

# KNOWLEDGE EXCHANGE

HKU produces excellent research in a wide variety of fields and has many talented and accomplished staff and students. By these factors alone, it can make many meaningful contributions to society. But the journey from the campus to the community is not always a given. Our researchers and students need support, guidance and training to develop their capacity and maximise the impact of their work. This is where University policies and investment can make a difference.

HKU regards knowledge exchange (KE) as the engine of impact. We have placed it alongside teaching and research as one of the key areas of the University's work. In 2014-15, we strengthened our institutional and capacity-building support for research translation by bringing technology transfer firmly under the KE umbrella.

HKU has been commercialising its research since 1994 through its business arm, Versitech Ltd. The Technology Transfer Office (TTO) was established in 2006 to provide structured services and support for invention disclosures and intellectual property management. These activities should operate as a subset of KE, but were sometimes seen to be isolated from it. Now, since January 2015, the TTO has been brought under the KE Office to reaffirm that technology transfer is a core function of HKU's KE mission.

The re-organisation has coincided with a ramping up of our technology transfer activities. Earnings from commercialising our intellectual property grew six-fold in 2014-15 over the previous year, to \$21 million. We also launched a fund for start-ups, called TSSSU@HKU (Technology Start-up Support Scheme for Universities at HKU), that is supported by the Government's Innovation and Technology Commission. By autumn 2015, 11 HKU start-ups had been awarded funding.

To develop the entrepreneurial capacity of staff, students and alumni, we launched the DreamCatchers series in May 2015, which attracted more than 1,000 alumni, staff, students and friends of HKU to its kick-off event. Our Entrepreneurship Academy also provides postgraduate students and research staff with training and networking opportunities to develop new ideas and research findings into a business, and in 2015 it admitted undergraduate students for the first time. Over the past three years, more than 400 students and research staff have participated in its sessions.



A group of Boy Scouts are given a tour of HKU's Stephen Hui Geological Museum by Dr Petra Bach (in white top), the museum's curator and lecturer in Earth Sciences.

Technology transfer and entrepreneurship are by no means the whole picture of KE at HKU. The University strongly supports projects whereby staff and students apply their expertise and research to benefit a whole range of people and organisations in the community. The Impact Project Funding Scheme supported 62 projects by staff in 2014–15 on such diverse topics as a web resource for interpreting, public education on rare bone diseases, and a self-help manual for end-of-life care. We also ran impact workshops with overseas universities that are experienced in translating research into impact, including Leeds University, Imperial College, the University of Sydney and the University of Reading.

Impact is one of three critical missions in HKU's Academic Development Plan for 2016–19 (alongside internationalisation and innovation). Our 2014–15 efforts have laid the groundwork and direction. We plan to invigorate entrepreneurship at HKU and enhance the commercialisation of our research. We will also continue to seek new avenues for engaging with the community and ensuring that the full benefits of our research and expertise are realised.



### DreamCatchers Spins its Magic

HKU aims to inspire and nurture innovation and entrepreneurship through DreamCatchers, a new series of initiatives for staff, students, alumni and friends of the University. More than 1,200 delegates attended the DreamCatchers launch in May 2015 which featured 67 speakers, many of them entrepreneurs, including Pony Ma, the Founder, Chairman and CEO of Tencent. Future activities will include forums, mixers, events, courses, training, marketplaces, co-workspaces, funding programmes and an Innovation Commons.

One of the attendees was Ailin Iwan (pictured above with her husband Kenneth), a PhD candidate in the Faculty of Education who previously ran her own company for a year before it closed down. "At the first session the speakers talked about what they did when they were 28. When I was 28, my company went bankrupt and I felt like I was a failure. Yet the speakers and audience members talked a lot about learning from failures. I felt emotional relief because I realised at that moment that many other people failed in business and got back up again. The difference between those who succeed and those who don't may only be the difference between those who are willing to try again and those who aren't." She now plans to set up a non-profit organisation with her husband and a friend. "It may not be as fancy as a start-up or aiming to make a lot of money, but I believe we still need some entrepreneurial spirit to start something out of nothing," she said.

## 70.5 daily news items

✦ A media impact study co-ordinated by the Communications and Public Affairs Office in 2014–15 found on average 70.5 KE-related news items on HKU each day

## \$21 million

✦ Earnings from the commercialisation of HKU's intellectual property were 6 times higher in 2014–15 than the previous year

## 62 KE projects funded

✦ The Impact Project Funding Scheme received 83 proposals, up from 66 in 2013–14 when 44 projects were supported  
✦ Another 39 projects were supported under the Student KE Project Grant Scheme, which is now administered under the Service 100 Fund of the Centre of Development and Resources for Students

## 2.3 million view counts

✦ The HKU Scholars Hub, a searchable engine for discovering research and experts at HKU, has seen view counts of its HKU Researcher Pages rise rapidly, from 1.3 million in 2013–14 to 2.3 million in 2014–15

## 887 contract research projects

✦ The number of active projects has increased in recent years, from 744 in 2011–12 to 887 by 2014–15

## 11 start-ups

✦ The new TSSSU@HKU funding scheme received 55 applications and selected 11, 5 of which are commercialising HKU technologies (see also page 18)

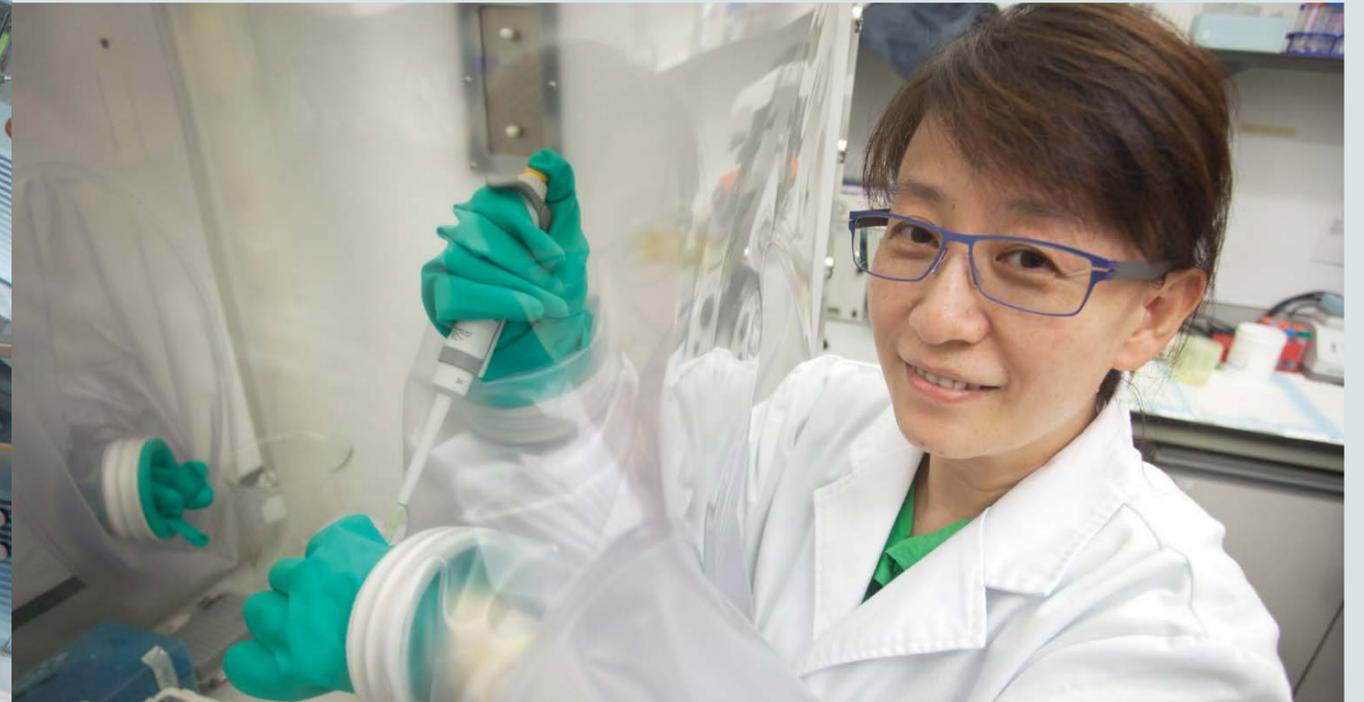


# IMPACT



Translating knowledge and discovery into impact is the University's ultimate aim, but it requires more than good intentions to succeed. HKU has been encouraging and supporting scholars to develop their research findings into impact projects, and to incorporate social responsibility and service into the curriculum. Both strategies will be accelerated in the coming years.

## START-UP TIME FOR TISSUE ENGINEERS



More than a decade spent at the cutting edge of tissue engineering is paying off for Dr Barbara Chan (pictured) of the Department of Mechanical Engineering, who has launched a new start-up with her colleagues, called Living Tissues Co Ltd, to translate their technologies into real applications.

Dr Chan's laboratory has developed four technology platforms and 10 patents, giving rise to innovative cartilage regeneration strategies. Working with small animals, her laboratory has successfully embedded stem cells from the animals' own bone marrow into biomaterials to create cartilage- and bone-like tissues. These were then transplanted to repair the animals' damaged knee joints and showed regeneration outcomes comparable to that of an autograft (grafting tissue from one area of

the body to another in the same individual), which is regarded as the clinical gold standard.

Future demand for this capability is expected to be very high as more people suffer wear and tear to their joints due to longer life spans and sportier lifestyles.

"We have started working with large animal models and we are planning clinical trials with orthopaedic surgeons," Dr Chan said. "We need funding and the right partners to take our results to the next phase of development."

Dr Chan co-founded Living Tissues with two of her former PhD students, Dr Daniel T.K. Chik and Dr Annie H.W. Cheng, and her former colleague Dr Sunny K.W. Cheng. She hoped that apart from translating HKU research to real clinical applications, the company would provide research and development opportunities for students and postdoctoral fellows, and give a boost to the start-up culture at HKU and the development of the biotechnology industry in Hong Kong.





## DOMESTIC WORKERS GET MANY HELPING HANDS



Hong Kong has more than 300,000 foreign domestic workers, who are not eligible for permanent residency and face a host of legal, workplace, social and other issues related to their situation. HKU academics and students across several faculties have been actively trying to improve their circumstances through several initiatives launched in 2014–15:

- The Domestic Workers' Roundtable, organised by the Centre for Comparative and Public Law and the Hong Kong Public Interest Law and Advocacy Society in April 2015, brought together multiple stakeholder groups to discuss critical issues affecting domestic workers. Participants included representatives from the workers' countries of origin, NGOs, groups representing domestic workers, employers and labour rights, academics, law firms, and the private sector. Their sessions were wide-ranging, covering such topics as financial abuse by placement agencies, access to justice and legal enforcement in Hong Kong. The longer-term aim is to establish multi-sector and inter-departmental and inter-governmental working groups to enhance the protection of domestic workers.
- The year-long Domestic Workers Empowerment Project organised by the Centre of Development and Resources for Students involved students in advocating and promoting cultural understanding, inclusion and respect for domestic workers, and equipped students with new knowledge and skills. Sixteen events were organised for more than 5,500 domestic workers, involving more than 100 students. The project culminated in a concert in June that was attended by more than 800 people, including HKU students, alumni, domestic workers, employers, staff, consular representatives and other interested groups.

- The social enterprise, Fair Employment Agency, was co-founded by Mr David Bishop of the School of Business to help domestic workers find employment without having to pay the high fees charged to them by agencies. Business students have also been closely involved in setting up and running the enterprise, providing important learning opportunities for them.
- The Faculty of Dentistry carried out a three-year knowledge exchange project to improve dental health among the 140,000 or so Indonesian domestic helpers, with encouragement from the Indonesian Consul-General. The helpers have been shown how to care not only for their own oral health, but also that of the children and elderly people they often care for.
- The Faculty of Medicine's Emergency Medicine Unit (EMU) organised several activities during the year for domestic helpers, including a book in English and Tagalog on handling acute medical conditions at home and a hands-on session with Year 4 medical students on CPR and choking management skills. The EMU is also in contact with the government about developing a scheme to equip domestic workers with emergency management skills – which could make the difference between life and death for their charges.



## 'GLOCAL' SOLUTION IN VIETNAM



A cross-disciplinary project in Vietnam has not only provided much-needed help to a local community, but a valuable learning experience for Social Sciences and Engineering students.

The Glocal Solutions project was a joint eight-week programme initiated by both faculties to construct a sanitation facility at a secondary school in rural Vietnam and conduct a needs analysis of two local communes on the topics of malnutrition among children under five, child injury prevention, water sanitation and early childhood development. The students worked under the local project management office of World Vision Vietnam.

Ms Jessie Chow of the Faculty of Social Sciences, who oversaw the project with Dr Ryan Wong in the Department of Civil Engineering, outlined the benefits to the local community. "The construction directly improved the sanitary situation of the local secondary school, and the healthy water and sanitation habits and behaviour improved the quality of life of the local students. The needs analysis provided World Vision Vietnam with information for launching new projects and gaining funding for new initiatives," she said.

The benefits also ran deep for the HKU students, who worked in teams of four with a translator and had to figure out how to communicate across cultures and deal with constraints such as lack of electricity.

Kenji Ho Chun-yin, a Year 4 Bachelor of Social Sciences student, and Marcus Yang Zi-yuan, a Year 3 Bachelor of Engineering student, said they were taken aback by the low safety awareness among construction workers and the primitive state of the school's sanitation facility when they arrived. But what had the biggest impact on them was the realisation that while they were there to help the local people, they could not do so without the local people's help.

"Our experiences helped to diminish our egos. Before departure we thought we were going to help people, but when we arrived, we discovered the story was completely the opposite. Most of the time they had to take care of us because of the many communication barriers and cultural differences. It showed us the truth about doing developmental work," Kenji said. Added Marcus: "We are students from a world-famous university. However, without the help from local people, we could achieve nothing with our service project."

## AUTISM ADVOCATE



Dr Carol To of the Division of Speech and Hearing Sciences is both an advocate and example for improving attitudes towards people with autism.

She specialises in research on autism and its particular manifestations in Cantonese speakers, such as monotonous intonation and use of formal speech. Her work is helping to improve diagnosis, but she has been seeking to expand its impact by trying to improve acceptance of individuals with autism in society. The latter effort has started in her own office.



Dr To (pictured above and left) employs two high-functioning staff with autism to do data entry and other tasks related to her research, and she is drawing on their success and her research to write a booklet for universities on how they can benefit from the attention to detail and patience with repetitive work that often characterise individuals with autism.

She has also produced case studies for Hong Kong's Labour Department on successful employment of individuals with autism that were used to promote employment of the disabled; partnered with NGOs who provide employment training for individuals with autism; participated in a Radio Television Hong Kong programme to raise awareness of people with disabilities; and developed ties with universities and organisations in Mainland China to improve understanding of autism there.

Ultimately, she hopes her efforts can improve treatment and reduce discrimination against individuals with autism, which is still very prevalent in both Hong Kong and the Mainland. "This is an area people are becoming more aware of and I hope we can raise the profile further," she said.

## RESOURCES FOR INTERPRETERS



Language is continually evolving, and in a world of rapid technological development and political change, it can be hard for interpreters to keep up. Dr Eva Ng (pictured), of the Translation Programme of the School of Chinese recognised this years ago when she started asking her students to submit new Chinese-English bilingual terms from the news on a weekly basis, which she then fed into a glossary she kept on her website. Now, that glossary is just one click away for interpreters and the general public, too, through a website to promote and support the practice of interpreting.

Dr Ng launched Resources for Interpreting in July 2015 and it has received positive feedback and endorsements from interpreters in Hong Kong and abroad. Its searchable bilingual glossary not only provides translations of the latest words trending in the news (think

'Grexit'), but also words related to everything from business, triads and the courts to culture, social media and new technology.

"I'm a former court interpreter and I know glossary compilation is an indispensable part of the practice of interpreting. Students in my interpreting class often come across terms that they don't know the equivalent of in the target language. It's very important for them to have an extensive vocabulary in both languages that is drawn from daily life," Dr Ng said.

The website, at <http://www.interpreting.hku.hk/>, also contains information on the practice, learning, teaching and research of interpreting, and was developed in collaboration with academics from the University of New South Wales and the Hong Kong Baptist University.

## LITTLE DREAMS AND BIG IDEAS IN CAMBODIA



The Faculty of Architecture has teamed up with a student-initiated charity to build schools and play facilities in Cambodia – a partnership that has seen them involved in four projects to date, with plans to continue in the future.

Project Little Dream (PLD) was founded in 2008 by secondary school students (including several future HKU students) to further education in underprivileged areas around the world. HKU students have been volunteering since the beginning and in 2013 the Faculty became formally involved when Tris Kee (pictured with PLD member Alex Lau), Director of the Community Project Workshop, was brought in as academic adviser to give practical design and construction advice to the students.

The students design prototypes for the schools under Ms Kee's guidance, then help build them in poverty-stricken villages in Cambodia's Takeo province using locally-sourced materials.

Recruitment is open to any Hong Kong university student and about 15–20 HKU students get involved every year. The Knowledge Exchange Fund has supported the project for the past two years.

"Some of the students have experience designing and some don't, but when we go to Cambodia, everyone is a blank slate. They learn to shave wood, lay foundations, do the painting, put windows together, all with guidance from the local contractors – the students learn a great deal from them," Ms Kee said.

"The places we go to do not have clean water or basic education for children, and you see children running around without pants, so you can see there is a need for these facilities. Living in that environment for a few weeks is also a real learning experience for Hong Kong students."

Building maintenance is also part of the architecture programme because, she said, "we wish to give a more holistic architectural approach and don't want to just walk away and let it deteriorate."

Ms Kee said they are now completing the fourth school and will continue to build for Project Little Dream in future. The charity also organises education and healthcare projects. "This is really a collaborative effort – we would not have done it without Project Little Dream and the support of organisations in Cambodia," she said.

