, that people with one common interest may have other common interests, but it has been propelled by more practical concerns.

Andy and Ivan, who met while they were studying for an MSc in E-Commerce and Internet Computing (MEICOM), realised student clubs at HKU relied on volunteers to manage their memberships and had cumbersome, sometimes repetitive procedures. Andy had also worked with the Hong Kong Jockey Club, which has small internal clubs, and knew the problem of membership management was a widespread one.

Their solution is to offer an automated solution through a one-stop app for registering, keeping records, carrying sponsored advertising and enabling members to find other clubs and services.



Andy Leung (right) and Ivan Law (left), founders of Passber

“More advanced organisations will have systems to manage memberships, but a lot of clubs are managed on a volunteer basis and they don’t have money to buy sophisticated software. When volunteers turnover, the new ones have to try to pick up where the others left off. We think our software can benefit them,” Ivan said.

He has a logistical automated software background to complement Andy’s background with user experience (UX) design and community groups. Their MEICOM training, combined with participation in HKU’s Entrepreneurship Academy and as active volunteers, provided them with the additional skills needed to develop and launch their platform.

They also received advice and support from various professors, HKU staff and alumni, such as the Associate Vice-President (Research) of HKU, Professor Paul Cheung, and the Director (Alumni Affairs) of the Development & Alumni Affairs Office, Miss Janet Chung.

Passber is being tested on campus first, but the goal is to reach a wider audience of young people. “First we want to get people connected to our service and using it, and then we want to focus on building a community. Once we have that, Passber can become a main place of communication for users to share photos and talk to each other, and for clubs and SMEs to talk to customers,” Andy said.

## MATTERS OF THE HEART

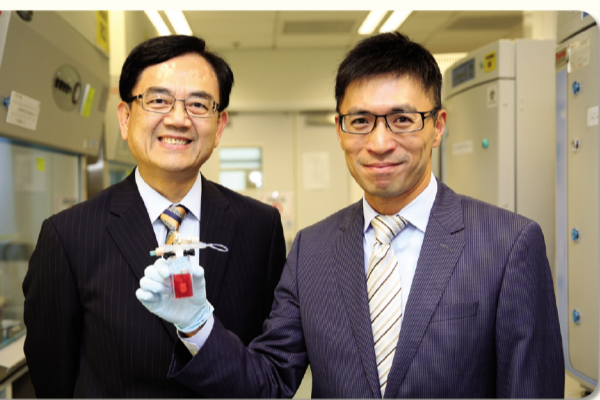
Professor Ronald Li, Founding Director of the Stem Cell & Regenerative Medicine Consortium at HKU, created the world's first genetically engineered human heart cells and the first "mini-heart" grown in the lab. These inventions are amazing in themselves but he has also been engaged in translating his inventions into products that can be used by industry and others.

His start-up, NovoHeart, is a global stem cell biotechnology company that aims to revolutionise drug discovery, reduce patient harm and pioneer next-generation cardiac tissue engineering.

Drug discovery may seem an unexpected target for heart-focused research, but cardiotoxicity is a major reason why all kinds of drug trials fail, including cancer drug trials.

"Our inventions can test drugs far more quickly and without harm to patients," Professor Li said.

The drugs are applied directly to the human heart cells, heart "sheets" of cells, muscle fibres or 3-D mini-hearts that Professor Li has developed with his team, which includes collaborators in the US. Many drug compounds can be tested simultaneously.

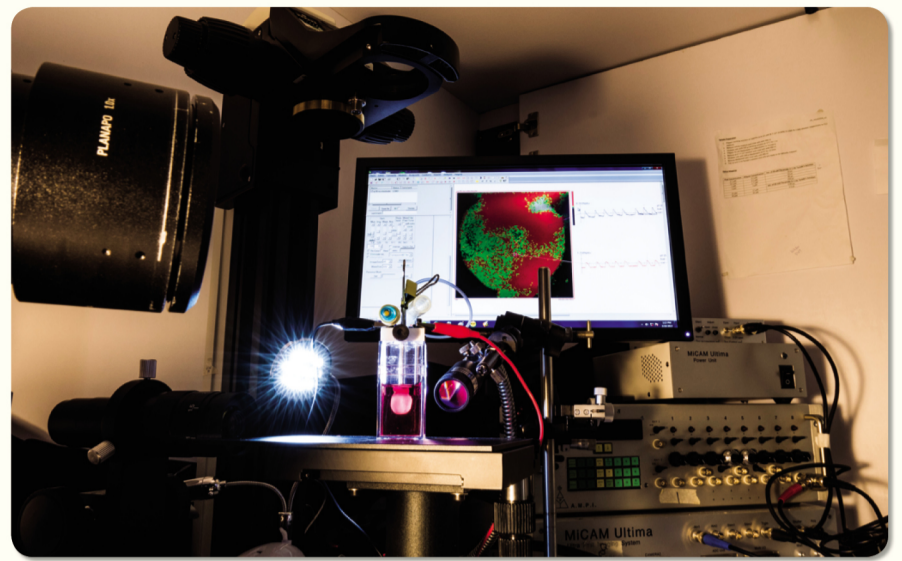


Professor Ronald Li (right) holding the "mini-heart", with Mr Allen Ma, Chief Executive Officer, Hong Kong Science and Technology Parks Corporation (left)

"Before, drug trials had to look at one drug at a time, a process that can take years and cost up to US\$1 billion or more. With synthesised cells and organs, we can now screen 10s of 10,000s of compounds at a time and get rapid feedback.

"If a drug is not working, or alternatively if it is enhancing cardio function, we want to know as early as possible."

His constructs have been developed with funding from the Theme-based Research Scheme, Innovation and



A mini human heart engineered from ventricular heart muscle cells derived from pluripotent stem cells being recorded for ECG signals or 'heart rhythms'. This heart can pump, with its pressure measured, and respond to various neurohormonal inputs and pharmacological stimuli as does our native heart.

Technology Fund and TSSSU@HKU, and support from the Hong Kong Science Park and HKU's Technology Transfer Office.

NovoHeart has also signed a strategic partnership with Pfizer that will take its technology to the next stage, and continue to involve the researchers. "This is not like a cooking recipe that can be re-produced. It also involves know-how, so we will have to stay involved," he said.

The company will also work on developing its constructs into treatments for patients. A transplantable heart from the lab could be developed within the next few years. Patients could also benefit from synthetic "patches" that repair heart damage at an early stage. All of these could be personalised from a simple draw of five millilitres of blood – which, in fact, was the starting point of his mini-heart.

"With what we and our colleagues around the world are doing, there are going to be even more promising developments over the next three years. But the first step is this revolution in drug discovery."

## Panorama

### Own the Process

If you want to do something well, it's a good idea to seek advice from those who do it best. So it was that Professor Peter Y. K. Cheung of Imperial College London was invited to talk at HKU on navigating impact assessment.

Professor Cheung is Head of the Department of Electrical and Electronic Engineering and recently steered his department to a perfect score of 100 per cent on the Impact component of the UK's recent research assessment exercise (Research Excellence Framework 2014). This was the first time Impact beyond academia was a criterion and it carried a weighting of 20%.

"This new component now provides a direct link between research funding and the people who provide the funds – the taxpayers. Before, there was no direct link between what we did and the man on the street or the company next door," he said.

"Secondly, it steers behaviour in such a way that people will think longer term because impact generally comes quite a few years after publication. It encourages us to do things that are ambitious and outward-looking."

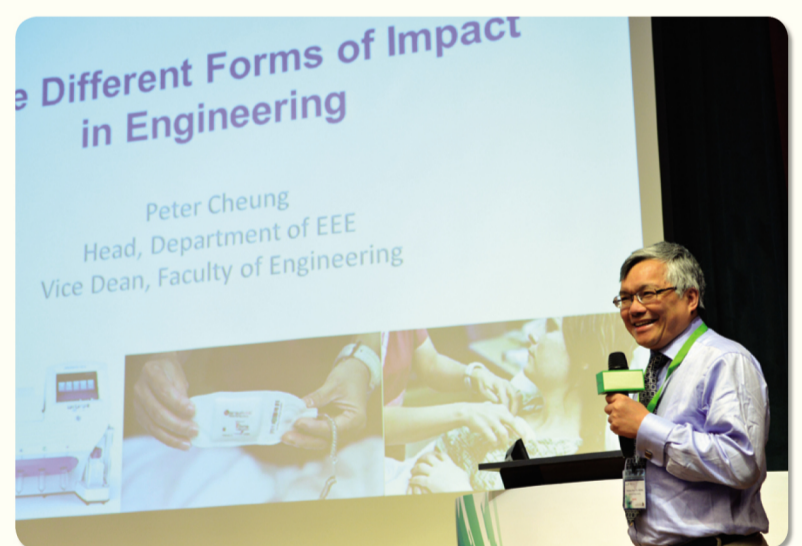
Given that importance, Professor Cheung decided it was imperative that he, as department head, should lead the process. He selected examples of impact from his department's research output, gathered data, and

pored over every word that went into their final submission.

"The head has to care; you cannot have surrogates when it comes to such an important exercise," he said. "This is not merely a summary of the department's work, but a showcase of the best research that it conducts and how to translate that into impact."

He took nothing for granted and backed up every claim of impact with hard facts, such as patents granted, industry prizes, consultancies and memberships on external committees – even the names of people his scholars had worked with, such as clinicians in hospitals and top management in industry.

The five best examples of impact were presented as case studies that were written up by assigned academics, called "case champions", who had not been involved in the research. They were people in the same field, so they could present a convincing, accurate summary of the underpinning research and the impacts to academics and professionals in the field but also make it intelligible to an outsider.



How did he manage to get all the support in the process? Well, because ultimately, the outcome reflected on the department as a whole.

"My advice to others is to always think about ownership. You have to persuade people that they own it. Individuals own their research output. Case champions own their case studies. I own the responsibility to ensure that the publications and case studies we submit are our best possible outputs. If you do ownership well, then you get good results."

## An Improved Tool for Spinal Cord Monitoring

### CLASSIFICATION OF SOMATOSENSORY EVOKED POTENTIAL WAVEFORMS

**Dr HU Yong, Prof LUK Dip Kei, Keith**


Department of Orthopaedics and Traumatology

US Patent No. 8,498,697 granted on July 30, 2013

CN Patent No. ZL201080049651.X granted on December 17, 2014

Somatosensory-evoked potentials (SEPs) tests are performed to determine the electrical responses in the brain when the hands or limbs are touched or stimulated by a small electric pulse. SEPs can be used to monitor the function of somatosensory afferent pathways during surgery for preventing possible surgical injury. However, SEP responses are embedded in a high level of electrical noise caused by background electrical activity and other non-cortical artifacts. It is challenging to obtain a reliable estimation of single-trial SEP responses.

The newly granted patent greatly improves the signal quality, reproducibility, and reliability of automatic spinal cord monitoring. By using both the frequency and temporal property of SEP responses, it can classify collected data samples for the purpose of removing noisy sweeps and produce a clean waveform for monitoring and diagnostics. The neurosurgeon can visually and accurately trace the situation of the patient during surgical treatment.

Compared to the conventional approach, this invention shows high reproducibility between successive measurements and therefore the measurements will become more accurate. In addition, it shortens the time required to monitor patients since only as few as one-tenth the number of stimuli are needed to measure the nerve conductivity per site. This in turn means a shorter anaesthetic for patients and so the secondary risk is also reduced. 

## Something New and Blue for Display and Lighting Applications


### PHOSPHORESCENT MATERIALS, PREPARATIONS AND APPLICATIONS

**Prof CHE Chi Ming, Mr LI Kai**

Department of Chemistry

US Patent No. 8,957,217 granted on February 17, 2015

OLED materials that use charge-neutral blue light are highly desirable because their shorter wavelength can be used to excite other phosphors to produce light of different colors. They are also particularly indispensable in producing white light. However, these blue emissions have, until now, only been achieved using iridium-based complexes and these iridium-based complexes are all held by a small number of companies with strong patent protection. Therefore, there is a need to break this monopoly and to discover new OLED materials using other metal centers such as platinum, palladium and gold.

One step in that direction is this newly-granted patent, which relates to a new class of bis-(NHC carbenes) alkylene ligand Pt(II) OLED materials that emit charge-neutral blue light. The chromaticity of a prototype OLED device fabricated using this material is CIE<sub>xy</sub> (0.16, 0.16). Such color is well within the desirable blue spectral region. Moreover, a maximum brightness of 1,200cd/m<sup>2</sup> and a peak luminous efficiency of 0.5cd/A produced by the prototype device were also recorded. 

## Next Generation Anti-inflammatory Drug

### EFFICIENT ISOLATION AND USE OF CIMIRACEMATE A


**Prof LAU Sik Yin, Allan, Dr YANG Lai Hung**

Department of Paediatrics and Adolescent Medicine

US Patent No. 8,633,332 granted on January 21, 2014

EP Patent No. 2445, 859 granted on September 24, 2014

ShengMa (Cimicifuga) is a traditional Chinese medicine which has been used for centuries to treat inflammation and some pyretic illnesses. The extract of Cimicifuga has been widely studied for its anti-viral properties and its inhibition of histidine, bradykinin, and cyclooxygenase-2 (COX-2) mediated inflammatory responses. The active constituents of Cimicifuga, including cycloartenol-type triterpenoids, cimicifugoside, and some cinnamic acid derivatives, can be found in significant quantities in the roots and rhizomes of Cimicifuga after extraction with alcohol.

One of the active ingredients is cimiracemate A (Cim A), has now been isolated from Shengma and shown to have potent effects to inhibit tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) activity. TNF- $\alpha$  is involved in the progression of various chronic diseases including rheumatoid arthritis and tumorigenesis (tumor growth and cell proliferation). Consequently, Cim A is effective for treating inflammation and also modulating immune responses by inhibiting TNF- $\alpha$  production. 

## Breakthrough in Treating Cancers

### SYNTHESIS OF NOVEL GOLD(III) COMPLEXES CONTAINING N-HETEROCYCLIC CARBENE LIGAND, AND THEIR APPLICATIONS IN CANCER TREATMENT AND THIOL DETECTION


**Prof CHE Chi Ming, Mr ZOU Taotao**

Department of Chemistry

US Patent No. 8,828,984 granted on September 9, 2014

Cisplatin is the first platinum-containing anti-cancer drug and it is used to treat various types of cancers. Its platinum complexes cause crosslinking of DNA and trigger apoptosis (programmed cell death), but they also lead to severe side effects and resistance problems, which has hindered wide application of the drug. Given that cancer is a leading cause of death worldwide, causing seven million deaths every year, there is an urgent need to develop newer chemo agents that have fewer side effects but comparable efficacy to Cisplatin.

New classes of anticancer drugs, such as gold(I)/gold(III) compounds targeting different cellular components, have been developed to tackle cisplatin-related resistance by inducing DNA-independent apoptosis. However, gold(III) compounds are unstable towards glutathione (GSH) in nature while gold(I) compounds quickly undergo a ligand exchanging reaction with physiological thiol, which contribute to bioavailability issues as seen in most other cancer drugs.

Now, with this invention, there is a new class of gold(III) compounds, Au(III)-NHC complexes, which can inhibit cell proliferation and tumor growth in mice models. These complexes have fewer side-effect than Cisplatin but are just as effective. The release of the ligand upon Au(III) to Au(I) reduction also switches on the fluorescence NHC complex, thus serving as thiol probes to detect the tumor location. 

# Celebrating Knowledge Exchange Achievements 2014

The Knowledge Exchange (KE) Awards 2014 were presented at the Award Presentation Ceremony for Excellence in Teaching, Research and Knowledge Exchange 2014, which was held on March 30, 2015 in Loke Yew Hall.

This annual ceremony honours and celebrates the outstanding achievements of our distinguished colleagues in teaching, research, and KE. Ten KE Awards were presented, including nine Faculty KE Awards and one for non-Faculty unit.

The Faculty KE Awards were introduced in 2011 in order to recognize each Faculty's outstanding KE accomplishment that has made demonstrable economic, social or cultural impacts to benefit the community, business/industry, or partner organizations. The KE Award (Non-Faculty Unit) was introduced in 2012 for the independent centres, institutes and units of the University.

Pro-Chancellor, Dr the Honourable Sir David Li Kwok Po, was the Guest of Honour at the Ceremony.

A summary of the awardees' achievements is at [www.hku.hk/award](http://www.hku.hk/award). Their success stories were featured in Issue 7 of this newsletter: <http://www.ke.hku.hk/eng/newsletter/issue7>.



## KE Videos

Watch the following videos on YouTube (<http://www.youtube.com/user/hkukeoffice/videos>), HKU KE website (<http://www.ke.hku.hk/eng/links/video>), or the KEO Facebook (<https://www.facebook.com/hkukeo>):

### 'Using Cryptography to Track Cybercriminals' Dr Kam Pui Chow, Faculty of Engineering

Cybercrime is one of the fastest growing, most lucrative and destructive areas of criminal activity in the world today. Dr Kam Pui Chow, Associate Director of the Center for Information Security and Cryptography at the University, is developing software specifically targeting these activities. He has been working closely with the Hong Kong Customs and Excise Department to help the authorities track down cybercriminals.



### 'Monitoring Light Pollution to Save the Night Sky' Dr Jason Pun, Faculty of Science



Hong Kong has one of the worst light pollution problems in the world. Apart from the energy, health and environmental costs, light pollution has another price – the loss of the night sky. For the last 10 years Dr Jason Pun of the Faculty of Science and his team have been researching the extent of light pollution across Hong Kong, and looking into ways that it can be reduced without the city losing its lustre as the "Pearl of the Orient". He has also been working with the Hong Kong Space Museum and other organizations to reach out to the general public and to school students, educating them of the negative consequences of light pollution. [KE](#)

## HKU at InnoCarnival 2014

The InnoCarnival 2014, organized by the Innovation and Technology Commission (ITC) as a major event of the InnoTech Month 2014, was held from November 1-9, 2014 in the Hong Kong Science Park. The Technology Transfer Office coordinated the University's participation in the InnoCarnival 2014.

The theme of the InnoCarnival 2014 was "Technology for a Better Future". HKU showcased the following 7 projects from the Faculties of Engineering, Medicine and Science at this large-scale event:

- An Integrated Platform for Analysis and Surgical Training of Aneurysms and Dissections in Major Arteries (Professor K W Chow, Department of Mechanical Engineering)
- Bendable Light-emitting Diodes (Dr H W Choi, Department of Electrical and Electronic Engineering)
- Visualizing Chemical Images in Daily Life Samples (Dr Kwan-Ming Ng, Department of Chemistry)
- E-textbook Platform and E-contents for Primary Maths and Secondary Computer Literacy subjects (Dr Wilton Fok, Department of Electrical and Electronic Engineering)

- Tumor Marker (Professor Kwan Man, Department of Surgery)
- New Hope for Oesophageal Cancer Patients (Dr Nikki Lee, Department of Surgery)
- New Generation of Antibiotics for Combating "Superbugs" (Dr Xuechen Li, Department of Chemistry)

The aforementioned project investigators and their teams used various exhibits, interactive demonstrations, specimens, videos and posters to demonstrate the application of their cutting-edge research and inventions to visitors. In addition, there were 2 computer games developed by summer



Explaining new technology to visitors



The HKU pavilion at the InnoCarnival 2014

interns of Versitech, one on the difference between Type I and Type II diabetes, and the other a game of self-examination for the visitors to see what they had learned from the HKU's exhibits. Visitors from all walks of life could gain hands-on experience of the convenience brought by these projects to everyday life and enjoy the fun. The HKU pavilion attracted a lot of visitors, from potential industry partners to school teachers and students as well as families.

According to the ITC, the InnoCarnival 2014 had attracted more than 230,000 visitors, raising public awareness of local inventions. [KE](#)

## HKU Three Minute Thesis (3MT<sup>®</sup>) Competition 2015

The Three Minute Thesis (3MT<sup>®</sup>) Competition 2015 of HKU was successfully held on March 10, 2015. This year 41 research postgraduate (RPG) students participated in the competition, and 10 finalists were shortlisted to compete for 3 prizes decided by the adjudicating panel and the People's Choice Award decided by audience ballot. The Online People's Choice Award was awarded to the finalist who received the most 'LIKE' votes on YouTube after the competition.

The 3MT was developed by The University of Queensland, Australia in 2008. It is an academic competition that challenges RPG students to explain their research within 3 minutes to a general audience. 3MT celebrates the discoveries made by RPG students and encourages them to develop the skills to communicate the importance of their research to the broader community.

Professor Peter Mathieson, President and Vice-Chancellor of HKU, officiated at the final competition. Mr Oscar Chow, Executive Director of Chevalier International Holdings Limited and HKU Court member, and Ms Wendy Gan, Executive Director of Pacific Century Premium Developments and HKU Court member, served on the adjudicating panel as external members. Internal members of the adjudicating panel included Professor John Bacon-Shone, Associate Director of the Knowledge Exchange Office (KEO), who served as the Chairman of the panel, Professor Ying Chan, Director of the Journalism and Media Studies Centre (JMSC), Professor Hongzhe Sun of the Department of Chemistry, Professor Paul Yip of the Department of Social Work and Social Administration, and Professor Ben Young, Associate Dean of the Graduate School.



Awardees, finalists and supervisors at the 3MT Competition with President and Vice-Chancellor Professor Peter Mathieson and members of the adjudicating panel

(From left, back row) Professor Hongzhe Sun, Professor Ben Young, Professor Mee Len Chye (Associate Dean of the Graduate School), Professor Nirmala Rao (Dean of the Graduate School), Mr Oscar Chow, Ms Wendy Gan, Professor Peter Mathieson, Professor John Bacon-Shone, Professor Ying Chan, Professor Paul Cheung (Associate Vice-President), Professor John Carroll, Professor Paul Yip, Dr Kevin Tsia (From left, front row) Ms Liping Wang (finalist), Ms Luqian Wang (finalist), Ms Wai Yan Kong (1<sup>st</sup> Runner-up and winner of the People's Choice Award), Ms Tianyin Liu (Champion), Mr Andy Kam Seng Lau (2<sup>nd</sup> Runner-up), Ms Man Na Mana Yung (Winner of the Online People's Choice Award), Dr Chun Yiu Law (finalist), Mr Xiaohu Wang (finalist), Ms Kara Fleming (finalist), Ms Liguan Li (finalist)

"Having a thousand ideas running in your head yet unable to convey the message clearly is agony. I was sitting among the audience in the past three years watching the 3MT Competition, and I could clearly recall a few 'wow' moments when the contestants just amazed me with the exciting findings and the way they presented the stories. I am glad that I am part of it this year. Compared to what I gained from the whole preparation process and what I learnt from other contestants, what I gave is minimal. Next year, the stage is yours," says Tianyin Liu, Champion of the HKU 3MT 2015.

Congratulations to all the winners of the 3MT Competition 2015. They are:

### Champion

Name Ms Tianyin LIU  
PhD candidate in the Faculty of Social Sciences  
Presentation Title A Tale of Two Chinese Languages  
Primary Supervisor Dr Janet Hui Wen HSIAO

### 1<sup>st</sup> Runner-up and People's Choice Award

Name Ms Wai Yan KONG  
MPhil candidate in the Faculty of Arts  
Presentation Title Britons Only: The 1940 Hong Kong Evacuation  
Primary Supervisor Professor John CARROLL

### 2<sup>nd</sup> Runner-up

Name Mr Andy Kam Seng LAU  
PhD candidate in the Faculty of Engineering  
Presentation Title World's Fastest Microscope – Creating Big-Data for Deciphering Big Unknowns in Biomedicine  
Primary Supervisor Dr Kevin Kin Man TSIA

### Online People's Choice Award

Name Ms Mana Man Na YUNG  
PhD candidate in the Faculty of Science  
Presentation Title Ecotoxicity of Zinc Oxide Nanoparticles in the Aquatic Environment  
Primary Supervisor Professor Kenneth Mei Yee LEUNG

"We want our next-generation researchers to not only excel in cutting-edge research, but also influence the world with their research discoveries and innovations," Professor Peter Mathieson says.

The 3MT Competition was jointly organized by the Graduate School and KEO. The event production was supported by JMSC. Videos on the presentations of the awardees and finalists can be viewed at the HKU 3MT website: <http://www.ke.hku.hk/hku3mt/>. [KE](#)

# Leeds-HKU Conference: Moving Beyond Research to Engagement and Impact

Jointly organized by the University of Leeds and The University of Hong Kong, the “Leeds-HKU Conference: Moving Beyond Research to Engagement and Impact” was successfully held on April 17-18, 2015 at the Wang Gungwu Theatre, The University of Hong Kong.

Distinguished overseas speakers from the University of Leeds, Imperial College London, Isis Innovation of the University of Oxford, King’s College London, Cardiff University, China Europe International Business School (CEIBS) and the University of Surrey joined academics in Hong Kong to discuss and analyze the complexities of shaping an impact agenda in higher education. Speakers who were involved in the UK Research Excellence Framework (REF) 2014, where for the first time “Impact” beyond academia carried a weighting of 20%, shared their first-hand experience in the preparation of impact case studies or in the REF Sub-panels’ assessment process.



Overseas speakers together with representatives of the organizers:  
 (From left, back row) Professor Ian Holliday (HKU), Professor Paul Y. S. Cheung (HKU), Dr Matthew Boswell (University of Leeds), Professor Paul Cooke (Leeds), Professor Christopher Megone (Leeds), Professor Stephen Williamson (University of Surrey), Professor John Bacon-Shone (HKU), Mr Tom Hockaday (Isis Innovation of the University of Oxford)  
 (From left, front row) Professor Claire Honess (Leeds), Professor Peter Y. K. Cheung (Imperial College London), Professor Denise Lievesley (King’s College London), Professor Ole Petersen (Cardiff University), Professor Paul K. H. Tam (HKU), Professor Frank Finlay (Leeds), Dr Alex Bamji (Leeds), Professor Amy Shuen (China Europe International Business School), Dr Laura King (Leeds)

Professor Paul K. H. Tam, Vice-President and Pro-Vice-Chancellor (Research) of The University of Hong Kong, and Professor Frank Finlay, Dean of Arts of the University of Leeds, officiated at the opening ceremony. Presentations and panel discussions at the Conference focused on the following themes:

- Innovative Knowledge Engagement and Sustainable Partnerships
- Articulating and Corroborating Research Impact
- Impact Case Studies as Food for Thought in Shaping the Faculty or Institutional Impact Agenda

- Evaluating Impact of Research Beyond Academia
- Addressing the Unlikely Disciplines in Knowledge Exchange
- What Next for Knowledge Exchange?

Presentations can be viewed at <http://www.ke.hku.hk/events/leeds-hku>.

There was also a video showcase of selected impact projects of the University of Leeds and HKU during the conference. The videos are also available for viewing at the conference website. [KE](#)



## Finding Experts

The **HKU Scholars Hub** is the University’s online expertise directory, which makes HKU researchers and their research visible. It provides an expert finder for businesses, industries, social enterprises, the public sector, and interested student applicants to find HKU experts for contract research, consultancies, and postgraduate student supervision etc. Please visit the HKU Scholars Hub at <http://hub.hku.hk/>.



## Tech Ready

For a complete list of HKU technologies that are currently available, please visit: <http://www.tto.hku.hk>.



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