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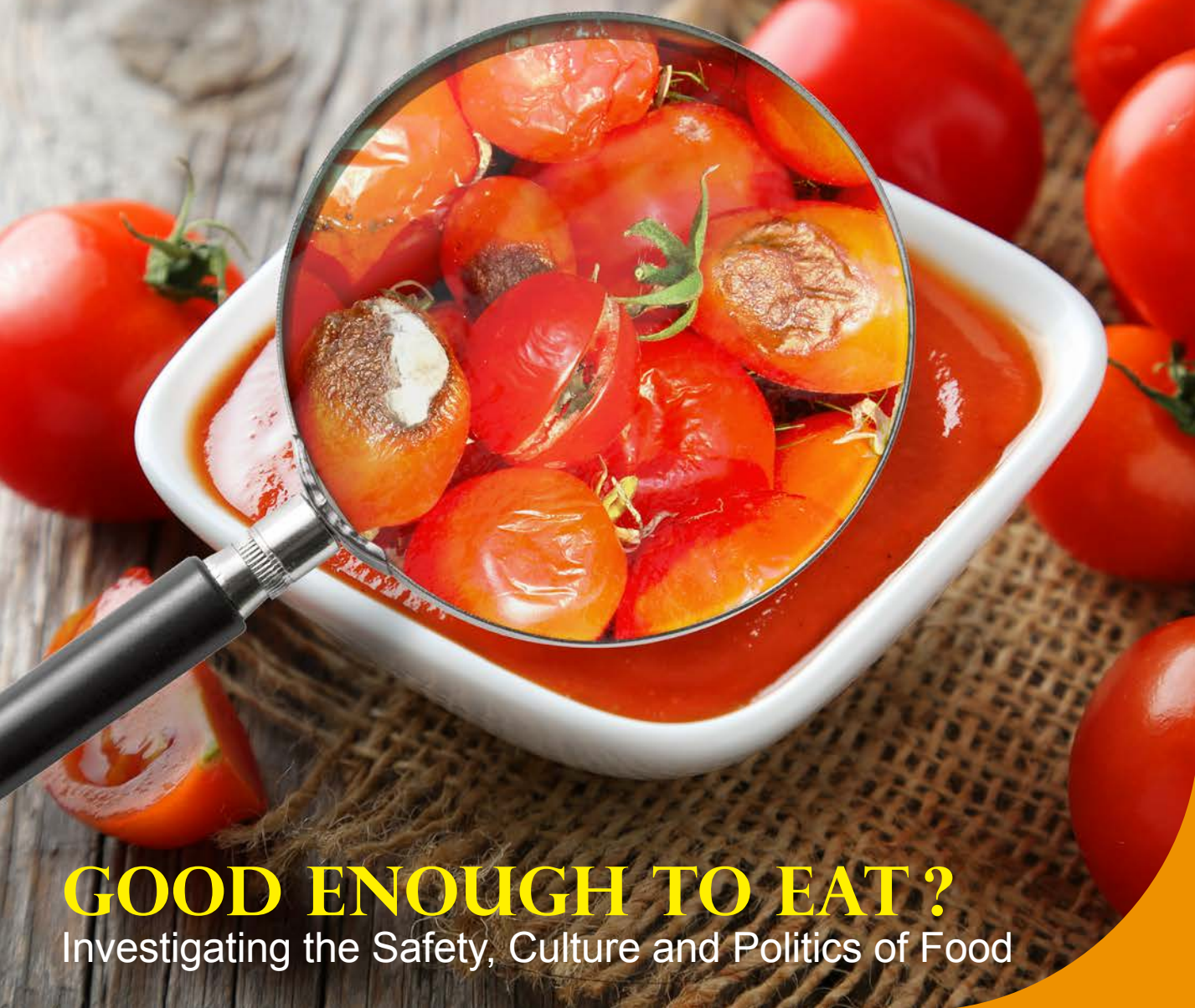
THE UNIVERSITY OF HONG KONG

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GOOD ENOUGH TO EAT?

Investigating the Safety, Culture and Politics of Food



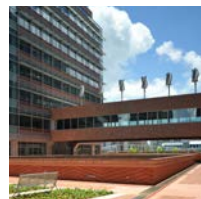
**Saving
Hong Kong
Oysters**

Heroes of the
half shell



Let's Go Green

Promoting
sustainability
on campus





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News in Brief

HKU President Takes up Leading Role at CASE Asia-Pacific

President Peter Mathieson has been appointed as the Chair of the newly-inaugurated Board of Directors for the Council for Advancement and Support of Education (CASE) Asia-Pacific.

The new board will serve as the governing body for CASE Asia-Pacific and will provide strategic direction. The inaugural board meeting was held at the CASE Asia-Pacific Advancement Conference in Singapore in April. The Conference is the annual signature event of the organisation and was attended by over 300 professionals from educational institutions.

In recognition of his efforts in promoting and supporting education and institutional advancement in the Region, former HKU Vice-Chancellor Professor Lap-Chee Tsui was honoured with the prestigious CASE Asia-Pacific Leadership Award at the Conference. Ms Sue Cunningham, President of CASE, remarked: "Professor Lap-Chee Tsui's remarkable leadership and exceptional commitment led to a sea-change in philanthropic giving at HKU, inspiring alumni and friends to give in ways never seen before at the University."

CASE, with a membership of 3,600, is one of the largest non-profit educational associations in the world. It is headquartered in Washington, DC, with offices in London, Singapore and Mexico City. CASE provides programmes and resources in the areas of alumni relations, communications, fundraising, marketing, and related fields for the professional staff of not-for-profit educational institutions. ■



President Peter Mathieson (fifth from right) and board members of CASE Asia-Pacific.



Former HKU Vice-Chancellor Professor Lap-Chee Tsui (right) receives the CASE Asia-Pacific Leadership Award from President of CASE Ms Sue Cunningham (left).

HKU Academic Wins Acclaim Dr Michael Botelho Receives UGC Teaching Award

The University Grants Committee (UGC) presented its Teaching Awards at a Ceremony on September 9 while celebrating its 50th anniversary. Dr Michael Botelho, Clinical Associate Professor in Oral Rehabilitation from the Faculty of Dentistry was one of the winners.

Dr Botelho has personally adopted a student-centred approach to teaching and learning using collaborative activities to engage students in dialogue, peer teaching and learning through the use of problem scenarios that are situated in clinical context and relevancy. This student-centred dialogic approach also allows staff members to have insights into students' levels of understanding, which allows specific opportunities for meaningful support.

In his nearly two decades of teaching and research at HKU, Dr Botelho has built a reputation as a committed and diligent educator in diverse areas of dental education, including simulation laboratory skills learning, assessment, clinical teaching, e-learning, problem-based learning and curriculum reform and innovation.

President Peter Mathieson is delighted with the achievements of HKU academics since the establishment of the UGC Award in 2011: "It is most encouraging to note that four of our colleagues have been conferred this prestigious Award in the past five exercises, which is clear evidence of the University's excellence in teaching and learning."

The three recipients of the 2015 UGC Teaching Award were selected from among 15 nominees for their outstanding teaching

performance and achievements, as well as their leadership and scholarly contributions to teaching and learning within and across institutions. The other two winners were Dr Gail Forey from the Hong Kong Polytechnic University and Professor Woo Kam-tim from the Hong Kong University of Science and Technology. ■



Dr Michael Botelho (left) receiving the UGC Teaching Award from Secretary for Education Mr Eddie Ng Hak-kim (right).

A Ceremony of Gratitude

HKU Presents Honorary University Fellowships to Six Distinguished Individuals

Six distinguished individuals were presented with Honorary University Fellowships at a ceremony held in the Rayson Huang Theatre on September 15, in recognition of their contributions to the University and the community. HKU's Pro-Chancellor, Dr the Honourable Sir David Li Kwok-po, presided at the Ceremony, which was attended by 300 guests who came to congratulate the recipients.

The six recipients were respected barrister Mr Edward Chan King-sang, SC, prominent hotelier Dr Aron Harilela, celebrated business leader Ms Pansy Ho Chiu-king, acclaimed specialist in Family

Medicine in private practice Dr Donald Li Kwok-tung, successful entrepreneur Dr Jimmy Tang Kui-ming and eminent Hong Kong educator Mr Tse Sik-yan.

President Peter Mathieson said in his welcome address: "It is great to see this lecture theatre so full. I think that pays tribute to the importance of the occasion and also to the significance of individuals that we are here to honour. It's a very auspicious day in the University Calendar. This is the day on which we say thank you to some of our most loyal and faithful and affective supporters. The other reason that we treasure the Honorary University Fellowships is it's a good example of the interaction between the University and the city and the community – the

town and gown. It's a great opportunity for the University of Hong Kong to recognise some of the citizens of this city which have become associated to the University in various ways."

Established in 1995, the Honorary University Fellowships were created to recognise and honour those who are held in the highest regard by the University and to establish closer relationships with the community.

For more about Honorary University Fellowships, please go to <http://www4.hku.hk/honfellows> ■



Back row from left: Mr Edward Chan King-sang, Dr Aron Harilela, Dr Donald Li Kwok-tung, Ms Pansy Ho Chiu-king, Dr Jimmy Tang Kui-ming, Mr Tse Sik-yan. Front row from left: President Peter Mathieson, Pro-Chancellor Dr David Li Kwok-po, Council Chairman Dr Leong Che-hung.

Ties between Academia and the Community

Two World Health Organization Units Established at HKU

To mark the collaboration between HKU and the World Health Organization (WHO), two plaque unveiling ceremonies were held at HKU on August 13, 2015 – one ceremony for the WHO Collaborating Centre for Infectious Disease Epidemiology and Control and the other for a WHO H5 Reference Laboratory officiated by Dr Margaret Chan, Director-General of the World Health Organization.

HKU's School of Public Health has been designated as a WHO Collaborating Centre for Infectious Disease Epidemiology and Control for four years with effect from December 10, 2014. A WHO Collaborating Centre (WHO CC) is an institution designated by the Director-General of WHO to form part of an

international collaborative network set up by WHO in support of its programme at the country, intercountry, regional, interregional and global levels. There are a total of 59 and six WHO CCs in Mainland China and Hong Kong respectively.

Dean of Medicine Professor Gabriel Leung said: "After the SARS epidemic in 2003, the Government has provided strong support for the development of infectious disease epidemiology research at the University and this signal award of Collaborating Centre status by the WHO is the culmination of this important partnership between HKU and the Food and Health Bureau for the protection of the public's health in Hong Kong and across the region."

The Centre of Influenza Research under the School of Public Health is one of 13 laboratories worldwide designated as a WHO H5 Reference Laboratory. The HKU H5 Reference Laboratory takes part in the biannual WHO influenza vaccine strain selection meetings. "With our established strengths in the surveillance and characterisation of animal influenza viruses with potential to cause human infections, our School is keen to continue assisting the WHO in addressing zoonotic and pandemic public health threats and in promoting the One Health framework to population health," said Professor Malik Peiris, Co-Director of the WHO H5 Reference Laboratory at HKU, Tam Wah-Ching Professor in Medical Science, and Director of the School of Public Health. ■



From left: Professor Malik Peiris, Dr Leung Siu-fai, Dr Margaret Chan, Dr Constance Chan, Professor Guan Yi and Professor Gabriel Leung.



Gift presented by President Peter Mathieson at the luncheon hosted in honour of Dr Margaret Chan on August 13, 2015.

Great Minds at HKU's Entrepreneurship Series Vision and Passion Shared by DreamCatchers

HKU has recently launched an initiative named 'DreamCatchers' to inspire and nurture innovation and entrepreneurship. A forum was held in the Grand Hall on May 31, which brought together students, alumni and people from across sectors and generations to take part in an array of entrepreneurship forums, training and events. The forum was a great success, with over 1,200 delegates participating and 67 speakers sharing their precious experience on start-ups.

President Peter Mathieson kicked off the forum by welcoming the participants, reminding them: "Entrepreneurship means having the vision, the strength of purpose, and the courage to take your dreams and see them through to the reality. It is okay to dream. We want you to dream. It is also okay to fail, as long as from failure, you learn lessons and you come back stronger, so you are less likely to fail next time. So the aim of today is to encourage you to follow your dreams, to see your dreams through to success, to learn from others around you."

This was followed by the plenary session 'If I were 28...' with panel speakers including Mr Leong Cheung, Executive Director, Charities

and Community, The Hong Kong Jockey Club; Mr Jason Chiu, CEO, The Cherrypicks; and Mr Antony Leung, CEO, Nan Fung Group. Mr Pony Ma, Founder, Chairman and CEO of Tencent also delivered the keynote covering the internet versus traditional industries, Chinese companies versus international companies. The forum was ended with a session called 'What Next?', providing the audience with resources

available in town to get business started. The then Vice-President (Research) Professor Paul Tam also revealed some of HKU's upcoming plans: "We will be launching our Innovation Commons. We need you to keep up the entrepreneurial culture and spirit."

For more about DreamCatchers, please go to <http://www.alumni.hku.hk/dreamcatchers> ■



Panel speakers of the opening plenary: (from left) Mr Antony Leung, Mr Leong Cheung, Mr Jason Chiu and moderator Professor Bernadette Tsui.



GOOD ENOUGH TO EAT ?

Food, in its glorious and inglorious forms, is the focus of several strands of research at HKU. One is looking at food safety and how to keep contaminants off of our plates, the other at the deeper meanings of the Hong Kong and Chinese diets.



GAPS IN THE FOOD CHAIN

Politics and commerce, as much as physical factors, can influence whether our food is fit for consumption.

A high-risk product – mussels – exported from a clean environment in New Zealand.

For most consumers, the pursuit of safe food is relatively straightforward: buy from reputable sellers, check expiry dates, wash vegetables and fruit. But well before food arrives at the market, a whole slate of factors will have affected whether that food was fit for consumption.

Food safety is a growing field of study, and a growing challenge for the world. Not only are there environmental problems to deal with, in particular water and soil contamination, but supply chains and the trade and marketing of food are creating conditions that require more technology and regulation.

Professor Harold Corke of the School of Biological Sciences has been studying food safety in terms of both the science – he researches new food materials, such as an anti-microbial film that can keep food fresher for longer in transport – and the management required to feed a growing world population.

The supply chain is a particular challenge because hot, humid weather, a lack of knowledge about food safety among small-scale food processing companies and the longer distances food travels to reach global markets, can result in food spoilage and



Markets bring the products of multiple complex supply chains to the consumer.

contamination. All these problems can be seen across Asia.

“I think most safety problems come from people making mistakes, not bad intentions,” he said. “The mistakes happen if they don’t



“ Food safety is different from most other regulated activities. The law cannot simply order you to ‘produce safe food’ and expect immediate compliance. ”

Professor Harold Corke

know the microbiological history of a product or they become accustomed to doing things in a traditional way and then start to package and sell it to a wider market without sufficient research and development to test the safety parameters for packing and storage.”

Market forces

One way to change this is to let market forces do their work. Globalisation is helping to lift food safety standards in poorer countries because their overseas buyers want better product compliance. Rising economic standards at home are having an even greater impact.

In China, for instance, small-scale producers are being replaced by larger local companies interested in brand recognition. “The middle class in China is concerned about food safety and willing to pay extra money for it. In the past when people didn’t have the money, everything was based on the cheapest price,” he said.

Regulation is another way of improving food safety, although it is much easier said than done. To illustrate the difficulties, Professor John Burns, Dean of the Faculty of Social Sciences, compared how Hong Kong, Taiwan and Beijing dealt with bird flu outbreaks in chickens and the 2008 melamine in milk scandal.

The response to bird flu was affected by politics. Hong Kong, with its more streamlined bureaucracy and relative lack of chicken producers, was able to effectively close its live chicken markets to contain the outbreak. But this was not possible in Beijing and Taiwan, where strong agricultural lobbies blocked or watered down market closures. In all cases, the consumers never paid the true cost of buying live chickens, which should factor in

keeping markets clean, hospital bills and avian flu monitoring systems, he said.

The melamine scandal arose from misguided policy and regulator failure. Households in some parts of China were encouraged to keep a cow and sell the milk to middlemen who then sold it to dairies. But the farmers did not have the necessary resources to optimise milk production so the middlemen added melamine to boost protein levels, which fetched a higher price. The main company involved, Sanlu, knew about the problem as did the Government, which sat on it until the 2008 Olympics were concluded.

Governance matters

“Commercialisation helps to pressure companies, but how do you explain Sanlu?” Professor Burns said. “They didn’t care about the brand. The shareholders, including the Government, only cared about short-term economic profit. It takes time for people to see food safety from a long-term perspective. This

is why food safety governance is so important. We need more research in this area.”

Which is not to say that food safety governance will be easy to achieve. Professor Corke pointed out: “Food safety is different from most other regulated activities. The law cannot simply order you to ‘produce safe food’ and expect immediate compliance. Regulation has to be supportive and guidance and training provided, particularly for smaller companies. The possibility of failure also has to be accepted – not all food will be safe always.”

And behind all this discussion is one big challenge for food safety: the vast and growing demand for safe food in China. Professor Corke said while the country had done well in feeding itself, it still needed to improve the environment, supply chains and regulatory enforcement of food safety. “There is nothing more central to Earth as a habitable planet than the ability of China to feed 1.3 billion people safe and high quality food,” he said. ■



Urbanisation puts pressure on China’s agricultural land and water supply.



THE LOW-LIVES IN OUR FOOD

Microscopic toxins in food can wreak all sorts of havoc with health. Dr Hani El-Nezami's laboratory has been sleuthing them out.

Cereals, nuts and oils are essential to our health but when they get mouldy they can also harbour aflatoxins, a particularly nasty class of compounds that have been shown conclusively to cause liver damage and cancer. Research at HKU has shown just how persistent and difficult aflatoxins can be.

The Food Safety and Toxicology Laboratory headed by Dr Hani El-Nezami investigates food contaminant exposure in at-risk populations, the effects on the placenta, the interactive effects of different toxins, and gut microbiota that may help or hinder health.

With the aflatoxin case, he was curious as to why young people in certain populations – particularly those with a high prevalence of

hepatitis B – were developing liver cancer as early as 20.

It was already known that aflatoxins and hepatitis B interacted to multiply the odds of developing liver cancer from three to seven per cent for each singly, to 60 per cent when combined. But it still usually takes decades to develop liver cancer. Could these young people have been exposed in the womb?

Focussing on China and Egypt, and working in collaboration with partners in Finland, he found this to indeed be the case.

"We found that aflatoxins can cross the placenta and be detected in the foetus. We also found aflatoxin present in breast milk. So

those who developed liver cancer at age 20 were exposed *in utero*, in the breast milk and of course in normal life. The insult on the liver was very high in the end," he said.



Nuts can also harbour aflatoxins which can cause liver damage if they get mouldy.



“ There is a misconception that everything natural is safe and anything synthetic is dangerous to health. If you fail to use the pesticides or fungicides, you can have mould and it will stay in the food – the toxin can be very difficult to get rid of. ”

Dr Hani El-Nezami

Detox concerns

Dr El-Nezami similarly was asked to investigate the placental crossover of melamine, after the Department of Health commissioned him to do a study in the wake of the contaminated milk powder scandal in China. He found it accumulated in the placental tissue but did not cross over to the foetus. “But this was a short-term study. It would be more realistic to look at one or two generations to be sure exposure of the foetus to melamine did not lead to disease development later in life,” he said.

He and his team also study other potential contaminants such as nanosilver, an anti-microbial agent applied to many products including baby bottles. So far it has not been found to cross into the placenta but only long-term monitoring will confirm that there are no ill effects.

“Many natural toxins have the ability to cross into the placenta,” he said. “Our adult detoxification system is much more mature compared to a child’s. We can withstand insults to our liver or gut, but a child cannot. That’s why it is very important in terms of child health to look at additives like food colouring and food additives, and whether they cross into the placenta.”

The emphasis on natural toxins is important because the most toxic compounds are from natural sources.

“There is a misconception that everything natural is safe and anything synthetic is dangerous to health. If you fail to use the pesticides or fungicides, you can have mould and it will stay in the food – the toxin can be very difficult to get rid of. If you don’t have adequate monitoring of the microbial

population in organic food, then you are at higher risk of getting microbial contamination than when you use pesticides,” he said.

Toxic cocktails

Natural toxins can have damaging effects on adults, too, quite apart from placental crossover. Dr El-Nezami’s laboratory has been investigating whether cocktails of toxins in the diet – even when each toxin is of a negligible quantity – can cause enough cumulative damage to contribute to leaky gut syndrome, which has been linked to metabolic conditions such as diabetes, obesity and arteriosclerosis.

“Regulators tend to regulate single compounds, but our big message to them is that it is not enough to say that being exposed to five micrograms per kilo of a certain toxin

will not cause a health problem. There are other toxins present, too, so even one microgram of that toxin could have a deleterious health impact when it is combined with the others.”

Dr El-Nezami’s team is also looking for solutions. Working with probiotics, they have identified a bacteria that can block the absorption of aflatoxins in the gut. The discovery was donated to the Food and Agriculture Organization of the United Nations for use in developing countries.

They have also recently filed for a US patent for a bacteria concoction they developed that can suffocate cancerous tumours of the liver – a sideline, he said, to the ultimate goal of protecting gut health by tackling it from the unusual perspective of food safety. ■



If food additives cross into the placenta, children will easily be attacked as they have weaker detoxification system than adults.

WHEN ONE MAN'S MEAT IS ANOTHER'S POISON

The 'ideal diet' can be as much about identity and politics as science, as Professor Angela Leung has been discovering in her study of the introduction of nutritional science from the West into China in the early 20th century.



When nutritional science was introduced in China, nutritionists and scientists promoted more eating of meat, milk and eggs. People are suggested to switch from the traditional veggie-centric Chinese diet to Western diet.

Beriberi (translated as leg-*qi* in Chinese), a disease causing inflammation of the peripheral nerves and heart failure, has been around since ancient times. In traditional Chinese medical texts, leg-*qi* was attributed to excess – too much humidity, too much food, too much

alcohol, too much sex. But at the turn of the last century, Western biomedical science stepped in and challenged not only this interpretation, but a key aspect of Chinese and Asian identity: the eating of rice.

Scientists determined that beriberi was the result of vitamin B1 deficiency at a time when the study of vitamins was nascent. Experiments showed B1 was lost when rice was processed. Therefore, it was concluded that beriberi came from eating too much polished rice.

To Professor Angela Leung, Joseph Needham – Philip Mao Professor in Chinese History, Science and Civilization, of the Hong Kong Institute for the Humanities and Social Sciences, these conflicting assessments of beriberi reflected not only different approaches to medicine, but also the conflicting morals and cultures of colonialists and the colonised, and modernists and traditionalists.



Experiments showed vitamin B1 was lost when rice was processed revealing that beriberi came from eating too much polished rice.

“The scientific interpretation can be quite deceptive. We should look at the deeper cultural roots of the arguments,” she said.

“You can see there was a moral aspect to this on both sides. Up to the late 19th century in China, beriberi was seen as a disease that happened to wealthy people who overindulged.

“On the other hand, the patients that the Europeans saw were not wealthy, but soldiers and workers, especially migrant workers from China and Japan working on plantations in Southeast Asia. These scientists thought beriberi arose from the bad eating habits and ignorance of poor Asian workers.”

A nation of weak bodies

Professor Leung has been considering these differences as part of a project funded by the General Research Fund that is looking at how nutritional science was introduced in China, who was involved in its introduction, and how it was received by the Chinese population.

In fact, the American and European scientists were not the key figures in promoting this new field in China. Chinese scientists, doctors and nutritionists who trained in the West in the early 20th century returned to their home country with new ideas about diet and food that they thought would advance their country.

Institutions were established to promote nutritional science, such as Peking Union Hospital, new departments of biochemistry in

universities, and Western-supported institutes in China. A translation was also coined, *yingyang*, meaning, roughly, ‘constructive nourishment’.

“This term became extremely popular in many writings, especially after the Republican Revolution. The whole nation was talking about how to save China as a nation – that as a nation of weak bodies, we should improve the health of our citizens. But at the same time there was the question of national identity. What kind of food should we eat? What food is good and what is bad for the Chinese body?”

One controversial issue was the eating of meat. Traditionalists maintained that the Chinese diet was mostly vegetarian with only a little meat, and that it was healthy, cheap and better for the environment. But in the 1920s that view was challenged.

The meat debate

“American-trained nutritionists and doctors and scientists were influencing government policies. They criticised the Chinese for being morally and physically weak because they didn’t eat enough meat,” Professor Leung said.

“When these experts promoted more eating of meat, milk and eggs, it meant eating a diet more similar to the Western diet. They were actually promoting a Western lifestyle.”

These views on the traditional Chinese diet changed, interestingly enough, as China’s

status in the world changed. “When China became stronger, especially after the 1980s, there was a resurgence of traditional diets and a great promotion of what they called medicinal meals,” she said.

Professor Leung is also interested in the moral attitudes to nutritional science elsewhere in Asia and organised a conference last year and a forthcoming workshop that will result in a publication of collected articles on the topic. This will be separate to her own project, but aligned with her goal of providing a

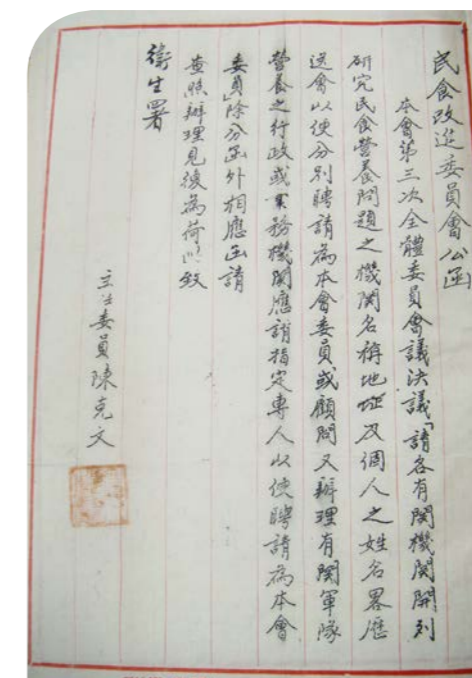
humanities perspective on a topic typically dominated by scientific and medical studies.

“The way you look at your body and treat your body is not only based on what you would call scientific knowledge, but also your identity – as a national citizen, a woman, a person of a certain age, an individual with all these identities,” she said. “The scientific explanation of foods is not universal in terms of time or place and it is shifting all the time.” ■

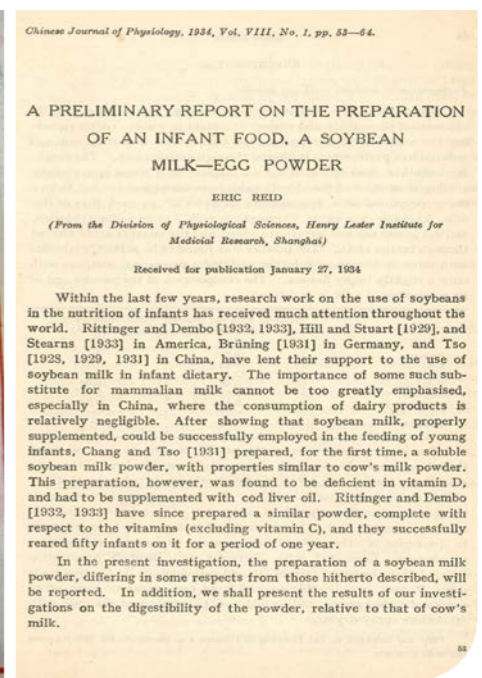


“The way you look at your body and treat your body is not only based on what you would call scientific knowledge, but also your identity... The scientific explanation of foods is not universal in terms of time or place and it is shifting all the time.”

Professor Angela Leung



An official letter from a 1942 wartime Government committee to improve people’s food-intake.



A report on the preparation of a soybean milk powder for infants published in the Chinese Journal of Physiology in 1934.



A SAUCY TAKE ON HISTORY

What do Lee Kum Kee, Sriracha hot sauce and tea have in common? They are barometers of the fundamental changes that have swept through Hong Kong and China over the past two centuries.

Dr John Wong has an unusual background for an historian. He spent more than a decade working in investment banking and hedge funds before deciding he wanted a more intellectually stimulating career – something that would help people see relevance in the past. What better topic to filter history through than food?

He has brought the business angle into this research, too, starting with his PhD at Harvard on Wu Bingjian (Houqua), who leveraged China's geopolitical situation in the early 19th century to become the world's foremost tea supplier. Houqua's achievements challenged the notion that China was not engaged in international trade and finance at the time (see panel).

Now, Dr Wong is launching a project on bottled sauces and drinks, inspired by the way in which food in general is a distinguishing aspect of Hong Kong's identity as a result of the Cold War divide and subsequent material prosperity compared to Mainland China.

"We could fly lobster in from Vancouver or abalone from Australia and develop Cantonese cuisine in a way that to this day would be considered quite distinct from what you see in Guangzhou," he said. "The availability of foodstuffs here versus across the border was one of the ways that we constructed our identity and I think it is worth investigating these food products and the recipes they inspired."

He is particularly interested in bottled products because their portability and long shelf life meant that 'Hong Kong' flavours could be packaged for local and overseas consumption. Lee Kum Kee, for example, has successfully produced and marketed sauces to Hong Kong and Chinese communities around the world.

"If you go to Toronto and lose your Filipina maid or Chinese amah, you can buy a bottle of



“ The availability of foodstuffs here versus across the border was one of the ways that we constructed our identity and I think it is worth investigating these food products and the recipes they inspired. ”

Dr John Wong

Lee Kum Kee soy sauce chicken or curry chicken Hong Kong-style, put it in a pot, and produce that dish," he said. "That situation reflects the configuration of Hong Kong families not just in the city, but beyond."

Reflecting the economic life of the city

Sauce companies also reflect the city's economic development. The Amoy brand was started by a manufacturing company that later moved into property and was bought out by the French company Danone, then Ajinomoto of Japan.

"You can see how the company started with a certain sales proposition of modernity, food, taste, and then evolved into real estate and other aspects that would be different representations of the economic life of Hong Kong in the later decades."

Dr Wong is also investigating Sriracha hot sauce, which has a Hong Kong connection because it was developed by Vietnamese boat

people who reached the US via Hong Kong – making it truly a product of the Cold War.

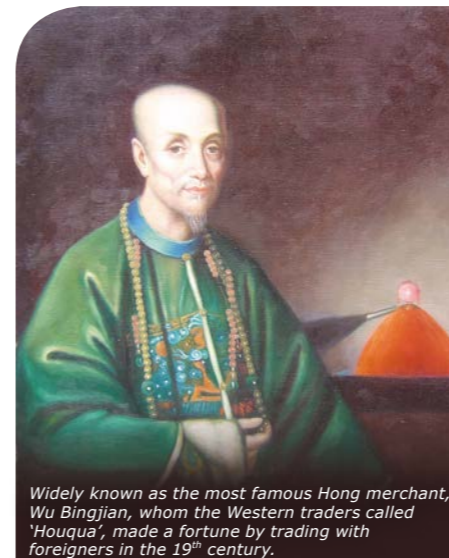
Similar to sauces, bottled drinks from Vitasoy and Dairy Farm were more than 'protein-in-a-bottle' – their very consumption was a mirror of society.

"When I was a primary school student in Hong Kong, you could go to the canteen for a cold bottle of Vitasoy in the summer and a warm bottle in winter. That's a different articulation of class compared to people who had bottled milk delivered to their doorsteps every morning from Dairy Farm. So the delivery process, the form you consumed it in, the price you paid, the different venues where you had it I think tell an interesting story of Hong Kong," Dr Wong said.

Dr Wong said he hopes to uncover other examples that will deepen his understanding of Hong Kong-linked sauces and beverage companies, and their interplay with the city's post-war development. ■



Getting bottled milk from convenience stores tells a different story from having it delivered to your door.



Widely known as the most famous Hong merchant, Wu Bingjian, whom the Western traders called 'Houqua', made a fortune by trading with foreigners in the 19th century.

Tea master Houqua

As with sauces, the story of Houqua and tea is revealing of the times – in this case, early-19th-century China.

Houqua rose to prominence after the presence of continental Europeans in Canton waned due to conflict in Europe. England was left as the major buyer but Americans were starting to arrive. Houqua began to deal with the latter to counterbalance British hegemony and, in the process, built a fortune. Through his partners, he even invested abroad in such things as US railways.

"We used to think the Chinese were unwilling participants in the world of international finance that was emerging in the 19th century, dragged onto the scene only with the opening of the treaty ports. Houqua's story tells us otherwise," Dr Wong said.

The wider background to his story also reveals interesting parallels between 19th-century Canton and 20th-century Hong Kong, he added. Both were sole ports of call for Westerners and both were changed as a result (Canton by the Opium Wars and treaty port status, Hong Kong by colonial administration and the 1997 change of sovereignty).



The Night Revels of Han Xizai, original by the 10th-century Chinese artist Gu Hongzhong of the Southern Tang.

CULTURAL MUSINGS ON THE DINNER TABLE

Dr Isaac Yue of the School of Chinese has been considering the cultural significance of foods in China's past and present.

Dr Isaac Yue uses food as a vehicle to travel to the past and bring ancient times back to life. Ironically, it would have been difficult for him to openly pursue this interest in times past because of the Confucian precept that men of virtue should steer clear of the kitchen.



“ Anywhere in the world you will notice this pattern in which people don't eat specific foods not because of the taste, but because of the ideas associated with them. ”

Dr Isaac Yue

“That saying was misinterpreted over time [it originally applied only to the slaughterhouse], but it became so widely accepted, that if men wrote down recipes they did it in private, in secret, because they didn't want people to know,” Dr Yue said.

Fortunately for Dr Yue, enough Chinese sages were secretly interested in food that there are written recipes dating back to the Tang Dynasty. Recipes have even crept into classical literary texts. Taken together, these snippets provide insights into the status and preparation of food over time.

For example, pork was shunned at one point during the Song Dynasty, despite its centrality to Chinese cuisine before and after. Lamb had come into favour instead under the influence of the north and because it was more difficult and costly to obtain.

“In one particular menu from that period, we know the emperor was a guest at a general's household. Pork was not served on the emperor's table, but it was served on the other tables. They were ranking food,” he said.

“Anywhere in the world you will notice this pattern in which people don't eat specific foods not because of the taste, but because of the ideas associated with them.”

Tastes of long ago

Dr Yue is also interested in the elaborate preparations of certain dishes. In *The Golden Lotus* there is a detailed description about a pig's head cooked using one log to control the fire and keep it at a low temperature, and in *Dream of the Red Chamber* of fetching mountain snow to make tea.

Dr Yue's interest in food is not confined to ancient China. He has also been studying the first Western recipe book written in China, by the missionary Martha Crawford of Alabama in the mid-19th century. It instructed servants how to make beef stew, carrot cake and other foods for their Western employers, and also found an audience among Chinese readers interested in these new foods.

“Usually when we study history, we look at dead people. But food is something that can be brought back to life. I am asking, is what we eat today the same as what we ate 100 years ago?” said Dr Yue. Apart from reading about food, he has also tested some of the recipes in his modern kitchen and found they stand up. Men can cook. ■



Secretary for Food and Health Dr Ko Wing-man (second from right) tastes the dish prepared by the champions.

JUNIOR CHEFS MASTER SCIENCE

A cooking competition organised by the Faculty of Science encouraged junior secondary school students to apply scientific principles in their daily lives.

The pursuit of science conjures up images of laboratories, test tubes and white coats – things removed from everyday life. But Dr Benny Ng of the Faculty of Science has been spearheading efforts to turn that idea on its head and show people how to see the science all around them.

In 2013 and 2014 he organised the Science and Art Crossover Project to inspire students



“ Our goal as a faculty is to increase scientific literacy, but not in the traditional way of going to a laboratory and listening to lectures. ”

Dr Benny Ng

to see the science in such things as sunflower patterns, origami and animation. This year he led the SciChef Cooking Challenge, in which junior secondary school students had to select a recipe, find a way to improve it, explain the science behind their efforts to a panel of judges, and cook up the dish. They were judged on both scientific knowledge and taste.

“Our goal as a faculty is to increase scientific literacy, but not in the traditional way of going to a laboratory and listening to lectures. We wanted the students to relate science to their daily lives, to something they can do at home,” he said.

“We also wanted them to be creative and work on their teamwork, communication and leadership skills, which are not things they learn from the traditional curriculum.”



A challenger is working on her latte art.

The event was organised in two parts. Eighty-eight applications were received from 28 schools and the top 15 were invited to the semi-finals where they had to describe their proposed recipe and the scientific ideas that they were exploring. For instance, one team proposed a soufflé and detailed their experimentation, which involved more than 20 attempts before they got the soufflé to rise.

Winning with polymerisation

Twelve teams were selected from that group for the final, where they actually prepared their dishes. They had 60 minutes and employed all kinds of scientific methods. For instance, one team used the sous vide method to cook chicken, which was vacuum-packed before being poached at a constant temperature of 63 degrees Celsius in a water bath – which, incidentally, had come from a laboratory.

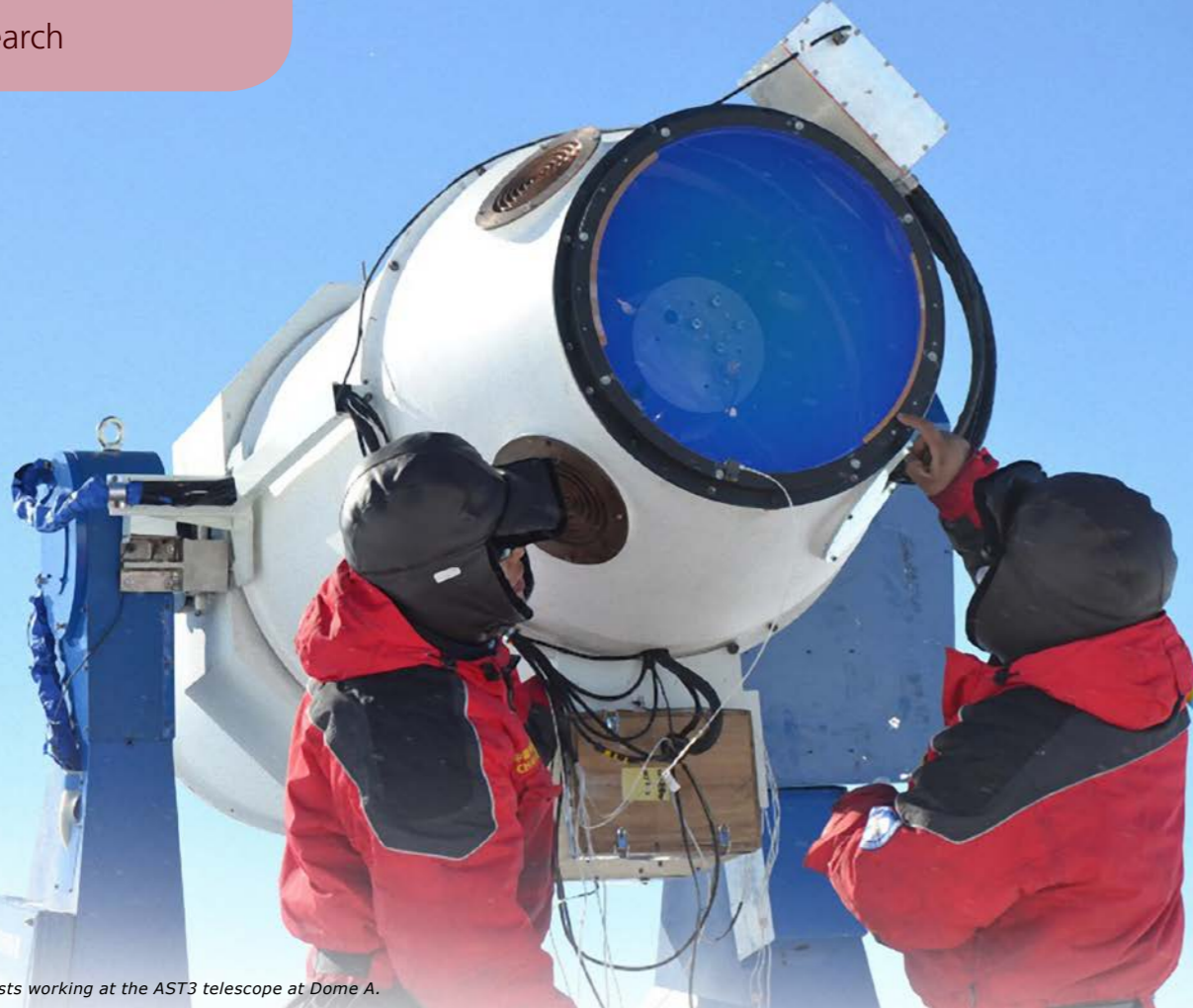
The winning entry, called ‘Amazing Dessert from Seaweed’, involved the preparation of five dessert jellies using a mixture of algae from seaweed extracts and calcium. The combination helped the jelly to set through the process of polymerisation.

The competition was supported by the Hong Kong Electric Home Management Centre, DotAsia Organisation and HKU's Knowledge Exchange Fund. Guest chefs gave demonstrations and the Secretary for Food and Health, Dr Ko Wing-man, BBS, JP, attended the closing ceremony in May.

Next up: the SMArt programme 2016, also aimed at secondary school students, which Dr Ng said would incorporate science, mathematics and art. For more information and registration, please go to <http://www.scifac.hku.hk/smart> ■



Chef Perry Lau from Shui Yue demonstrates glow-in-the-dark sugar crystal ball.



Scientists working at the AST3 telescope at Dome A.

TAKING IT TO THE NEXT LEVEL

HKU's hosting of a major international forum on the Antarctic Survey Telescopes is both an exciting mark of the University's leading role within the international science community and a sign of the collaborative nature of research today.

HKU recently played host to the 2015 International Collaboration Meeting on Antarctic Survey Telescopes, attended by some 40 scientists and researchers from around the world. The purpose was to review the progress on and discuss the plans for future operations of the latest telescopes that have been installed on China's research programme at Dome A, the highest point of the Antarctic plateau.

Dean of Science Professor Sun Kwok, who led the conference, said Professor Wang Lifan, Director of the Chinese Center for Antarctic Astronomy, had asked HKU to host in recognition of the work that the University has done. He added that such international

collaborations are the way forward for science research: "HKU has developed a strong research profile over the past 15 years, but to go to the next step in Science we need access to major facilities, which means collaborating with other countries."

He pointed out that in the past countries such as the United States, Australia, France, Germany and the United Kingdom could go it alone on big projects, but now because of immense costs involved, the trend is towards international ventures.

He cited the Large Hadron Collider at CERN (Conseil Européen pour la Recherche Nucléaire, or European Council for Nuclear Research),

which cost US\$10 billion to build and about US\$1 billion a year to maintain, as an example. It started out as a European project, but now most of the world's major countries are involved – including China, Japan and Singapore. Likewise the Hubble Space Telescope cost more than US\$2 billion and is a joint venture between NASA (National Aeronautics and Space Administration) and the European Space Agency.

A question of access

"In Hong Kong, we don't have the space or the funds, so it's a question of access," said Professor Kwok, adding that the Antarctic Survey Telescopes project is another example.



“As Dean of Science, it is my job to take HKU Science to a higher level. We can't be stuck. To get to that next level we need to collaborate with others. Not only Mainland China, but the international community at large.”

Professor Sun Kwok

China is a latecomer to Antarctic research – all major countries are involved in Antarctica somehow – and with this project has now made it a high priority.

"Dome A is the highest plateau in Antarctica and the prime site for astronomical observations – conditions there are almost as good as going into space, but cheaper and (slightly) less troublesome. The reason the site has not been claimed before is that it is very difficult and expensive to access and the conditions are hostile. An ice-breaker is used to transport people and supplies as near to site as possible, then it's a hard trek overland."

China has a specialised team of engineers and technicians trained to deal with the harsh conditions. They go for a few weeks at a time only, and for six months of the year the site is unmanned: Scientists collect and analyse the data via internet.

China has led the development of the Dome A site, and HKU is playing its part, with Professor Kwok being a principal adviser. Two optical telescopes have already been installed on the site and Professor Kwok is particularly interested in the next phase: "My experience is in infrared telescopes, one of which is being installed next, alongside a sub-millimetre-wave telescope.

"HKU, and indeed Hong Kong could never achieve this on our own. We don't have satellites or ocean-going research vessels," said Professor Kwok. "But we are part of China so I'm proposing that we integrate better with the Mainland to take advantage of what they have to offer. We need to take Hong Kong science to the next level via China.

"Some people want Hong Kong to be isolated or separate, but in terms of science we want Hong Kong to be part of the larger community – not only China but the international community. As Dean of Science, it is my job to take HKU Science to a higher level. We can't be stuck. To get to that next

level we need to collaborate with others. Not only Mainland China, but the international community at large."

And for the future, Professor Kwok has his eyes fixed on an even bigger enterprise – space, with plans now underway to establish a

space centre at HKU. "Space is a common platform for science, and a lot of science today is dependent on access to space," he said. "President Mathieson has been very supportive of the space centre, and while the funding is not huge, it's a start." ■



President Peter Mathieson (first from right) being introduced by Professor Sun Kwok (second from right) to Professor Jeremy Mould (first from left), Department of Physics and Astronomy, Swinburne University of Technology and former Director of National Optical Astronomy Observatory, USA, and Professor Wang Lifan (second from left), Director, Chinese Center for Antarctic Astronomy.

Another Leadership Appointment for the Respected Astronomer

Widely acknowledged as one of the leading experts in the world in the study of stellar synthesis of organic compounds, Professor Sun Kwok, was elected as the President of the International Astronomical Union (IAU) Commission on Astrobiology in August.

During his three-year tenure as President, Professor Kwok will help the Union to organise worldwide research and education activities in astrobiology.

Professor Kwok's discovery of stellar organics has generated worldwide interest in the possibility of stellar organics enriching the early Earth and therefore having influenced the origin of life on Earth. Led by Professor Kwok, HKU Science successfully organised the first international astronomical symposium entitled 'Organic Matter in Space' in Hong Kong in 2008.



In-house generated zebrafish mutants carrying mutation in *idh1* gene (isocitrate dehydrogenase 1) for modelling of human leukaemia.

ZEBRAFISH EARN THEIR STRIPES

The Zebrafish Core Facility in Li Ka Shing Faculty of Medicine is proving an invaluable model for studying developmental biology and human diseases and is being used across multiple disciplines.

The possibilities for the Core Facility all come down to one small fish, whose usefulness as a research tool has only been fully realised relatively recently. First used in the 1930s when scientists realised that the transparency of zebrafish embryos made them a perfect window for live study, modern zebrafish research started in the 1960s in Oregon when embryos were cloned. In 1996, two large-scale projects were undertaken in Germany and the United States – exposing zebrafish to chemicals that could induce mutation. Their usefulness as

a vertebrate model for developmental biology was fully realised in 2013 when the entire genome of the zebrafish was published.

Professor Anskar Leung, Li Shu Fan Medical Foundation Professor in Haematology, Principal Coordinator of the Zebrafish Core Facility, explained: “Eighty per cent of genes identified in human genome can now be found in zebrafish. We can use them to study many human ailments, including cancers that have a genetic basis.

“The zebrafish model is compatible to a wide range of forward and reverse genetic manipulations. A phenotypic abnormality after chemical induced mutagenesis can be detected and traced to see how it has occurred. Technologies of gene knockdown and genome editing are also widely available and the effects of genetic alteration are visible under the microscopy.”

Professor Leung’s research focusses on the clinical management of patients with



“ Eighty per cent of genes identified in human genome can now be found in zebrafish. We can use them to study many human ailments, including cancers that have a genetic basis. ”

Professor Anskar Leung

leukaemia and the development of novel therapy for these diseases. “We need to develop better treatments for leukaemia and better ways to test them, so the question we are asking is: Can the zebrafish model help us learn more about leukaemia and be used as a screening tool to identify new drugs?

“Leukaemia is a heterogeneous disease and each patient’s disease is unique. However, the current treatment is largely uniform and the outcome is expectedly unsatisfactory. We need to tailor-make a treatment for each patient at different stages of disease,” he said.

In the laboratory, the thinking is if the genetic defect causing the disease can be identified and recapitulated in zebrafish, the organisms can be used as a model to screen for better treatment. The zebrafish model is much faster, cheaper and easier than – and as close to human as – the mouse model. It is more relevant as a model of human diseases compared with cell line study.

The high fecundity and rapid embryonic development of zebrafish offer another advantage. “It’s a very timely model,” said Professor Leung. “We now have Next Generation Sequencing (NGS) technology, but the generation of genetic information has been so fast that it is difficult for us to validate them adequately in mouse models. The zebrafish model works fast enough to let us do that.”

Key uses

The zebrafish is a key tool for people to understand numerous human diseases. Notable examples include blood diseases such as leukaemia and anaemia; neuro-degenerative diseases such as Parkinson’s and Alzheimer’s Disease, muscle diseases as well as

hereditary or acquired kidney diseases. In particular, the nephron – the basic unit of the kidney – is remarkably similar in zebrafish and mammals.

“The zebrafish model can also be used to see how heart muscle can regenerate,” said Professor Leung. “If one removes part of the zebrafish heart muscle, it regenerates. Obviously this doesn’t happen in humans, but these experiments show how heart muscle can regenerate – how that process works – and that’s useful information.

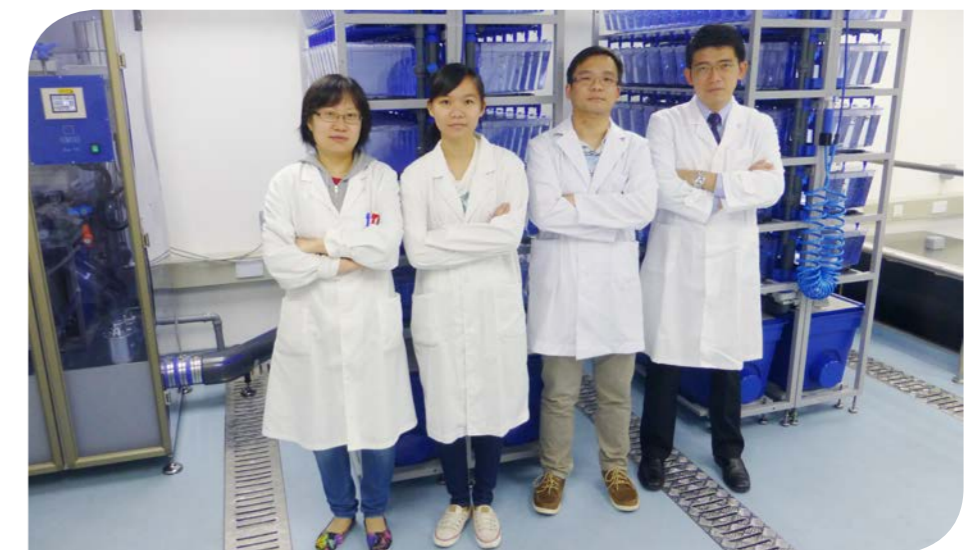
“The model has also been used to study congenital defects that occur in infants. For example, to study disease conditions in which babies are born with their heart on the right side, researchers have been able to genetically modify the zebrafish so that they were born with similar defects.”

It is surprising to know that the zebrafish model has also been used to study psychiatric

disorders. Professor Leung said: “Zebrafish swim in schools together and you can perturb this behaviour by changing their genes. The model has also provided good training opportunities. Recently we had a symposium at which research graduates from HKU and three other local universities gave talks on their research using the zebrafish model.”

HKU is not the only institution in Hong Kong to use zebrafish, but this is the first Core Facility provided by a faculty. “We want more people to use the facility,” said Professor Leung. “To date, nine research groups from different departments from within or outside the Faculty have joined the Core and produced research outputs (published in journals including *Elife*, *Nature*, *Blood* and the *Journal of the American Chemical Society*), and competitive funding proposals based on the zebrafish model have been successful.”

For more information, please go to <http://www.med.hku.hk/corefac/zfc/aboutus.htm>



Researchers from the Zebrafish Core Facility: (from left) Miss Guo Yuhan, Miss Toni Man, Dr Alvin Ma and Professor Anskar Leung.



WORTH ITS WEIGHT IN STEEL

Around the world, carmakers are under pressure to reduce emissions from their vehicles. A new lightweight steel developed at HKU could make a difference by substantially reducing fuel consumption and thus emissions.

Tiny Hong Kong is an unexpected place to find research into automotive steel. There are no steelmakers here to test the product, nor big car manufacturers to fund research. But Dr Huang Mingxin of the Department of Mechanical Engineering, working within those limits, has managed to develop a new type of car steel that offers significant environmental benefits while remaining strong, flexible and, most importantly, affordable. He has also lined up industrial players to take his discovery forward.

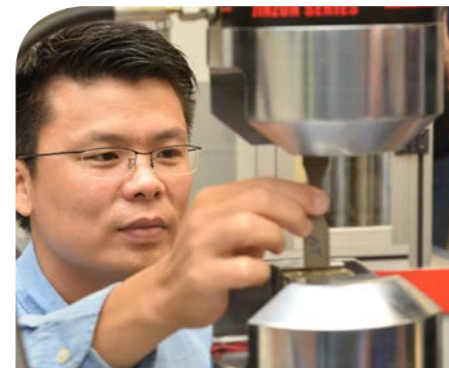
The green benefits come from addressing one of the key concerns in the auto industry, which is how to reduce fuel consumption and thereby emissions. Governments around the world are tightening their fuel efficiency standards – in China, for instance it must reach five litres per 100 kilometres by 2020 and in the US 54.5 miles per gallon by 2025.

One of the most straightforward solutions is to reduce the weight of vehicles so they consume less fuel.

“You can do that by using new materials like carbon fibres, which are very light but then you have to look at the cost,” Dr Huang said. “We’re talking about family cars, affordable cars, not sports cars. Therefore, we have to look at reducing the weight of materials already being used. Steel is the obvious first choice.”

Dr Huang has been researching steel for many years, starting in France where he worked in the research and development centre of ArcelorMittal, the world’s largest steel maker, before joining HKU in 2010. His work there focussed on making car steel lighter while retaining its ‘ductility’ – its ability to be bent or shaped.

That work led to his recent development of ultra-lightweight automobile steel, which is not only light and ductile but as strong as conventional steel – an essential condition for safety.



“ This steel could reduce car weight by 30 per cent and if you do that you will typically have 20 per cent less fuel consumption, which would mean 20 per cent fewer emissions. ”

Dr Huang Mingxin

Strong but not brittle

“There is always this contradiction in steel-making between strength and brittleness. Although you can make thinner steel with high strength that meets safety standards, in general if you increase strength the material becomes very brittle. And when that happens how can you shape the steel into components?”

He has answered this problem by using nanotechnology to manipulate the crystal structure of the steel so that nano-sized ‘twins’ are created when the crystal is sheared in a certain way. This produces a mirror image between which there are boundaries that act to limit the movement of defects in the crystals, thus increasing their strength. The nanotwins also have the effect of increasing ductility, so the steel is made both stronger and more flexible while only half as thick as the steel currently used in automobiles.

“Carmakers don’t need such material as yet because the tighter energy standards won’t be in place for a few years. But we would like to

convince them that they don’t need to wait,” Dr Huang said.

He is working with Ansteel, China’s second largest steelmaker, and General Motors on ways to do large-scale testing of the material. “I think of it as a golden triangle – there is the materials producer Ansteel, the materials user General Motors, and the third side which proposes ideas which is academics,” he said.

The ‘trick’ is in the cost

A key advantage of the nanotwin technology is that it does not need special manufacturing facilities – it can be made in existing plants. Moreover, the overall cost is about the same as the best conventional steel used today.

“That is our trick. Although the unit cost of the material may be a little more expensive, because you use less material the total cost will be very similar to components made of existing steels,” he said.

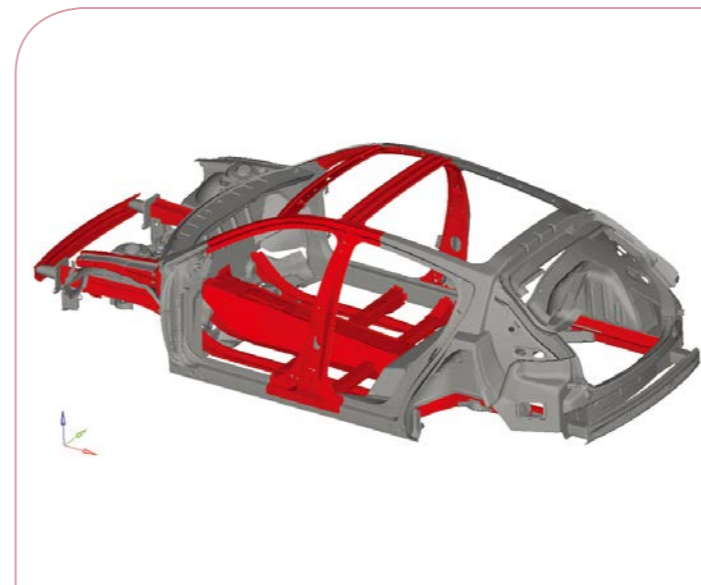
Cars are not the only possible use of this steel. Given its strength and flexibility, it could be

applied in anything from bridges and airplane landing gear to military tank protection and police helmets.

For now, though, Dr Huang is focussed on seeing the steel tested properly for vehicles to confirm that it will offer the same crash performance and passenger protection as conventional steel. And betting that the steel will be a green solution for carmakers.

“This steel could reduce car weight by 30 per cent and if you do that you will typically have 20 per cent less fuel consumption, which would mean 20 per cent fewer emissions,” he said.

By keeping the barriers low to bringing the product to market, the hope is that that impact will be achieved sooner rather than later. ■



Parts (in red) could be made of the nanotwinned steel.



The new generation of automobile steel (right) is only half as thick (1.00mm) as the steel now used in automobiles (left, 2.02mm), while offering the same strength and ductility.



TALES FROM THE FLU FRONT

The H7N9 influenza virus has the potential to become a pandemic threat. If this does not happen, then Professor Guan Yi and his team may be the ones to thank.



“ I don't know whether we still have a chance to eradicate the virus in the field, but as a professor at HKU, I have a duty to educate not just our students but the whole world about the options, so they can decide how to make people more safe. ”

Professor Guan Yi

How does one contain a pandemic? For Professor Guan Yi, Daniel CK Yu Professor in Virology, it comes down to old-fashioned legwork. He and his team have collected thousands and thousands of influenza samples over the past 15 years from the breeding and transmission grounds of new and old viruses – chickens, ducks and other birds found in markets and farms in China and patients hospitalised with mysterious flu-like illnesses – to track their progress and raise alarms.

The painstaking and persistent work has made Professor Guan one of the top microbiologists in the world. But it has not diminished his biggest problem: not the birds, not the viruses, but the human tendency to brush aside warnings that may be inconvenient.

His recent work on H7N9, a particularly lethal virus which has killed more than one-third of the people it has infected, is no exception.

Only weeks after China reported the first infected patient in spring, 2013, Professor Guan and his team – which included scientists from Shantou University and the United States and Britain – reported in both *Nature* and *Science* how and where the virus had emerged and showed conclusively that the main source was

chickens. “We told people directly how it evolved step by step by transmitting from migratory bird to domestic duck, then getting into chicken, and finally re-assorting with the chicken H9N2 influenza viruses to generate this H7N9 virus,” he said.

HKU's School of Public Health and others began to raise the alarm, but not everyone was convinced. Poultry markets, believed to be a main incubator of the virus, remained open in Mainland China. And over the next couple of years, in three successive waves of H7N9 infections, an anomaly was reported by Mainland authorities: infections attributed to human-to-human transmission increased, but those from chickens dropped to zero.

“This was impossible!” Professor Guan said. “The source of the human virus is actually an animal virus. If we want to control this outbreak, control this source, we have to get rid of the infected chickens.”

Lethal consequences

As if to underscore the point, the number of people infected with H7N9 continued to increase. As of mid-March this year, 638 people had been infected and 229 of them

team to work even more intensively on H7N9, and again linked up with Shantou University as well as Shenzhen Third People's Hospital, Zhejiang Provincial Center for Disease Control and Prevention, and American and Australian scientists.

They tested samples collected from 16,299 chickens in more than 15 cities in five provinces in China, and showed conclusively that the virus was present in three to five per cent of the birds (15 per cent at peak time), and that the number of variants found in chickens that could infect humans was increasing.

The scientists said the persistence and diversification of the virus was likely due to its spread along poultry trade routes. They also reported that they had detected other viruses with potential to infect humans, including H7N7, H7N6 and H10N6.

Renewed warning

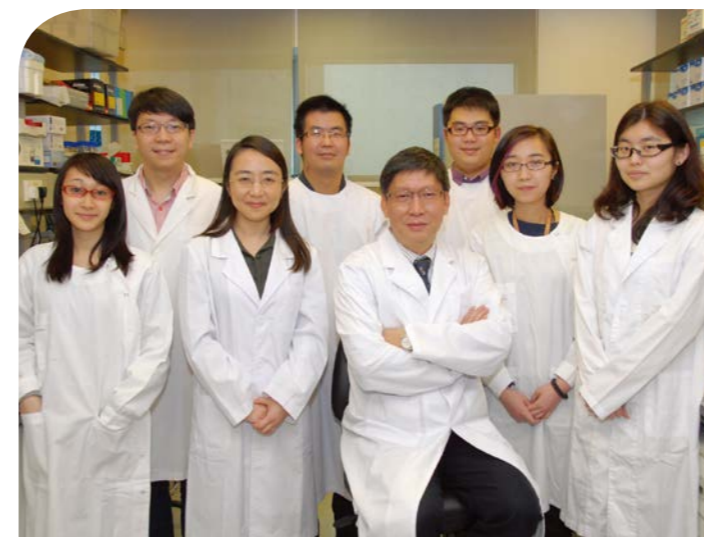
The results were published this spring in *Nature* and *Science*, with the warning that unless effective control measures were in place, the virus would continue to spread.

“If a virus has more time to cook, then the whole population may get much more seriously infected,” Professor Guan said.

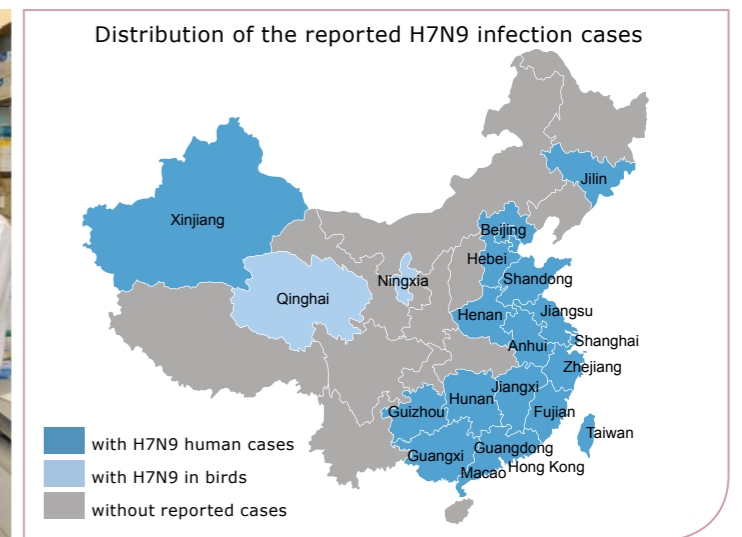
Fortunately, the renewed warning has fallen on the right ears. Soon after the recent research was published, the Guangdong Government announced that major cities in the Pearl River Delta would close their live poultry markets with immediate effect and all other cities would close them by October this year.

“I don't know whether we still have a chance to eradicate the virus in the field, but as a professor at HKU, I have a duty to educate not just our students but the whole world about the options, so they can decide how to make people more safe.”

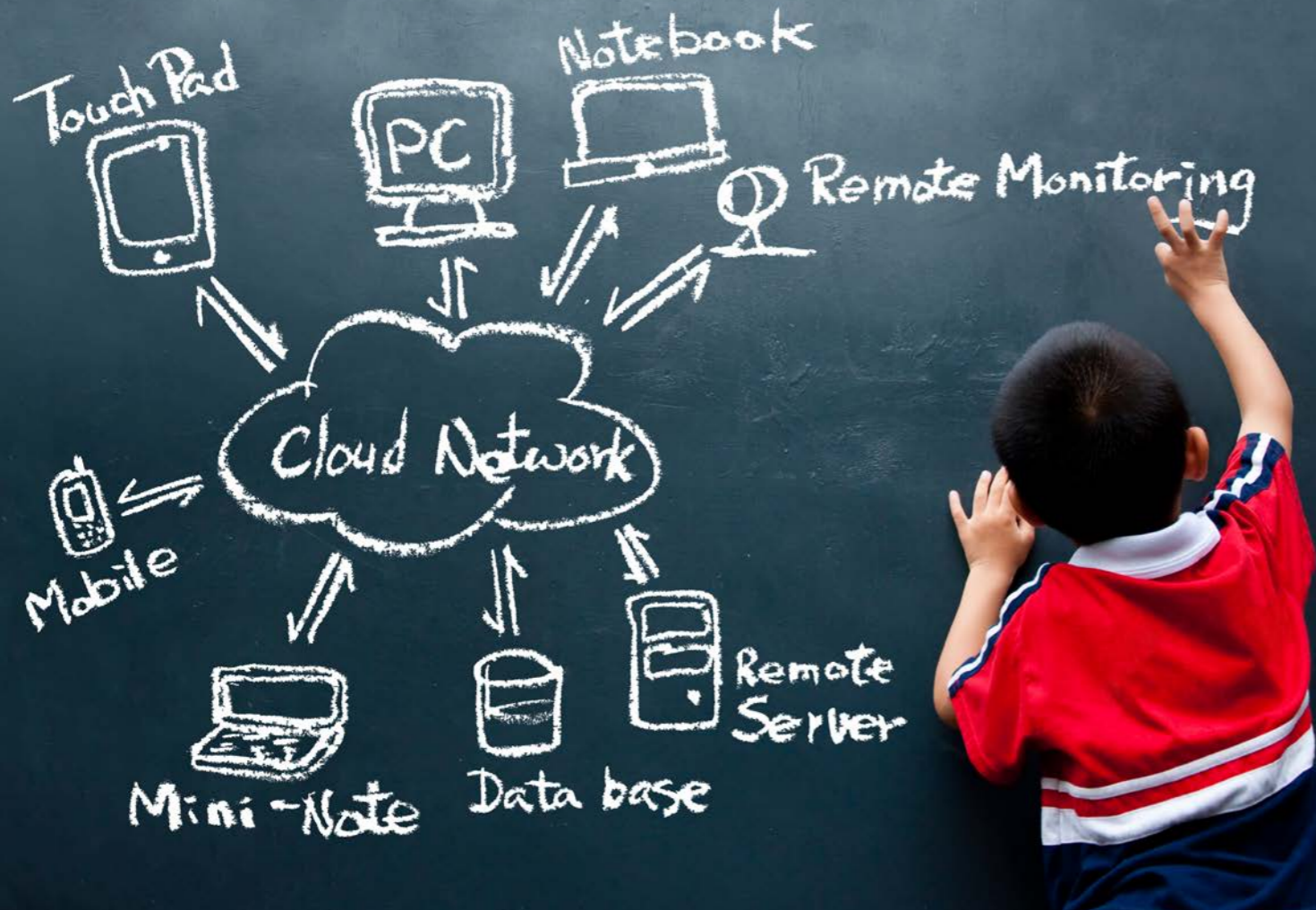
Ironically, Professor Guan was due to present his findings in person at a conference in Seoul in June but had to appear via Skype instead due to an outbreak of Middle East Respiratory Syndrome. Similar to H7N9, people were seemingly indifferent to the dangers and continued to travel and even ignore quarantine orders. “This is much more difficult than birds!” he said. ■



Professor Guan Yi (centre in the front row), Daniel CK Yu Professor in Virology, and his team.



The above map shows the H7N9 distribution across China, as reported in the research. Deep blue indicates provinces with human infection cases. Light blue indicates provinces with H7N9 viruses reported in poultry or environmental samples at the live poultry markets.



CLOSING THE DIGITAL DIVIDE

The digital divide is not only about the gap between schoolchildren with access to information and communications technology and those without, it's also about how they use that technology.

When information and communications technology (ICT) was first widely used in education, the perception was that it would be a liberation for the underprivileged, bridging the gap between poor and rich as the former would have equal access to information and knowledge. That didn't happen.

Instead a 'digital divide' opened up – the gap between those who had access to technology and those who did not – a phenomenon that raised questions of equity of access. In Hong Kong most students do have access to ICT, but another divide has also opened up – in the way it is used.

Dr Allan Yuen Hoi-kau, Associate Professor in the Faculty of Education and Director of the Faculty's Centre for Information Technology in Education, who has done extensive research in this field, said: "The phenomenon of a digital divide has put a spotlight worldwide on the whole equity of access question, but what we are seeing in Hong Kong shows that this is not the only issue. It is more deep-rooted than simply the availability of equipment – as in so many other areas of life, it is the socioeconomic factor that still dominates."

Dr Yuen has led to a two-year study of ICT habits in school-age children and found that

parental guidance is an essential element in helping children use computers and the internet properly and creatively. His research team followed the digital habits of 22 families with school-age children for one year. The children were from Primary Two to Secondary Five, and the research team recorded their ICT usage and interviewed their parents, teachers and classmates.

'Celebrating users'

Of the 22 students studied, five were classified as 'celebrating users' with a positive attitude towards internet and digital usage; 10 were



“ With the advent and establishment of information and communications technology in education, the boundaries between family and school are blurring. Students can learn in many ways now... and they can learn anywhere. ”

Dr Allan Yuen Hoi-kau

coping users, whose usage was restricted to 'after homework is done'; and seven were 'struggling users' – all of them secondary school students and none of them used ICT for learning or creative purposes at home.

The struggling users were all from low-income and / or troubled families where parents typically had less time to provide guidance than parents from higher-income families.

The research revealed that high-socioeconomic-status (SES) families in general have good usage – the parents are better educated and therefore able to nurture and guide their children. But in low-income families ICT usage is often not positive – there are risk factors and ethical problems in using computers.

Dr Yuen feels the most important implication of the study is that the influence of parents is far more important than that of schools. And it is not just a question of whether a parent is tech-savvy or not, more critical is the culture fostered at home regarding digital use.

As part of the research, Dr Yuen and his team also held Knowledge Exchange project

workshops for parents of students ranging in age from kindergarten age right through to secondary school.

Based partly on these workshops and on the study, he recently published a book, *Walk with Your Kids on the New Media Paths*. The book comprises 10 parental strategies to help families navigate the digital dos and don'ts. "We thought why not do something for the parents," said Dr Yuen. "We hope this will help them fill the gap between what their children learn at school and how they use computers at home. The ultimate aim is to help parents to nurture the younger generation in the ICT age."

Published in Chinese, the book includes quotes from parents and students involved in the study and workshops, which Dr Yuen hopes will make the book more accessible and help readers identify with the problem.

In addition to the parental role, the digital divide also raises important questions about government policy on ICT in education. Dr Yuen has drawn up a set of policy implications, with recommendations including introducing

measures to promote positive and quality usage of technologies; building 'cultural capital' for students from low-socioeconomic-status families; and providing help to parents.

"With the advent and establishment of ICT in education, the boundaries between family and school are blurring," he said. "Students can learn in many ways now – and these are often better and more interesting ways than they were taught in class previously – and they can learn anywhere."

He emphasised that there has been a paradigm change in that students today don't look primarily to their teachers when they want to learn, they open their mobile devices.

"Digital equity is not only about the distribution of teaching or technology resources," said Dr Yuen. "It is necessary to look beyond the cognitive aspects to the social, cultural and contextual factors in order to ensure ICT in education is an asset to all." ■



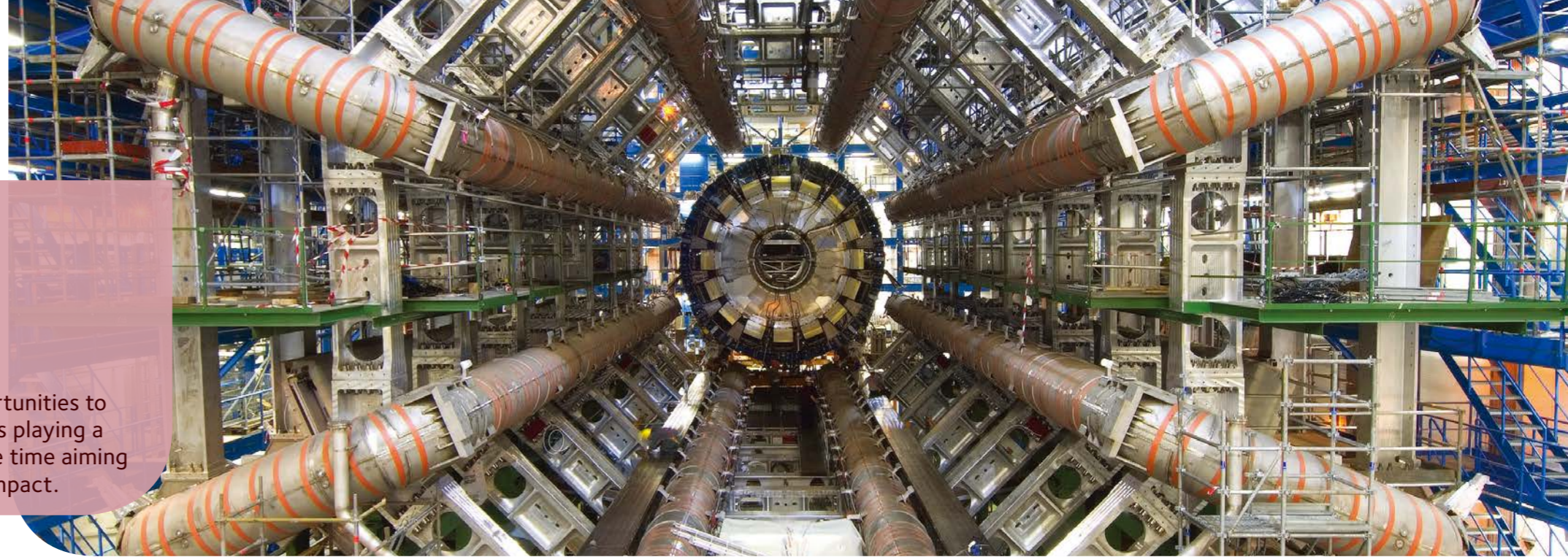
An education seminar titled 'Walking through IT Pathway with Kids' was held at HKU in June, 2015.



Walk with Your Kids on the New Media Paths offers 10 parental strategies in the digital era.

BIG PHYSICS, BIGGER IMPACT

The development of the Large Hadron Collider provides unique opportunities to answer fundamental questions in particle physics. A team from HKU is playing a role in the Large Hadron Collider's ATLAS experiment and at the same time aiming to establish a particle physics group in Hong Kong with world-level impact.



Front view of the ATLAS detector. (Courtesy of CERN)



“High-energy particle physics is a new research field in Hong Kong, although it has long been a worldwide frontier in physics, addressing the most fundamental questions in the universe. Experimental high-energy particle physics is big science which takes big cooperation, and has a big impact.”

Dr Yanjun Tu

The field of high-energy particle physics has been very active over the past century and the launch in 2010 of the Large Hadron Collider (LHC) – the world's largest and most powerful particle collider and the most complex experimental facility ever built – has only heightened the possibilities for discovery in this field.

More than 10,000 scientists and engineers from over 100 countries are working on the LHC and a group from HKU, collaborating with scientists from the Chinese University of Hong Kong (CUHK) and the Hong Kong University of Science and Technology (HKUST), is playing an important role in the ATLAS Experiment.

Said Dr Yanjun Tu, Assistant Professor in the Department of Physics: “The three teams have been working together since 2014, right after we formed Joint Consortium of Fundamental Physics, marking the first time in the Hong Kong history that all three universities have formed such a joint body for research. The consortium's aim is to collaborate in establishing a research programme in Astrophysics, Cosmology and Particle Physics in Hong Kong, and to develop working relationships among the member institutions.

“High-energy particle physics is a new research field in Hong Kong, although it has long been a worldwide frontier in physics, addressing the most fundamental questions in the universe. Experimental high-energy particle physics is big science which takes big cooperation, and has a big impact.”

The LHC programme involves hundreds of universities and laboratories, attracting many

of the best minds and talents from all over the world. In its first years of operation, perhaps the most famous discovery at the LHC was the Higgs particle, a key element to understanding the mass origin of fundamental particles in the universe. Its discovery, about half a century after its existence was predicted by theorists, marked a triumph in particle physics and science.

Now, after two years of maintenance and upgrade, the LHC came back into operation in April this year and the ATLAS and CMS – Compact Muon Solenoid – experiments are the big ongoing projects. “ATLAS stands for A Toroidal LHC ApparatuS,” said Dr Tu. “It is one of the two general-purpose particle detectors at the LHC. More than 3,000 scientists from 175 institutes in 38 countries work on the experiment, in which the collision information collected by the ATLAS detector is reconstructed and analysed. The scientific goals of the ATLAS and CMS experiments are the same, which is to search for physics beyond the Standard Model, but they have a different technical design.”

Breakthrough in the field

The Hong Kong team joined the ATLAS experiment in June 2014. Since then, the group has been involved in both physics analysis and detector upgrade work. “We focus on searching for supersymmetry particles at the ATLAS experiment,” said Dr Tu. “Any discoveries in these topics will be a breakthrough of the field.

“We are also working with our HKUST and CUHK colleagues on Higgs and exotic physics,

and the HKU group has also built up a collaboration with the University of Michigan on preparing the Phase I detector upgrade.”

Further, the team is constructing a Tier-2 computing centre, which will not only serve the local research group, but also the whole ATLAS community. This will also help to make the team more visible in such a big science community.

Dr Tu emphasised that the impact the LHC has had on physics research cannot be underestimated, and nor can the opportunities it brings for the Hong Kong team.

Six postgraduate students and five undergraduates from the Hong Kong team worked at CERN (Conseil Européen pour la Recherche Nucléaire, or European Council for Nuclear Research) during the summer. Two postdocs are based at CERN long term. Dr Tu predicts that this opportunity is likely to result in some of these students become driving forces to push the development of not only the

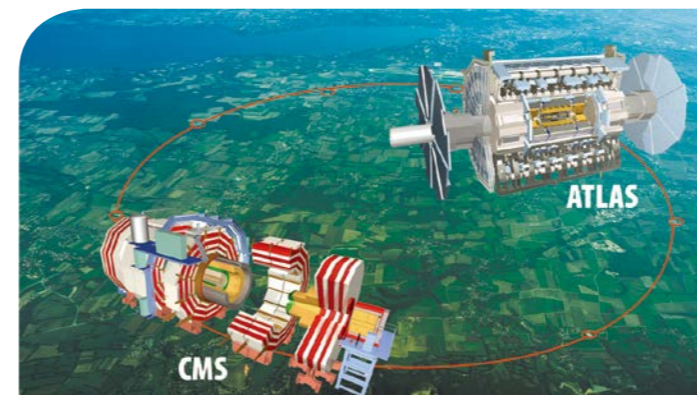
science but also the technology beyond the present limits.

“In addition, the technology developed for the study of experimental particle physics may have deep and long-term impacts for the whole of human society. A famous example in history is the application of the World Wide Web (WWW), which was firstly created to meet the demand for information-sharing among particle physicists at CERN laboratory and later distributed freely to the world in the early of 1990s.”

It follows then that developing such a new field at HKU is not only helpful for fundamental science, but also for other related research fields. “A good example from the Hong Kong team is that we are collaborating with Professor Ki Wing-hung from the Electronic and Computer Engineering Department at the HKUST on the electronics project for detector upgrade.” ■

Prime objectives of the Joint Consortium for Fundamental Physics:

- Promoting unification of current and future independent scientific projects
- Prioritising future research based on an agreed scientific plan
- Fostering a collaborative research environment that will bring various disciplines and institutions together
- Communicating the best available information to the decision-makers and funding sources in Hong Kong in a unified manner



The Large Hadron Collider is located in a tunnel about 100m underground, show as a ring of 27km perimeter near Lake Geneva (in the background). The locations of the two large general purpose detectors ATLAS and CMS are also shown (not to scale).



Dr Yanjun Tu (third from left) with colleagues and students from The Chinese University of Hong Kong (CUHK) and Hong Kong University of Science and Technology (HKUST).

GETTING IN THE FESTIVAL SPIRIT

Students organised their own film festival and learned much about film culture beyond the moving pictures themselves.



Film festivals have proliferated in recent years. A quick check with Wikipedia shows there are now more than 400 major film festivals around the world, from heavyweights like Cannes, Sundance and Toronto to more obscure gatherings such as the Camp Cult Classics Film Festival and Pyongyang International Film Festival. This year, HKU pitched in.

Professor Gina Marchetti organised a credit-bearing course in which students not only studied film festivals, but organised their own. There was much academic insight to be gained from the exercise, she said.

“Film festivals are important not only because they focus attention on a neglected aspect of film or highlight the need for a particular community to see itself on the screen, but also because they provide a discourse beyond the screen. That discourse is sometimes lost as more and more people watch films at home or on portable devices – they don’t have that big screen experience and so they lose the community experience, too.

“At film festival screenings, you are forced to recreate the communal screening and extend it to engage in discussion and interaction. There’s also this idea of levelling the playing field between audience and filmmaker by allowing the audience to question the filmmaker, which they normally cannot do.”

The whole shebang

The students were required to curate their own festival – to decide on a theme, select films, contact filmmakers to negotiate permission to screen the films for free (they had no budget), find a venue, advertise the festival, prepare questions for Q&A sessions after the screening, and survey audiences on their response to the festival.



“Film festivals are important not only because they focus attention on a neglected aspect of film or highlight the need for a particular community to see itself on the screen, but also because they provide a discourse beyond the screen.”

Professor Gina Marchetti

They worked in small groups and organised five festivals that were screened around HKU campus on the themes of the Umbrella Movement, the immigrant experience, animated documentaries, horror documentaries and road movies. The first two in particular generated a lot of discussion because the audiences had direct experience of the topics.

Nora Lam Tze-wing, now a third-year student majoring in Comparative Literature and French, was in the group that organised the Umbrella Movement festival, to which students and independent filmmakers contributed films. She learned much from the process.

“We received a lot of short films, more than we had time to screen, and choices had to be made. My groupmates and I spent a lot of time discussing what directions and styles to screen – journalistic versus theatrical, clearly-narrated versus experimental, documentary versus drama and so on. I had thought that for such a political topic, only documentaries could fully present the themes, but I was surprised by the diverse genres and the broad styles that could be used to present one single topic,” she said.



Students from Department of Comparative Literature curated a screening on the theme of the Umbrella Movement.

Film culture beyond the screen

The students were also exposed to the organisation and wheeling and dealing that go on around professional film festivals. Professor Marchetti arranged for them to attend the Hong Kong International Film Festival (HKIFF) and the trade fair Hong Kong Filmart, using funding support from HKU’s Experiential Learning Fund. She also brought in such guest speakers as Roger Garcia, HKIFF Executive Director, and the organisers of several smaller, specialised local film festivals.

“It’s really important for students who want to go into film in some sort of professional capacity as programmers, critics, policymakers, as well as people working in the industry, to have some idea of how film festivals work in this kind of climate,” she said.

“It’s taught them that there’s more to film culture than what you simply see on the screen. And that what you see is very much dependent on what happens off-screen in terms of not only production but what comes after that – exhibitions, distribution, critical reception, audience reception, the way in

which festivals and other special events shape the screening environment and screening context.”

The festival project follows on from the well-received student work last year under Dr Esther Yau to create films about Pokfulam village and screen them in the village.

“I wanted to do something a bit different than the creative end,” Professor Marchetti said. “What do you do when you’ve got a lot of creative material and viewers hungry for something that they cannot normally get in the Cineplex? We came at it from that angle.” ■

The AniDox Animated Documentaries Festival can be viewed at

<http://anidox2015.tumblr.com/>

Horror Animation Festival at

<http://hkuanimationfestival.weebly.com/>

Road Movie Festival at

<http://theroadstakenff.weebly.com/>

Umbrella through Lens at

<http://utl.mylife.hk/>

United Cinemas – Hong Kong International

Film Festival for Immigrants at

<https://hkiffimmigrants.wordpress.com/>



The screening was followed by a sharing session by guest speakers Mr Alex Chow (centre), former leader of the Hong Kong Federation of Students who played an important role in the Umbrella Movement, and film critic Mr Bruce Lai (left).



RIDING THE SAILS OF FISHERMEN'S TALES

The changing culture of Aberdeen's fishing community is being recorded and preserved in a new project launched through HKU. Fishermen are also being trained to make a living from their heritage.

The Hong Kong story is often framed in terms of who rules, owns or occupies the land. Even the city's critical role as a port is described as a landmark – the 'gateway' to Mainland China. Far less has been said about our water-dwelling and wandering fishing community. A new project is trying to correct that imbalance.

The 'Fisheries and Fishing Community of Aberdeen' project, which is organised by the Centre of Development and Resources for Students (CEDARS), has been collecting, preserving and sharing stories and information about fishing life through oral histories, a living museum and guided tours of Aberdeen Typhoon Shelter. It is also training fishermen to operate social enterprises based on their culture.

Dr Albert Ko of CEDARS has been overseeing the activities, which involve students, staff and alumni, as well as Aberdeen's fisherfolk. The project is sponsored by the We Are With You (WAY) Project, a HK\$10 million initiative funded by Chow Tai Fook Charity Foundation to support the University in building social capital in Southern District.

"Our belief is that if we want to develop the future, we need to know about the past. By bringing people together, enabling them to take pride in their community, understanding that community, we can move forward," Dr Ko said.

In their own words

The heart of the project is a collection of oral histories that have been put together by Dr Wong Wai-ling, a researcher in the Hong Kong Institute for the Humanities and Social Sciences, with the participation of trained student volunteers. They interviewed fishing people aged from their late 40s to late 80s and compiled 30 oral histories into a book, *Memorscape: Aberdeen Fishermen Oral Histories*, which was published in August.

The stories reveal aspects of life at sea. For example, children were quite vulnerable. One



“ If we want to develop the future, we need to know about the past. By bringing people together, enabling them to take pride in their community, understanding that community, we can move forward. ”

Dr Albert Ko

interviewee told a tragic tale in which a young child who had not been tethered to a harness – common practice for the boat people – awoke from a nap while everyone was busy pulling in a haul. The child subsequently disappeared in the waters off Hainan Island, in an area reputed for such disappearances.

The interviewees also reflect on such things as their special foods, where they got the best harvests of fish, how they weathered storms, and their particular understanding of Hong Kong as a place divided down the middle, with fisherfolk to the West having strong ties to the Gulf of Tonkin through Macau and those to the East looking to Taiwan through Shantou.

The oral history project is also the basis of a living museum – an exhibition called *Stories of Aberdeen Fishing Folks*, which opened in May, 2015 in the Postgraduate Hub of Graduate House. The exhibition features photos and artefacts of fishing life, and voice clips of fishing people talking about their lives. Dr Ko said they wanted to take it into the wider community and the Department of Architecture was helping to design a mobile version of the museum. Three schools have been invited to host it.

Helping the fisherfolk

In the meantime, the public can listen to the oral histories through a dedicated website and take guided boat tours around Aberdeen Typhoon Shelter in which the fisherfolk talking about their lives. HKU students have helped to run the tours and provide interpretation, which has also been a great learning experience, according to student guide Tina Cheung Wing-yan, a third-year Bachelor of Arts student.

"Before I did this project I thought fishing was quite romantic – they sit in a boat and just throw the net into the sea to get fish. I now see there are many hardships. They have to travel far to get fish and face things like typhoons, where they can't sleep for 24 hours. I appreciate this occupation more and I'm more grateful about having seafood to eat," she said.

The next step is to sustain the project to the fisherfolks' benefit. Alumni have offered expertise and advice. One idea is to work with a restaurant to offer food made with recipes passed down through fishing families, in a venue that includes exhibits from the museum. Dr Ko said they were also looking at how to provide the fishermen with the necessary skills

and know-how to manage these operations, without duplicating other re-training programmes. "In the end, all the work we are doing will help the fishermen to run these things themselves," he said. ■

Excerpts of the fishermen's oral histories can be heard at



Dr Wong Wai-ling's book, *Memorscape: Aberdeen Fishermen Oral Histories (in Chinese)*, is published by Joint Publishing Ltd. (王惠玲、羅家輝著:《記憶景觀:香港仔漁民口述歷史》·香港:三聯書店·2015年)



Grocery boat in Aberdeen Typhoon Shelter, 1979.



Workshop activities hosted by HKU students for the guided tours for the Fisherfolks' Lifestyle and Culture in summer, 2014.



HKU student Mr Benedict Cheung (left) and Research Officer Dr Wong Wai-ling (centre) having oral history interview with fisherman Mr Chan Kwok-wah (right).



AGEING OUT OF THE BOX

It is possible to find a sustainable way to care for our greying population, argues Professor Terry Lum, who is leading several large projects toward this end. Asian values and empowerment are at the core of his vision.

The problem of ageing populations is starting to plague Asian economies, but with a twist: ageing is happening at a far more rapid pace here than in the West, leaving little time to prepare.

The US, for instance, had 69 years to adapt to a doubling of the over-65s from seven per cent of the population to 14 per cent. In Asia, the transition is being compressed into a single generation of about 25 years. All of that means there is an urgent need for solutions.

Professor Terry Lum, Henry G Leong Professor in Social Work and Social Administration, Director of the Sau Po Centre on Ageing, spent

nearly two decades in the US developing innovative programmes for the most frail elderly, before coming to HKU in 2011. Now he is turning his efforts to Hong Kong's ageing problem, where he sees constraints but also opportunities.

"In the West, they have developed a compensatory system because a lot of people live far away from their parents and can no longer look after them when they are elderly. Non-governmental organisations and service providers have replaced family support.

"Hong Kong also has a compensatory system, yet its conditions are different. Young people

still live close to parents. Communities and families are intact. You have filial piety, domestic helpers. We should try to look at how to channel resources to the community and family instead of taking power away from them, which is the Western way."

New models of care

Professor Lum has several projects working towards that goal, the largest of which is a HK\$24.6 million study on long-term care commissioned by the Hong Kong Government.

Some 6.8 per cent of over 65s here are in residential care and another 2.5 per cent are



“ If we can activate the power of the family and community, then the burden on families will be less and the government can focus resources on the most needy. ”

Professor Terry Lum

waitlisted, compared with three or four per cent in nursing homes in the US and Japan. The Government picks up most of the bill, which will be clearly unsustainable as society continues to age.

The Government is now considering a voucher system so frail elderly and their families can decide what level of care to select and top up the voucher amount if they wish. But in order for that to work, there have to be benchmarks for quality and a more sophisticated protocol to assess the level of care that an elderly person requires.

Professor Lum has been developing these tools, which could maximise choice even to the extent of funding family and community members to look after their elderly provided they met quality benchmarks. A full set of recommendations will be delivered towards the end of 2016.

"This is not simply fine-tuning," he insisted. "The existing system will collapse if there isn't a major revamp."

Expanding choices

Community support is also the focus of an ageing-in-place programme being implemented with the Hong Kong Housing Society at 11 of its public rental housing estates. The goal is to keep the elderly at home as long as possible, thus easing some of the demand on care homes. The programme includes home and environmental modifications and social programmes that promote active and healthy ageing. Volunteers have been organised and staff at the estates have been trained to work with frail elderly residents. Professor Lum and his team are now assessing the impact of these changes on the health and well-being of the elderly residents and their likelihood of staying in the community as they age.

A third project aims to keep elderly healthy for as long as possible, which could also lower demand on care homes. The Sao Po Centre is developing a model to promote exercise and lifestyle change among the elderly with HKU colleagues in Geriatric Medicine, Nursing,

Social Work and the Institute of Human Performance. The model will be based on a pilot project in which frail participants reported improved well-being after three months, with some able to walk without walking sticks. The project has received HK\$5.3 million from the Simon KY Lee Foundation.

All of these projects aim to address what Professor Lum sees as fatal flaws in the current system of old-age care. "This system has been limiting our choices and making us depend on Government. It is disempowering the community rather than empowering. The key for us is to think outside the box.

"The family, community and Government can become shared partners in the provision of care. If we can activate the power of the family and community, then the burden on families will be less and the Government can focus resources on the most needy." ■



Trained peer health educators conducted home visits to elderly residents.



Professor Terry Lum (second from left), Dr Vivian Lou (second from right) and Dr Ernest Chui (first from right) received the Knowledge Exchange Award from Professor Paul Tam (first from left) for their project on 'Promoting Ageing-in-Place for Elderly Tenant in Rental Housing Estates of Hong Kong Housing Society'.



OYSTER SOURCE

The Hong Kong Oyster (*Crassostrea hongkongensis*) is tasty and highly nutritious and has also helped to clean and enrich our deep bay waters. Yet the local oyster industry is under threat. Scientists at HKU's Swire Institute of Marine Science are now getting behind this home-grown shellfish.

For 700 years there has been an oyster-growing industry in Lau Fau Shan and the surrounding waters of Deep Bay on the Shenzhen River. However, that industry has gone into slow decline in the last 70 years as heavy metal pollution in the waters around Shenzhen Bay have severely damaged the product and the industry.

The low-point came in 2014, when the Shenzhen authorities banned Hong Kong oyster farmers from selling their wares on the grounds that waters had become so contaminated seafood from Shenzhen Bay was not fit for consumption. The oyster growers disagreed, citing findings by the Hong Kong Environmental Protection Department (EPD)

and Agriculture, Fisheries and Conservation Department (AFCD) which suggested heavy metal and bacterial pollutions have steadily declined in the past 20 years.

They complained to the Hong Kong Government that they were being unjustly cut off from their livelihood. Now, scientists from HKU's Swire Institute of Marine Science (SWIMS) and School of Biological Sciences have joined forces with local oyster growers and the Government to put the Hong Kong oyster back on the map and, more importantly, back on the plate.

Under a major new programme, funded by the HKU Knowledge Exchange Fund and AFCD's Sustainable Aquaculture Fund, SWIMS is getting the public involved too through workshops and hands-on training aimed at raising public awareness.

Sentimental value

"There are two main goals to the project," said SWIMS Associate Professor Dr V Thiyagarajan (Dr Rajan), who is leading the programme. "First, to persuade the public



“It’s vital that we ensure it continues to flourish. Deep Bay water is highly productive and biodiverse, and this is down to the oysters that grow there.”

Dr V Thiyagarajan

that Hong Kong oysters have a cultural and sentimental value to them. The Hong Kong oyster is tasty, highly nutritious and very good for local waters – plus there are 700 years of cultivating tradition behind it.

"We want to change the perception that if the Shenzhen River is polluted then the Hong Kong oyster must be. We scientists will carry out regular monitoring over the next five years, so that production will go up the quality of the product will go up and, eventually, the price will go up thereby benefiting the oyster growers."

The second goal is scientific input: initially, the removal of bacteria from the oysters before they go to market, and then the introduction of hatchery technology to local oyster farmers to facilitate a sustainable oyster industry in Hong Kong.

"At the moment Hong Kong growers buy seed from China, and it is the seed that may be contaminated, unsustainable and expensive," said Dr Rajan. "We recently held a workshop

for oyster growers and the public which showed them that with hatchery technology developed at SWIMS the future of oyster grown exclusively in Hong Kong is not only feasible it is sustainable too.

"We want to return the industry to the local growers, and so we plan to work with them and the Government over the next five years to put the technology in place in Lau Fau Shan and to monitor the oysters grown there so we can assure the public they are pollution free and safe to eat."

Hotspot of biodiversity

In their turn, oysters have given back to Hong Kong. Seven hundred years of oyster growing in Deep Bay has resulted in the area being a highly sensitive site and a hotspot of biodiversity. "It's vital that we ensure it continues to flourish," said Dr Rajan. "Deep Bay water is highly productive and biodiverse, and this is down to the oysters that grow there. They provide a habitat for myriad other species. If the oysters died out, we would also

lose those species – so there is an important ecological purpose to this programme too."

This is one of the messages they aimed to get across to the community at the workshop. "Most of the public are unaware that oysters are very important to the Hong Kong environment," he said. "They keep Deep Bay at this high level of biodiversity, acting as filters and emitting clean water."

That shows in the rate of growth too. At the workshop oyster growers showed scientists at SWIMS that oysters grown in the rich waters of Deep Bay can grow in six months to a size that takes a year elsewhere.

"Another of the aims of this project for the oyster growers is to increase the price from HK\$5 to at least HK\$10 per oyster," Dr Rajan said. "While that represents a 100 per cent increase, this is still far cheaper than imported oysters from, say, New Zealand. Plus, Hong Kong oysters are big – the shells can grow up to 30cm in length – that is a lot of oyster for your money." ■



Oyster growers from Hong Kong visited an oyster production site in Yangjiang, China and learned how oyster seeds are produced using traditional methods and the socioeconomic aspects of oyster hatchery in China.



Oyster spats or young adults from Dongshan area, China, are raised to market size at Deep Bay using 700-year-old traditional methods such as suspending them from rafts or placing them on concrete tiles on the mud flat.

A model hatchery (larval rearing) technology was introduced to Lau Fau Shan oyster growers where oyster larvae will be raised to spats in a hatchery.



Wind turbines at the University's Centennial Campus.

GREEN CAMPUS PROGRESSIONS

HKU recently hosted a major international conference on sustainability in higher education, boosting the University's profile and also that of sustainability on campus.

When Ann Kildahl was appointed as HKU's Sustainability Manager, in 2008, it was a time of unprecedented growth and change that included construction of the Centennial Campus and the introduction of a new curriculum. Sustainability issues were not front and centre for the University. "Sustainability and climate change are among the most important issues facing the planet, but we are often competing for people's attention," Ms Kildahl said.

Now that the dust has settled and campus life has fallen into a new normal, it is time for Ms Kildahl's office to press their advantage.



Ms Joy Lam (left) and Ms Ann Kildahl (right) from HKU's Sustainability Office.

In June, they hosted the annual conference of the International Sustainable Campus Network (ISCN), which attracted delegates from 22 countries, including leading Asian, European and North American higher education institutions, the University's senior management, senior business executives, and Hong Kong's Secretary for the Environment, Mr Wong Kam-sing. The Mayor of Seoul, Mr Park Won-soon, sent a pre-recorded video message.

The turnout was recognition the University can be a player in promoting sustainability in higher education locally and in the region.

"Hosting the conference helped us to raise awareness of the issues within HKU and Hong Kong and to raise the profile of our sustainability work," Ms Kildahl said.

That work has included collaborating with colleagues across the University to expand informal education on campus, building networks, and taking action to improve HKU's environmental performance.

Taking action

Green Connections, a speaker and film series now in its sixth year, encourages networking

“ We want to mainstream sustainability and make it part and parcel of what people do every day, whether it's to recycle and waste less, reduce our carbon footprint, conserve water, or recognise broader social issues such as gender equity and cultural diversity. ”

Ms Ann Kildahl

among students, staff and the wider community. A waste recycling programme, introduced in 2009, has been steadily expanded. The Hong Kong Sustainable Campus Consortium, initiated by HKU in 2010, brings together the city's eight public universities. As a signatory to the consortium's Hong Kong Declaration and the ISCN-GULF Charter, HKU has made important public commitments to sustainability.

Other actions include a pilot programme to retrofit buildings with more energy-efficient lighting, air-conditioning systems, and other environmental features such as green roofs. The first retrofit was carried out at Chow Yei Ching Building under an energy performance contract and was awarded LEED (Leadership in Energy and Environmental Design) Gold certification. Work is now underway on TT Tsui Building.

"We have learned a great deal so far," Ms Kildahl said. "Working with the Estates Office and the University's facilities managers, there may be features we can scale up across campus."

With those pieces in place, things are now ready to move to the next level. The Executive

Vice-President, Dr Steve Cannon, is chairing a new, high-level working group on sustainability strategy.

Assisted by a consultant, the working group will enable the University to meet its existing commitments, set campus-wide targets, and explore creative, new approaches to sustainability. One goal back on the table is a car-free campus, an idea mooted some years ago that could now be attainable with the opening of the Mass Transit Railway (MTR) station.

Two new hires will be recruited soon to join Ms Kildahl and Ms Joy Lam, bringing the team to four and enabling the Sustainability Office to engage more actively with stakeholders.

Ms Kildahl hopes to see sustainability move closer to the forefront. "We want to mainstream sustainability and make it part and parcel of what people do every day, whether it's to recycle and waste less, reduce our carbon footprint, conserve water, or recognise broader social issues such as gender equity and cultural diversity. All of these are part of sustainability," she said. ■



Participants and student volunteers on the first day of ISCN (International Sustainable Campus Network) 2015 Conference at HKU Centennial Courtyard.



Executive Vice-President Dr Steve Cannon giving closing remarks at the ISCN Conference.



The problem of water

One of the small but appealing initiatives introduced by the Sustainability Office is the WaterHunt@HKU map, which not only shows where on campus people can fill up their reusable water bottles with clean, filtered water, but also flags a problem that has otherwise been little discussed in Hong Kong.

"Reducing the use of bottled water is a pressing environmental issue due to the harmful effects of plastic production and disposal. More broadly, it's also a reminder that access to fresh water is so important. In Hong Kong, water is inexpensive and people generally do not conserve it. There are many constraints affecting water supplies in China, however, and with some 80 per cent of our water coming from Guangdong, we need to pay much more attention to it," Ms Kildahl said.

"Expanding on the efforts of our Estates Office team, we will be working towards a new strategy for water conservation that includes things like increasing the use of low-flow fixtures, reusing and recycling water, changing the way we do landscape – there are all kinds of things we can do. It's only a matter of time before we will be forced to make changes because water is such a problematic issue for China."



Consolidating leather on a book spine.

COVER STORY

Disaster has struck — the air conditioner has leaked overnight, thoroughly soaking your antique books collection that was kept on the shelf beneath. What do you do?

This was the premise of a workshop co-organised by the Preservation and Conservation Division (PCD), part of HKU's Libraries and located in a sprawling workshop in Aberdeen. Head of the PCD Ms Jody Beenk and her 10-strong team of skilled conservators and binders work daily to repair, preserve and conserve books, scrolls, photos and documents.

The Division was formed in 2010, although the University has had a bindery since 1953. The

conservators in the PCD – most of whom trained outside Hong Kong as there is little training available locally – have been running a series of workshops designed to pass on their specialist knowledge to the public and others involved in associated industries.

"The workshops are aimed both at people inside the industry looking to extend specific knowledge and also at the public – so students, curators, conservators, archivists and collections managers across the GLAM

[Galleries, Libraries, Archives and Museums] sector," said Ms Beenk. "They are not structured to create conservators – preservation is a discipline that requires extensive training – but rather to emphasise collections care, how to assess a collection, how best to preserve it and knowing when to hire outside experts."

The series of Knowledge Exchange-funded workshops are run in collaboration with several partners across campus, including the



Rare book enclosures fabricated in the University Libraries Preservation Centre.



Sewing an 18th-century book.



“ The conservator’s skill is not only in having the practical knowledge and skills required to know how to repair or preserve an item. It’s also about having a sense of the social and cultural history of a piece. ”

Ms Jody Beenk

University Museum and Art Gallery (UMAG), University Libraries (HKUL), Archives, and Architectural Conservation Programmes (ACP), as well as external organisations including the Getty Conservation Institute, AXA Art Asia and M+, the museum that will form the cornerstone of the West Kowloon Cultural District Project and which is due to open officially in 2018.

Subjects covered include: an introduction to the Getty’s ‘Arches’ heritage inventory system; handling and packing art and artifacts for transportation; caring for and identifying photographs (from daguerreotypes to digital); and an upcoming workshop in December will look at pest management.

Perhaps the most popular was the workshop about coping with emergencies, led by Ms Priscilla Anderson, a senior preservation librarian from Harvard. It included how to respond to an emergency effectively to prevent damage to the most vulnerable collections, and how to salvage a variety of wet collection types during the recovery phase. "For this workshop we soaked several shelves of books, maps and audio formats overnight," said Ms Beenk, "then basically said to participants, 'We have an emergency, what do you do first?'" Since that workshop there have been no fewer than five such emergencies at HKU. Luckily HKUL staff attended the course, so they knew what to do!"

Standards and ethics

Interestingly, it was a water damage emergency – floods in Florence, Italy in 1966 – that marked what is considered the start of book preservation. "It led to the setting up of proper standards for the craft," said Ms Beenk. "The introduction of uniform ways to treat damage and to document repairs, and the creation of standards and ethics."

As an international university of stature, HKU needed a proper preservation centre, Ms Beenk emphasised, adding that it is the only university in Hong Kong to have an established centre. "We also have an informal preservation group, whose members include UMAG’s Dr Florian Knothe and Mr Christopher Mattison, and Professor Lynne DiStefano and Ms Gesa Schwantes from ACP.

"Conservation is becoming more important in this part of the world," said Ms Beenk. "The International Institute for Conservation of Historic and Artistic Works held its annual Congress in Hong Kong for the first time last year, and as a result of that is now working in collaboration with the Forbidden City in Beijing. Ms Beenk was recently invited to the Sun Yat-sen University in Guangzhou to speak about the workshops at the South China Preservation and Conservation Forum.

There is certainly more than enough work to keep the PCD team busy. Bookbinding takes up much of the time, with a steady stream of volumes being shuttled daily between the main campus libraries and the Division in Aberdeen. It can be as simple as replacing a torn hard-cover on a relatively modern book or as complicated as painstakingly reforming damaged pages using paper specially made to match as closely as possible the original.

They also sew pages back in, remove aged sellotape that’s been used for amateur repairs, restore pages that have been nibbled by cockroaches, and make digitised editions of works that are too delicate to be handled. While at one desk a member of staff is repairing page by page local newspapers dating from the 1960s, another is custom-making enclosures (protective boxes) for law tomes that are several hundred years old, and two more staff are gold-stamping titles on newly constructed book covers.



Workshop participants receive guidance before tackling wet books.



Workshop participants collaborate to sort wet documents.

The PCD provides these services both for the University and for private clients. "We get enquiries from corporations who have a big anniversary, such as a centenary coming up," said Ms Beenk. "People start looking at documents they have in storage and realise they have interesting items but they are delicate and need careful handling."

Asked to sum up what the Division does, she said: "The conservator’s skill is not only in having the practical knowledge and skills required to know how to repair or preserve an item. It’s also about having a sense of the social and cultural history of a piece." ■

CENOZOIC CLIMATE CHANGE 新生代氣候變遷



PAST, PRESENT, FUTURE

An exhibition aims to predict future climate change by looking at the past.

Climate change affects our daily lives and is therefore a hot topic these days. Seeking an understanding of the extent of the present climate change was part of the reasoning behind the new permanent exhibition, *Cenozoic Climate Change*, which has been added to the existing Earth Evolution Gallery at HKU's Stephen Hui Geological Museum.

Curator and lecturer in Earth Sciences Dr Petra Bach explained: "Everyone is talking about climate change evidenced by rising global temperatures, sea levels and concentrations in greenhouse gases, but little is said about its relationship with climate variations in the geological past. For Earth scientists the context with the geological past is an essential part of the conversation."

Displayed climate data demonstrates to visitors that 50 million years ago Earth's temperature was actually hotter than today – about 10 to 15 degrees Celsius higher, with life thriving on an ice-free Earth. More recently during the Pliocene epoch (2.3 to 5.6 million years ago), just before the emergence of our genus Homo, temperatures were 2 degrees higher than today. "It is very important to study such periods of the Earth's history to be able to predict the future," said Dr Bach.

Opened on Earth Day this year, the *Cenozoic Climate Change* exhibition spans the last 65 million years of Earth history – from the extinction of the dinosaurs to the present day. Dr Bach put the exhibition together in collaboration with two climate change experts from the Department of Earth Sciences, Professor Zong Yongqiang and Dr Liu Zhonghui.

Scientists have no way of directly measuring past levels of atmospheric temperature or carbon dioxide (CO₂) content. But a number of different indirect methods, called proxies, lead them to estimate the temperatures and CO₂ contents in ancient atmospheres.

One part of the exhibition displays a range of such paleoclimate 'proxies' including marine



Curator of the Stephen Hui Geological Museum Dr Petra Bach (centre) and two climate change experts of the Department of Earth Sciences Professor Zong Yongqiang (left) and Dr Liu Zhonghui (right).



“ Everyone is talking about climate change evidenced by rising global temperatures, sea levels and concentrations in greenhouse gases, but little is said about its relationship with climate variations in the geological past. ”

Dr Petra Bach

micro-fossils from deep-sea sediment cores viewable through a magnifier, a marine sediment core, a replica of an ice core as well as some beautiful 3,000-year-old tree rings.

"These proxies act like natural recorders of climate variability in the geological past addressing climate history beyond the limited instrumental weather records," said Dr Bach. "They provide paleoclimate data that gives us a much needed baseline of natural climate variability against which human-induced climate change can be assessed. For example, ice core records provide the primary evidence that modern greenhouse gas concentration lies far outside the natural variability of the last 800,000 years."

Hong Kong's climate history is represented by a preserved core of marine mud collected off Lantau Island. The lower red section was deposited in the last interglacial about 125,000 years ago, and the upper section was deposited during the past 7,000 years, *i.e.* the current interglacial.

There are also samples of dust deposits from the China Loess Plateau, dating back about 100,000 years. All these exhibits show the

scientific methods used to measure and help scientists reconstruct global and regional climate changes over the last 65 million years.

"The typical geologically young and undisturbed proxies from the Cenozoic, the most recent geological era, have the advantage of providing a continuous climate record," said Dr Bach. "It is the combination of different types of proxy records covering various time scales that help us to reconstruct detailed climate variations going back millions of years and revealing multiple episodes of gradual and rapid climate changes."

Orbital eccentricities

"Climate is a very complex system. The most vital factor is the energy provided by our sun, of course, but it too fluctuates because of solar activities and periodical changes in the Earth's orbit, defined in the Milankovitch cycles, providing a predictable pacing of climate change," she said. "But it is the complicated interaction between processes in the interconnected Earth systems of the atmosphere, hydrosphere, geosphere and biosphere and their feedbacks that makes climate change a complex phenomenon."

The focus of the second part of the exhibition is a large 3D graph, running the length of a display and showing temperature fluctuations from 65 million years ago to today.

"Beside a continuous long-term trend of climate change from warm conditions with ice-free poles 65 million years ago to present-day cooler conditions, there are also short-term abrupt climate changes that occurred before humans appeared, so we can't be blamed for this," said Dr Bach. "They could have been caused by volcanic eruptions, fluctuations in ocean currents as continental plates formed or moved and mountains formed."

Today, however, human activities seem to play a part. "In my lifetime the world population has doubled and CO₂ levels have soared," she said. "Paleoclimate proxy research reveals that in only the last 300 years since the beginning of the Industrial Revolution, atmospheric CO₂ levels rose to an extent that exceeds by far the natural variations of the last 650,000 years. Such abrupt climate change may force our climate system to respond in abrupt and unexpected ways that humans and natural systems may have difficulties adapting to it." ■



Tree rings of a 3,000-year-old fossil wood of a pine tree (*Glyptostrobus pensilis*) from the Pearl River Delta reveal past climatic conditions.



Fossil from an ancient rhinoceros paradise in Linxia basin, north of the Tibetan Plateau.



NURTURING RESEARCH ACROSS THE SPECTRUM

The new Vice-President and Pro-Vice-Chancellor (Research), Professor Andy Hor, asks some pointed questions about what research at HKU should do and how to take it forward.

“More and more, we will be measured by outcome, not just output, and impact, not just relevance.”

Professor Andy Hor

Professor Andy Hor opens his interview with a blunt statement: “Feel free to ask questions; if I don’t have the answer I will tell you.” But it soon becomes clear he is as interested in asking questions as answering them.

He starts with the holy grail of research itself: publication. Across the academic world, impact has become measured by publications in high-profile journals, the number of times a scholar’s work is cited by others, and other measurable outputs. These things can make or break a career but what, asks Professor Hor, does that have to do with the rest of society?

“You publish so many papers and have 1,000 citations – so what? You have 100 patents on the shelf – so what? People on the street are going to wonder, what does that mean to me? These are the people, the taxpayers, that fund much of our research, as well as other stakeholders of the University,” he said.

Professor Hor believes it is time for the University to make a greater push towards explicitly addressing the impact of research in the world at large and place this alongside traditional ideas of research, rather than regard the two in isolation.

His vision is of a continuum of knowledge creation, translation and harnessing. At one end is blue-sky research where knowledge is pursued at its root, at the other end is impact where research seeks to address specific problems in society and take on global challenges.

Why impact matters

Although HKU has been edging towards this vision in recent years, there have been detractors who worry that it draws attention and funding away from the pure pursuit of new knowledge that ultimately, if not

immediately, benefits society. Professor Hor believes that it is better to focus on the value-chain of the knowledge continuum rather than draw artificial lines between basic and applied research.

“HKU is a comprehensive university and we should value its inherent diversity. The challenge for us is to find the synergy and harness our complementary strengths,” he said.

He would like to see faculties and departments produce statements about what impact means to them as this will likely be important both in terms of funding and relevance to the world we live in. “More funding will come but only if we are truly innovative in our works and we take on global aspirations. The distinctive and distinguishing traits of HKU must be evident to all.

“More and more, we will be measured by outcome, not just output, and impact, not just relevance,” he said. “Impact and outcome take time to crystallise, but we must be serious in embarking on this journey. They may affect the way you look at research, how you run a project, even the research field you enter. We have to think deeply about it and get ready.”

That means not only using research to solve problems, but being creative and innovative in turning challenges into opportunities. He cited emerging challenges in social security, food safety and environmental pollution as examples of areas where HKU should play a leading role.

“Creative and innovative research is not just about solving problems, but staying ahead of the problems. We create new knowledge, some of which provides solutions in tomorrow’s world,” he said. “This is how some Nobel Laureates were incubated.”

Frontline experience

Professor Hor has himself straddled the research-impact continuum. Born and raised in Hong Kong, he pursued a typical academic career track, studying at Imperial College and Oxford and doing postdoctoral work at Yale before arriving at the National University of Singapore in 1984 as a Lecturer and eventually becoming Professor of Chemistry at age 44. But five years ago he did an almost 180-degree turn. He was seconded to the city-state’s Agency for Science, Technology and Research (A*STAR) to be Executive Director of its Institute of Materials Research and Engineering. A*STAR is a mission-oriented research organisation with a clear technological and economic brief.

“I went through a big change in focussing on publications, citations, teaching and services, to a place that every day we talked about how to grow GDP, how to create high-value jobs, and how research can benefit industry, economy and social cause. We had to deal with the grand plans of multi-billion international companies and the on-the-ground problems facing small local enterprises that are struggling to stay afloat. We had to turn ‘mission impossible’ to realities in order to gain the ‘buy-in’ from the public, not just government.

“I learned so much there that I feel I can contribute to HKU, particularly in innovation and entrepreneurship,” he said, adding that the latter was not confined to academic staff but included both undergraduate and postgraduate students, and should be supported by the whole Senior Management Team. It has to be a campus-wide pursuit. ■



A WORLD OF EXPERIENCE

The new position of Vice-President and Pro-Vice-Chancellor (Global) has been filled by Professor W John Kao, who has been preparing all his life for just such a role.

Professor W John Kao has had about as international an upbringing as one can get. From childhood right up to the start of his academic career, he called almost 30 places across Asia, the United States (US) and Europe 'home'. Eighteen years ago he decided it was time to settle and so, at the University of Wisconsin-Madison, he established a thriving research career, started a family and even designed his house. But it seems mobility and the inherent risks and rewards it involves are in his blood.

This summer he uprooted his family and moved to HKU, to take up a position that is new not only to him but to the University. As Vice-President and Pro-Vice-Chancellor

(Global), his brief is to strengthen HKU's global networks, presence and engagement.

"I wanted a new challenge and this opportunity was very attractive," he said. "I feel all my life I have been preparing for this kind of role – moving so many times, and being challenged by so many situations but then taking ownership of that. I think I can share my experiences and also make a contribution in some small way to HKU."

That contribution entails, firstly, engaging people in debate about just what is meant by 'internationalisation' in higher education. At HKU, nearly 60 per cent of staff and more than 20 per cent of undergraduates hold

nationality outside Hong Kong, but Professor Kao said the numbers are an incomplete measure.

"It's clear we have the demographics to say we're international, but when you dig deeper, you can see that we must do more to have a fully integrated campus," he said. "The students from the Mainland eat lunch by themselves, as do the students from India and Europe and Hong Kong. These things are not unique to Hong Kong. I've seen them happening in state universities in the US, too.

"But given the rich history and experiences of HKU, we are positioned to make a change for the better."

On and off campus

Professor Kao is aiming to promote that change by involving people across campus in the discussion. He has formed a cross-faculty working group on global engagement, sounded out individual professors and student groups, and started to draft some ideas of why and how HKU should be more international.

One point that is important to him is that internationalisation is something that

augments other activities, rather than a goal in itself. This has some interesting parallels with other core values of the University such as innovation. "You have to be willing to take risks, such as sitting down with people of different cultures, languages and looks and learning to deal with the uncertainties of how to behave and understand each other," he said.

"It takes face-to-face contact and being planted down in front of people to know what you have to offer and what you do or do not know.

"I want our students to have international experiences on and off campus because it can help them to define who they can be and their relationship to the rest of the world. It can be life-changing."

Given that, the global nature of his portfolio is as much about on campus as off. "My job is external – building bridges, connecting dots, finding new opportunities – but equally I need to articulate on campus what internationalisation is and could be, and why it matters.

"Are we training our students for Hong Kong or are we training students who are rooted in

“It's clear we have the demographics to say we're international, but when you dig deeper, you can see that we must do more to have a fully integrated campus.”

Professor W John Kao

Hong Kong but can apply their talents and be successful anywhere?"

Do something you've never done

Professor Kao does not offer easy answers – his goal at this stage is to encourage deep and meaningful discussions. He praised HKU's intention to offer all undergraduates overseas and Mainland experiences by 2022, and said staff should also be encouraged to conduct research with partners outside Hong Kong to tackle grand challenges.

He also sees potential to enhance the many other activities on campus that have an

international element, promote more cooperation and inclusiveness in these activities, and provide more support in terms of resources, incentives, benchmarks and global engagement. In general, to give a high-octane boost to HKU's long-standing goal of being an international university.

"Let me show you my mantra," he added, holding up his phone. The display read: If you want something you have never had, you have to do something you've never done. That sums up Professor Kao's approach to globalisation, and also to his own decision to come to HKU. ■



Professor Kao is eager to communicate with students and provide them with international experiences on and off campus.



LOOKING AT THE BIGGER PICTURE

With a scholarly background in the Classics, particularly archaic Greek poetry, Latin literature, history and magic, and leisure-time passions for fast cars and all kinds of music, the new Dean of Arts Professor Derek Collins hopes to instill in students a love of pursuing a wide range of interests.

Describing himself as ‘a classicist by training and a Dean by experience’, Professor Collins comes to HKU from the University of Michigan, where he joined the Classics Department 16 years ago and rose to become Dean of Humanities. Several factors drew him to HKU, chiefly its reputation, its students and the calibre of its staff.

“The University has an excellent reputation overseas: particularly for its strength as an academic institution and its regional importance,” said Professor Collins. “The calibre of the staff is incredible and the international breadth is impressive. It’s more genuinely cosmopolitan than I had realised.”

But the biggest impression was made by the students: “I think the students here are stronger than they even know. They function well in three languages, they are intrinsically international and that goes for within the region and beyond. There is a crisis coming in US education – we’re not able to dramatically increase global experiences. But there is a huge gravitational shift to Asia, and HKU already has exposure both to China and the West.”

His vision for the Arts Faculty includes extending that international reach even further: “We already offer languages training and I’d like to enhance our offerings in Arabic, and to extend collaborations to Africa, Middle East, Europe and South America. Building on what is already being done, we can make our students globally unmatched and as competitive as possible.”

He feels strongly that an Arts background is the best possible preparation for life, both in terms of career choices and contentment. “Ten, 20, 30 years out of university, Arts graduates are still thinking, still innovating, still flexible in the way they think. Arts graduates can develop careers in every field – they are not closed off from any areas. They run everything from banks to arts festivals.

“I’m told that some parents feel an Arts graduate won’t earn as much as, say a lawyer.

In the United States, figures show that often Arts students make more money in the long run.” The Dean believes though that knowing how to enjoy life is more critical than money, and Arts instills in students a reflective and critical thinking approach to issues that will open many and diverse doors.

“In the United States Liberal Arts students are cocooned for four years, then the approach is that hopefully they will somehow work out how their philosophy degree will help them find a job in, say, the business sector. My outlook is to show students how Arts enhances and broadens their thinking from day one of their degree, and how it can take them to any career.”

He would like to instill a strong sense of leadership and entrepreneurship: “We need to get students to think about how they can create and add value by fostering a focus on leadership. How to actively engage and collaborate with people, how to set objectives and how not to fear failure but to learn from it.”

Collaboration is another key focus. “I’d like to generate more opportunities by creating

“Ten, 20, 30 years out of university, Arts graduates are still thinking, still innovating, still flexible in the way they think.”

Professor Derek Collins

co-projects across disciplines and encouraging soft entrepreneurship. HKU’s Common Core is a great way to achieve this: forcing students out of their comfort zone is really healthy. One of my goals as Dean of Arts is to continue to nurture that spirit of crossdisciplinary exposure.”

The University’s role

Professor Collins believes too that a university has a fundamental responsibility to the community. “Knowledge Exchange is important because that is what a university – particularly a public university – should do. We are meant to serve the community. The autonomy a university has should allow it to fulfil these roles,” he said.

“A university really is the only place where a society can step away from the current flow of events and think more broadly about what we are doing and why. But if we’re not then taking those thoughts and communicating them more widely to the public then we’re not meeting our responsibilities to society. It’s crucial to serve the public interest because that’s how society as a whole benefits from

the knowledge generated at a university. Our job is to create new knowledge and to create collaborations and possibilities and to think the unimaginable.

“It’s a Confucian philosophical value – to share knowledge with society. What do people need culturally and philosophically? In Classics, the scholar and the philosopher are not separate – and this is at the core of Arts. It’s also a life lesson. It’s not just about your job – and it’s certainly not about how much money you’re going to make – what matters in the end is what kind of contributor to society you are.”

Professor Collins’ own interests as a student at University of California, Los Angeles (UCLA) and Harvard were literature and anthropology, particularly learning how ancient cultures functioned. From there he delved into folklore and also became fascinated by magic. “Magic features throughout history and cultures,” he said. “In Rome for example, they were very concerned about magic, as it might serve to stir up the public imagination – they didn’t want that. At the Faculty of Arts my concern is the opposite: we want to lift the limitations on imagination.” ■



Professor Collins (right) meeting with students at the Faculty Welcoming Reception for Research Postgraduates.



Dr Dirk Noël (second from right), Head of School of English and Professor Derek Collins (first from right), Dean of Arts presenting the scholarship certificates to the awardees of the Fr Alvaro Ribeiro SJ Memorial Scholarship.



'Black Friday', May 9, 1873 at the Vienna Stock Exchange, wood engraving, 1873.

EPIDEMICS, PANIC AND HISTORY

Social and political contexts are crucial for understanding epidemics, argues Dr Robert Peckham, who has been drawing on lessons from history to shed new light on panic and disease control.

Hong Kong is more familiar with epidemics than most cities, having lived through SARS and avian influenza in recent years. What better place, then, to consider the far-reaching impacts of epidemics on society.

Dr Robert Peckham, Founder and Co-Director of HKU's Centre for the Humanities and Medicine which recently marked its fifth anniversary, is applying a fresh approach to epidemics and their effects. His new edited book, *Empires of Panic: Epidemics and Colonial Anxieties*, explores the different kinds of panic produced by outbreaks of infectious disease.

"Managing panic is integral to disease control," he said. "An epidemic poses a multi-faceted security challenge: Health concerns can easily become entangled with anxieties about social order and economic stability. There is a loop-back effect as epidemics produce panic, triggering an emergency response that induces further panic that may drive infection."

Outbreaks of bubonic plague in late 19th-century India and Hong Kong caused widespread panic. Draconian measures imposed by the panicky colonial state – such as enforced isolation and quarantine – served to exacerbate panic in the local population, which then spilled over into violent protest that called forth even harsher interventions by the state.

"In Hong Kong, the colonial administration was forced to back down. In the end, it couldn't control cross-border movements," Dr Peckham said.

An agent of change

The experience of epidemics led Europeans to rethink how they organised their colonies. Initially, they had sought to distance themselves from the threat of disease at large by establishing enclaves. Legislation was passed in Hong Kong at the beginning of the 20th century, for example, that reserved the

Peak District exclusively for colonials. It soon became apparent, however, that exclusionary policies would not work.

Epidemics provided a stimulus for infrastructural projects designed to sanitise the city, including the construction of waterworks and a system of reservoirs, as well as new types of housing. More recently, SARS resulted in far-reaching institutional changes, from the provision of hand-sanitizers at the entrances of many public buildings, to the arrangement of the city's public services, including hospital operations and morgue facilities.

"In this sense," Dr Peckham said, "panic can be harnessed by the government to effect change. It can serve, often inadvertently, as a tool for pushing through policies that might have been difficult or impossible to implement at a time of non-crisis."

Curiously, some diseases have sparked panic while others have not. In India, the plague is



“Health concerns can easily become entangled with anxieties about social order and economic stability. There is a loop-back effect as epidemics produce panic, triggering an emergency response that induces further panic that may drive infection.”

Dr Robert Peckham

estimated to have killed about as many people as the influenza of 1918–1919, but there was no widespread panic with the latter. Dr Peckham pointed out that responses can be shaped by the nature of the disease and its particular cultural associations in a given community, as well as government action (or inaction). Panic may also be produced by the spectre of disease, even when there are no cases of infection.

"Last year's Ebola outbreak in West Africa provides useful insights into why history matters," he said. Political, social and cultural contexts were crucial in determining how the epidemic played out. Moreover, Ebola erupted at a moment when Europe was dealing with two other concurrent crises: one economic, the other over mass migration from Sub-Saharan Africa. Fears about the spread of disease coalesced with these other anxieties, each fuelling the other.

Panics not panic

Dr Peckham suggested that it would be more helpful if 'panics' were referred to in the plural, rather than a singular panic. Epidemics are compounded events that involve many different kinds of panic that pivot on fears

about health, the economy, political stability, and social coherence.

"MERS (Middle East Respiratory Syndrome) in Korea provides the latest example of a situation where an epidemic became intertwined with anxieties about a faltering economy and public concerns about political transparency and government accountability. Our research focusses on the entanglement of these panics and their consequences," he said. He explores these themes further in his forthcoming book, *Epidemics in Modern Asia*, to be published next year.

On a related note, Dr Peckham is also interested in how military surveillance technologies have been co-opted for epidemic control. While unmanned aerial vehicles or drones are being used for combat, they are also being deployed for monitoring potential epidemics. Viral activity in emerging disease 'hot-spots' is increasingly tracked using military-style intelligence-gathering techniques that aim to anticipate spill-over events.

"What happens," he asked, "when we import a military operational modality into public health and implicitly equate biological phenomena with an insurgent terror?"

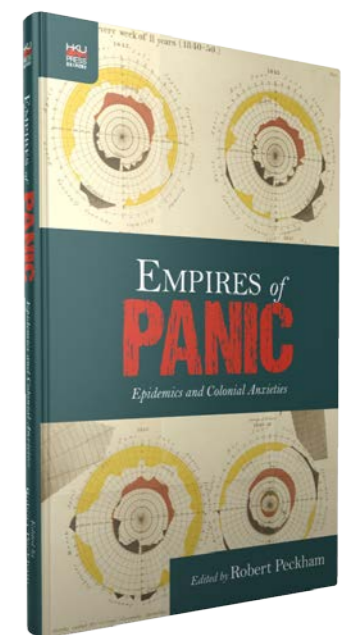
Microorganisms responsible for infectious disease exist as part of complex and little understood ecologies. The military model, he argued, diminished this complexity and created a false expectation that pathogenic threats could be blitzed.

Meanwhile, Dr Peckham and the members of the Centre will continue to build a bridge between the humanities and medicine. "Our aim is to develop a novel transdisciplinary approach to infectious disease, in order to better understand how biological and social ecologies interact," he said. He suggested the humanities could provide critical insights into the social, cultural and political dimensions of epidemics and in so doing, help to forge a more integrated response to future threats.

Empires of Panic: Epidemics and Colonial Anxieties is published by Hong Kong University Press. *Epidemics in Modern Asia* will be published by Cambridge University Press in 2016. ■



Illustration by Fritz Graetz showing the cholera personified as a Turkish immigrant arriving in New York, Puck, July 18, 1883.





REDEFINING MULTICULTURALISM

In our global society, research from one part of the world can make a difference in another part, which is one of the reasons HKU prides itself on its diverse scholars making contributions to knowledge the world over. A study of American curriculum might seem unimportant to Hong Kong life. However Dr Liz Jackson's book, *Muslims and Islam in US Education: Reconsidering Multiculturalism*, provides a counter case.



“ I was surprised to find that when and if Islam was discussed, the emphasis always seemed to be on Islam and terrorism. ”

Dr Liz Jackson

Although focussed on American education, Dr Jackson's book provides lessons that can be extended to Hong Kong: these relate to diversity in society, competing demands for national stability and democracy, and how to understand the varied experiences of Muslims the world over. This year the book has been selected for the PESA (Philosophy of Education Society of Australia) Book Award and the HKU Research Output Prize for Education.

The book focusses on the case of Islam in US education over the last 20 years with implications for curricula, religious education and multicultural education today. It explores the complex relationships between religious education in the US, the attitudes of teachers

and society toward Islam, and multiculturalism as a framework for meeting the needs of minority group students. Dr Jackson looks closely at multiculturalism as a concept and suggests that it should be rethought with the aim of developing a more democratic, inclusive and informed society.

Prompted by her surprise at the impact of Middle East politics on US textbooks in the 1980s and 1990s, Dr Jackson first explored Islam in American education for her thesis in 2008. She could have no idea that even more interesting changes to texts – and more fascinating debates about Islam in society and education – would take place toward the end of the 2000s, and into the 2010s.

Public ignorance

“In the US the place of religion in the public sphere has always been controversial. And there was a lot of public ignorance about Islam revealed after 9/11,” she said. Since then, there has been a growing acknowledgement that education about Islam is necessary but she notes that such efforts are often disparaged by local communities as somehow unpatriotic.

Dr Jackson admits that when she first came to HKU three years ago, she wondered how her research would be relevant or applicable to Hong Kong. It is both. In 2012 she was funded by the UGC (University Grants Committee)



From left: Professor Gerard Postiglione, Associate Dean (Research), Faculty of Education; Dean of Education Professor Steve Andrews; and Dr Liz Jackson at the book launch on September 19, 2014.



Dr Liz Jackson (second from left) having a discussion with students.

“ Occupy Central gave rise to new questions about identity – who is a Hongkonger and what is multiculturalism? ”

Dr Liz Jackson

Early Career Scheme to examine the representation of ethnicity, religion and minorities in Liberal Studies curriculum.

“I was surprised to find that when and if Islam was discussed, the emphasis always seemed to be on Islam and terrorism. There is a conflict here – if a goal in Liberal Studies is to increase understanding of diverse viewpoints, such exclusively negative connotations do not address that aim. This focus raises questions about whether the curriculum is mirroring the values that we as a society want to promote.”

This became very pertinent in 2012 when the debate about national education was raging, as Dr Jackson observes that Liberal Studies aims to develop cultural alignment of students with China without regard to the belonging of

ethnic minorities in society. “Occupy Central too, gave rise to new questions about identity – who is a Hongkonger and what is multiculturalism?” Liberal Studies was again under fire, and various political figures in Hong Kong sought out Dr Jackson’s advice regarding how to reform Liberal Studies to be inclusive, balanced and informative.

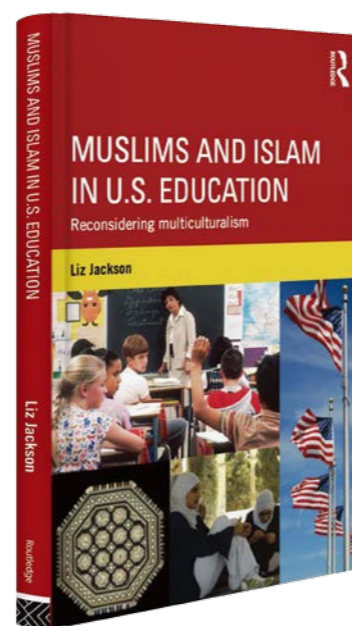
In both the book and this latest research, Dr Jackson argues that while challenging stereotypes perpetuated by the media and encouraging dialogue and understanding are essential, it is difficult without proper educational materials and instructors who can facilitate this learning. She calls for the creation of learning environments that facilitate critical media literacy and enhanced opportunities to practise democratic dialogue.

Asked about the book’s implications for Hong Kong, Dr Jackson talks about changing awareness within the city. “I used to have to explain my specialist area – two years ago, people would ask me: ‘Why does Islam matter?’ or ‘Why would I want to know about Islam?’. Now they say: ‘Tell me what’s going on in Islam – I want to know.’” A few years ago she used to joke that her next book would be ‘Islam in Hong Kong’. Today this idea is taking shape.

Dr Jackson will be sharing her book in Europe over the next year, when she will be taking her sabbatical as a visiting scholar at the University of Glasgow. A review symposium of the book is forthcoming this fall with the journal *Educational Philosophy and Theory*. ■



Dr Liz Jackson regards the two significant social movements in Hong Kong – the debate about national education in 2012 and the Umbrella Movement in 2014 (shown above) – have given rise to new angles about identity and multiculturalism.



Muslims and Islam in US Education: Reconsidering Multiculturalism is published by Routledge.



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