



# ANNUAL REPORT 2014/15

Recurrent Funding for Knowledge Transfer  
in the 2012/13 to 2014/15 Triennium

submitted to  
**University Grants Committee**



香港大學  
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**Table of Contents**

Executive Summary	1
1. Preamble	2
2. Strategic KE Developments in 2014/15	2
2.1 Taking Impact on Board	2
2.1.1 Leeds-HKU Conference: Moving Beyond Research to Engagement and Impact	2
2.1.2 Impact Workshops	2
2.1.3 Impact Case Histories	3
2.2 Strengthening Technology Transfer	4
2.2.1 Reorganization of the Technology Transfer Office	4
2.2.2 Latest Developments of HKU Technologies Transferred: Selected Examples	4
2.2.3 Engaging Industries	5
2.2.4 Promoting HKU Technologies to the Public	6
2.3 Nurturing Entrepreneurship	6
2.3.1 DreamCatchers 2015	6
2.3.2 Entrepreneurship Academy	7
2.3.3 TSSSU@HKU	7
2.4 Turning Knowledge into Actions	8
2.4.1 Impact Project Funding Scheme	8
2.4.2 Student KE Project Grants	8
3. Summary of Achievements in the 2012-15 Triennium	9
3.1 Impact as the Priority Aim	9
3.2 Capacity Building	10
3.3 Knowledge Access	10
3.4 Knowledge Engagement	10
3.5 Broadening KE Opportunities	11
4. Quantitative Indicators	12
5. Looking Ahead	12
Annex I-A: Impact Case History: Fighting High-Tech Crime in Cyberspace	
Annex I-B: Impact Case History: Oral Health Promotion among Indonesian Domestic Workers and Their Employers' Families	
Annex I-C: Impact Case History: A Meaningful Journey of Teaching and Learning of Chinese for Non-Chinese Students: Towards Local, Regional and International Advancement	
Annex I-D: Impact Case History: The Community Legal Information Centre (CLIC) Series	
Annex I-E: Impact Case History: Promoting Ageing-in-Place for Elderly Tenants in Rental Housing Estates of Hong Kong Housing Society	
Annex II: Impact Projects 2014/15	
Annex III: Student KE Projects 2014/15	
Annex IV: KE Awards 2014	
Annex V: Quantitative Indicators	

## Executive Summary

Knowledge Exchange (KE) has become entrenched at The University of Hong Kong. It is closely entwined with our academic endeavours and is part of our value system. The notions that KE can maximize the impact of research and that the higher education sector being the knowledge base of society has a responsibility to contribute to advancement of society have been reiterated by the new senior management of the University.

In the reporting year, we have strengthened our collaboration with overseas institutions that are recognized leaders in KE to learn from their experience in developing the impact agenda. We jointly organized the *Leeds-HKU Conference: Moving Beyond Research to Engagement and Impact* with the University of Leeds in April 2015. Overseas 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 with us and participants from across the UGC sector their first-hand experience in the preparation of impact case studies or in the REF Sub-panels’ assessment process.

Technology transfer has been reaffirmed as a core function of the University under the KE mission. Under the new organizational structure implemented since January 2015, the Knowledge Exchange Office oversees the Technology Transfer Office. We have achieved a record-high level of income from the commercialization of HKU’s intellectual property in 2014/15, with HK\$21M, which is more than 6 times higher than the income in 2013/14.

Great strides have been made towards entrepreneurship development. The DreamCatchers forum, which is HKU’s new entrepreneurship series, providing a hub to inspire and nurture innovation and entrepreneurship, was launched on May 31, 2015. The inaugural event was attended by 1,000 delegates. In addition, TSSSU@HKU, a new funding scheme leveraging on the “Technology Start-up Support Scheme for Universities” (TSSSU) of the Innovation and Technology Commission, was set up to provide support to technology start-ups. A total of 11 new start-up companies were awarded in 2014/15 and five of them are commercializing HKU technologies.

Looking back to the 2012-15 triennium, the University has achieved substantial growth and positive outcomes in KE. Based on the well-defined strategy as set out in the Initial Statement, we have strengthened KE developments at all levels and across all disciplines. KE is incorporated into our strategic development planning; it is recognised in the performance review process of academic staff; and it is a factor in the internal resource allocation for Faculties. KE has become an integral part of every Faculty’s core activities, as evident from the KE webpages under the Faculty websites and the annual Faculty Development Plans. Moreover, there has been strong buy-in from the non-Faculty-based units across the University. We have strengthened the two museums on campus as significant KE organs. Outstanding KE achievements are also celebrated alongside teaching and research at the annual award presentation ceremony. Knowledge access mechanisms such as the HKU Scholars Hub have been enhanced to make HKU research and expertise highly visible and searchable.

Most importantly, more and more academic staff members and students are engaged in KE activities. The UGC’s Knowledge Transfer funding has enabled the University to incentivize and provide support to faculty members to undertake KE projects. Not only has the application number been increasing, but also almost 50% of the proposals each year for the Impact Project Funding Scheme were from new applicants. Of a total of 211 proposals submitted in the past three years, 111 came from new applicants, i.e. 53%.

Student interests in KE projects, entrepreneurship, and communication of research to the broader community are also growing. The student KE project grants had attracted a total of 139 applications in the past three years, involving over 640 students. A total of 85 projects were supported, involving about 470 students. The Entrepreneurship Academy had a total of 421 participants in the past three years. The Three Minute Thesis (3MT) Competition has become an annual event for research postgraduate students, with a total of 114 students having participated in the past three years.

We have made significant progress in making impact the focus of the KE strategy. Articulation of impact has been emphasized through the criteria for KE funding and KE Awards, as well as communication of KE success stories, such as the five impact case histories submitted as part of this report. The impact workshops have become an on-going series to raise awareness of faculty members about the importance of not only understanding and evaluating the impacts arising from their research, but also collecting evidence to corroborate such impacts.

Looking ahead, such efforts relating to the impact focus will continue. The technology transfer function under the KE mission will be enhanced. Entrepreneurship developments are expected to move forward with renewed vigour, with plans being made for an Innovation Commons and a new centre for innovation and entrepreneurship.

## 1. Preamble

The first part of this report gives a highlight of the University's Knowledge Exchange (KE) initiatives in 2014/15, whereas the latter part of the report is a summary of the University's achievements in relation to the proposed goals, strategies and plans set out in the Initial Statement for the 2012-15 triennium. In this report, "KT" is used when referring to the UGC's earmarked funding allocation for Knowledge Transfer for the 2009-12 and 2012-15 trienniums, whereas "KE" is used when referring to HKU's third mission.

## 2. Strategic KE Developments in 2014/15

### 2.1 Taking Impact on Board

Impact is a key element of the University's KE strategy, so it is considered important to develop the capabilities to analyse and articulate the broad impacts of the University's excellent research to society. In the reporting year, we have strengthened our collaboration with overseas institutions that are recognized leaders in KE to learn from their experience in developing the impact agenda.

#### 2.1.1 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.



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?

With over 130 academics and administrators from different UGC-funded institutions attending the conference, there were vibrant discussions and networking during the event. Presentations can be viewed at the conference website (<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.

#### 2.1.2 Impact Workshops

Since 2013, the Knowledge Exchange Office (KEO) has collaborated with Faculties to organize a series of impact workshops to raise the awareness of faculty members in different disciplines about the increasing importance attached to impacts of research beyond the academia. In the reporting year, three impact workshops by experts from Imperial College London, University of Sydney, and University of Reading were organized, covering the disciplines in Engineering, Education and

Architecture respectively (details at <http://www.ke.hku.hk/events/impact/2015>).

### 2.1.3 Impact Case Histories

The University is pleased to submit the following five impact case histories:

#### ❖ **Fighting High-Tech Crime in Cyberspace** (Annex I-A)

Dr K. P. Chow and his team in the Centre for Information Security and Cryptography have been working closely with local law enforcement agencies for over 10 years to develop technologies and tools to protect against cyberspace crime in Hong Kong. The team assisted the Hong Kong Customs and Excise Department in the deployment of the latest software systems to protect against Internet pirates. They have developed Lineament I, which detects suspected infringement of intellectual property rights over the Internet using BitTorrent; Lineament II, which uses cybercriminal profiling and artificial intelligence to detect potential auction fraud; Lineament I Plus, which analyses suspected criminal items in the cyberlocker; and SocNet Monitoring System, which monitors and detects illegal activities on social networking platforms. The impressive performance of these systems was recognized by the aforementioned government department for enhancing cyberspace safety in Hong Kong.



#### ❖ **Oral Health Promotion among Indonesian Domestic Workers and Their Employers' Families** (Annex I-B)



Dr Xiaoli Gao and her team (Professor Edward Lo and Professor Colman McGrath) in the Faculty of Dentistry developed a large-scale project to help Indonesian domestic helpers (of whom there are 140,000 in Hong Kong) take care of their oral health. The team developed a four-part project for the helpers that included developing/producing 100,000 oral health education packs and distributing them through the Indonesian consulate, employment agencies and other outlets; organising an oral health campaign that reached about 6,000 Indonesian domestic workers; organising

"train-the-trainer" workshops for representatives from 237 employment agencies; and providing individualised oral health advice for 968 domestic workers. By changing the current practice of occupational training to domestic helpers, the project not only benefits the workers themselves but also indirectly benefits the local families as the workers, now better equipped with oral health knowledge, could give better care to the children and elderly people they look after.

#### ❖ **A Meaningful Journey of Teaching and Learning of Chinese for Non-Chinese Students: Towards Local, Regional and International Advancement** (Annex I-C)



A team of six principal investigators (Professor S. K. Tse, Dr S. K. Shum, Dr W. W. Ki, Dr W. M. Cheung, Dr W. I. Lam and Dr K. Y. Loh) at the Centre for Advancement of Chinese Language Education and Research (CACLER) of the Faculty of Education has been involved in over 20 projects to help non-Chinese students. The team found that the Chinese proficiency of non-Chinese students varies enormously, and the teachers may not be experienced or may not know how to tailor materials in the curriculum for them. Since 2006, they have organized a series

of projects and after-school lessons from kindergarten to secondary school levels, benefiting more than 3,500 secondary school students, 500 primary school students and 1,000 pre-primary children and their parents. They have also provided research-based professional training and development to teachers, guidance on curriculum development, books and related materials, and other resources for

teachers, and held four international conferences on learning Chinese to share their expertise with the community and the world.

#### ❖ **The Community Legal Information Centre (CLIC) Series ([Annex I-D](#))**

Professor Anne Cheung of the Department of Law and her team members (Dr Kevin Pun, Dr Felix Chan and Mr Eric Cheung) set up the Community Legal Information Centre (CLIC) website series ([www.clic.org.hk/](http://www.clic.org.hk/)) to provide free bilingual legal information to the local community. The series includes YouthCLIC, SeniorCLIC and FamilyCLIC, which were specifically developed for teenagers, the seniors and families in Hong Kong respectively. The websites cover legal issues that have direct bearing on the daily lives of people in Hong Kong. The CLIC website was started in 2007 following debate in the community about the high cost of legal services and the need to provide an affordable legal information service for the public. The impact of the project can be seen in the number of visitors – more than 3,700 each day to the main CLIC site alone. The team has also been invited through CLIC to give public talks to share legal knowledge with the community.



#### ❖ **Promoting Ageing-in-Place for Elderly Tenants in Rental Housing Estates of Hong Kong Housing Society ([Annex I-E](#))**

Professor Terry Lum and his team (Dr Vivian Lou and Dr Ernest Chui) in the Department of Social Work and Social Administration developed a project that aimed at giving more elderly people the chance to stay in their own homes longer, rather than go into institutional care. “Ageing in place” is a concept that has been embraced around the world to enable the elderly to live in their own homes for as long as possible regardless of their abilities. Based on the team’s recommendation from the Ageing-in-Place study, the Hong Kong Housing Society adopted this approach in a pilot project at Cho Yiu Chuen, a housing estate in Kwai Chung, in 2012, and the results have been highly positive. It now plans to extend the model to 11 estates.

## 2.2 **Strengthening Technology Transfer**

### 2.2.1 **Reorganization of the Technology Transfer Office**

Led by Vice-President and Pro-Vice-Chancellor (Research) Professor Paul Tam, the reorganization of the Technology Transfer Office (TTO) has moved to its second stage in the reporting year. Under the new organizational structure implemented since January 2015, KEO oversees TTO. The reorganization reaffirms technology transfer as a core function of the University under the KE mission such that efforts on technology transfer are integrated with the overall KE strategy.

TTO has achieved a record-high level of income from the commercialization of HKU’s intellectual property in 2014/15, with HK\$21M, which is more than 6 times higher than the income in 2013/14. TTO has actively taken part in a number of exhibitions and marketing activities to promote technology transfer to the industry as well as introduce HKU technologies to the public.

### 2.2.2 **Latest Developments of HKU Technologies Transferred: Selected Examples**

#### ❖ **Deployment of a New Diabetic Retinopathy Screening Platform in China**

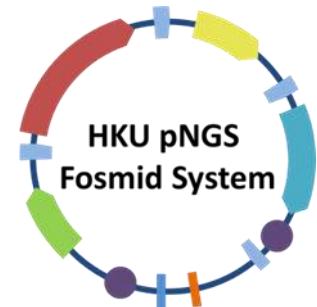


A new and comprehensive diabetic retinopathy screening platform that was developed jointly by Professor David S. H. Wong of the Department of Ophthalmology and an industrial partner was successfully deployed in China through a project supported by the Chinese Ministry of Health and the Lifeline Express China Foundation.

The new IT platform allows hospitals in China to remotely screen patients with diabetic retinopathy early so that they could seek medical help in their early stage of development. The system can help the vast number of people living in the rural parts of China where transportation is costly and medical services are scarce to receive the needed attention. Since diabetic retinopathy is an irreversible disease, it is important that patients get early stage diagnosis and receive treatment as soon as possible. The screening platform is of significant clinical value because it can greatly reduce the subsequent medical costs incurred, both social and personal. It has addressed the corresponding needs of the “National Public Health Services Specifications (2011)” published by the Chinese Ministry of Health in 2011.

### ❖ Market Launch of a New Cloning System for Next Generation Sequencing

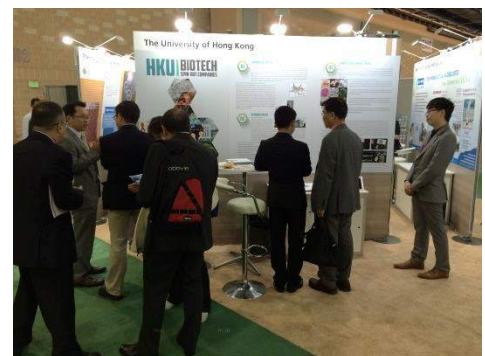
A new cloning platform for next generation sequencing (NGS) has been successfully launched to the market by an internationally recognized genomics research company that provides cloning kits for dedicated NGS. This new cloning platform is based on a novel pNGS fosmid system developed by HKU’s Center of Genomic Sciences. NGS technology can rapidly and economically produce a draft genome of an organism *de novo*. However, the quality of the draft data generated from the conventional method is usually less than 80% complete for very large genomes, and is insufficient for most applications. Moreover, it is very time consuming to identify genetic alterations such as insertion or deletion by conventional whole genome sequencing protocol. The research team at the Center of Genomic Sciences has successfully solved this problem by providing a highly efficient method for analyzing DNA sequences of 40kb (kilo base) apart or longer and with much reduced processing time and costs. This state-of-the-art technology is now made available to research laboratories around the world where researchers may use it to detect cancer specific genetic alterations, for example. The technology will continue to create significant impact on new drug target identification and development of more effective treatment.



### 2.2.3 Engaging Industries

TTO co-ordinated HKU’s participation in the Bio International Convention 2015, which was held in Philadelphia, USA, from June 15-18, 2015. Five projects relating to treatment of infectious diseases as well as treatment of cancer by bacterial therapy and chemical drugs were showcased at the event:

- Arsenol (Arsenic Trioxide Oral Solution)
- Bio-Engineered Bacteria for Cancer Therapy
- Combined Prokaryotic-Eukaryotic Delivery and Expression of Therapeutic Factors Through a Primed Autocatalytic Positive-Feedback Loop
- Immunotherapeutic Targets Against Staphylococcus Aureus
- Method and Compositions for Treating Cancer Using Probiotics



Moreover, some technologies relating to disease diagnosis, fluorescent probes and cancer therapeutic drugs were also introduced on this occasion and they have drawn a lot of attention from the respective industries.

Furthermore, four HKU biotech companies in the business of diagnostic kits, HIV aids vaccine development, stem cells and tissue engineering were featured at the exhibition:

- Novoheart Limited
- Living Tissues Co Ltd
- Immunocure Limited
- Hyribio Limited

The HKU booth attracted many visitors. TTO and the HKU spinoff companies also took the opportunity to establish new business connections with investors, business partners and collaborators.

### 2.2.4 Promoting HKU Technologies to the Public

TTO again co-ordinated the University's participation in the InnoCarnival organized by the Innovation and Technology Commission (ITC), which was held from November 1-9, 2014 at the Hong Kong Science and Technology Park. 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 HKU pavilion was very well attended by school teachers, students as well as families. The 9-day event drew an attendance of over 230,000 visitors, and many of them had visited the HKU Pavilion and took the opportunity to chat with our researchers and student helpers about the HKU technologies.

## 2.3 Nurturing Entrepreneurship

### 2.3.1 DreamCatchers 2015

DreamCatchers is HKU's newly launched Entrepreneurship series, providing a hub to inspire and nurture innovation and entrepreneurship, with forums, mixers, events, courses, marketplaces, co-workspaces and portal, covering all tech, biz, social, cultural and media spheres. It is cross-sector and inter-generational, for alumni and students with passion and determination to innovate and change the world.

The inaugural event, jointly organized by the Development and Alumni Affairs Office (DAAO), TTO, Centre of Development and Resources for Students (CEDARS) and Journalism and Media Studies Centre (JMSSC), was held on May 31, 2015, where 67 speakers shared their experience on start-ups. Panel speakers included Mr Leong Cheung (張亮), Executive Director, Charities and Community, The Hong Kong Jockey Club; Mr Jason Chiu (趙子翹), CEO, The Cherrypicks; and Mr Antony Leung (梁錦松), CEO, Nan Fung Group. The keynote in the afternoon was delivered by Mr Pony Ma (馬化騰), Founder, Chairman and CEO of Tencent. The forum was attended by 1,000 delegates.





### 2.3.2 Entrepreneurship Academy

The popular workshop series run by TTO since 2010 on entrepreneurship was held from February to April 2015. In response to high demand, this was the first time enrollment had been extended to undergraduate students, in addition to postgraduate students and researchers. There was a substantial increase in the number of attendees and over 110 people on average attended each of the ten meetings held. Apart from the workshops, TTO provides support to the participants and alumni to have networking opportunities with early stage entrepreneurs and access to CoCoon, an open co-working space for entrepreneurs.



### 2.3.3 TSSSU@HKU

TSSSU@HKU is a newly established funding scheme that provides support to technology start-up companies formed by HKU members. This scheme leverages on the “Technology Start-up Support Scheme for Universities” (TSSSU) launched by ITC in October 2014 for the local universities where an annual funding of up to HK\$4 million was provided to each university to encourage technology start-ups. The first two rounds of application were concluded in December 2014 and April 2015 respectively, where a total of 55 applications were received. A total of 11 new start-up companies were awarded in these two rounds and five of them are commercializing HKU technologies. Two examples are highlighted below.

#### ❖ **Novoheart Limited**

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. Cardiotoxicity is a major reason why drug trials fail, including cancer drug trials. Professor Li’s inventions can test drugs far more quickly and without harm to patients. 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 revolutionize drug discovery, reduce patient harm and pioneer next-generation cardiac tissue engineering.



#### ❖ **Passber Limited**



Andy Leung and Ivan Law, alumni of the MSc in E-Commerce and Internet Computing (MEICOM) programme, have launched 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. To address the problem of membership management, they 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. Passber is being tested on campus first, but the goal is to reach a wider audience of young people.

## 2.4 Turning Knowledge into Actions

### 2.4.1 Impact Project Funding Scheme

The University continues to make use of the UGC KT funding to run the competitive Impact Project Funding Scheme in 2014/15, which provides support to academic staff to undertake innovative projects that have the potential to create social, economic, environmental or cultural impacts for industry, business or the community by building on expertise or knowledge in the University. With an increasing number of applications since its launch in 2010/11, the Scheme has become an important enabler for faculty members to benefit the broader community with their expert knowledge. In the reporting year, 83 proposals were received, of which 62 were supported, involving 26% and 41% increase respectively over the numbers of proposals (66) and funded projects (44) in 2013/14. A list of the funded projects in 2014/15 is at [Annex II](#). Two examples are highlighted below.

#### ❖ **Little People Care Alliance**

Children with different forms of rare bone diseases (little people) face many difficulties because of incorrect community perception, and school and public facilities that are not appropriate for their use. Through dialogues, workshops and a specialized information booklet, this project led by Professor Danny Chan of the School of Biomedical Sciences seeks to change this perception for a better community understanding of the needs of the “little people” and the role of school teachers and students.

#### ❖ **Advancing Dignity and Compassion in End-of-Life Care**

This project aims to enhance compassionate understanding of patients and families facing the end-of-life, and to promote care with dignity among health and social care staff of all 10 Hospital Authority (HA) Li Ka Shing Foundation (LKSF) Hospice Centres. Led by Professor Cecilia Chan of the Department of Social Work and Social Administration, 5 workshops were held in October 2014, which were attended by over 160 participants in HA-LKSF Hospice Centres. Self-help manuals on self-compassion and dignified end-of-life care were produced and distributed by the hospice centres to help healthcare professionals, family caregivers and volunteers manage the stress of providing end-of-life care and take care of their physical and psychological needs. A project Facebook was built, sharing articles, patient stories, and event information, etc.

### 2.4.2 Student KE Project Grants

The KT funding was again used in the reporting year to support student KE projects. A review was done on the Student KE Project Grant Scheme introduced since 2011/12, and it was decided that the Scheme should be subsumed under the Service 100 Fund administered by CEDARS in order to make best use of the resources available to support the KE elements in non-credit-bearing community engagement projects initiated by students and to streamline the application and reporting procedures for students. A total of 79 applications were received, which more than doubled the application number in 2013/14 (33). 39 projects were supported, involving an increase of 40% over the number in 2013/14 (28). A list of the student projects supported in 2014/15 is at [Annex III](#).

The University also makes use of other funds to encourage students to undertake community projects, for example, the Service 100 Fund and the We Are With You Project Scheme that are administered by CEDARS. Two examples are highlighted below.

#### ❖ **Fair Employment Campaign**

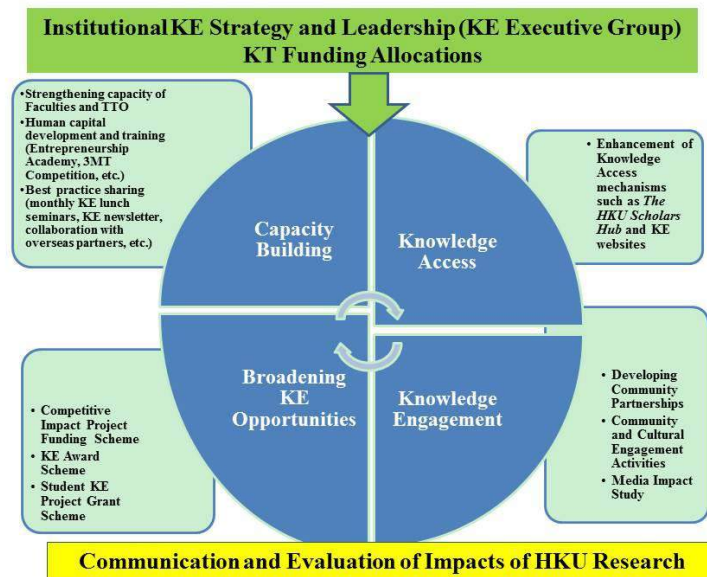
A group of students in the Faculty of Business and Economics played a significant role in developing the business of a non-profit social enterprise set up to help migrant workers avoid the burden of illegal debt they owe to agencies by charging employers instead of the workers a fee for the placement service. This project was funded by student KE project grants in 2014/15.

❖ **Beyond Architecture: Hong Kong 2014**

This is a community service project organised by students of the Faculty of Architecture, which aims to improve the living conditions of ethnic minority families in Hong Kong by designing and tailor making furniture for these families. Five pieces of tailor-made furniture were produced for 5 ethnic minority families to help improve their living environment. An exhibition, “Beyond Architecture: Hong Kong 2014” (匠家匠情), on the furniture designs was held in February 2015 in Kwai Hing.

**3. Summary of Achievements in the 2012-15 Triennium**

Based on the well-defined strategy as set out in the Initial Statement, the University has strengthened KE developments at all levels and across all disciplines. As the third mission of HKU, KE has been embedded in the University’s structures, processes, systems, calendar as well as regular activities. A broad range of activities is encouraged, including not only commercialization, contract research, entrepreneurship education, but also community partnerships, open access, and knowledge dissemination through public events, media and KE websites, etc. Substantial growth and positive outcomes have been achieved. Most importantly, more and more academic staff members and students are engaged in KE activities.



**3.1 Impact as the Priority Aim**

Apart from making an impact in academia, HKU researchers have been actively bringing their findings into the community through KE. It is however recognized that in order to take these activities further, researchers have to focus more on the question of “impact”. In the 2012-15 triennium, the University has made significant progress in making impact the focus of the KE strategy.

- ❖ **Articulation of impact:** Articulation of impact has been emphasized through the criteria for KE funding and KE Awards, as well as communication of KE success stories, including KE newsletters, KE videos, and features in university-level publications such as *The Review*, and *Bulletin*, etc.
- ❖ **Raising awareness on the importance of impact:** We have made substantial progress in raising awareness of faculty members about why they need to understand the impact of their research: this will help them attract funding, to explain their research to stakeholders and the community, and to maximize the benefits of their findings on society. As described in section 2.1 above, efforts have been made to learn from the UK experience in the 2014 REF exercise, which gave 20% weighting to impact beyond academia. The *Leeds-HKU Conference: Leeds-HKU Conference: Moving Beyond Research to Engagement and Impact* held in April 2015 was a major effort to facilitate local institutions to understand the huge challenges involved in developing the impact agenda.

Besides, the impact workshops have become an on-going series to raise awareness of faculty members about the importance of not only understanding and evaluating the impacts arising from their research, but also collecting evidence to corroborate such impacts.



### 3.2 Capacity Building

- ❖ **Strong support infrastructure:** All ten Faculties have strengthened their Faculty KE units led by an Associate Dean with dedicated support staff, working closely with KEO to promote and co-ordinate KE initiatives. There has also been an expansion of KE activities co-ordinated at the faculty level. In addition, TTO has undergone a major re-organization in these two years, and all the support staff members of Versitech Limited (a wholly owned subsidiary of HKU) are now employed by the University instead. Furthermore, as technology transfer is recognized as a sub-set of KE, KEO now oversees TTO, integrating the efforts in technology transfer with the overall KE strategy. The technology transfer outcomes have improved significantly - as mentioned in section 2.2.1 above, the income from the commercialization of HKU's intellectual property in 2014/15 was HK\$21M, which is more than 6 times higher than the income in 2013/14.
- ❖ **Strong buy-in from all quarters:** KE has been fully embedded in every Faculty's core activities, as evident from the KE webpages under the Faculty websites. Moreover, there has been strong buy-in from the non-Faculty-based units across the University, including the Communications and Public Affairs Office (CPAO) [media impact study], DAAO (DreamCatchers), CEDARS (student KE projects and DreamCatchers), Graduate School (Three Minute Thesis [3MT] Competition), JMSC (3MT, KE videos and DreamCatchers), University Libraries (HKU Scholars Hub and open access), and University Museum and Art Gallery (exhibitions and promotion of art appreciation), etc.
- ❖ **Recognition of KE in Faculty budget resource allocation process:** KE has been included in the annual recurrent budget allocation process for Faculties since 2012/13. This is of strategic importance as it means that KE performance and plans are included in the annual Faculty Development Plan of each Faculty, alongside Teaching and Research.
- ❖ **KE fully incorporated in the staffing process:** Following completion of the interface between the new KE Activities System (KEAS) and the Academic Portfolio of Achievement (APA) system in 2013, KE has been fully encompassed in the performance review process for individual academic and academic-related staff. This is also of strategic importance as it gives recognition to individual academic staff's KE contributions as well as motivates staff members to undertake more KE activities.

### 3.3 Knowledge Access

- ❖ **Making research visible:** The HKU Scholars Hub (<http://hub.hku.hk/>) is the visible expertise directory of HKU and a unique one-stop online platform for searching our experts. The Hub has made HKU researchers, their research and expertise highly visible, with significant increase in view and download counts. For example, the view count of the HKU ResearcherPages (excluding those from the hku domain) has increased from 1,019,359 in 2012/13, 1,334,201 in 2013/14, to 2,333,995 in 2014/15.
- ❖ **Enhanced efforts in Knowledge Dissemination via the Media:** Our Faculties and individual academic staff members are encouraged to disseminate the latest research discoveries and expert views to the public through the media. According to the media impact study coordinated by CPAO, in 2014/15, on average there were 70.5 KE-related news items on HKU each day, which reflect the commitment and efforts of Faculties and individual researchers.
- ❖ **KE websites:** Not only have all ten Faculties built KE webpages on their Faculty websites, but more and more academic staff members are also making use of web technologies to share their knowledge and expertise, especially to fill the gap in certain areas where there are unmet needs in society. Recent examples include the HKU Legal Scholarship Blog (<http://researchblog.law.hku.hk/>), which was launched in September 2014 for wide dissemination of HKU legal scholarship on the latest issues; and Resources for Interpreting (<http://www.interpreting.hku.hk/>), which was launched in June 2015 to provide a one-stop online platform for the practice, learning, teaching and research of interpreting.

### 3.4 Knowledge Engagement

- ❖ **Community engagement:** Community engagement activities have become embedded in the annual Faculty Development Plans. For example, more and more faculty members across all ten Faculties are

engaged in delivering public lectures, and there were over 1,000 events that were open to the public each year in the past three years. Cultural events, school engagement and science outreach have become regular features in the Faculties of Arts, Education and Science respectively (e.g. University Artists Scheme, Concert series, Education Seminar series, Junior Science Institute, etc.). The Medical Faculty also has a public lecture series held at the Hong Kong Central Library throughout the year. The continuing legal education programme organized by the Faculty of Law tailors to the professional development needs of legal practitioners. Another notable example is the study done by Professor Nelson Wing-sun Chow and his research team for the Commission on Poverty on the future development of retirement security in Hong Kong. Their report was submitted in August 2014, and the proposal on the introduction of a universal old age pension has informed public debate.

- ❖ ***Enhancement of museums:*** The University Museum and Art Gallery (UMAG) has been rejuvenated as a significant KE organ of the University, staging major exhibitions and popular outreach activities since 2013 (e.g. Botticelli's *Venus* in 2013, Picasso Ceramics in 2014, etc.). The exhibits in the Stephen Hui Geological Museum under the Faculty of Science have been enhanced using KE funding. Being the first and only geological museum in Hong Kong, it has an important role in KE by providing an attractive object-based learning facility for understanding the nature and evolution of our planet to visitors of all ages. Similar to UMAG, it organizes numerous tours for schools and the public throughout the year.
- ❖ ***Facilitating development of community partnerships:*** With reference to Sir Brian Fender's comment on "one-stop shop" access by SMEs, a Partnerships webpage has been built (<http://www.ke.hku.hk/eng/links/partnerships>), which links external organizations to the various online resources of the University to explore opportunities of working with our students through internships or student projects and to search for our researchers for potential collaboration. Faculties are also encouraged to build and strengthen partnerships with different stakeholder groups in the community. For example, since its launch in 2012, the "Excellence and Capacity building for Entrepreneurship and Leadership for the Third Sector" (ExCEL3) programme of the Faculty of Social Sciences has conducted a wide array of activities, including collaborative projects, case bank, professional education, service workshops, and forums, etc., to engage NGOs in Hong Kong and the region.
- ❖ ***Engagement beyond Hong Kong:*** As explained in the Initial Statement, being an international university, HKU encourages faculty members to not only target impacts locally but also aspire to make regional and even global impacts. For example, the Faculty of Architecture launched StudioMYANMAR in late 2013 to promote cross-cultural understanding among architecture students and professionals. The Faculty has made a multi-year commitment to working on the environmental design of Yangon, with a focus on the central business district and colonial quarter along the Yangon River. The Faculty is working closely with the Yangon Heritage Trust, and lectures for local professionals are also organized.

### 3.5 **Broadening KE Opportunities**

As set out in the Initial Statement, continuous efforts have been made to increase the awareness of academic staff of the numerous KE opportunities given the inclusive definition of KE adopted by HKU. Community engagement by students through student KE projects has also been promoted.

- ❖ ***Growing staff interests:*** As mentioned in section 2.4.1 above, the UGC's KT funding has enabled the University to incentivize and provide support to faculty members to undertake KE projects. Not only has the application number been increasing, but also almost 50% of the proposals each year for the Impact Project Funding Scheme were from new applicants. Of a total of 211 proposals submitted in the past three years, 111 came from new applicants, i.e. 53%.
- ❖ ***KE Awards:*** The KE Awards are presented at the University's annual Award Presentation Ceremony for Excellence, alongside the long established awards for Teaching and Research. The KE Award Scheme has played an increasingly important role in making outstanding KE accomplishments visible and encouraging more academic staff to engage in KE activities. The Ceremony for 2014 was held on March 30, 2015 in Loke Yew Hall. A list of the KE Awards 2014 is at [Annex IV](#).

- ❖ ***Engaging students:*** HKU students are the ambassadors of the University's knowledge, so on-going efforts are made to filter the KE concept down to students in order to develop a student culture of engagement with the community. The 3MT Competition has become an annual event for research postgraduate students, with a total of 114 students having participated in the past three years. The student KE project grants had attracted a total of 139 applications in the past three years, involving over 640 students. A total of 85 projects were supported, involving about 470 students.
- ❖ ***Entrepreneurship:*** In the past three years, the University has intensified efforts to foster an entrepreneurial culture and strengthen such pertinent skills in the University. The Entrepreneurship Academy had a total of 421 participants in the past 3 years. As described in section 2.3 above, DreamCatchers and TSSSU@HKU were launched in 2014/15.

#### 4. Quantitative Indicators

As explained in our Initial Statement, given the broad definition of KE of the University, our performance indicators are not limited to the UGC required metrics, but also other indicators that are highly relevant to the University's KE efforts. Two tables on the UGC and HKU performance indicators respectively are at [Annex V](#). The University has achieved most of the targets set out in the Initial Statement.

#### 5. Looking Ahead

In the UGC's guidance notes for Academic Development Proposal (ADP) for the 2016-19 triennium issued in November 2014, knowledge transfer is stated as a mission-critical area. In the ADP submitted by the University to the UGC in February 2015, "Impact" is one of the three strategic themes of HKU in the 2016-19 triennium. Efforts to raise awareness of faculty members about the importance of evaluating and corroborating the impacts of research will continue. New funding support will be provided for projects designed to collect evidence for corroboration and evaluation of impacts arising from a research project or KE project.

The technology transfer function under the KE mission will be enhanced, with intensified efforts not only in commercialization but also in bringing in induced contract research projects that support further research on licensed technologies.

With the momentum built up with the DreamCatchers forum, entrepreneurship developments are expected to move forward with renewed vigour. An Innovation Commons is being planned and hopefully will be in place within the next academic year, which will be complementary to the existing Learning Commons. The University will set up a new centre for innovation and entrepreneurship to coordinate and drive all entrepreneurship activities across all disciplines within the University. In addition, the University will consider ways to support students in not-for-profit start-ups that are non-technology-based. This could hopefully complement the funding support for technology start-ups under TSSSU@HKU.

The KT funding makes UGC's recognition of KT/KE as the third mission of higher education highly visible not only within the UGC sector but also to the community and our overseas partners. It is of critical importance that the UGC would continue to make such funding available not only for the 2015/16 roll-over year but also in the 2016-19 triennium.

July 31, 2015

**THE UNIVERSITY OF HONG KONG**

**IMPACT CASE HISTORY**

**Title of case study: Fighting High-Tech Crime in Cyberspace**

**1. Summary**

Dr K.P. Chow, Associate Professor in the Department of Computer Science, and his team in the Centre for Information Security and Cryptography (CISC) have been working closely with local law enforcement agencies for over 10 years to develop technologies and tools to protect against cyberspace crime in Hong Kong. The team assisted the Hong Kong Customs and Excise Department in the deployment of the latest software systems to protect against Internet pirates. They have developed Lineament I, which detects suspected infringement of intellectual property rights over the Internet using BitTorrent; Lineament II, which uses cybercriminal profiling and artificial intelligence to detect potential auction fraud; Lineament I Plus, which analyses suspected criminal items in the cyberlocker; and SocNet Monitoring System, which monitors and detects illegal activities on social networking platforms. The impressive performance of these systems was recognized by the aforementioned government department for enhancing cyberspace safety in Hong Kong. The project demonstrated how excellence in research at the University could be applied to real problems which are of importance to the community.

**2. Underpinning research**

The number of cybercrime incidents has been increasing significantly, such as online piracy, child pornography and auction fraud. Technologies adopted by cybercriminals are also increasingly sophisticated, having evolved from traditional computer hacking to sharing of confidential information using peer-to-peer network, sharing of copyrighted videos and music using cloud based storage cyberlocker. CISC has been active in cybercrime research since 2005. In 2007, CISC developed the first cybercrime monitoring system, Lineament I. By 2010, Dr Chow had architected the cybercrime research roadmap for CISC. He has supervised PhD students' research projects on cybercrime investigation and forensics, cybercriminal profiling and cybercrime modelling.

Dr Chow's cybercrime research has contributed to the local community in the areas of Internet piracy monitoring (the basis of Lineament I), file timestamp analysis (paper has been submitted to the Hong Kong courts several times by digital forensics experts), and software copyright piracy (Dr Chow has appeared as prosecution expert at the Court). In 2011, CISC has received an applied research fund from the Innovation and Technology Fund on cybercriminal profiling.

Dr Chow has been aware of the importance of data privacy during investigation and believes that there should be a balance between investigation and data privacy protection. He has published two research papers in the area.

**3. References to the research**

**Key publications:**

K.P. Chow, K.Y. Cheng, L.Y. Man, Pierre K.Y. Lai, Lucas C.K. Hui, C.F. Chong, K.H. Pun, W.W. Tsang, H.W. Chan, S.M. Yiu, BTM - An Automated Rule-based BT Monitoring System for Piracy Detection, *Proceedings of the Second International Conference on Internet Monitoring and Protection (ICIMP 2007)*

M. Kwan, R.E. Overill, K.P. Chow, J.A.M. Silomon, H. Tse, F. Law & P. Lai, Evaluation of Evidence in Internet Auction Fraud Investigations, Proc.6th Annual IFIP WG 11.9 International Conference on Digital Forensics, Hong Kong, 3-6 January 2010, *Advances in Digital Forensics VI*, Ch.7, pp.95-106, Springer (2010)

K.P. Chow, Frank Y.W. Law, Michael Y.K. Kwan, Pierre K.Y. Lai, The Rules of Time on NTFS File System, *Proceedings of the Second International Workshop on Systematic Approaches to Digital Forensic Engineering* (SADFE 2007), Seattle, Washington, USA, April 10-12, 2007 (peer-reviewed) – the paper has been submitted to courts of Hong Kong by digital forensics experts multiple times to assist judges and lawyers to understand digital evidence for several child pornography criminal cases since 2010.

Law, FYW; Lai, PKY; Jiang, ZL; Jeong, RSC; Kwan, MYK; Chow, KP; Hui, LCK; Yiu, SM; Chong, CF, Protecting Digital Legal Professional Privilege (LPP) Data, *Proceedings of the 3rd International Workshop on Systematic Approaches to Digital Forensic Engineering* (SADFE 2008), Oakland, California, USA, May 18-22, 2008 (peer-reviewed, best paper award)

Frank Y.W. Law, P. Chan, S.M. Yiu, K.P. Chow, Michael Y.K. Kwan, Hayson Tse, Pierre K.Y. Lai, Protecting Digital Data Privacy in Computer Forensic Examination, *Proceedings of the sixth International Workshop on Systematic Approaches to Digital Forensic Engineering* (SADFE 2011), Oakland, California, USA, 2011 (peer-reviewed, best paper award)

Pierre K.Y. Lai, K.P. Chow, X. Fan and V. Chan, An Empirical Study for Profiling Internet Pirates, *Ninth Annual IFIP WG 11.9 International Conference on Digital Forensics*, Orlando, USA, January 27 - 30, 2013 (peer-reviewed)

#### **Selected external grant funding:**

1. The Lineaments Systems for HKSAR Customs & Excise Department: Software systems to monitor Internet Piracy
  - Lineament I: monitor illegal sharing of files using BitTorrent
  - Lineament II: monitor online auction site for auction fraud
  - LineamentI Plus: monitor illegal sharing of files using cloud-based storage cyberlocker
  - SocNet Monitoring System: monitor illegal activities on social networking platforms
 Funding Source: Customs and Excise Department of the HKSAR Government (contract research)  
 Principal Investigator: Dr K.P. Chow  
 Period: 2009 – 2015  
 Amount Awarded: HK\$1.9M
2. Cyberspace Investigation Technology Using Criminal Profiling (ITS/085/11)  
 Funding Scheme: Innovation and Technology Support Programme (Tier 3)  
 Principal Investigator: Dr C.K. Hui  
 Co-Investigator: Dr K.P. Chow  
 Period: 2011 – 2012  
 Amount Awarded: HK\$999,810
3. Trial: Cyberspace Investigation Technology Using Criminal Profiling (ITT/018/13GP)  
 Funding Scheme: Public Sector Trial Scheme  
 Principal Investigator: Dr K.P. Chow  
 Period: 2014  
 Amount Awarded: HK\$299,000

#### **4. Details of the impact or benefit**

In 2011-2012, several key cybercrime incidents happened in Hong Kong, such as closing down of cyberlocker Megaupload who was registered in Hong Kong and DDoS attack of Hong Kong Stock Exchange website. Local law enforcement agencies then contacted CISC about the latest technologies developed by CISC that they could adopt to fight against cybercrime. In late 2012, the HK Police established the Cyber Security Center, and the Customs and Excise Department (C&ED) established the Electronic Crime Investigation Center. Dr Chow and CISC have been working closely with both government departments on the latest R&D in cybercrime investigation and forensics.



The Lineament I & II systems have been deployed to C&ED in 2007 and 2010 respectively to support their daily operations:

- Lineament I (LMS-I) (2007): LMS-I detects suspected infringement of IP rights activities over the Internet using BitTorrent
- Lineament II (LMS-II) (2010): LMS-II uses cybercriminal profiling and artificial intelligence techniques to analyse behaviour of individual user account for potential auction fraud. Since its launch in January 2011, LMS-II had assisted the officers in investigating 120 cases, of which 70 were solved in the first six months of its deployment.

In recent years, CISC research reported that Linker sites have been used to access cyberlocker. Lineament I Plus (LMS-I+) was then developed to analyse suspected criminal items in the cyberlocker through those Linker sites. Lineament I Plus was deployed to C&ED in 2014 to help monitor illegal usage of cyberlocker. This year (2015), CISC cooperated with C&ED again to study the monitoring and automatic detection of illegal activities on social network platforms. SocNet Monitoring System has been deployed to C&ED for trial use to monitor the illegal activities on different social network platforms. CISC has also helped analyze complex crime cases involving Internet and digital technologies for the HK Police and C&ED.

CISC has actively engaged the community, industry and government bodies about its research results of cybercrime through workshops and exhibitions as well as the media. For example, CISC hosted the IFIP WG11.9 International Conference on Digital Forensics in 2010, which attracted over 80 international and local researchers and practitioners. The Lineament suites were widely published in different forms of media. Dr Chow has also invited to give talks by the Office of the Privacy Commissioner for Personal Data, government departments such as the Office of the Government Chief Information Officer (OGCIO), and professional organizations.

##### **5. References to the corroboration of impact or benefit**

- Statements of support from the HKSAR law enforcement agencies are available for corroboration purpose.
- Press Release from Customs & Excise Department, HKSAR on January 31, 2011 ([http://www.customs.gov.hk/en/publication\\_press/press/index\\_id\\_790.html](http://www.customs.gov.hk/en/publication_press/press/index_id_790.html)):

‘For the combat of copyright infringing activities through "peer-to-peer" network on the Internet, we worked in collaboration with the Centre for Information Security and Cryptography of The University of Hong Kong and developed a monitoring system named "Lineament Monitoring System I" in 2007. Thereafter, we co-operated with the Centre again and successfully developed a monitoring system named "Lineament Monitoring System II", targeting the activities of Internet auction sites selling intellectual property infringement articles. By entering some relevant information into the system, we can impose a 24-hour monitoring of the local Internet auction sites and suspected infringing activities are recorded to facilitate follow-up action and investigation by Customs officers. As "Lineament Monitoring System II" can be operated automatically, not only can it enhance the efficiency in monitoring Internet auction sites, it can also enhance the enforcement effectiveness of combating the sale of infringing articles through Internet auction sites as it can operate round the clock.’

The press release on the statement by the Commissioner of Customs & Excise, Mr Richard Yuen, was followed by numerous newspaper reports, reflecting the excellence of the project in research that has achieved the impacts and benefits to the community.

**THE UNIVERSITY OF HONG KONG**

**IMPACT CASE HISTORY**

**Title of case study: Oral Health Promotion among Indonesian Domestic Workers and Their Employers' Families**

**1. Summary**

Dr Xiaoli Gao, Research Assistant Professor, and her team (Professor Edward Lo and Professor Colman McGrath) developed a large-scale project to help Indonesian domestic helpers (of whom there are 140,000 in Hong Kong) take care of their oral health. The team developed a four-part project for the helpers that included developing/producing 100,000 oral health education packs and distributing them through the Indonesian consulate, employment agencies and other outlets; organising an oral health campaign that reached about 6,000 Indonesian domestic workers; organising "train-the-trainer" workshops for representatives from 237 employment agencies; and providing individualised oral health advice for 968 domestic workers. By changing the current practice of occupational training to domestic helpers, the project not only benefits the workers themselves but also indirectly benefits the local families as the workers, now better equipped with oral health knowledge, could give better care to the children and elderly people they look after.

**2. Underpinning research**

The research team's epidemiological studies have shown a huge disparity in oral health between ethnic minorities and immigrants (including foreign workers) and the rest of the population [section 3: i-iii]. This finding points to the urgent need to engage them in dental programmes and to raise their dental awareness.

Understanding the underlying social/cultural/behavioural determinants has been an expertise area and research focus of the team members. Their research revealed multi-structured behavioural pathways linking social-economic circumstances, oral health perceptions and habits, and oral health outcomes [iii]. Another study showed how cultural beliefs shape health perceptions that affect oral health [iv]. Through a systematic review, they have synthesized the evidence on the impact of acculturation on oral health [v]. Findings on these social/cultural/behavioural determinants helped the team tackle the root issues of poor oral health and develop health interventions effectively.

The team members have rich experience in developing and delivering outreach dental service and oral health education/promotion, especially to those vulnerable groups or disadvantaged communities, including ethnic minorities, immigrants, refugees, homeless or low income families, and the elderly [vi-vii]. Oral health messages were disseminated through various means/channels and using multi-media/multi-lingual materials. Preventive measures (e.g. fluorides for preventing tooth decays) have been promoted to these vulnerable groups.

The team members have supervised undergraduate student groups in carrying out community health projects in the two largest domestic worker groups (i.e. Filipinos and Indonesians). One of the small projects among 163 Indonesian domestic helpers revealed their poor oral health. Over 90% were affected by dental caries (tooth decay), with an average of 5 carious teeth. None of the participants had healthy gingiva; 45% had periodontal pockets. Participants' oral health knowledge is unsatisfactory. Many held a fatalistic view and perceived tooth loss as a natural process of ageing. Training is needed to improve their diet habits and oral hygiene practice (e.g. toothbrushing skills and dental flossing). The small project pinpointed several perceptions/habits for future intervention, such as their fatalistic views on oral health and rare use of inter-dental cleaning tools (e.g. dental floss). Through further analysis, several social determinants were identified, explaining the poor oral health of domestic workers, including their poor living condition, lack of social support, and rare engagement in social activities [i]. Findings of this study were reported in conferences and peer-reviewed journal. One of the student groups received local prize (Dental Alumni Association Prize) and international award (International

Association for Dental Research Southeast Asia Division Best Paper Award in Behavioural Science and Health Service Research) for this project.

### 3. References to the research

#### Key publications:

- i. Gao X., Chan C.W., Mak S.L., Ng Z., Kwong W.H. and Kot C.C.S. Oral health of foreign domestic workers: exploring the social determinants. *Journal of Immigrant and Minority Health*. 2014 Oct; 16(5):926-33.
- ii. Gao X., McGrath C.P.J. and Lin H.C. Oral health status of rural-urban migrant children in south China. *International Journal of Paediatric Dentistry*. 2011; 21 (1): 58-67.
- iii. Gao X., Hsu C.Y.S., Xu Y.C., Loh T., Koh D. and Hwarng H.B., Behavioral pathways explaining oral health disparity in children. *Journal of Dental Research*. 2010; 89(9): 985-90.
- iv. Gao X., Hsu C.Y.S., Xu Y.C., Loh T., Koh D. and Hwarng H.B. Promoting positive health behaviours - 'tooth worm' phenomenon and its implications. *Community Dental Health*. 2012; 29: 55-61.
- v. Gao X. and McGrath C.P.J. A Review on the oral health impacts of acculturation, *Journal of Immigrant and Minority Health*. 2011; 13: 202-213.
- vi. Zhang W, McGrath C, Lo EC, Li JY. Silver diamine fluoride and education to prevent and arrest root caries among community-dwelling elders. *Caries Research*. 2013; 47(4):284-90.
- vii. Luo Y, McGrath C. Oral health and its impact on the life quality of homeless people in Hong Kong. *Community Dental Health*. 2008 Sep; 25(3):137-42.

#### Selected external grant funding:

Oral health promotion for and through Indonesian domestic helpers in Hong Kong (25110514)  
 Funding Scheme: HKSAR Food and Health Bureau's Health Care Promotion Fund  
 Principal Investigator: Gao Xiaoli  
 Period: 2012 – 2015  
 Amount Awarded: HK\$255,000

### 4. Details of the impact or benefit

This knowledge exchange programme was a joint effort of the academic, local and foreign governments, NGOs and industry. The team's previous collaborations with the relevant parties have laid a foundation for the successful planning and implementation of this programme. Funding support was granted by HKSAR Food and Health Bureau's Health Promotion Care fund. The Indonesian Consulate General and the association of employment agencies (APPIH) provided support in organizing this programme. The industry partner (Colgate) contributed by providing in-kind products (sponsorship of toothbrushes and toothpaste) and education support to the programme.

The development of oral health education materials as well as the planning and implementation of the programme were informed by the team's previous research findings and health promotion experience. Tailor-made, culturally relevant, bilingual/trilingual materials were prepared with full consideration of the current status of the target groups, including their dental awareness, gaps in their oral health knowledge, cultural beliefs, and the social determinants of their oral health.

Undergraduate and postgraduate students continued to be involved in this programme, especially in the big events. They applied their knowledge and skills and also deepened their own understanding on community oral health through this programme.

This programme comprised the following activities:

- (1) A total of 100,000 sets of tailor-made oral health education packs were designed and disseminated through various channels and on different occasions, mainly through the Indonesian Consulate General Welcoming Program for newly arrived domestic helpers and the business offices of all employment agencies for Indonesian domestic helpers.
- (2) Large oral health campaigns were organized: around 6,000 participants were recorded and received oral health education through posters, exhibition booths, and oral health talks given to small groups of participants.
- (3) "Train the trainers" workshops were organized to train representatives from 237 employment agencies so that they can incorporate oral health education into their occupational training program for domestic helpers.
- (4) Individualized oral health advice and oral hygiene instructions (toothbrushing skills and use of interdental cleaning aids) were provided to 968 domestic workers.

Significant improvements were seen in oral health knowledge of both the participating domestic workers and representatives of employment agencies (both  $p < 0.05$ ).

The personal and societal impacts of this programme have been sustained into the future in several ways:

- (1) NGOs gave feedback that they appreciated the partnership and train-the-trainer sessions and will incorporate oral health education into their occupational training for domestic workers.
- (2) The tailor-made, cultural relevant materials are accessible in Consulate and business offices of employment agencies and will continue to be disseminated. It is expected that the participants also share their knowledge with other workers.
- (3) With domestic helpers who took part in the programme sharing their knowledge with their employers, employers' families and their own families, the impact of this programme can be extended to many other beneficiaries.
- (4) Since domestic workers are often the carers of many vulnerable groups, such as children, elders, and disabled people in their employers' families, such knowledge exchange programme could also improve oral health of the local society.

##### **5. References to the corroboration of impact or benefit**

- Very positive feedback on this programme was received from the participating parties. Evaluation results are available for corroboration purpose.
- Appreciation letter from the NGO partner (association of employment agencies) is available for corroboration purpose.

## THE UNIVERSITY OF HONG KONG

## IMPACT CASE HISTORY

**Title of case study: A Meaningful Journey of Teaching and Learning of Chinese for Non-Chinese Students: Towards Local, Regional and International Advancement****1. Summary**

A team of six principal investigators (Professor S. K. Tse, Dr S. K. Shum, Dr W. W. Ki, Dr W. M. Cheung, Dr W. I. Lam and Dr K. Y. Loh) at the Centre for Advancement of Chinese Language Education and Research (CACLER) of the Faculty of Education has been involved in over 20 projects to help non-Chinese students. The team found that the Chinese proficiency of non-Chinese students varies enormously, and the teachers may not be experienced or may not know how to tailor materials in the curriculum for them. Since 2006, they have organized a series of projects and after-school lessons from kindergarten to secondary school levels, benefiting more than 3,500 secondary school students, 500 primary school students and 1,000 pre-primary children and their parents. They have also provided research-based professional training and development to teachers, guidance on curriculum development, books and related materials, and other resources for teachers, and held four international conferences on learning Chinese to share their expertise with the community and the world.

**2. Underpinning research**

The project team at CACLER has conducted research which includes the following: action research on classroom teaching, case studies on students' learning processes, learning assessment and investigation on the motivation of non-Chinese speaking (NCS) students ("NCS" is used in this case study as it is the term used by the Education Bureau, despite the fact that some non-Chinese students can speak Cantonese). Moreover, the learning materials and teachers' professional development programmes are based on theories of learning Chinese as a second language as well as on principles of meaningful, systematic and differentiated learning of the language in the local context.

The HKU team and teachers from the collaborating schools jointly conducted a number of action research which focused on learning and teaching (L/T) such as: (1) the Integrated Perceptual Approach (Tse, Marton, Ki, & Loh, 2007) to teach Chinese characters; (2) pedagogies and related teaching materials developed based on the differentiated concept (Tse, Li, & Loh, 2012) to teach Chinese characters, reading and writing by applying the Integrated Perceptual Approach (Tse, Marton, Ki, & Loh, 2007), drama approach (Ho, 2011), which provided the students space of learning (Marton, Tse, & Cheung, 2010), as well as teaching them effective reading strategies (Tse, Cheung, Loh, & Lui, 2008; Tse, Lam, Lam, & Loh, 2006; Law, 2011); (3) adopting approaches including pleasure reading, transformative pedagogy and PRISM model which have been proposed by prominent scholars in the field of second language acquisition (Krashen, Cummins, Thomas & Collier) to encourage and lead NCS students to read picture books and then write up their own picture books; (4) genre-based approach (Shum, 2010) to help students in organizing their ideas in reading and writing.

Moreover, the project investigators have extended theory and developed pedagogy that addresses pressing issues encountered by schools on the teaching and learning of Chinese for non-native learners. Such has been its success that it has been invited to co-host a series of International Conference on Chinese (Han) Characters Education and Research in Asian languages since 2011.

**3. References to the research****Key peer-reviewed publications:**

- Leong, C. K., Tse, S. K., Loh, E. K. Y., & Ki, W. W. (2011). Orthographic knowledge important in comprehending elementary Chinese text by users of Alphasyllabries. *Reading Psychology*, 32(3), 237-271.
- Loh, E. K. Y. & Tse, S. K. (2012). An investigation of school-based curriculum of effective Chinese character learning for Non-Chinese speaking kindergarteners, *Han Character and Han Writing*

*Education*, 28, 171-195.

- **Tse, S. K.**, & Wong, M. Y. (2012). An assessment tool for the learning of Chinese character writing by non-Chinese speaking students. *Han Character and Han Writing Education*, 28, 79-298.
- **Shum, M.S.K.**, Gao, F. & Tsung, L. (2012). Unlocking the racialized and gendered educational experiences of South Asian girls in Hong Kong: The case study of Pakistani girls. *Asian Ethnicity*, 13(3), 151-262.
- **Loh, E.K.Y.**, **Tse, S.K.** and Tsui, S.K. (2013). A study of the effectiveness of a school-based Chinese characters curriculum for Non-Chinese speaking kindergarteners: Hong Kong experience. *Han Character and Han Writing Education*, 30, 277-323.
- **Shum, M.S.K.**, **Ki, W.W.** & Leong, C.K. (2014). Cognitive and linguistic factors affecting alphasyllabary language users comprehending Chinese text. *Reading in a Foreign Language*, 26(1), 153-175.

**Selected external grant funding:**

The project team has obtained over \$87M since 2006 from the Education Bureau for a series of projects, some examples of which are listed below.

**Supporting Secondary Schools in the Teaching & Learning of Chinese for Non-native Learners**

Funding Scheme: University-School Support Programme (USP), Education Development Fund, Education Bureau, HKSAR Government

Principal Investigator: Dr W.W. Ki

Period: 2008-11

Amount Awarded: HK\$16,169,111

**Supporting Secondary Schools in the Teaching & Learning of Chinese for Non-native Learners (2011-13)**

Funding Scheme: USP, Education Bureau

Principal Investigator: Dr Joseph W.I. Lam

Period: 2011-13

Amount Awarded: HK\$12,391,050

**Research and Development of Exemplars on Chinese Language Assessment Tools for Non-Chinese Speaking Students in Local Primary and Secondary Schools of Hong Kong**

Funding Source: Education Bureau

Principal Investigator: Professor S.K. Tse

Period: 2012-13

Amount Awarded: HK\$1,308,000

**Provision of Services for Running of Chinese Language Learning Support Centres for Non-Chinese Speaking (NCS) Students**

Funding Source: Education Bureau

Principal Investigator: Dr Mark S.K. Shum

Period: 2012-14

Amount Awarded: HK\$6,697,100

**Tradition and Innovation: Supporting the Learning and Teaching of Chinese Language for Non-Chinese Speaking Students in Secondary Schools (2013-2015)**

Funding Scheme: USP, Education Bureau

Principal Investigator: Dr E.K.Y. Loh

Period: 2013-15

Amount Awarded: HK\$8,293,500

**Accommodating Diversity: Supporting Secondary Schools in the Teaching & Learning of Chinese for Non-Chinese Speaking Students in Primary Schools**

Funding Scheme: USP, Education Bureau

Principal Investigator: Dr W.M. Cheung

Period: 2014-17

Amount Awarded: HK\$12,322,000

#### 4. Details of the impact or benefit

The project team has helped teachers ranging from kindergarten to secondary levels in advancing their knowledge, practice and understanding with the focuses on (1) the teaching and learning of Chinese as a second language; (2) the background and needs of the ethnic minority students; and (3) useful strategies and resources in advancing the learning of these students. The teachers' advancement in knowledge, practice and understanding could be seen in the innovations they carried out in the schools and their sharing of these innovations with other teachers in the field through seminars, conferences, and writings in the projects.

At the beginning of each academic year, the team and the teachers will draw up a school-based teaching plan including needs analysis of the school and NCS students, the focus of support, expected outcomes, support strategies and measures, monitoring and evaluation measures and the timeframe. The project team provides professional support and assistance to the collaborating teachers to develop school-based learning and teaching materials grounded on educational theories and research evidence for classroom teaching. Some strategies and methods in raising students' motivation and effectiveness of Chinese language learning were discussed and tried out. Other than provision of on-site school-based support, the team conducts systematic research studies with the collaborating schools. There is a cyclical mechanism of planning, acting, observing and reflecting to explore innovative forms of learning and teaching Chinese language to cater for the needs of NCS students.

The series of projects have engaged and directly benefited around 75 kindergartens, 44 primary schools, and over 70 secondary schools. The numbers of NCS students directly benefited are around 1,000 at pre-primary level, 500 at primary level and 3,500 at secondary level. The nature and extent of the impacts of the projects are summarized below.

##### **(a) Impact on teaching and learning:**

The learning of Chinese characters is considered one major obstacle for NCS students admitted to Form one. The NCS students were provided help to consolidate their character knowledge with meaningful and rhyming texts, and to become more sensitive to character structure and components. Help was also provided to extend their written vocabulary through mental lexicon activities based on the spoken Chinese vocabulary and their current knowledge. From the Form 1 pre-test and post-test data, learning progress can be clearly seen in the students' character knowledge and written vocabulary, as compared to when they first started.

Another learning difficulty of the NCS students is reading comprehension. Trials of picture book reading and writing by NCS students in different schools and settings have repeatedly indicated clear positive effects on the participating students. More teachers in the projects are adapting picture book reading and writing activities in their schools; some also introduce the use of drama and script writing as part of the activities.

Another important pedagogy spearheaded in the project is task-based language learning (TBLL). A number of schools have designed learning materials that bring students through pre-task, task and post-task learning activities of the TBL cycle. Successful experience has also been shared among schools.

##### **(b) Impact on promoting intercultural communication with respect to social psychological aspects of NCS students development:**

NCS students need to overcome the social psychological barrier before using the language confidently for intercultural communications. The project team in collaboration with some schools introduced innovative programmes that extend the experience of intercultural communication of their NCS students. For example, one school makes use of the drawing talent of the NCS students in creating illustrations for stories created by Chinese pupils in a partnership primary school. The interactions between the NCS students and Chinese students in the process help boost their confidence in daily communication using Chinese.

The projects helped 11 NCS school graduates to be admitted to Beijing Normal University Zhuhai

Campus in 2010 and 2012 to study a B.A. degree programme with major in Chinese language. These students subsequently went back to their schools to share their learning experience with junior NCS students.

**(c) Teacher empowerment:**

Learning materials for NCS students have been developed and tried in classroom contexts when supporting schools in the past three years. The Chinese Language learning materials adopted by different schools include *Differentiated story learning material for learner diversity* 《多層原著閱讀教材》, *Accessing Chinese for Ethnic Minority Learners in Hong Kong* 《新版中文八達通》, and *Picture Books in Chinese composited by 20 ethnic minority students* (Ki, Poon, & Kosar, 2011).

The project team also designed assessment tools for Chinese teachers to assess the Chinese language proficiency of their NCS students. In addition, teaching exemplars jointly developed by the collaborating teachers and the HKU team have been uploaded to the web to facilitate exchange among teachers.

Through providing on-site support to teachers since 2008, more teachers are willing to open their lessons to be observed and discussed. The project team has organized four conferences since 2009 for schools with on-site support to present their teaching examples and experiences, and the number of schools joining the conference has been increasing.

**5. References to the corroboration of impact or benefit**

- Government press release on February 22, 2011:  
<http://www.info.gov.hk/gia/general/201102/22/P201102220208.htm>

The then Secretary for Education, Mr Michael Suen, visited Hong Kong Taoist Association Wun Tsuen School, which was able to demonstrate an effective Chinese teaching and learning for NCS students. The contributions of the HKU project team were acknowledged in the press release:

“To enable NCS students to learn Chinese more effectively, the University of Hong Kong’s Faculty of Education has assisted the school in developing a school-based Chinese Language curriculum for students from Primary One to Six.

The curriculum helps to enhance effective learning of Chinese characters and improve students’ listening and speaking skills. It strengthens students’ reading ability with the use of storybooks, diversifying their vocabulary and knowledge in the target language. Students’ writing ability and interest is also nurtured and improved using a diversified writing strategy.”

- Some collaborating schools have become ‘Professional Development Schools’ (under Education Bureau’s ‘Professional Development Schools Scheme’), e.g. Hong Kong Taoist Association Wun Tsuen School and Caritas Tuen Mun Marden Foundation Secondary School, which offer professional sharing for other schools covering a wide range of subjects and themes.
- Professor S.K. Tse and the team were interviewed by TVB reporter on teaching Chinese for NCS students, which was broadcasted at TVB Jade channel ‘Tuesday Report (星期二檔案)’ on February 18, 2014.
- Professor S.K. Tse has been serving as overseas consultant to the Ministry of Education of Singapore since 2004 on the development of Chinese curricula to meet the needs of learners from a diverse range of cultural and language backgrounds.
- Professor Tse was also invited as trainer in a series of train-the-trainer programmes organized by the South East Asian Ministry of Education Quality Improvement of Teachers and Education Personnel in June 2011 in Indonesia.



## THE UNIVERSITY OF HONG KONG

## IMPACT CASE HISTORY

**Title of case study: The Community Legal Information Centre (CLIC) Series****1. Summary**

Professor Anne Cheung of the Department of Law and Dr Kevin Pun of the Department of Computer Science, together with their project team members, Dr Felix Chan and Mr Eric Cheung, set up the Community Legal Information Centre (CLIC) website series ([www.clic.org.hk/](http://www.clic.org.hk/)) to provide free bilingual legal information to the local community. The series includes YouthCLIC, SeniorCLIC and FamilyCLIC, which were specifically developed for teenagers, the seniors and families in Hong Kong respectively. The websites cover legal issues that have direct bearing on the daily lives of people in Hong Kong. The CLIC website was started in 2007 following debate in the community about the high cost of legal services and the need to provide an affordable legal information service for the public. The impact of the project can be seen in the number of visitors – more than 3,700 each day to the main CLIC site alone. The team has also been invited through CLIC to give public talks to share legal knowledge with the community.

**2. Underpinning research**

The Law and Technology Centre (LawTech Centre), established in 2001, is a joint Centre of the Faculty of Law and the Department of Computer Science at The University of Hong Kong. With a view to promoting and supporting the rule of law in Hong Kong, the Centre has long been committed to serving the community by making legal information available on the Internet for free access by the public. In 2002, it launched the “Hong Kong Legal Information Institute” (HKLII) at [www.hklii.hk](http://www.hklii.hk), which is a legal research facility on Hong Kong law offering primary legal information relating to Hong Kong, including legislation, regulations, case law, practice directions and law reform reports. HKLII is the first of its kind in Hong Kong and Asia that provides free access of information not limited to the legal profession but the general community. Currently, HKLII attracts over 3,200 visitors per day.

There has been debate in the community about the high cost of legal services and the need to provide an affordable legal information service for the public. In view of the success of the HKLII, the LawTech Centre was commissioned by the Government in 2005 to develop, host and maintain a website known as the Community Legal Information Centre (CLIC) as an adjunct to the HKLII. The aim is to enable members of the public to have a preliminary understanding of the legal position of a certain matter before going to a lawyer for legal advice. Apart from the project team members, research students were also involved to contribute to the contents of the website.

**3. References to the research****Key publications:**

Greenleaf, G; Chung, P; Mowbray, A; Chow, KP; Pun, KH. *The Hong Kong Legal Information Institute (HKLII): its role in free access to global law via the Internet*, Hong Kong Law Journal, 2002, v. 32 n. 2, p. 401-428.

Kevin KH Pun, HW Chan, CF Chong, KP Chow, Lucas Hui, WW Tsang. *An unexplored legal issue for the provision of free legal information in Hong Kong*, Proceedings of the 9th International Conference on Law via the Internet, October 2008, Florence, Italy, 151-160.

Cheung, ASY. *The Hong Kong Legal Information Institute Experience*, World Legal Information Institute Conference, Sydney, Australia, 2009.

Alex Y H Fung, Kevin K H Pun, Philip Chung and Andrew Mowbray. *Searching in Chinese: the experience of HKLII*, Law via the Internet Conference 2011, June 2011, Hong Kong.

Alex Y H Fung and Kevin K H Pun. *Hypertext Markup in Bilingual Environment: The Challenge for HKLII*, Law via the Internet Conference 2012, October 2012, Ithaca, USA.

**Selected external grant funding:**

Community Legal Information Project

Funding Source: Department of Justice, HKSAR Government - General Award

Principal Investigator: Dr Kevin Pun

Period: 2004 – 2007

Amount Awarded: HK\$3.18M

Free Legal Information for Families, Youth and the Elderly in Hong Kong

Funding Source: Home Affairs Bureau of the HKSAR Government of the HKSAR

Principal Investigator: Professor Anne Cheung and Dr Kevin Pun

Period: 2012 – 2014

Amount Awarded: HK\$3.12M

**4. Details of the impact or benefit**

Launched in 2007, the CLIC website at [www.clic.org.hk](http://www.clic.org.hk) provides free bilingual legal information, written for the lay person. It provides basic information on more than 20 legal topics that have most interest and direct bearing on the daily lives of ordinary citizens in Hong Kong. The topics include employment disputes, landlord and tenant, personal injuries, protection for investors and structured products, police and crime, etc. Mobile apps for iOS and Android platforms have also been developed for free download.

The average number of visitors for CLIC is over 3,700 per day.

The success of CLIC has led to the launch of 3 websites for specific groups of people in Hong Kong, which were sponsored by the Home Affairs Bureau of the HKSAR Government:

(a) YouthCLIC: <http://youthclic.hk/>

Launched in 2012, the YouthCLIC website provides free legal information on about 70 offences and legal issues concerning young people. Topics covered by YouthCLIC include sexual offences, Internet crimes, school bullying, triad-related offences, theft and drug offences. More than 20 videos are shown to illustrate different crime scenarios based on true cases. Answers to the questions posed in the videos were written by legal experts. Viewers can click on specific legal terms which interlink with brief explanations of relevant crimes or Hong Kong ordinances.

Besides the website, YouthCLIC also set up a channel in Youtube and a page in Facebook to enhance interaction with young people. Selected news clippings with recommended YouthCLIC website content in YouthCLIC Facebook Page (Chinese only) help young people better understand the legal issues they may encounter in daily life.

The CLIC team, in collaboration with the HKU Faculty of Education, has successfully obtained Knowledge Exchange (KE) funding in 2013/14 to develop teaching materials for secondary school students. Six specific topics have been chosen from the YouthCLIC website to enrich the syllabus of the high school curriculum on liberal studies. The topics include: (i) use of illegal drugs, (ii) school bullying, (iii) intellectual property offences, (iv) online shopping, (v) sexual offences, and (vi) compensated dating.

The project aims to enhance students' legal knowledge by providing credible and accurate legal information for teaching materials in Liberal Studies. Data and suggested answers in the teaching packages were extracted from the YouthCLIC website. The project will benefit not only secondary school students but also Liberal Studies teachers, social workers, NGOs and youth counseling organizations. 90 sets of teaching packages were produced, including booklets and USBs, and were

distributed to teachers during two dissemination seminars held in September and October 2014. The soft copy of the teaching material can be downloaded for free at [http://youth.clic.org.hk/LS\\_teaching.pdf](http://youth.clic.org.hk/LS_teaching.pdf).

(b) SeniorCLIC: <http://www.s100.hk/>

The SeniorCLIC website followed in 2013. It provides free legal information on 27 legal topics of concern to seniors. The topics are divided into five groups: (1) housing and accommodation, (2) smart elderly, (3) work and retirement, (4) farewell to life, and (5) health and care. SeniorCLIC was designed as a legal guide for the elderly, tailor-made in every respect to suit the needs of seniors. The contents were written by legal experts, with the relevant laws and legal concepts being explained in plain language.

Much of the legal information provided on SeniorCLIC is also available in audio form. The website has an audio page (in Cantonese only) that summarizes the 27 topics in audio clips of three to four minutes each. The audio clips are also available in CD form for seniors who do not use computers. So far, about 2,000 booklets containing the transcript of the audio clips and 1,500 CDs have been sent out on request.

(c) FamilyCLIC: <http://familyclic.hk/>

The FamilyCLIC was launched in 2014 and provides free legal information on 19 topics involving legal issues commonly encountered by families in Hong Kong, including disputes with neighbours, domestic violence and assistance, foster care and child adoption, purchasing property together and divorce. The contents were again written by legal experts in plain language. FamilyCLIC serves as a quick and handy Internet guide for family members in Hong Kong to find relevant legal information. The contents of the website were summarized into 100 questions and answers as an introductory guide for viewers. These 100 Q&As were printed into booklets available to the public for free, and about 3,500 booklets (3,000 Chinese version and 500 English version) have been sent out on request.

In 2014, the average number of visitors for YouthCLIC and SeniorCLIC websites was about 150 to 250 per day. FamilyCLIC, being the most recent addition, has about 170 visitors per day last year after the official launch in April 2014.

The reach and popularity of the websites could be illustrated by the visitor numbers from July 2014 to June 2015 as follows:

	CLIC	YouthCLIC	SeniorCLIC	FamilyCLIC (note: launched on March 31, 2014)
Unique visitors	758,170	68,284	87,299	78,145
Number of visitors	1,257,945	86,826	125,110	117,617

The YouthCLIC website joined two website competitions, namely, "Top 10 .hk Website Competition 2012" organized by the Hong Kong Internet Registration Corporation (HKIRC) and "Meritorious Websites Contest 2012" organized by the Office for Film, Newspaper and Article Administration (OFNAA) in 2013. It was shortlisted as the final contestants in both competitions.

The YouthCLIC and SeniorCLIC websites were shortlisted as the final contestants in "Top 10. hk Website Competition 2013" organized by the HKIRC in 2014.

Since the launch of CLIC in 2012, the project team has been interviewed by newspapers and on radio programmes to introduce the topics of the websites. Team members were also invited to give talks by NGOs, such as the Hong Kong Council of Social Service and the Family Council, to share about how to promote legal knowledge to the public by making use of the Internet. Promotional items of HKLII, CLIC and YouthCLIC were distributed in the UNESCO Peacemakers' Celebration on February 24, 2013 at the booth for FIDA (International Federation of Women Lawyers).

The CLIC series provide an important resource to our society – access to legal information, which could help people navigate their everyday lives. The project team has demonstrated what knowledge exchange initiatives could do to improve people’s lives where access to knowledge is of the essence of such improvement.

#### **5. References to the corroboration of impact or benefit**

- Analytics of the websites are available for corroboration purpose.
- A list of news reports and radio interviews is available for corroboration purpose.
- Crosslinking or listing of CLIC/YouthCLIC/SeniorCLIC/FamilyCLIC websites can be found on the following websites:

The Home Affairs Bureau of the Government of HKSAR

The Department of Justice

Hong Kong Law Reform Commission

The Family Council

The Hong Kong Federation of Youth Groups

Hong Kong University of Science and Technology Library Internet Sources

## THE UNIVERSITY OF HONG KONG

## IMPACT CASE HISTORY

**Title of case study: Promoting Ageing-in-Place for Elderly Tenants in Rental Housing Estates of Hong Kong Housing Society****1. Summary**

Professor Terry Lum, Professor in the Department of Social Work and Social Administration and Director of the Sau Po Centre on Ageing, and his team (Dr Vivian Lou and Dr Ernest Chui) developed a project that aimed at giving more elderly people the chance to stay in their own homes longer, rather than go into institutional care. “Ageing in place” is a concept that has been embraced around the world to enable the elderly to live in their own homes for as long as possible regardless of their abilities. Based on the team’s recommendation from the Ageing-in-Place study, the Hong Kong Housing Society adopted this approach in a pilot project at Cho Yiu Chuen, a housing estate in Kwai Chung, in 2012, and the results have been highly positive. It now plans to extend the model to 11 estates. This project helps thousands of low income elderly people stay in their communities as they age.

**2. Underpinning research**

In September 2011, the Hong Kong Housing Society (HKHS) invited the Sau Po Centre on Ageing (COA) to conduct a consultancy study to develop a new ageing-in-place model for low income elderly people living in HKHS’s twenty rental housing estates. The principal investigator of the project was Professor Terry Lum (Professor, Department of Social Work and Social Administration [SWSA] and Director of COA), and co-investigators included Dr Vivian Lou (Associate Professor, SWSA & Associate Director, COA) and Dr Ernest Chui (Associate Professor, SWSA). About 32% of all tenants of these rental housing estates are older people and the property management staff of the HKHA is not trained to help these older tenants. Furthermore, senior staff of the HKHS understood that they needed to change the scope of services they offer to meet the needs of their rapidly ageing tenant population. However, there was no working model of Ageing-in-place for low income elderly in Hong Kong. Internationally, the recent development of environmental gerontology has pinpointed the importance of environmental and social factors, other than medical factors, on the long term care decision of frail older people. However, most overseas research findings came from middle class and educated elderly samples.

Between November 2011 and February 2012, the COA research team surveyed 400 elderly residents living in four HKHS rental estates, and conducted numerous focus groups with elderly tenants, NGOs’ staff members who were providing services to the elderly in the four estates, HKHS property management staff, and HKHS senior staff. They also carried out an environment scan of all four estates. Their report, submitted in February 2012, recommended three specific ageing-in-place models that could be implemented in these rental housing estates.

The team’s study identified the significant roles of neighbourhood physical environment, neighbour support, and availability of social care and medical care centers in the immediate environment to the ageing-in-place decision of low income elderly. These findings enriched theoretical understanding of the interaction between long term care decision and neighbourhood characteristics, which is a rapidly developing research area in environmental gerontology. They were invited to present their findings in local and international conferences (e.g. 20th IAGG Congress of Gerontology and Geriatrics in Seoul, 2013).

**3. References to the research****Key peer-reviewed publications:**

Chen YY, Wong GH, Lum TY, Lou VW, Ho AH, Luo H, Tong TL. Neighborhood support network, perceived proximity to community facilities and depressive symptoms among low socioeconomic status

Chinese elders. Ageing Ment Health. 2015 Mar 16:1-9.

**Terry Y. S. Lum**, Vivian W. Q. Lou, Yanyan Chen, Gloria H. Y. Wong, Hao Luo and Tracy L. W. Tong. Neighborhood Support and Ageing-in-Place Preference Among Low-Income Elderly Chinese City-Dwellers. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 2015.

**Selected external grant funding:**

Promoting Ageing-in-Place for Elderly Tenants in Rental Estates of Hong Kong Housing Society

Funding Source: Hong Kong Housing Society

Principal Investigator: Dr Terry Lum

Period: 2011 – 2012

Amount Awarded: HK\$500,000

A Comprehensive Study on Housing in an Ageing Community

Funding Source: Hong Kong Housing Society

Principal Investigator: Professor Rebecca Chiu

Co-Investigator: Dr Terry Lum

Period: 2013 – 2014

Amount Awarded: HK\$1,930,000

Family Caregiving and Long-term Care Decision of People with Dementia in Hong Kong

Funding Scheme: Central Policy Unit's Public Policy Research

Principal Investigator: Lum TYS

Period: 2014 – 2015

Amount Awarded: HK\$332,426.70

**4. Details of the impact or benefit**

The team presented their research findings and recommendations to the senior management of the HKHS in February 2012, and their recommendations were supported by the senior management. In March 2012, they presented the findings and recommendations to the Board of Directors of the HKHS, and the Board also endorsed the recommendations. To gain further support from the local community, they presented the findings in the Yan Oi Tong Cross-Strait Conference on Elderly Services in February 2012. More than 200 people from Hong Kong, Taiwan, Mainland China, and Macau participated in this meeting.

In the summer of 2012, the HKHS selected Cho Yiu Chuen, a low income public housing estate, to implement a pilot project based on the team's recommendations. The initial budget for the pilot project was HK\$6 million. In the summer of 2013, the HKHS completed an internal evaluation of the effects of the project on the well-being of older residents in Cho Yiu Chuen and found very positive impact. The HKHS is expanding the project to 11 public housing estates in 2014. The COA research team is currently working with the HKHS to study the long term impacts of this ageing-in-place model on older people's well-being.

**5. References to the corroboration of impact or benefit**

- Statement of support from HKHS is available for corroboration purpose:  
The team's efforts have been recognized by the HKHS as having "strengthened the role of the HKHS in serving the needs of the rapidly ageing tenant populations of the Hong Kong community in housing and related services".
- HKHS' press release on April 15, 2013:  
[http://www.hkhs.com/eng/wnew/pdf/pr\\_20130415\\_AIP.pdf](http://www.hkhs.com/eng/wnew/pdf/pr_20130415_AIP.pdf)  
房協協助長者居民「居家安老」(Chinese version only)  
(translated as: Housing Society Enables Elderly Residents to Age in Place)

## Knowledge Exchange Funding Exercise 2014/15: Summary of Impact Projects

Dept/ Unit	Project Co-ordinator	Post Title, Department	Project Title	Summary Description
Architecture	Ms Tris KEE	Assistant Professor, Department of Architecture	Charity School Prototype - Building Community Architecture in Cambodia	The project aims to utilize architectural knowledge to build charity school prototypes, study models and organize student workshops for both non-architecture students and architecture students, and to generate a series of analyses and prototype models to benefit a poverty-stricken rural area in Cambodia.
Architecture	Mr Olivier OTTEVAERE	Assistant Professor, Department of Architecture	Earthquake Reconstruction for Jintai Village: A Bamboo Formwork Cast Community Center	The project aims to enable the construction of the very first bamboo formwork cast community center as part of the earthquake reconstruction efforts for Jintai Village in Sichuan Province, China. The technology and techniques for using bamboo as a reusable casting formwork will be further developed in collaboration with local builders and the local government.
Architecture	Dr Sun Wah POON	Principal Lecturer, Department of Real Estate and Construction	Historical Construction Works in Hong Kong	Whether and how to preserve the recently unearthed construction works, believed to have been built in Sung Dynasty, in the old Kai Tak Airport has been a hot topic. The project aims to provide a platform for knowledge exchange of our enriched construction heritage in Hong Kong among the construction professionals, history researchers and the general public.
Arts	Professor Stephen Y W CHU	Professor and Director, Hong Kong Studies Programme, School of Modern Languages and Cultures	Synesthesia: Rediscovering Hong Kong Myriad Cultures	The project aims to rethink Hong Kong cultural characteristics and the city's transforming identity via senses. It will explore the multiple perspectives of the various producers and consumers of Hong Kong culture by engaging secondary school students, members of other interested institutions, as well as the general public, through forums, public seminars, community educational outreach programmes and liberal education endeavors.
Arts	Professor Daniel CHUA	Professor, School of Humanities (Music)	Collaborating Sounds: Arts Exchange Project	The project aims to bring together the HKU Gamelan and HKU Percussion Ensemble with our partners, the Hong Kong New Music Ensemble and HKU Cultural Management Team, to collaborate in a series of workshops and talks culminating in a concert in The Grand Hall, Lee Shau Kee Lecture Centre in early 2015. This artistic and educational collaboration will benefit underprivileged school students and the general public.
Arts	Professor Douglas KERR	Dean	Second Century Lecture Series	In association with the Faculty of Social Sciences and the Hong Kong International Literary Festival, the project aims to offer free public lectures given by internationally renowned experts in the Arts and Humanities to give the public access to high-calibre lectures and to develop the intellectual culture in Hong Kong.
Arts	Dr Joe LAU	Associate Professor, School of Humanities (Philosophy)	Design and Content Update of OpenCourseWare Website <i>Critical Thinking Web</i>	The project aims to update both the content and design of the "Critical Thinking Web", a website with more than 100 online tutorials on critical thinking, logic and creativity. More than 40,000 visitors per month from Hong Kong and overseas will benefit from the new content and more mobile-friendly design.
Arts	Dr Ken LAU	Assistant Professor, Centre for Applied English Studies	ProWrite: One Click to Success	The project aims to create a one-stop interactive online platform "ProWrite" to provide self-help language resources for people in different stages of career who would like to strengthen their professional writing skills.
Arts	Dr Li CHONG	Lecturer, School of Modern Languages and Cultures	German for Fun - Language and Cultural Project for Secondary School Students	The project aims to enhance the interest of Hong Kong secondary school students in learning German and the understanding of the German culture through outreach events like public lectures and workshops to be conducted by HKU lecturers and students from the German Programme.
Arts	Dr Lisa LIM	Assistant Professor, School of English	LinguisticMinorities.HK: Speaking in Their Tongues	The project aims to further develop the website "LinguisticMinorities.HK", a one-stop resource on the linguistic situations of ethnic minorities in Hong Kong, by providing a Chinese version so that the Chinese-speaking population will be able to access the website's resources.
Arts	Dr Eva Nga Shan NG	Lecturer, School of Chinese	Resources for Interpreting	The project aims to build a website which compiles training and reference materials, including a bilingual Chinese/English vocabulary database on current affairs, to benefit (1) professional interpreters and those aspiring to be interpreters, (2) trainers of interpreters and researchers of interpreting studies, (3) Translation and Interpreting students and (4) the general public including language learners and interpreting service users.

Arts	Dr Ria SINHA	Post-doctoral Fellow, Centre for the Humanities and Medicine	The History of Malaria in Hong Kong: A Public Exhibition	The project aims to (1) organize an exhibition to explore with the public the history of malaria and its subsequent eradication in Hong Kong, (2) educate local students about malaria and its impacts on health through exhibition tours and online resources, and (3) organize a public talk and a symposium to raise community's awareness of the continued global threat posed by malaria and the issues at stake in its eradication.
Arts	Dr Mirana M SZETO	Assistant Professor, School of Humanities (Comparative Literature)	Preservation of Socio-cultural Heritage and Historical Landscape of Kwu Tung at Sheung Shui, New Territories	The project aims to investigate the socio-cultural heritage and historical landscape potential of Kwu Tung Village. To advocate partial or complete preservation of the Village, a report will be prepared for the submission to the Antiquities Advisory Board under the Development Bureau and the UNESCO World Heritage Committee. Oral histories will be collected with the villagers, and community tours and seminars will be organised for the public.
Arts	Dr Esther YAU	Associate Professor, School of Humanities (Comparative Literature)	Narratives of Connections in Many Accents	The project aims to establish a network of non-Chinese and non-native Cantonese speaking groups to share their stories of connecting to the people in the cosmopolitan city of Hong Kong through readings and discussions of selected short stories, films, and visual art in interactive workshops. Their creative connection narratives will be exhibited in a web resource to benefit the wider community.
Arts	Dr Olga ZAYTS	Assistant Professor, School of English	Reaching the Audience: Broadening Resources and Implementing Social Media for the 'Language in Healthcare (LiH)' Initiative	The project aims to further develop the LiH website, an information resource about language and communication in healthcare, by adding the Chinese translations, expanding the resources available, and launching it publicly and professionally, to broaden the impact of the website upon the target communities such as healthcare professionals, the general public and researchers of healthcare communication in Hong Kong.
Dentistry	Dr Chun Hung CHU and Dr Dominic K L HO	Clinical Associate Professor (Oral Diagnosis and Polyclinics) // Clinical Assistant Professor (Periodontology)	Empowering a Non-Governmental Non-Profit Organization to Deliver Primary Oral Care to Tung Chung Citizens	The project aims to improve the dental health, oral health knowledge and self-care capacity of Tung Chung citizens, by (1) training the dental care team of the mobile dental clinic of Project Concern Hong Kong to provide primary oral health care in the three public housing estates of Tung Chung and (2) holding high-profile public events with Project Concern to promote oral health, with the assistance of the District Councilor and his team.
Dentistry	Dr Gillian Hiu Man LEE	Clinical Assistant Professor (Paediatric)	Promoting Oral Health and Preventing Tooth Decay in Nursery Children	The project aims to raise dental awareness and increase access to dental care among Hong Kong nursery-school children, their caregivers and their teachers by introducing an easy-to-use evidence-based guideline for caries prevention and management. The guideline will help prevent dental caries in nursery children at an early stage of life, and hence improve the oral health condition of Hong Kong children.
Education	Professor Mark BRAY	UNESCO Chair Professor in Comparative Education, Comparative Education Research Centre (CERC)	Regulating Private Tutoring for Public Good	The project will follow up the 2013/14 work which produced and disseminated a booklet in English jointly published by CERC and UNESCO. It will lead to (1) the co-publication of a Chinese translation in paper and electronic versions, and (2) the launch of the book, with accompanying discussion, at a national meeting of shadow education providers.
Education	Dr Dennis Chun-Lok FUNG and Professor Anne Shann-Yue CHEUNG	Assistant Professor (Division of Science, Mathematics and Computing) // Professor, Department of Law	Promoting the Understanding of Legislative Council and Universal Suffrage in the Liberal Studies Curriculum in Hong Kong Secondary Schools	The project aims to (1) enhance students' understanding of the constitutional functions and formation of the Legislative Council, (2) raise their awareness of right to vote and participation in public affairs, and (3) promote their critical-thinking skills to analyze the contemporary issues by providing credible and systematic information for the teaching materials in Liberal Studies for Hong Kong secondary school students.
Education	Dr Tammy KWAN	Assistant Dean (School-University Partnerships); Associate Professor	Enhancing Knowledge Exchange: Raising Teachers' English Language Awareness in Teaching Different Key Learning Areas (KLAs)	The project aims to raise the language awareness of teachers who are asked to teach their responsible KLAs (namely, Mathematics, Science and PSHE) in English through talks and workshops in the hope to benefit students who learn those subjects in a second language.
Education	Professor Edwin YIU	Professor (Division of Speech and Hearing Sciences)	Educating the Public with Vocal Hygiene and Treatment Options for Voice Problems Using the Body Type Concept of Traditional Chinese Medicine	The project aims to make use of the Internet (smart phone/tablet/World Wide Web platforms) for self-identification of body type so that appropriate vocal hygiene strategies, respective dietary suggestions and treatment options could be disseminated. Professional voice users such as teachers, parents and sales persons will benefit from this project.
Engineering	Professor Francis CHIN	Associate Dean; Chair, Department of Computer Science	Robotics in Daily Life	The project aims to provide most updated information to the community on robotics development and daily applications through briefing, training, news broadcast, distribution of educational materials, exhibitions, and technical tours, etc.
Engineering	Dr Kam Pui CHOW	Associate Professor, Department of Computer Science	CRISIS - Critical Infrastructure Incident Simulator	The project aims to help strengthen the responsiveness of the region's critical infrastructure community against cyber attack (particularly malware attack) through simulation drill exercises and knowledge sharing.



Engineering	Dr Wilton FOK	Assistant Dean; Principal Lecturer, Department of Electrical and Electronic Engineering (EEE)	Learning Maths and Computer in HKU with e-Textbook	The e-Learning Lab under the Department of EEE is developing a set of e-textbook in mathematics and computer for the Education Bureau. The project aims to invite under-privileged junior students to attend free tutorial classes on the e-textbook and offer each participant a free account to use it.
Engineering	Professor Francis C M LAU	Associate Dean; Professor, Department of Computer Science	Sea Level Measurement Device for Everyone	Through organization of a competition and workshops, the project aims to encourage the primary and secondary school students and teachers, as well as the public, to learn more about engineering, weather and climate change by designing low-cost sea level measurement devices.
Medicine	Professor Danny CHAN	Professor, Department of Biochemistry	Little People Care Alliance	Children with different forms of rare bone diseases (little people) face many difficulties because of incorrect community perception, and school and public facilities that are not appropriate for their use. Through dialogues, workshops and a specialized information booklet, the project aims to change this perception for a better community understanding of the needs of the "little people" and the role of school teachers and students.
Medicine	Dr Johnny Chun-yin CHAN	Clinical Assistant Professor, Department of Medicine	Dermatology: More Than Skin Deep	The project aims to promote public awareness and knowledge on common and important dermatological conditions, their medical implications and the often neglected psychosocial impacts through a series of lectures and health exhibitions. It also aims to enhance the interest of the youth population on health issues and empower them to engage in health care promotion.
Medicine	Dr Lap Ki CHAN	Associate Professor, Institute of Medical and Health Sciences Education and Department of Anatomy	Publication of Medical Students' Reflective Essays on Dissection: Life and Death Education for the Medical Professional and the General Public	The project aims to support the publication of an anthology of medical students' reflective essays on their dissection experience and the importance of "Great Body Teachers", the body donors. Associated promotional activities will be organized to enhance the discussion and understanding of body donation in Hong Kong and to strengthen the mutual trust and respect between the public and the medical profession.
Medicine	Dr Noel Po Tai CHAN	Assistant Professor, School of Nursing	Preventing Excess Weight Gain in Primary School Children: Train the Trainer Through Knowledge Exchange	The project aims to train the trainers to (1) increase awareness of the parents/guardians about the weight status of their overweight/obese children in junior primary years and health potential consequences of obesity, and (2) provide support to parents/guardians and their overweight/obese children to adopt small changes in daily lifestyle.
Medicine	Dr Brian Hon-Yin CHUNG and Dr Olga ZAYTS	Clinical Associate Professor, Dept. of Paediatrics and Adolescent Medicine // Assistant Professor, School of English	Raising Awareness About Genetics and Genomic Medicine Through Printed and Electronic Resources Among Children and Adolescents in Hong Kong	The project aims to exchange professional knowledge of genetics and genetic conditions by developing a free bilingual educational cartoon booklet for children, adolescents and the families/carers of those affected by genetic conditions, and organising a series of events such as focus group meetings, workshops for parents/carers and seminars for professionals who provide genetic services.
Medicine	Dr Christopher HUI	Clinical Assistant Professor, Department of Medicine	COPD and Pulmonary Rehabilitation Public Awareness Campaign at HKU-SZH	The project aims to introduce patients suffering from Chronic Obstructive Pulmonary Disease (COPD) in Shenzhen a comprehensive physiotherapy, pulmonary rehabilitation and public information/tobacco awareness programme. It will also target the public and relatives of smokers/ COPD sufferers who are subject to the harmful effects of second-hand smoke inhalation.
Medicine	Dr Christopher HUI	Clinical Assistant Professor, Department of Medicine	Smoking Cessation and Anti-smoking Public Awareness Campaign at HKU-SZH	The project aims to introduce regular smokers in Shenzhen a comprehensive smoking cessation and public information/ tobacco awareness programme. It will also target the public and relatives of smokers/COPD sufferers who are subject to the harmful effects of second-hand smoke inhalation.
Medicine	Dr Gary Kui Kai LAU	Clinical Assistant Professor, Department of Medicine	Neuroimaging for Health Care Professionals	The project aims to provide health care professionals with an easily accessible platform in the form of an iPad App to further understand, learn and appreciate imaging characteristics of commonly encountered neurological disorders in daily clinical practice.
Medicine	Dr Edwin Ho Ming LEE	Clinical Assistant Professor, Department of Psychiatry	Improving Cognition of Psychosis Patients in the Community: FitMind Yoga	The project aims to advocate and promote the benefits of developing an exercise habit on the cognition of patients with early psychosis by offering free sessions of yoga training and self-practice materials to the patients under Hospital Authority who cannot afford to join or have never joined yoga exercise classes.
Medicine	Dr Elaine Yuen Phin LEE	Clinical Assistant Professor, Department of Diagnostic Radiology	Radiation in Medical Imaging: The Myths and Realities Explained	Through delivery of public seminars, publications of information pamphlets and creation of an electronic resource on medical imaging radiation, this project aims to empower the public with knowledge on clinical applications of medical imaging, its impact on disease management and treatment, and the risks related to radiation exposure with emphasis on issues with medical radiation protection.

Medicine	Dr Lei LI	Assistant Professor, School of Chinese Medicine	Acupressure Workshop - Acupressure Rehabilitation for Hemiplegic Stroke Patients	The project aims to enhance the capacity of the caretakers who provide care services to hemiplegic stroke patients by offering them free workshops with training of acupressure rehabilitation techniques that is easy to learn and use.
Medicine	Professor Ronald LI	Director, Stem Cell and Regenerative Medicine Consortium (SCRMC)	Stem Cell Knowledge Exchange Program: From the Scientific Cutting Edge to Experience	The project aims to raise public awareness about stem cells and regenerative medicine and how stem cell research can benefit the future mankind by providing secondary school students opportunities to experience and participate in various activities including luncheons with stem cell experts, visits of SCRMC laboratories, a debate on stem cell and a poster competition, etc.
Medicine	Ms Rebecca P W POON	Lecturer, School of Nursing	Promotion of Oral Health for Lower-social Class Community-dwelling Older Adults Through Interdisciplinary Collaboration	The project aims to transfer oral health care knowledge and skill to community-dwelling older adults and their caregivers by providing health education through interdisciplinary collaboration of nursing students, dental students and secondary school students.
Medicine	Dr Janet Yuen Ha WONG	Assistant Professor, School of Nursing	A Community Women's Health Ambassador Programme	The project aims to train 100 grassroots women in Shatin to be the Community Women's Health Ambassadors to (1) promote their health and wellness, and (2) raise awareness of women's health in the community, by providing a training programme hosted by HKU teaching staff from different disciplines (nursing, physiotherapy and nutrition).
Science	Dr Benny Chun Hei NG	Lecturer	HKU x Food Revolution 2015 - The SciChef Cooking Challenge	The project aims to share knowledge on food science, chemistry and nutrition with junior secondary school students, and to arouse their interest towards science and healthy diets, through a two-day event, which includes lectures, live cooking demonstrations, a cooking competition and "healthy dish" presentations.
Science	Dr Jason C S PUN	Principal Lecturer, Department of Physics	Promoting Light Pollution Education and Research Worldwide	The project aims to (1) spread the night sky measurement method developed at HKU to overseas locations such as Tokyo, Japan and Ulan Bator, Mongolia; (2) establish the foundation for setting up an international light pollution monitoring network, with HKU as the data center; and (3) sustain light pollution public education in Hong Kong by maintaining the public webpage and night sky measuring programs.
Science	Dr Thiagarajan VENGATESEN	Associate Professor, School of Biological Sciences	Sustainable Production Technology of Spat for Hong Kong Oyster Growers	The project aims to (1) provide hands-on training and practical knowledge to Hong Kong's oyster growers about oyster seed production for sustainable aquaculture, and (2) engage the public and students to promote awareness about sustainable methods for oyster meat production in Hong Kong through a training course and a workshop .
Social Sciences	Dr Celia Hoi Yan CHAN	Assistant Professor, Department of Social Work and Social Administration	IVF CARE – Developing an Interactive Self-help Kit in Assisting Patients to Monitor the Medication and Psychosocial Well Being During IVF Treatment	The project aims to develop a tailor-made mobile application to assist women currently receiving or planning to receive in vitro fertilization (IVF) treatments at fertility clinics. The application will be an all-in-one treatment planner, medical and psychosocial information portal, and patient well-being self-help package.
Social Sciences	Dr Christian CHAN	Assistant Professor, Department of Psychology	Post-typhoon Haiyan Mental Health Risk Assessment and Intervention	In response to a lack of resources and professionals to identify and provide service to survivors who are in need of mental health services in the regions affected by Typhoon Haiyan, the project aims to provide post-disaster mental health assessment and intervention training to non-professional service providers in the Philippines.
Social Sciences	Professor Cecilia CHENG	Professor, Department of Psychology	Evidence-based Stress Management Intervention Designed for Employees of Small- and Medium-sized Enterprises	The project aims to build up effective coping skills of the employees in local small- and medium-sized enterprises (SMEs) by (1) delivering evidence-based intervention that engages the employees in stress management in their working environments, (2) training SME trainers to deliver "in-house" intervention programs, and (3) establishing best practice guidelines for other mental health professionals to follow.
Social Sciences	Professor Cecilia L W CHAN	Head and Professor, Department of Social Work and Social Administration	Advancing Dignity and Compassion in End-of-Life (EoL) Care	The project aims to (1) enhance compassionate understanding of patients and families facing the end of life, (2) promote care with dignity among health and social care providers and (3) increase public awareness, engagement and participation in the governance of death, dying and loss through the publication of an informative self-help manual, a concise interactive webpage, and other social media based promotions.
Social Sciences	Dr Janet Hui-wen HSIAO	Assistant Professor, Department of Psychology	HKU Project in Enhancing the Orthographic Awareness of Chinese Characters in Local Chinese-as-a-Second-Language (CSL) Secondary School Students	Through an in-class character component training program, the project aims to enhance the orthographic awareness of Chinese characters in secondary school students who study Chinese as a second language. The protocol of the program will be distributed to teachers or educators of CSL students and available on a website.
Social Sciences	Dr Harry HUI	Associate Professor, Department of Psychology	The Science of Love and Relationships	The project aims to (1) produce videos that are both interesting to watch and that contain scientifically accurate information on intimate relationships and (2) disseminate the videos on the Internet in order to engage the public in conversations leading to better understanding of the science of intimate relationships.

Social Sciences	Dr Terry Y S LUM	Director, Sau Po Centre on Ageing	Healthy x Productive Ageing: Elderly Peer Health Educator Programme	The project aims to promote healthy and productive ageing by empowering elders as peer health educators to promote awareness of healthy lifestyle in community-dwelling older persons. Training in basic health screening and briefing on healthy lifestyle tips will be provided to the peer health educators, and leaflets on healthy lifestyle tips will be distributed to community-dwelling older persons.
Social Sciences	Dr Sandra Kit Man TSANG	Associate Professor, Department of Social Work and Social Administration	Home-schooling Wisdom in Facilitating Mathematics and Related Learning Going On-line	Through a website for public access, a booklet for school distribution, and an inter-disciplinary dissemination seminar, the project aims to share successfully-applied local home-schooling resources and strategies to enhance the learning of children with mathematics and related learning difficulties.
Social Sciences	Dr Gloria H Y WONG	Research Assistant Professor, Sau Po Centre on Ageing	Workshop and Implementation Guidebook for Elderly Services Organisation Managers on Evidence-based Non-pharmacological Interventions for People with Dementia and Family Caregivers	The project aims to systematically introduce evidence-based non-pharmacological interventions for people with dementia and their family caregiver in Hong Kong, by organizing a workshop for elderly service organization managers, and producing an implementation guidebook based on the knowledge shared in the workshop.
Social Sciences	Professor Paul S F YIP	Director, The Hong Kong Jockey Club Centre for Suicide Research and Prevention	Engage Media Professionals into Suicide Prevention	The project aims to engage media professionals and journalism students in suicide prevention to change social norms of suicide preventions at large by offering a workshop, continuously monitoring online and offline suicide news, proactively reminding and supporting local media professionals to responsibly report suicide, and developing updated guidelines for reporting and online dissemination of suicide news, etc.
Communications and Public Affairs Office	Ms Katherine MA	Director of Communications	Measurement of Positive Media Impact Related to HKU Knowledge Exchange	The project aims to continue on supporting an online news set up for pooling of daily local news reports concerning HKU and for measurement. The platform and statistics generated provide major reference to the University Management, Faculties and their members of their KE performance.
Institute of Human Performance	Dr Tanja SOBKO	Assistant Professor	Empowering Domestic Helpers and Parents to Promote Healthy Lifestyle (Physical Activity and Diet) in the Families with 2- to 4-Year-Old Children	The project aims to empower the domestic helpers, who take care of 2- to 4-year-old children, with the capacity to introduce and maintain a healthy life style of the children by (1) training domestic helpers to arrange for age-appropriate diets, physical activities and sleeping habits, (2) enhancing the communication between the domestic helpers and parents and (3) setting mutual goals to maintain children's healthy lifestyle habits in the families.
Institute of Human Performance	Dr Thomson Wai-lung WONG	Assistant Professor	Development of a Mobile App to Promote Fall Prevention Exercises for Older Adults in Hong Kong	The project aims to develop a mobile app to promote fall prevention exercises for older adults in Hong Kong and to serve as a valuable tool for the physiotherapists to guide and monitor the exercise compliance and progress of the older adults.
Journalism and Media Studies Centre	Dr King-wa FU	Assistant Professor	Hong Kong Online Sentiment Index	The project aims to deploy and disseminate the "Hong Kong Online Sentiment Index" through a project website and various social media platforms.
University Libraries	Mrs Jody BEENK	Head, Preservation and Conservation	HK PAGES - HONG KONG Preservation/Advocacy/Guidelines/Education/Sustainability	The project aims to create a bilingual set of preservation guidelines which will be available to the public through the Libraries' Preservation & Conservation Division website. The guideline will include care and handling tips and interactive features which will help diagnose and propose courses of action for the preservation of common library and archival materials.
University Libraries	Mr David PALMER	Associate University Librarian	HKU Scholars Hub - Further Development	The project aims to increase the functionality, utility and visibility of the HKU Scholars Hub for those looking for research collaborators, media contacts, and research supervisors.
University Museum and Art Gallery	Dr Florian KNOTHE	Director	Clay Classes	The project will coincide with the forthcoming exhibition of Picasso ceramics at the Museum in September and October 2014, and aims to (1) develop an educational programme for secondary school students and the general public, (2) illustrate modern ceramics and (3) encourage pupils to imitate the designs, train their eyes and hand skills, and enhance their appreciation of art.
University Museum and Art Gallery	Dr Florian KNOTHE	Director	Early <i>Mona Lisa</i>	The project will coincide with the forthcoming exhibition of Leonardo Da Vinci's early <i>Mona Lisa</i> portrait at the Museum in March and April 2015, and aims to (1) develop an educational programme for secondary school students and the general public, (2) illustrate the work of Italy's most famous painter of the High Renaissance, and (3) draw attention to the scholarly debate around attribution and authentication.

## Student Knowledge Exchange (KE) Projects under the Service 100 Fund 2014/15

Student Group or Name of Team Leader	Partner Organization	Project Title	Target Beneficiaries
<b>Faculty of Arts</b>			
<i>ArtSeeker</i>	The Conservancy Association Centre for Heritage (CACHe)	Sai Ying Pun Seek & See	Local residents in Sai Ying Pun
<b>Faculty of Business and Economics</b>			
<i>Beyond The Pivot</i>	Light for Children Ghana	BTP Go2Africa Program 14-15	Local communities in Ghana
<i>SpeechExpress</i>	<ul style="list-style-type: none"> <li>• Shaukiwan Tsung Tsin School</li> <li>• Hong Kong Chinese Women's Club College</li> <li>• Clementi Secondary School</li> <li>• Leung Shek Chee College</li> <li>• Fukien Secondary School (Siu Sai Wan)</li> </ul>	SpeechExpress Hong Kong Programmes	Students in Hong Kong who do not have access to international school education
Miss Vivian Po Yee LAM	Fair Employment Agency	Fair Employment Campaign	Foreign domestic helpers working in Hong Kong
<i>SpeechExpress</i>	Yongchun No. 1 Middle School	SpeechExpress Yongchun Language Camp 2014	Secondary school students in Yongchun, Mainland China
<i>Beyond the Pivot</i>	Light for Children	BTP Go2Africa Program 14-15	Children from less advantaged groups in Ghana
<b>Faculty of Dentistry</b>			
Mr Arthur MAN	<ul style="list-style-type: none"> <li>• Refugee Union</li> <li>• Hong Kong Baptist Church Good Neighbour Chapel</li> <li>• Disabled Children's Centre</li> </ul>	A Reason to Smile	3-5 year-old children and their parents from minority groups in Hong Kong
Miss Winnie Wai Chi CHENG	Ebenezer New Hope School	Dental Examination and Oral Health Education for the Visually Impaired Students	Visually-impaired students
Miss Jingyu ZHAN	St. Barnabas' Society and Home	Oral Health Promotion among Homeless People in Hong Kong	Homeless people in Hong Kong
Miss Phoebe Pui Ying LAM	Fountainhead Association	Aiding Age Estimation for Orphans in Guangxi, Mainland China	Orphans in Guangxi, Mainland China
Mr Franketh Chi Hei LIU	Ho Fung College (Sponsored by Sik Sik Yuen)	CLOSER - Cultivating a Life-long Oral Healthcare for Students and Elderly Residents	Secondary school students and the elderly in Hong Kong
<b>Faculty of Education</b>			
Miss Chi Man WONG	Po On Commercial Association Wan Ho Kan Primary School	Supporting Non-Chinese Primary School Students Chinese Learning Program	Non-Chinese primary school students in Hong Kong
Mr David WOO	Yu Tim Primary School	Global Citizenship: A Revolution in Chinese Education	Grades 5 and 6 students in Dongguan, Mainland China
Mr Chiu Hon TSANG	Delia English Primary School & Kindergarten	Supporting Non-Chinese Speaking Primary School Students Chinese Learning Program	Non-Chinese children in Hong Kong
<b>Faculty of Engineering</b>			
<i>Pathfinder - Cambodia Volunteer Service</i>	Clear Cambodia	Pathfinder-Cambodia Service Trip	Children in Cambodia
<b>Faculty of Law</b>			
<i>CHEER</i>	<ul style="list-style-type: none"> <li>• Children &amp; Development Organization (CDO)</li> <li>• Children Improvement Organization (CIO)</li> <li>• Sunshine Action (SA)</li> </ul>	Better health, Better lives, Better future IV	Children in Cambodia
<b>Li Ka Shing Faculty of Medicine</b>			
Miss Ka Ki CHAN	Kwun Tong Baptist Church Choi Ming Kindergarten	DASH Diet Education	General public
<i>Medical Outreachers Hong Kong</i>	Watoto	Uganda Medical Service Trip	Orphaned children and vulnerable women in Uganda
<i>VOICE</i>	China Candlelight Education Fund	Vision of Inspiration and Child Empowerment (VOICE) - Hunan Health Promotion and Education Programme	Children in Hunan Province, Mainland China
<i>Pharmacy Exhibition</i>	The Society of Hospital Pharmacists of Hong Kong	Drug Usage Information Day	General public
<i>Humble Mission</i>	<ul style="list-style-type: none"> <li>• Yang Memorial Methodist Social Service</li> <li>• St James' Settlement Central &amp; Western District Elderly Community Centre</li> </ul>	The Poem	Elders in elderly care homes
Mr Raymond Kwok Leung IP	Kwun Tong Baptist Church Choi Ming Kindergarten	Food Label Education	General public
<i>Health Exhibition Organizing Committee 2014</i>	<ul style="list-style-type: none"> <li>• Institute of Digestive Disease of The Chinese University of Hong Kong</li> <li>• The Hong Kong Society of Gastroenterology</li> </ul>	Health Exhibition 2014 - Journey to Gastrointestinal Care	General public
<i>Prime Care @ HKU</i>	Caritas Youth & Community Service - Community Centre - Kowloon	Love in Society	Ethnic minorities living in Hong Kong
Miss Joyce Oching YAM	Children's Hope	Project Saukya 2014	Children in Sri Lanka
Miss Karen Ka Wan YUE	Hong Kong Hereditary Breast Cancer Family Registry	The Breast Moment	Senior form secondary school students
<b>Faculty of Science</b>			
<i>HKU Science Outreach Team</i>	Dandelion Project HK	Science in Need	Underprivileged children in remote area of Tainan, Mainland China
<b>Faculty of Social Sciences</b>			
<i>Social Service Interest Group @ Graduate House</i>	Above & Beyond Education	Act to Change	Primary school students
<i>PolicyDESK Youth Think Tank</i>	Campus Policy	PolicyDESK Youth Think Tank Project	Secondary school students
<i>SESAME</i>	New Home Association	SESAME - Southeast Asians Supportive, Assimilating and Merging Education	Southeast Asians living in Hong Kong
<i>Mind Workers</i>	Hong Kong Young Women's Christian Association Western District Integrated Social Service Centre	Capture-Paint-Heart	Younger generation
<i>Social and Health Psychology Laboratory</i>	CCC Mong Wong Far Yok Memorial Primary School	Applying Baumrind's Theories of Parenting Styles to Internet Addiction Preventive Education for Primary School Parents	Primary school students and their parents

# Faculty Knowledge Exchange Awards 2014

These awards recognise each Faculty's outstanding KE accomplishment that has had demonstrable economic, social or cultural impact to benefit the community, business / industry, or partner organisations.

- Architecture:** ***Mapping Modern Architecture in Hong Kong***  
A team led by Dr Cole Roskam helped to launch a local chapter of the international organisation Docomomo (Documentation and Conservation of the Modern Movement) to spotlight examples of architectural modernism in Hong Kong.
- Arts:** ***Linguistic Minorities.HK: Connecting with the Communities***  
Dr Lisa LS Lim set up a website to recognise the richness and diversity of Hong Kong's linguistic environment and to give a voice to those communities that are often sidelined because of language barriers.
- Dentistry:** ***Oral Health Promotion among Indonesian Domestic Workers and Their Employers' Families***  
Dr Gao Xiaoli and her team developed a large-scale project to help Indonesian domestic helpers (of whom there are 140,000 in HK) take care of their oral health.
- Education:** ***A Meaningful Journey of Teaching and Learning of Chinese for Non-Chinese Speaking Students: Towards Local, Regional and International Advancement***  
Professor Tse Shek-kam and team (see 'Language for All', overleaf).
- Engineering:** ***Knowledge Exchange of e-Learning Technology and Pedagogy in Hong Kong and Overseas***  
Dr Wilton WT Fok mentored his students in developing iClass, a mobile platform which enables students to share knowledge immediately with their teachers and classmates, enabling simultaneous interaction across the whole class.
- Law:** ***The Community Legal Information Centre (CLIC) Series***  
Professor Anne SY Cheung and team set up the Community Legal Information Centre website series to provide free bilingual legal information for the lay person. It includes Youth CLIC, Senior CLIC and Family CLIC.
- Medicine:** ***Life and Death Education through HKU Body Donation Programme***  
A team led by Dr Chan Lap-ki has undergone a campaign, via HKU's Body Donation Programme, to teach people how even after death they can contribute to society by donating their body for use in anatomy lessons by medical students.
- Science:** ***Science and Art Crossover Project – Visualizing Science via Creative Lens and Interactive Art***  
The general tendency to view science and art as two very different extremes prompted Dr Benny CH Ng and his team to start a programme to show youngsters how the two continually interconnect.
- Social Sciences:** ***Promoting Ageing-in-Place for Elderly Tenants in Rental Housing Estates of Hong Kong Housing Society***  
Dr Terry YS Lum and his team developed a project aimed at giving more elderly people the chance to stay in their own homes longer, rather than go into care.

## KE Award (Non-Faculty Unit)

- UMAG:** ***Botticelli's Venus at the University Museum and Art Gallery, HKU***  
Led by Dr Florian Knothe, with team member Dr Opher Mansour (see facing page).

**Quantitative Indicators**

Tables 1 and 2 below correspond to Tables 9.1 and 9.2 of the Initial Statement for the 2012-15 triennium respectively.

**Table 1**

<b>Performance Indicators</b>	<b>2013/14</b> <sup>Note 1 &amp; 2</sup>	<b>2014/15</b> <sup>Note 2</sup>
Number of patents filed in the year (with breakdown by country and type) <sup>Note 3</sup>	94 <sup>Note 4</sup>	157 <sup>Note 4</sup>
Number of patents granted in the year (with breakdown by country and type) <sup>Note 3</sup>	24 <sup>Note 5</sup>	50 <sup>Note 5</sup>
Number of licenses granted (with breakdown by type) <sup>Note 3</sup>	66	75
Income (on cash basis) generated from intellectual property rights	\$3,154,000	\$21,034,000
Expenditure involved in generating income from intellectual property rights	\$379,000	\$616,000
Net income generated from intellectual property rights <sup>Note 6</sup>	\$2,775,000	\$20,418,000
Number of economically active spin-off companies (with breakdown by type) <sup>Note 3 &amp; 7</sup>	2	2
Net income generated (or net loss arising) from spin-off companies <sup>Note 8</sup>	\$778,000	\$346,000
Number of collaborative researches, and income thereby generated <sup>Note 9</sup>		
- no. of projects	26	18
- income generated	\$11,097,000	\$11,767,000
Number of contract researches (other than those included in "collaborative researches" above), and income thereby generated <sup>Note 10</sup>		
- no. of projects	846	887
- income generated	\$205,281,000	\$258,323,000
Number of consultancies, and income thereby generated		
- no. of projects	718	954
- income generated	\$41,849,000	\$47,593,000
Total of collaborative researches, contract researches and consultancies <sup>Note 11</sup>		
- no. of projects	1,590	1,859
- income generated	\$258,227,000	\$317,683,000

Performance Indicators	2013/14 <sup>Note 1 &amp; 2</sup>	2014/15 <sup>Note 2</sup>
Number of student contact hours in short courses or e-learning programmes specially tailored to meet business or CPD needs <sup>Note 12 &amp; 13</sup>	100,461	122,380
Number of equipment and facilities service agreements, and income thereby generated - no. of agreements - income generated	18 \$255,000	11 \$467,000
Income received from Continuing Professional Development (CPD) courses <sup>Note 14</sup>	\$6,477,000	\$3,150,000
Number of public lectures/symposiums/ exhibitions and speeches to a community audience	1,547	1,470
Number of performances and exhibitions of creative works by staff or students	81	83
Number of staff engaged as members of external advisory bodies including professional, industry, government, statutory or non-statutory bodies	617	558

Notes:

1. Data of the last reporting year as stated in the last annual report, unless otherwise specified
2. Income/expenditure figures in HKD were rounded to the nearest thousand.
3. Breakdown available in CDCF
4. The number of inventions involved is 96.
5. The number of inventions involved is 30.
6. The target increase in the Initial Statement actually referred to the net income generated from intellectual property rights.
7. The HKU strategy is that licensing rather than spin-off companies should be the preferred route for commercialization because licensing would allow the University to leverage on industry expertise and remain focused in its core capabilities. Spin-off companies will be set up if and when deemed necessary or to the best interest of the University.
8. Versitech, the University's technology transfer company, is a minority shareholder in the spin-off companies. It is difficult to predict the companies' sales/turnover due to the volatile business environment.
9. ITF projects with industrial sponsorship and other collaborative projects with at least two partners (one of which being a government or public body) were included.
10. For the number of contract research projects, ITF projects without industrial sponsorship, Public Policy Research projects, projects funded by the Food and Health Bureau and the SK Yee Foundation, and other contract research projects were included.
11. It is considered more appropriate to target the increase in collaborative researches, contract researches and consultancies together rather than separately as in the Initial Statement because it is sometimes not easy to classify projects into these categories.
12. Taught postgraduate programmes were not included.
13. The difference in the number with those in the previous years was attributed to the change in the data collection methodology. The manual data collection process has been replaced by a central information system, and it may take time for course organizers to adapt to the new system.
14. Expenditures including overheads were deducted. Net income from taught postgraduate programmes was not included.

**Table 2**

<b>Other Performance Indicators</b>	<b>2013/14</b>	<b>2014/15</b>
Number of placement/internships <sup>Note 2</sup>	6,604	5,440
Number of books and other media for non-academic audiences <sup>Note 3</sup>	302	364
Number of mentors from outside HKU for HKU students <sup>Note 2</sup>	1,659	1,763
Number of knowledge transfer websites <sup>Note 4</sup>	126	190
Number of postgraduate theses on open access <sup>Note 4</sup>	22,174	23,186
Download count of postgraduate theses to addresses outside HKU <sup>Note 4</sup>	1,664,575	1,115,629
Number of publications on open access <sup>Note 4</sup>	14,483	19,713
Download count of publications to addresses outside HKU <sup>Note 4</sup>	488,323	1,267,717
Number of positive media impact related to knowledge transfer coverage, including print, on-line and electronic media <sup>Note 5</sup>	24,846	25,583
Number of staff available for media contact <sup>Note 4</sup>	685	661
Number of appointments of external members to HKU advisory boards, committees or panels <sup>Note 2</sup>	322	448

Notes:

1. Data of the last reporting year as stated in the last annual report, unless otherwise specified
2. As HKU sees KE as a two-way process, these three indicators refer to the University's efforts to learn from the community.
3. Includes books, book chapters, textbooks, handbooks, public policy reports, and DVDs etc. published mainly for non-academic audiences by HKU staff, but excludes all research publications and patents.
4. These six indicators refer to the University's efforts in making knowledge accessible to society.
5. The number was obtained through the media impact project using an online news platform covering mainly local newspapers and magazines as well as some multi-media outlets and websites to pool daily news reports concerning HKU that are KE-related.