THE UNIVERSITY OF HONG KONG BULLETIN

MAY 2021 VOLUME 22 NO.2



THE FUTURE OF WORK Disruptions ahead and silver linings

GREENER POWER GENERATION

Converting waste heat into electricity

CALLING FOR CONSERVATION PLANNING

World War II military heritage sites in Hong Kong



CONTENTS

COVER STORY

- **02** The Future of Work
- 04 Short-Term Pain, Long-Term Gain
- 06 Robots Do Us Better
- **08** Keeping Humans in the Loop
- **10** Unmasking the Machine
- **12** Workers of the World, Divided

RESEARCH

- 14 Lest We Forget
- **16** Invention Turns Waste Heat into Electricity
- **18** The Global Inequities of Urban Development
- **20** How Green Is Seen
- **22** Breakthrough in Fight against Liver Disease in Newborns
- 24 Hollywood's Cosy Ties with the US Military
- 26 Leprosy Paradox
- 28 Poetry in Motion

TEACHING AND LEARNING

- **30** Seeing the LITE
- 32 Cutting-Edge Course for Future Surgeons

KNOWLEDGE EXCHANGE

- **34** Hong Kong History in Pictures
- **36** Stopping the Rot Early
- **38** Copy This

PEOPLE

- 40 Global Thinker Acts Locally
- 42 Engineer of Growth
- 44 Human Rights Scholar Is New Dean of Law











BOOKS

- **46** Humans in the Wild
- 48 Children of the Quake
- 50 It Takes a Village

ARTS AND CULTURE

- 52 True Colours
- 54 Portrait of the Artist as a Young Woman



THE FUTURE OF WORK

The COVID-19 pandemic is not the only factor disrupting working lives. Automation and changes in worker-employee relationships are transforming labour across the world. HKU scholars have been considering the potential pros and cons of these changes.





SHORT-TERM PAIN, LONG-TERM GAIN

The workplace disruptions caused by automation may ultimately improve our lives, suggests Professor Yuk-fai Fong of the HKU Business School. Professor Yuk-fai Fong is under no illusions about the challenges that automation presents to workers around the world. Robots, automation and artificial intelligence (Al) are threatening jobs – indeed, in 2019 Oxford Economics predicted up to 20 million manufacturing jobs will be lost to robots by 2030. Last year, economist Daron Acemoglu of the Massachusetts Institute of Technology showed that from 1990 to 2007 in the US, each additional robot in manufacturing replaced an average of 3.3 workers and the use of robots lowered wages by 0.4 per cent over the same period.

"I agree that AI machine learning and increased automation will create short-term pain and some people's jobs will be replaced," Professor Fong said. "But as a society, I don't think we should slow down that process. It's about embracing it and finding ways to help those who are affected. Because even if we are in a grimmer scenario in which automation displaces more jobs than it creates, it may not be worse in the long run."

This is because the alternative would be for new technologies to mainly enhance our productivity, which would not necessarily improve our lives. "Think of our phones. They make us work longer hours so we're never away from work. And because our time is more productive, the market operates in a way that our time gets utilised."

Displacement, on the other hand, would force workers and governments to adjust to new realities, such as fewer jobs for people and lower wages. For example, a large reduction in jobs could prompt governments to reduce the working week so there could be enough jobs to go around. That would have the additional benefit of improving work-life balance, he said.

And while this would mean wages would drop, so would prices.

Market equilibrium

"As an economist, we want to look not only at the direct implications, but what we call the equilibrium. We believe the market will settle in a certain way and when it does, there are different adjustments that will be made," he said.

"We are still going to consume a mountain of commodities – keep that in mind. Machines and Al may compete for our jobs, but they do not compete for our products, they are not consumers. All these products produced at a massive scale would come down in price to a level that the market clears."

Inequality would be a concern because the small number of people who own new technologies would have first-mover advantage and likely become or maintain their positions as monopolists. But they could never consume everything that their technologies produce – products would still need to be affordable to the general populace.

And while prices go down, free time would increase. People would have more time to seek out services provided by humans. "We don't long to interact with machines, we long to interact with people," he said. This optimistic picture depends, however, on individuals and governments being flexible and prepared. Governments should take responsibility for helping people transition to a more automated society, he said. Individuals should retrain if they see their field is becoming automated.

Testing adaptability

In any case, Professor Fong does not envision a jobless future: "Having a job by itself gives us a lot of fulfilment and satisfaction that we are contributing to society." Because of that, he would rather governments provide retraining and time-limited unemployment benefits than a universal basic income.

"I don't want to paint an excessively rosy picture. What I would say is that in the long run, we will be in a better world and it will not just be a small number of people who are going to benefit. Most people will benefit. But I am mindful there could be short-term pain," he said.

More immediately, he has also taken note of the workplace changes that have arisen during the COVID-19 pandemic, which is testing people's capacity to adapt. Online meetings and classes have shown it is possible to achieve things remotely, but he cautions that the circumstances are unusual. "People already had prior relationships which has meant their online meetings can be productive. In three or four years, when there is a turnover of staff and new people are hired, how can you establish a productive relationship with a stranger?" Nonetheless, he foresees a future of 'blended working' where part of the week is spent working remotely and part is at the office. "The pandemic has been a long experiment. I feel it is impossible that there will be no permanent impact on work arrangements. It is not like SARS, which was limited in scale and only lasted a few months. This time it's different. It just makes sense for us to retain some of the online component of work that has been improved upon, to save our time."



Machines and Al may compete for our jobs, but they do not compete for our products,

they are not consumers. All these products produced at a massive scale would come down in price to a level that the market clears.





ROBOTS DO US BETTER

The recent landings on Mars showed how robots can venture where no person has gone before. Professor Xi Ning's laboratory is exploring that capability here on Earth. Robotics and artificial intelligence (AI) are changing in rapid and fundamental ways. Think back to AlphaGo, which was the first algorithmic program to defeat a human player of Go. That was barely six years ago, yet to Professor Xi Ning, Chair Professor of Robotics and Automation and Director of the Emerging Technologies Institute, it is almost old hat.

Professor Xi arrived at HKU around the same time as AlphaGo's achievement, having worked for two decades on robotics at Michigan State University where his findings were applied in industrial applications such as automotive manufacturing and nuclear waste clean-up.

"Having a robot play Go is easy – it just has to make a decision, it doesn't have to take action," he said. "Getting a robot to take action is a much more difficult problem."

Professor Xi has applied himself to that challenge by combining robots, sensors such as cameras, and AI to develop multiple robotic tools that have a wide range of uses, such as scientific research, manufacturing, medicine, disinfection and even art creation.

One promising line of investigation is nanorobotics. He and his team have developed a nano-scale robot hand that can interact with molecules. This interaction provides information about the molecules and enables scientists to manipulate them, for example by assembling molecules for drug discovery or conducting diagnostics.

The system is already being applied in collaboration with Professor Pengtao Liu



The robot is fitted with a camera and arm to assemble ballpoint pens and can do autonomous assembly without any human input.



The artist robot, which can quickly capture a person's facial features and draw a portrait of them, has industrial potential in cleaning or polishing surfaces with complicated contours.

of the Li Ka Shing Faculty of Medicine to his groundbreaking work on stem cell differentiation (see *HKU Bulletin*, Vol.21, No.1). "The nanorobot can 'feel' the stem cell. We hope this will help identify or predict what potency the stem cell has so it can then be manipulated to differentiate in a specific way, for example, into a heart or other organ," Professor Xi said.

"Our nanorobot is the only one of its kind in the world and it will enable us to do very advanced innovations."

See and touch

More life-sized inventions are also being produced by Professor Xi's laboratory, such as a robot that can do autonomous assembly without any human input. The test robot is fitted with a camera and arm to assemble ballpoint pens. The robot is 'smart' enough to identify if there is a part available for assembly and if not, it will wait until one is available.

A wearable robot, in the form of a brace or belt, has also been developed that can help elderly people stand up and walk. The robot automatically measures electrical signals that are sent to the muscles from the brain to signal muscle contraction, then gives them an extra boost. "When people get old, they can lose muscle mass and not have enough strength to stand up, so this could help them by generating additional strength for their muscles," he said. Yet another system they developed can measure human tactile sense, which can be used to diagnose medical conditions, such as loss of balance in the elderly, and even detect cancerous tumours in dense breast tissue.

Professor Xi notes that the robotics field is being driven forward not only by new technology, but new demands for application, such as COVID-19. His team have developed a disinfection robot that can bring a very highintensity ultraviolet light close to surfaces. The light is too potent for human cleaners to use but can kill viruses quickly and it is currently being tested in HKU's libraries. In addition, following the reliance on online learning during the pandemic, they have just received funding to develop a 'telelaboratory' that would enable students to perform laboratory experiments from home through remote control of robots.

Beyond '3D'

"In the past, robots were developed to do things humans did not want to do – the '3D' jobs that are dirty, dull and dangerous. Robots have quite successfully replaced humans in these jobs. Over 90 per cent of car manufacturing processes are now done by robots," he said.

"But when you talk about the future, the key point is that robots can augment human capabilities – they can do something humans cannot do. I call it 'ultra-robotics'."



Professor Xi Ning (first from right) and his research team.

Professor Xi and his laboratory have been pushing at the 'ultra' envelope. They have developed an artist robot that can quickly capture a person's facial features and draw a portrait of them. The technology has industrial potential, for instance in cleaning or polishing surfaces with complicated contours.

And they are working what he calls a 'biosyncretic' robot that combines an infrared camera with the cell of a snake eye. "There is a lot of potential for humans. If a certain part of your body breaks down, you could replace it using an electrical-mechanical system," he said, acknowledging some people may find this scary. "When you don't understand things, you may feel scared. But once you understand, you can take advantage of it," he said.



XI NING

When you talk about the future, the key point is that robots can augment

human capabilities – they can do something humans cannot do. I call it 'ultra-robotics'.

"

KEEPING HUMANS IN THE LOOP

Robo-doctors are still the domain of science fiction. But researchers in engineering and medicine are developing human-controlled advanced technologies that will improve healthcare.



MRI-guided needle robot for percutaneous ablation of primary liver cancer.

The promise of robotics in healthcare is often equated with the development of self-driving cars. The latter technology has accelerated and these cars are now being tested on roads, although not without challenges. Could we one day have autonomous medical droids performing surgery, like those seen in the *Star Wars* movies?

Not for a long time yet, caution researchers. Although robotics and artificial intelligence (Al) technologies are being applied in medicine, humans remain firmly in the picture.

"Many people think AI will replace clinical duties, especially those of the radiologist who reviews and interprets medical images. But we can't look forward to this any time soon," said Dr Kwok Ka-wai of the Department of Mechanical Engineering, who specialises in surgical robotics, Al and related systems.

"Taking the driver out of a car is easy in comparison. Taking out a clinician is a lot more difficult."

That is because there are many more hurdles to overcome, says Dr Vince Vardhanabhuti of the Medical Faculty's Department of Diagnostic Radiology, who uses big data and analytics in his research. Medical decisions are based on a wide variety of data – not just medical images but laboratory tests, pre-existing conditions, gender, age and a host of other factors. Plus, there is the liability factor.

"Who is responsible when AI gets it wrong? At the very least, this is why doctors need to remain in the loop with overall responsibility until such times when people can fully trust Al. I think we are still a long way from that," he said. "In the short term, I think it is more likely that Al and humans will work in collaboration – the Al will be used as a team member, a bit like in the multidisciplinary collaborative teams that we now see in medical practice."

To that end, the two scholars and their teams have been developing ways to use robotics and Al alongside humans to improve diagnosis and treatment.

Robots in the machine

Dr Kwok's big breakthrough has been developing a robot that can operate within a magnetic resonance imaging (MRI)



Tasks requiring dexterous movements can be carried out by the robotic arms even when channelled through an endoscope more than one-metre long.



Dr Kwok Ka-wai's Group for Interventional Robotic and Imaging Systems (IRIS) attending the 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems in Macau.

machine. The strong magnetic force means no ferromagnetic metals can be used, so his robot is made of plastic or MR-safe materials, and runs on hydraulic fluid.

"We already have a lot of minimally invasive surgical tools like endoscopy and laparoscopy where a camera is mounted on a scope that goes inside the body to visualise the surgical site. Surgeons can then do procedures remotely by manipulating different instruments, like a puppet.

"My work is to see if we can work with the MRI's ability to see through the whole body to provide safer, more accurate and more effective positioning for clinical surgeries."

MRI-guided surgeries can already be done manually but are cumbersome – the surgeon checks the image, enters the MRI room, takes the patient out of the 'donut' for treatment, puts the patient back in, then checks the computerised image to see what should be done next. An MRI robot can be manipulated remotely to do the procedure, without needing to move the patient so many times and risk displacement.

Dr Kwok's robot is being developed for brain surgery. Pre-clinical tests have been performed on cadavers and while there are many hurdles to getting clinical approval from the US Food and Drug Administration, collaborations are underway with a potential industry partner. Another output from his laboratory is a tiny robot that can manoeuvre within an endoscope tunnel that is less than 2.8 millimetres wide, to perform procedures such as polyp dissection. This robot is easier to implement than the MRI robot. A spinoff company, Agilis, is making the robot available for clinical approval.

Learning the boundaries

Dr Vardhanabhuti has worked with Dr Kwok on the MRI robot project, as well as another project that uses AI to improve MRI imaging of suspected prostate cancer tumours, which reduces variability between the observations of different radiologists. Separately, he has also had success using AI to improve predictions of cancer patient-related outcomes based on imaging.

As the end-user of advanced technologies, Dr Vardhanabhuti thinks there is potential to make his work more efficient and accurate but is cautious about over-selling it at this point.

"I don't think we know yet how best to work in conjunction with these technologies," he said. "For imaging and diagnosis, AI could be seen as a second reader but even then, it can depend on how confident the person is in their diagnosis and whether they are swayed by the second reader."

As an example, he cites mammograms using computer-assisted diagnosis (CAD).

The technology was widely adopted before clinical trials were conducted and when a proper trial was finally held, it found humans performed worse when they relied on CAD because they called too many false positives. "From a mass screening perspective, this is not a good result because it results in too many unnecessary biopsies and distresses the patients," he said.



DR VINCE VARDHANA-BHUTI In the

In the short term, I think it is more likely that AI and humans will work in collaboration – the AI will be used

as a team member, a bit like in the multidisciplinary collaborative teams that we now see in medical practice.



UNMASKING THE MACHINE

The workplace and commercial environments are increasingly being populated by robots and digital assistants that have human features. But putting a face on them can sometimes backfire, warns Dr Sara Kim of the HKU Business School.



When a South Korean call centre decided to bring robots into the workplace, they asked Dr Sara Kim to study their employees' response. The firm had told workers they would not be replaced, but it wanted to better understand their insecurities and perceptions of these new 'co-workers'. Dr Kim's preliminary results offer lessons on how to integrate people and Al-powered technology.

The key variable was people's tendency to humanise their robot co-workers. Some were more likely to do this than others, and it made them feel more threatened by the technology. "Those who construe robots or digital agents to be more human-like tend to treat the robots like real people who can replace their job, whereas those who treat it like a machine are less likely to feel threatened," she said.

For managers, that signified the need to sidestep the urge to put a smiling, winking face on a digital assistant or robot in certain environments. "There is some backfiring effect when human-like features are adopted for technological assistants," she said. "The workplace is one environment where that can happen, but I think it extends to competitive atmospheres in general. Once the robot is seen as a competitor, you better not impose humanlike eyes or mouth or head, or else it can evoke uncomfortable feelings like insecurity."

An exception that she found proves the rule: if the company culture is highly collaborative and evaluates teams rather than individuals for promotion, human-like features on a robot will not necessarily be harmful. "But if the environment is competitive, you better have a box shape," she said.

Thunder stolen

The findings echo earlier work by Dr Kim on user responses to digital assistants in computer games and education software that either had no human features (such as simply a laptop image) or had human features (such as a laptop superimposed with eyes and a smile). The assistant gave instructions or hints on playing a game or solving a math problem.

"Practitioners assume that adopting these human forms can create friendly warm images that help people interact more smoothly with digital agents and robots and while that is often true, it isn't always the case. That is the core of my research," she said.

With computer games, she found that human-like characters ruined players' enjoyment of the game, possibly because they felt undermined. "A major reason why people play computer games is because they want to feel a kind of autonomy or ownership over the outcomes so they can feel good about themselves. That thunder seems to be a little stolen when human-like icons give hints," she said.

The findings were more complex with education software because they depended on the subject's own beliefs about intelligence. Working with an educational and developmental psychologist, Dr Kim tested college students who believed either that intelligence was fixed from birth or that it depended on effort. Those who believed intelligence could not be changed were negatively impacted by human-like digital assistants. "They felt bad about themselves and that they must be dumb, so they were not motivated to do the next task and they performed worse on it," she said. "Non-human assistants did not make participants feel they were being judged, so they were not necessarily reluctant to get help from them."

But sometimes human features are preferred

Dr Kim hopes to replicate the findings about educational software with young children to determine what age they start to feel threatened by human-like figures. "Kids five or six years old might not have a problem with it," she said. "I want to see when this belief starts to have an effect, although I don't think it affects everyone."

People's feelings about their technological helpers can also create internal conflict when it comes to performing workplace duties. In medical settings, for instance, other researchers have shown that staff may feel their job and even their sense of human identity is threatened, so they may be reluctant to use robots even if robots do a better job for patients, such as helping them out of bed.

But Dr Kim is at pains to point out that there are instances when people prefer human-like characteristics on technology – for instance, patients may prefer human-like robots. And in another study she did, consumers derived more pleasure from products when they humanised them. "When you name your phone or your car, you tend to feel happiness from experiences with that product at a similar level to experiential products, which people usually prefer over material things," she said.

That also gives rise to complex feelings about replacement. "Other researchers have shown that when people treat their products more like a human, they are less likely to discard it. If you want to discard it, better to treat the product like a tool and don't give it a name," she said.



KIM

Those who construe robots or digital agents to be more human-like tend

to treat the robots like real people who can replace their job, whereas those who treat it like a machine are less likely to feel threatened.



WORKERS OF THE WORLD, DIVIDED

Automation and robots aside, the worker-employer relationship is changing across the world. Legal scholar Dr Jedidiah Kroncke has been looking at the surprising convergence between America and China in eroding workers' collective rights.



Employees of Telecom Verizon helped initiate a new wave of labour strikes in the United States after their 2016 bargaining victory. (Courtesy of LaborNotes)

In the 1970s, democratic United States and authoritarian China began to witness trends in the regulation of workers' collective rights that, today, have resulted in puzzling similarities.

Both countries increasingly prioritised contractual arrangements between employers and individual workers, rather than collective rights and active participation in decisionmaking. In the United States, unions became progressively weakened while workers were granted a growing number of grounds to sue employers solely on an individual basis.

In China, economic reforms shifted from the ideal that the workers and the State were a unified entity grounded in guaranteed employment, to that of a labour market that, like the US, commodifies and regulates labour through private contracting with individual remedies.

To Dr Jedidiah Kroncke, a scholar of comparative labour law in the Faculty of Law, these developments present an unsettling paradox.

"You would presume the workplace would be structurally different under liberal and

collective, it's certainly not about workers' participation in enterprise decision-making." That matters for several reasons, he said. At the societal level, one would expect a country's political and economic systems to reflect similar values. "Normatively, political and economic citizenship should be coherently integrated and the workplace should be a key forum where such values are promoted,"

authoritarian regimes," he said. "But here are

two different countries and political systems

that are both increasingly moving towards a

contractarian view of the workplace without

any reference to liberal or social democratic

norms. Labour relations are seen as just

another economic transaction, like the

exchange of most any other commodity.

"Even though in some substantive sense

working conditions are generally harsher in

China, at a basic level the US and China are

converging on this idea that labour is just

about a contract, it's not about anything

he said. "If you really believe in democracy, it has to be lived in the workplace, which is the dominant social experience for most citizens beyond the family."

Undesirable outcomes

At the individual level, people derive meaning and agency from work, much more than from the political arena. If they are disempowered in the workplace, it can lead to discontent.

"Work traditionally grounds people's sense of meaning and community. When you take that away, they become very susceptible to finding those things in other, often less socially constructive, places," he said.

This outcome is evident in the ongoing labour unrest in China and the rise of tribalism in the US and other countries where unions have been weakened, employment contract law has been on the rise, and governments have adopted the view that any form of worker empowerment promotes inefficiency.

China on the surface may seem an exception because every company has workers' councils or state-backed unions. "There's a form of unionisation there, but it's not to empower workers to participate. It's to keep a lid on labour unrest," which is regarded as a threat to stability, he said.

Another point of convergence has been attempts to address this issue by allowing workers to hold shares in companies, though this is also not all that it seems. In the US, special trusts have been promoted to hold shares for workers, but the nature of this ownership ultimately gives workers little control over how the company is run. In China, Huawei is a parallel example where most of the company's shares are held by the state-backed union, but without leading to any real governance input and with the original owner (technically a minority owner)

retaining large governance powers. "In both situations, worker participation in governance is not seen as valuable or desirable," he said.

No easy responses

Dr Kroncke said the convergence perspective may help explain why economic globalisation spearheaded by the US has been so readily adopted by authoritarian regimes, and why economic opening has not led to greater democratisation in China. Most relations between the US and China are conducted not through diplomatic or cultural exchange but corporations, and American corporations are internally authoritarian, not democratic.

The reception to these observations has often not been warm, he said. People in both China and the US believe their legal systems are exceptional and resist comparison. But Dr Kroncke, who also trained as an anthropologist, believes comparison provides the larger picture of labour rights around the world. "These are really conversations about first principles - about what is a good life," he said.

Responses to this troubling convergence are still being formulated. Ideas like universal basic income and job guarantees are increasingly being discussed to address labour commodification, as well as automation and rising inequality. Alternative labour institutions that give workers more say in the workplace



have also been suggested, although he cautions against the disabling effect of utopian ideas about worker participation.

"A lot of people in the 20th century got used to the idea of progress, that things would keep getting better. Unfortunately, from an anthropological perspective, human history is cyclical," he said. "We're going through a period where we can't ignore that things haven't worked out for everyone."



KRONCKE

At a basic level the US and China are converging on this **DR JEDIDIAH** idea that labour is just about a contract, it's not about anything

collective, it's certainly not about workers' participation in enterprise decision-making.



LEST WE FORGET

A research team have spent over two decades locating and studying military relics left from World War II and are now campaigning for the government to conserve these historically significant structures.



Pillbox PB7, which is believed to have been used by the Japanese army as the site's command post

More than 200 military relics from World War II (WWII) are scattered around Hong Kong, including gun batteries, pillboxes (PBs), the air raid tunnels now housing the Hong Kong Museum of Coastal Defence at Shau Kei Wan, as well as fortifications along the Gin Drinker's Line (GDL), at Devil's Peak and in many other places.

Most were left by the British, but one of the most intriguing relics, located near Luk Keng in the northeastern New Territories, was constructed by the Japanese during their occupation of Hong Kong from December 1941 to 1945.

"The Luk Keng cluster comprises at least 14 PBs, built of reinforced concrete, connected by a 400-metre trench system on the crest of a knoll," said Professor Lawrence Lai from the Department of Real Estate and Construction of the Faculty of Architecture, who led the team. "Seven of the pillboxes are bigger and there are six smaller satellite pillboxes, capable of holding just one soldier."

The team behind the Luk Keng research have worked alongside Professor Lai frequently over the past 10 years. Members include Professor Daniel C Ho, Honorary Professor Dr Stephen N G Davies, both from the Faculty of Architecture, as well as local military expert Mr Y K Tan and local historian Mr Tim Ko, both of whom Professor Lai met through the Royal Asiatic Society Hong Kong. The study has included researching the military heritage on Devil's Peak and Bokhara Batteries, as well as PBs along the GDL and on Hong Kong Island. "Through all these projects I have hoped to set a foundational standard for local heritage and conservation studies on military sites," said Professor Lai.

"The type of military structure we see at Luk Keng is rare in Hong Kong," said Professor Ho. "It is a comprehensive system of installations. No archival material has been found to suggest they existed pre-war as colonial defences, so it seems most likely they were constructed by the Japanese during their occupation."

Historian Mr Ko has found clues to support this theory: "From the recollections of villagers nearby it can be established that pillboxes and observation posts were built during the period of the Japanese occupation and some local inhabitants were pressed into labour building the constructions."



On a 120m knoll with a levelled summit, near Luk Keng, stand some seven pillboxes connected by a system of communication trenches with, further downhill, at least six smaller satellite pillboxes that each can only accommodate one soldier.

The team also made another important discovery recently when they drained a cistern at the site and found a water storage chamber at its bottom, which Dr Davies worked out could supply water for a 200-strong garrison for almost a month. The discovery was observed in a joint visit by a correspondent from Japanese news bureau *Nikkei Asia* who had covered the 70th anniversary of the Battle of Hong Kong in December 2011.

Since the PBs were positioned in good tactical locations, the team speculate that the Luk Keng fortifications were built either to battle an anticipated Allied landing (which was planned to occur at Mirs Bay in 1946), or possibly to deter the guerilla forces of the East River Column, formally under the command of the National Revolutionary Army, who harassed the Japanese Army throughout its occupation.

Raid on guerilla headquarters

Team thought leans towards the latter, partly because they have linked the building of the site to a report of a battle in Luk Keng on March 3, 1942, where Japanese soldiers and *Kempeitai* (Japanese military police) made a successful raid on the Column's guerilla political commissar's headquarters at Nam Chung, located just below the western side of the knoll, killing 11 senior cadres and capturing four more.

"Luk Keng's all-round defensive system, readily visible in analysis of fields of fire from the pillboxes and its implicit tactical linkage with the systems on the north side of Starling Inlet around Sha Tau Kok, argues the possibility of a defended location in a counter-insurgency context," said Professor Lai. He anticipates further and better research by historians.

The team are now keen for the structures to be recognised and protected properly as a heritage site. Dr Davies said: "Luk Keng is one of five major clusters of Japanese fortifications in the northeastern New Territories, and it has an important place in Hong Kong's story and should be preserved. Given that this site was a Japanese military base, it serves to remind us of the clash between nationalistic militarism and local resistance against brutal rule in Hong Kong."

Professor Lai's first association with WWII fortifications, goes back to his childhood and walks round war relics with his dad, who was here during the Battle of Hong Kong in December 1941. Professor Lai graduated from HKU in 1981, became a town planner in government then returned to HKU in 1989 as a teacher and has been identifying and recording WWII fortifications since 2000. "In government, I gained the experience of using survey plans and aerial photos to do better field research and came into touch with the pioneering work on heritage buildings by Hong Kong volunteer veteran the late Dr Solomon Bard."

Professor Lai and Professor Ho also run a Common Core course, begun in 2012 and called 'Property Rights, Built Heritage and Sustainable Development in Hong Kong', which takes students on field trips to military heritage sites, initiating them in the use of maps and aerial photos, heritage identification and conservation. Luk Keng is an important link in these studies and conservation is a key issue.



Pillbox PB6, looking over to the southwestern side of the knoll.

"We want to ensure its important place in Hong Kong's history is recognised. At present, the site is open access and unmanaged, though owned by government," said Professor Lai. "Plant growth, particularly roots, and landslides will soon destroy all the pillboxes. Visitors could also ruin them through carelessness."

His proposals include building a system of slightly elevated walkways around the PBs and along the trench; adding proper walking trails to follow old but now overgrown village paths; and an interpretation room to be built downhill. "In short, it requires authentic and proper conservation planning and environmentally-sensitive development that preserves the integrity of the site with safe access, and a small local museum," he said.



LAI

Luk Keng's allround defensive system, readily visible in analysis of fields of fire from the pillboxes

and its implicit tactical linkage with the systems on the north side of Starling Inlet around Sha Tau Kok, argues the possibility of a defended location in a counterinsurgency context.



INVENTION TURNS WASTE HEAT INTO ELECTRICITY

Dr Tony Feng Shien-Ping has devised an effective, costefficient and greener way to recover low-temperature waste heat, even body heat, and use it to generate power.



More than 60 per cent of the electricity generated by power plants and industrial processes is lost as waste heat, and more than half of that is low-grade heat that is difficult to recover. Dr Tony Feng Shien-Ping of the Department of Mechanical Engineering has broken through these barriers with a new approach to capturing this heat.

Until now, semi-conductors have been the main tool for waste heat recovery, but they are not effective when temperatures drop below 100 degrees Celsius. Semi-conductors generate electricity based on the temperature differences - or fixed thermal gradient between the heat source to which they are attached and the outside environment.

Dr Feng's approach is to come at the problem from a different angle. Rather than the thermal gradient, he has tapped into the thermal cycle of heating and cooling using a direct thermal charging cell (DTCC). He and his team apply chemicals to the DTCC that capture the heat and can also restart the heating process when the device cools down, making it self-regenerating. Most importantly, their approach works at temperatures as low as 30 degrees Celsius.

"Other researchers have studied electrochemical heat converters, but they don't have this self-regeneration function so their converters might only be able to be used once or need external electricity input," he said.

The advantages and applications of this approach are manifold. Not only can it recover low-grade heat for power generation, it can also be done using thinner, lighter devices than semi-conductors. One slim cell is all that is needed to regulate the thermal cycle, with graphic oxide applied on one side, a conductive polymer on the other and saltwater in the middle.

"Our cell is environmentally friendly because it is degradable and disposable, unlike a lithium battery. It is also much cheaper," Dr Feng said.

The direct thermal charging cell can harness body heat to power wearable electronic devices or medical devices for monitoring body health conditions.

Industry partners

The findings have been reported in Nature Communications and received numerous awards, including being named best business start-up in the Institution of Chemical Engineers Global Awards 2020 and being highly commended at the same event for energy saving.

Dr Feng and his team also have a start-up and are working with partners to further test and commercialise the DTCC. The start-up is called High Performance Solution and its key technology is a paste containing the chemicals that regulate the DTCC.

Their first industrial partnership was with Techskill (Asia) Ltd (Hong Kong) to recover waste heat from an HVAC (heating, ventilation and air conditioning) system and use that to generate electricity. Testing got underway in 2020 but was interrupted by the COVID-19 pandemic, however, it has shown promising results to date.

Another partnership is Brilliant Optronics in Taiwan, where the manufacturing site of High Performance Solution is based and where Dr Feng hails from. Here, they are working on an electro-chromatic window that changes colour or darkens under summer sunlight to keep out the heat. The window needs electricity to function, which the DTCC could provide by converting heat from sunshine (making it different from a solar cell that uses light for power generation). Tests are being carried out in Kaohsiung this year.



The Electrical and Mechanical Services Department of the HKSAR Government brought in the start-up to test the reliability of the direct thermal charging cell in converting heat to electricity under different weather conditions.

Skin power

Tests are also underway to see whether the DTCC can recover body heat, in collaboration with EcoFlow, a company started by a former Research Associate of Dr Feng's. Human skin temperature is about 32 degrees Celsius (a bit cooler than our inner body temperature) and Dr Feng reckons this should be enough to power low-power sensors.

"We want to do this because if someone needs a health monitor attached to their skin, the next person probably won't want to use it so it has to be thrown away. It also needs a battery which is environmentally unfriendly.



Dr Tony Feng (second from left) and his research team.

So we are working on a smart patch that combines the cell and sensors to provide a greener solution," he said.

Early this year, the HKSAR Government's Electrical and Mechanical Services Department also brought in the start-up to test the DTCC's reliability in converting heat to electricity under different weather conditions. The test is being carried out on the Department's green roof and will run for one year.

High Performance Solution is led by Dr Feng's former student and HKU PhD graduate, Dr Vivian Huang, and he continues to work closely with her and her team. "I spend a certain amount of time in this company because it is related to my research. It makes me excited to see how academic research can have real-world applications," he said.



DR TONY FENG SHIEN-PING

Our cell is environmentally friendly because it is degradable and disposable, unlike a lithium battery. It is also much cheaper.



THE GLOBAL INEQUITIES OF URBAN DEVELOPMENT

The first study to compare urban development, urban greening and population growth in large cities around the world shows how low income cities are lagging behind.



In 1889, *Nature* magazine carried an article that described China as a treeless country. To Professor Chen Ji of the Department of Civil Engineering, who was corresponding author of a recent groundbreaking study on urban development, the description was revealing of the conditions necessary for people to enjoy pleasant urban surroundings.

"Why was it treeless? Because in urban areas, people didn't have enough resources to develop their environment. Like Lagos in Nigeria today, there is no money for greening, just for building a simple house to live in," he said.

Professor Chen has shown where those conditions exist in the present day in the first global survey to link urban expansion, population growth and greening in large cities. While other studies have addressed individual components, none has provided such a comprehensive picture. The study was published in *Nature Communications* last October and singled out under its Editors' Highlights section.

"One of our findings is that cities in the lowest income countries face a serious problem with population growth and have an urban expansion path that is below that growth. The population is growing too fast," he said.

"Another big issue is that their urban environment is getting even worse. We hope the study will provide some warning signals to those cities to have more governance over their urbanisation."

The study was based on a rich dataset from 841 cities during 2001–2018. A former PhD student of Professor Chen's and first author of the study, Dr Sun Liqun, had developed a method to rapidly analyse several terabytes of data from publicly available US satellite data to track development. They also used a vegetation index they had previously applied to analyse the impact of ice storms in southern China and the Wenzhou earthquake in Sichuan, which both occurred in 2008.

Income and greenness linked

The 841 cities each had areas larger than 100 square kilometres by 2018 and were analysed

based on the increase in their built-up area (BUA), population growth and increased greening, such as new parks, green spaces and green roofs. This information was combined and compared with the cities' economic status in World Bank rankings, to reveal trends showing strong links between the different variables.

Cities in upper-middle income countries experienced the greatest expansion in their BUAs – 61 such cities expanded by more than 50 square kilometres from 2001 to 2018, compared to 21 lower-middle income cities, 17 high income cities and six low income ones.

Upper-middle income cities also showed significant greening, meaning the greening happened during the study period (total vegetation including pre-2001 planting was instead labelled 'greenness'). Some 325 cities saw significant greening in more than 10 per cent of BUAs and nearly one-third of those were in China. Overall, greening in Chinese cities increased by 32 per cent.

Professor Chen explained that many high income places were already quite green to begin with or were in challenging environments, such as the semi-arid conditions around Los Angeles. But in low income cities, the story was different. In Africa, not one city scored highly on greening even though some of them have favourable climates for vegetation growth. "In places like Lagos, their greening decreased dramatically. It's like bare soil there – they have removed many trees. But somewhere like New York City, although it did not have much greening from 2001 to 2018, its greenness is already quite good. In the Pearl River Delta, total greenness is not as good as New York, but it is steadily increasing and I believe it will increase further," he said.

"The relationship between green space and higher incomes is very clear. People want to live in a good environment. When the economy does well, they can spend money on proper green spaces."

Population challenge

Population expansion is another important variable. Some 86 cities in high income countries and 59 cities in upper-middle income ones had negative population growth during the study period, although overall their cities expanded by an average of 100,000 and 300,000 people per city, respectively. Lowermiddle income and lower income cities, however, saw much larger growth, expanding by an average of 500,000 people per city.

"At the same time, the lower-middle income and lower income cities were substantially lagging behind in BUA expansion and infrastructure development, resulting in serious urban problems such as slums and crowding," Professor Chen said.



The greening in Lagos decreased dramatically after many trees were removed.

The growth in population also meant even fewer people benefitted from whatever greening measures were carried out in low and lower-middle income cities compared with those in wealthier cities, to the detriment of both people and the environment.

"Significant greening can help neutralise carbon emissions and mitigate the impact of global climate change in urban areas. A better understanding of the uneven urbanisation in developing countries can give them scientific references for managing urban areas and striking a balance between urbanisation, population growth and environmental changes," he said.



"

One of our findings is that cities in the lowest income countries face a serious

PROFESSOR CHEN JI

problem with population growth and have an urban expansion path that is below that growth. The population is growing too fast.





Greening built-up areas in Pearl River Delta (left) and Yangtze River Delta (right) city clusters.

HOW GREEN IS SEEN

A collaborative research study spanning architecture, psychology and neuroscience answers the question: what happens in the brain when people view urban green landscapes?

Numerous studies have reported the mental health benefits of contact with green landscapes. However, the mechanistic and neural bases of why such landscapes drive positive mental health outcomes have remained poorly understood until now.

"This study uses functional magnetic resonance imaging (fMRI) to enable us to understand the mechanisms and effects in a more accurate and theoretically valid way," said Dr Bin Jiang, Associate Professor in Landscape Architecture. "By scanning the brain, we can observe that different brain parts make different levels of neural responses to the green landscapes. This study is opening a 'black box' that cannot be opened before."

In 2016, Dean of the Faculty of Architecture and Chair Professor Chris Webster set up a strategic research cooperation with the Head of Department of Psychology and Chair Professor Tatia MC Lee, May Professor in Neuropsychology, and her State Key Laboratory of Brain and Cognitive Sciences. With their support and guidance, Dr Jiang had the opportunity to work with Dr Dorita Chang from the Department of Psychology to investigate the problem. First, the research team developed the plan together based on visual materials collected by Dr Jiang in the US. Then Dr Chang designed and ran a random assignment fMRI experiment, asking participants to view one of three types of 3D image inside the fMRI device. Each type of image contains similar single-house community streets with a low (0–2.5 per cent), medium (31–40 per cent), or high (61–70 per cent) level of tree canopy density measured at eye-level. Brain activities were measured while the participant was viewing the images. In addition, the investigators conducted a photograph survey study of images in the laboratory as a supportive portion of the study.



Sample stimuli from the three density levels tested in the fMRI. Stimuli were stereoscopic, and presented in the magnet using a prism setup.



Images of streetscapes with low (top, average tree cover density is 1.7 per cent), moderate (middle), and high (bottom) tree cover density within single-house communities.



The results indicated that viewing green landscapes that vary in terms of green-space density sparks corresponding changes in the activity of the human ventral posterior cingulate cortex in the brain that is correlated to behavioural stress-related responses.

"The study also shows that cingulate responses are engaged early in the processing cascade, influencing attentional and executive regions in a predominantly feedforward manner," said Dr Chang. "Our data suggest a key role for this region in regulating (nature) dose-dependent changes in stress responses, potentially through its extensive connections to the prefrontal and hippocampal regions which in turn project towards the neuroendocrine system."

Strong argument

Dr Jiang said: "In past decades, the government and society have gradually realised the health benefits of urban green landscapes. However, findings reported by previous studies were often criticised as 'indirect,' inaccurate', or even 'soft'. The neuroimage technology and methods can largely address those shortcomings, making a much stronger argument that the urban green landscape is critical for promoting public health and well-being."

Understanding the impact of greenness on human health and well-being is an initial but fundamentally important step. In future studies the team intend to measure the impact of green landscape in a more detailed and comprehensive way. "The same challenges exist for researching other types of built environmental features in the city, such as street façade, ground surface, and building density," said Dr Jiang. "This line of research is pioneering and vital for society." He is also leading a laboratory called 'Virtual Reality Lab of Urban Environments and Human Health' at the Faculty. The laboratory, which again is characterised by strong international and interdisciplinary cooperation, examines the impact of multiple characteristics of the urban environment, especially urban landscapes, on social justice, public health, and well-being.

Dr Jiang said: "We have finished several influential research projects in the past three years, including: how different types of green landscapes and land uses influence citizens' perceived safety; how the factory environment of Foxconn influences assembly line workers' mental health and suicide behaviour; how different types of freeway landscapes influence drivers' mental states and driving performance; how the quality of the residential and nearby urban environment is associated with 13-year suicide rates of residents living in 151 public housing communities in Hong Kong; and how ratios of different types of green spaces at the county level are associated with the racial disparity in SARS-CoV-2 infection rates in the US."

According to Dr Jiang and the rest of the team involved, the implications for modern architecture of the fMRI study are very important. "This study provides concrete evidence that urban green landscapes are not just pleasant 'visual candy' but can efficiently improve public health and well-being, and therefore I think the government and society should regard urban green landscapes as critical and low-cost 'preventive medicine'.

"Compared to spending a tremendous amount of money and other resources on building a few 'iconic' and 'high-end' buildings and places, it would be more beneficial to the public to provide many more 'ordinary' green landscapes, such as neighbourhood parks and pocket gardens, in cities."

Finally, Dr Jiang added a note for fellow architects: "I would humbly suggest that designers reduce reliance on anecdotal evidence and subjective perceptions. If we want to make society and government fully realise the significant positive or negative impacts of urban environments on public health and well-being, searching for scientific evidence from empirical studies to support our arguments is critical."



Learn more about the Virtual Reality Lab of Urban Environments and Human Health



DR BIN JIANG uman Health

This study provides concrete evidence that urban green landscapes are

not just pleasant 'visual candy' but can efficiently improve public health and well-being, and therefore I think the government and society should regard urban green landscapes as critical and low-cost 'preventive medicine'.



BREAKTHROUGH IN FIGHT AGAINST LIVER DISEASE IN NEWBORNS

Scientists and clinicians join forces to battle liver disease in newborn babies and discover a novel disease mechanism.

"What we are doing here is applying science to solve an intractable clinical problem: a clinician-scientist's guest," said Professor Paul Tam Kwong-hang in describing his research on liver disease in newborn infants. He went on to quote an editorial in The Lancet from 2017: "Paediatric surgery... is possibly the most challenging subspecialty in which to conduct research, and yet it is pushing the

boundaries of biomedical science, seeking innovative, often non-surgical, solutions for intractable problems."

Professor Tam, who is Li Shu-Pui Professor in Surgery, Director of Dr Li Dak-Sum Research Centre and Chair Professor of Paediatric Surgery in HKUMed's Department of Surgery, recently led a research team to the





discovery that abnormal beta-amyloid deposition is a novel disease mechanism for biliary atresia (BA). The groundbreaking finding, made in collaboration with overseas and Mainland researchers, provides insights into new diagnostic and therapeutic strategies for BA, a devastating liver disease in newborns, the causes of which were hitherto largely unknown.

BA is a life-threatening congenital anomaly proceeding from progressive fibroinflammatory obstruction of the entire biliary tract in newborn babies, and results in liver failure if untreated, making it possibly the epitome of the aforementioned intractable diseases.

Babies suffering

"As a young surgeon, I would see many babies suffering from BA," said Professor Tam, "and there was a sense of helplessness as the prevailing treatment – surgery – often did not work, resulting in death. And, even when it succeeded in relieving patients' jaundice, they continue to return to hospital with complications in ensuing years, often for life."

The aim of the study was to seek a new cure by applying science to discover key factors responsible for the cause and deterioration of the disease. A novel aspect is that the team successfully created a human surrogate disease model – a patient-derived



HKUMed discovered beta-amyloid deposition to be a novel disease mechanism for biliary atresia.

'mini-organ' - that allowed them to discover a key biological factor, beta-amyloid, in disease causation and deterioration.

"Through research on another congenital disease, Hirschsprung's disease, which has been my lifelong passion," said Professor Tam, "I came to realise the power of genomics, stem cell and tissue engineering in solving human diseases, and began to feel that a solution for BA could be feasible through the application of precision and regenerative medicine, focussing on human-derived materials for advanced laboratory studies.

"We knew that what had held us back in designing a new solution was that we didn't understand how the disease occurred and why it deteriorated, and the root cause of this was the lack of a valid disease model to test hypotheses in disease causation and deterioration. Bench and animal findings may not be replicated in clinical setting."

Organoids

The answer was organoids: an organoid is a cell/tissue-derived culture system that can mimic a real-life (in vivo) organ 'in a dish'. Intestinal organoids were introduced by a Dutch scientist Hans Clevers in 2009, and subsequently many other types of organoids have been developed, but until now, none for human BA liver. This is the first human BA disease model.

The team successfully grew liver organoids from BA patients and controls, giving them a valid disease model, which in turn gave them new therapeutic targets for pre-clinical testing. They found that the BA organoids showed retarded growth, abnormal morphology and disturbed cell polarity and organisation. Analysis of gene-readouts from the BA organoids revealed a developmental shift from bile duct cells to liver cells and, most significantly, altered beta-amyloid-related gene expression.

"The study provided the first evidence about the key role of beta-amyloid in BA," said Professor Tam. "This has more far-reaching implications too as beta-amyloid is also a key disease-causing, associated factor for Alzheimer's disease. Many new drugs are being developed to treat beta-amyloid, so our next step is to test some of these drugs in BA to see if we can improve or cure the disease."

Describing the next step for his team, Professor Tam said: "BA is likely heterogeneous and multifactorial. Finding a substantial disease factor is exciting, but more research is needed to unravel the full story. We need and are applying for a big grant to reveal the full story and 'take out' the disease once and for all.

"We will recruit more patients both in Hong Kong and China, integrate genetic, organoidderived and clinical data, develop next-

generation organoids and test therapeutic targets to inform us in designing new clinical trials as final proof of effective new treatments which are likely to be personalised for different patient subgroups and individuals."



PAUL TAM

"

The study provided the first evidence about **PROFESSOR** the key role of beta-amyloid in **KWONG-HANG** biliary atresia

(BA)... Many new drugs are being developed to treat beta-amyloid, so our next step is to test some of these drugs in BA to see if we can improve or cure the disease.

HOLLYWOOD'S COSY TIES WITH THE US MILITARY

Hollywood is as much a part of the American militaryindustrial complex as the defence and aerospace industries. Dr Sylvia Martin has been researching the connections.



After the World Trade Centre in New York was attacked in 2001, the 9/11 Commission concluded that American security forces had fallen short due to a 'failure of imagination'. It is a failure that the military is trying to ensure will not happen again.

From brainstorming strategies with film and television directors to holding creative writing workshops with writers and commissioning training manuals illustrated by animation artists, the American military has been tapping creative talents to bring more soft power into its operations.

Dr Sylvia Martin of the Department of Sociology has been examining that relationship, which started to come to her attention while writing the 2017 book *Haunted: An Ethnography of the Hollywood and Hong Kong Media Industries* about shared concerns among media workers in both places.

"Some of my contacts in Hollywood said they had worked on various military projects for a few weeks or as a side job. It's common practice. You have both a strong military presence and the US entertainment industry in Southern California," she said.

At the same time, she noticed her students had assumed Hollywood had an independent film industry with no ties to the government. "But that's not entirely true. Besides the internal relationships with the Department of Defense, Hollywood receives federal and state support, such as tax credits and favourable trade conditions through international treaties," she said. Both observations inspired her to take a closer look at Hollywood's military ties.

Seeking innovative ways to fight wars

Apart from commonly known arrangements such as the loan of equipment from the

Pentagon for theatrical war movies, that relationship has also entailed getting creative talents to provide insights and materials for the military itself.

For example, a few weeks after 9/11, top film and television directors were invited by the Pentagon to imagine how the US could respond and how their targets might react. "Action movies and TV shows are like simulations of war, of terror, of disasters. We can think of them as a kind of prototype of these events," Dr Martin said.

"We think of the US military as being discipline-based, bureaucratic, with a strict doctrine. But they are also concerned with how to fight wars and strategise and train people in innovative ways."

Writers, computer graphics artists, storyboard artists, illustrators, painters, photographers and other creative types have also been brought in to provide ideas and create realistic and engaging visuals, and actors have been recruited to portray characters in different scenarios. This input has focussed not only on combat but on new technologies.

For example, in 'ideation' exercises participants are asked to imagine how a new technology might be used in a military situation, or what kind of technology might be designed to solve a future problem. Dr Martin was an observer in one session that looked at how to operationalise artificial intelligence against opponents in 2035. "A director might say, I can imagine this happening and here is a plot. And that plot could be prototyped into a graphic novel by illustrators," she said.

"There is an embrace of interdisciplinarity for fighting wars. Walt Disney was talking about Imagineering in the 1950s and 1960s – you imagine experiences, then engineer them. He worked with artists like Salvador Dali as well as with NASA." Film scholarship documents that Disney animators were behind illustrations of nuclear war during the Cold War, demonstrating that the Hollywood-US military links are long-standing. In fact, Hollywood was considered an essential industry during World War II.

The power of storytelling

But Dr Martin said the relationship has picked up pace since the 1990s, particularly after 9/11. Apart from strategising, Hollywood talent has been sought to give creative writing workshops to military officials and to devise more compelling ways of training new recruits – for instance, by devising video games with options for storylines, or graphic novels.

"A former marine lieutenant who served in Afghanistan said to me, 'we need the power of Hollywood storytelling to get our people out into the field. We all remember lines from our favourite movies more than what we learned in a classroom," she said.

Technological know-how has also been exchanged. Some Hollywood special effects technologies have been adopted by the military, while the military's use of virtual reality to desensitise combatants suffering post-traumatic stress disorder has potential for application in the civilian sector.

"When we think of the US empire and how it is formed, it is not just something that is happening overseas. It also involves creative and technical labour within the US, a labour that is often precarious, sometimes very prestigious. The state recognises that the hard power of the military needs the resources of soft power," she said.



Haunted: An Ethnography of the Hollywood and Hong Kong Media Industries *was published by Oxford University Press in 2017.*



Action movies and TV shows are like simulations of war, of terror, of disasters. We can

think of them as a kind of prototype of these events.

MARTIN



LEPROSY PARADOX

A paradox – the fact that the World Health Organization (WHO) has declared leprosy officially eliminated as a public health problem has hindered treatment for those suffering from the disease.

Dr Laura Meek, Assistant Professor in the Centre for the Humanities and Medicine, is studying what she terms the 'grammar of leprosy' – the ways in which leprosy has been framed as a disease of the past for nearly a century. This framing, she argues, leads to leprosy being overlooked as a significant global health concern.

Dr Meek's awareness of this apparent paradox came about through personal experience. "This research was prompted by a case during fieldwork on counterfeit pharmaceuticals in Tanzania in 2015. My friend and interlocutor suffered from advanced leprosy, but was never able to acquire the antibiotics needed to treat his condition," she said. "Over the years, he and I have spent hundreds of hours trying, always unsuccessfully, to access medical care for him – from attempting to acquire the cure for leprosy (which was sitting collecting dust on the shelves of the local government hospital) to seeking to have his necrotic wounds cleaned, dressed and treated."

In addition to being devastating, the situation also threw up a troubling question: how could leprosy be 'eliminated' and yet also be present and untreatable? Could declaring a disease eliminated actually make it harder for those with the condition to access treatment? And, if so, what are the broader implications of this for disease elimination campaigns?

"Over the years I have been trying to help my friend access treatment, I have also been conducting archival research at the Tanzania National Archives and I was stunned as I came across document after document portraying leprosy as something from the past, recalcitrantly lingering on into the present, but surely about to be gone," said Dr Meek. This temporal framing has shaped leprosy campaigns for a century – from colonial medicine, through international health, to contemporary global health. For instance, Dr Meek discovered a 1952 article from a Tanzanian national newspaper, written by the General Secretary for the British Leprosy Relief Association, which declared that "the battle against the scourge of leprosy is all but won."

"Half a century later, we are still talking about leprosy in exactly the same way!" she said. "The elimination of the disease also appeared as something of an obsession for missionaries and colonial medical officers, with their Protestant ethos of salvation, as well as for the postcolonial socialist nation that saw leprosy as incommensurable with modernity and development."

Lack of training

She recalls a medical appointment when a doctor confirmed that her friend had the telltale symptoms of leprosy, but confessed that he did not know how to perform the test for it. Although his work title located him within the 'Leprosy and Tuberculosis Programme' at the hospital, the doctor had never received any training in its treatment. "There was a course he was supposed to attend, he said, but the government funds were not available, so he was 'still waiting', which in Swahili – 'bado nasubiri' – is often a subtle way of conveying that something which ought to have happened, probably never will. It implies a kind of political critique."

The doctor's lack of training must be understood within broader global health developments. According to the WHO Regional Office for Africa, leprosy "has been eliminated as a national public health problem in all countries of the region since 2007." Elimination is defined as a reduction of global prevalence to less than one case per 10,000 people. Today the prevalence of leprosy is thought to have plateaued at about 200,000 cases per year, but few countries now have any surveillance-response system to provide current epidemiological data.

Further, when leprosy was declared successfully 'eliminated', many governments

ended specialised programmes and adopted more cost-efficient integrated approaches whereby primary healthcare workers were tasked with diagnosing and treating leprosy, often without any additional training. Yet, pointed out Dr Meek: "Many infectious disease physicians argue that leprosy does not biologically lend itself to elimination and that, instead, it should be classified as a chronic stable disease rather than as an acute infectious disease responsive to elimination strategies. At the same time, leprologists still have many unanswered questions about the disease, including how it is spread, and we are witnessing rising numbers of multi-drug resistance and chronic (re)infections."

When it comes to the numbers themselves, Dr Meek suggested that it is important to examine how they have been produced: the motivations of various stakeholders always influence methods of enumerating social problems. "Numbers are cultural artifacts; they are social objects shaped by the conditions of their production. How one chooses to measure leprosy – or anything else – is shaped by the story one wants to tell about it," she said.

To date, the WHO has not responded to Dr Meek's questions but she is now expanding the research and has begun collaborating with medical anthropologists and leprologists

Storage of pharmaceuticals at a government hospital in Tanzania, where the leprosy antibiotics sit and collect dust on the shelves.





Living in Iringa in Tanzania for three years, Dr Meek did her fieldwork in the hospital and medical centres in the town centre.

in Brazil, where leprosy is endemic. "They report similar findings – that the declaration of the disease as 'eliminated' puts pressure on governments not to report cases, resulting in a lack of training for doctors and, ultimately, barriers to treatment for infected individuals," she said. "Together we are planning to write a policy recommendation for the WHO in the hopes that our work reaches beyond the walls of the academy and contributes to real change for those with leprosy."



DR LAURA MEEK "

Many infectious disease physicians argue that leprosy does not biologically

lend itself to elimination and that, instead, it should be classified as a chronic stable disease rather than as an acute infectious disease responsive to elimination strategies.





Dr Meek presenting her research at the Hong Kong Museum of History in November 2020.



POETRY IN MOTION

The friendship between two poets - one from Chile and one from China - in the 1950s has lent a cultural perspective and legacy to diplomatic ties between the two countries.

The discovery of a friendship between Chilean poet Pablo Neruda and Chinese poet Ai Qing in the 1950s became the starting point of research by Dr Bárbara Fernández Melleda, Assistant Professor in Latin American Studies at the School of Modern Languages and Cultures, into diplomatic relations between Chile and China from a cultural perspective.

Nobel Prize Laureate and Chilean poet Pablo Neruda (1904–1973) and Chinese poet Ai Qing (1910–1996) met in the 1950s when Neruda visited China and became close with the Chinese literary and artistic scene. Dr Fernández Melleda's work – Poets as Friends: Images of Chile in Ai Qing's Poetry – focusses on how this relationship also settled the basis for a cultural understanding between Chile and China that lasts until today.

Key find in HKU Libraries

She first became aware of the connection between Neruda and Ai when doing research in the HKU Libraries. "While working on Neruda's Canto general (1950) and the poetisation of América (the continent) I found references to the author's trips into China," she said. "I was curious enough to see his own account in his autobiographical work Confieso que he vivido (1974) which was both in original Spanish and English here at the HKU Libraries!

"It was in that text that I found that Neruda was very fond of Ai and that they had a very deep friendship. Ai also visited Chile and wrote poetry while there – he was heavily inspired by the landscape, which is an aspect that I look forward to analysing in depth in my next paper.

"Interestingly, I found that Neruda did not speak Chinese, and Ai did not speak Spanish so the language of communication was French. Neruda studied French at the University of Chile and later resided in Paris as a diplomat to support emigration from Spain in the context of the Civil War. Neruda is known for his humanitarian work and, from this post in Paris, he organised the emigration of over 2,000 Spanish dissidents who arrived in Chile at the Valparaiso port on September 3, 1939 on the cargo ship 'Winnipeg'.

"Ai, as far as I understand, was schooled in Paris together with a cohort of Chinese poets and writers between 1928 and 1932. Ai and Neruda did not meet in Europe but in China. when the Chilean travelled there to confer the Lenin Peace Prize on Soong Ching-ling in 1951, and Ai was part of a delegation of writers and intellectuals that looked after Neruda's visit."

Asked why this has been such a lasting cultural relationship for both countries,

Dr Fernández Melleda said: "Considering the distance between Chile and China, it's clear that having Neruda in the country and, later on Ai visiting Chile was relevant to both their friendship and the diplomatic relationship between both nations. Also, Neruda has been one of the world's most famous communists and his works have been extensively read in China. He is very much appreciated in the Mainland. Most of his political – or pamphlet – poetry was translated into Chinese guite early, unlike his love poems, for instance, which I believe started being acknowledged even decades later. Neruda's links with the Soviet Union, China and Cuba were very strong."

Human component

Today, relationships between China and Chile are mostly economic, however, Dr Fernández Melleda strongly believes that meaningful relationships need a human component, "an identity and that comes inextricably linked with culture and, in this case, poetry."

"The legacy of Neruda and Ai's relationship has continued over the years," she said. There is a monument to Neruda, in the form of a bust, in Beijing. In 2013, Ai Qing's son, the artist Ai Weiwei, painted a mural in Neruda's honour in the Chilean port city of Valparaiso where the poet resided. And, the most recent issue of the Pablo Neruda Foundation's



commemorate 50 years of relationships between the People's Republic of China and Chile," said Dr Fernández Melleda. "Official relationships began on December 15, 1970, during President Salvador Allende's office. Chile was the first country in the region to recognise the new China and, the first Chilean ambassador to China was another poet, Armando Uribe. Neruda was close to President Allende so I believe one way or another his trips to China helped pave the way for good bilateral relationships at that moment. It is relevant to mention that President Allende was unseated by a US-supported coup d'éta in September 1973.

(Courtesy of FELIPE GAMBOA/AFP via Getty Images)

"The Pablo Neruda Foundation sought to commemorate diplomatic relations through poetry, starting with Neruda and Ai, but further developing connections through the publication of a bilingual special issue showcasing the work of 20 contemporary Chinese poets – work translated skilfully by Sun Xintang – so that readers become acquainted with current Chinese poetry as part of an ongoing and fruitful cultural relationship between both countries."

That relationship continues in various other forms too. Over the last few decades, there has been marked interest in learning Mandarin Chinese in Latin America. The presence of the Confucius Institute has been very relevant, and a growing number of Chinese students are interested in developing research on cultural and literary relationships between China and Latin America in disciplines as varied as translation studies, literature studies and film studies.



FERNÁNDEZ having Neruda MELLEDA

both nations.



Renowned artist Ai Weiwei, the son of poet Ai Qing, painted a mural in tribute to Chilean poet Pablo Neruda in the Chilean port city of Valparaiso.



late 2020.

Considering the distance between Chile and China, **DR BÁRBARA** *it's clear that*

in the country and, later on Ai visiting Chile was relevant to both their friendship and the diplomatic relationship between



Dr Bárbara Fernández Melleda gave a Zoom presentation titled 'Cultural Sino-Latin American Relations: Between Poetry and Diplomacy' in



SEEING THE LITE

The Faculty of Law's new LITE Lab is using digital tools to increase access to justice, help start-ups navigate legal affairs, and train students in legal technology.

The Law Faculty's Law, Innovation, Technovation and Entrepreneurship (LITE) Lab@HKU is barely two years old, but it is already making an impact. Students and staff have been developing tools and systems that are nudging current and future legal professionals in Hong Kong into the 'ABCD' era of artificial intelligence (AI), blockchain, cloud computing and data, and improving access to justice and fairness.

Students enrolled and affiliated with LITE Lab have performed strongly in international competitions, such as winning the inaugural Iron Tech Lawyer Invitational organised by Georgetown University in April 2020.

LITE Lab scholars, including Founding Executive Director Brian Tang and Professor Douglas Arner, Kerry Holdings Professor in

Law, of the Faculty of Law and Professor Yiu Siu-ming of the Department of Computer Science, are part of the HKU–Standard Chartered Foundation Fintech Academy team that collaborated with Standard Chartered Bank to develop a tool to combat financial crime and fraud in digital trade finance. The tool won Best Governance, Risk and Compliance Solution in last November's TechChallenge run by the Bank for International Settlements Innovation Hub and Hong Kong Monetary Authority.

The driving force behind LITE Lab has been Mr Tang, who previously worked with large legal firms in Australia, Wall Street and Silicon Valley and in-house at a global investment bank in Hong Kong. He also organised Hong Kong's first legaltech and regtech hackathon

in 2018, after which he was recruited to HKU to put a focus on technology in the legal realm.

Industry partners

According to Mr Tang, "LITE Lab@HKU is trying to achieve three main objectives. One is to train future legal talent. Technology like automation tools and AI have implications for access to justice and the business of doing law, and so new skillsets and mindsets are needed.

"Second, we are also trying to address the high legal costs involved in establishing and running innovative start-ups, social enterprises and NGOs by involving students as legal researchers, interns and legal engineers in a win-win scenario. Third, we are looking at how the new ABCD technologies are impacting the legal profession and how the law responds to such innovative technologies and evolving applications."

LITE Lab@HKU works closely with industry partners such as Cyberport, Hong Kong Science and Technology Parks Corporation (HKSTP), the Association of Corporate Counsel – Hong Kong, HKU's entrepreneurship hub iDendron and the FinTech Association of Hong Kong, to enable students to work on solving real-world problems. Both undergraduate and postgraduate experiential classes are offered to students from various disciplines, in keeping with the lab's mission to be cross-disciplinary.

LITE Lab courses give students the opportunity to undertake legal research or internships or create legal tech tools that can benefit underresourced organisations. Mr Tang's students

LITE Lab students won the InnoSpark pitching competition held by the Innovation Academy, Faculty of Engineering, with a virtual reality (VR) mock trial initiative for unrepresented litigants.

have created animated videos, automated documents and even built chatbots. One group worked with the community start-up Equal Justice Hong Kong to create a tool that can help frontline workers, such as social workers and police officers, identify if someone is a victim of human trafficking.

Tremendous potential

One of the most impactful ventures came from the team of law, business, government and design undergraduate students who won the Iron Tech Lawyer Invitational. They collaborated with NGOs to create a legal research engine on compensation for injured workers, using natural language processing. Users input data and learn about levels of compensation awarded in the past to help them decide whether to accept insurance offers or appeal tribunal



IRON TECH LAWYER INVITATIONAL 2020 First Prize

University of Hong Kong



Students won the inaugural Iron Tech Lawyer Invitational organised by Georgetown Law by creating an Al-powered platform to assist injured workers.



LITE Lab Founding Executive Director Mr Brian Tang (first from left) and students at the InnoHub launch at the Tam Wing Fan Innovation Wing.



findings. The students have now incorporated into a start-up called Litex Limited, which is incubating at the HKSTP.

"We realised the difficulty and cost barriers around legal research tools and figured it was possible to provide a more elegant and costeffective solution," said Cuthbert Chow, now in his final year of a BBA(Law)&LLB. "Had it not been for Brian's class, we would not have been so keenly attuned to the intersection between the legal field and technology."

Mr Tang said his students' output showed the richness of talent at HKU. "We just need to give Hong Kong youth the opportunities, tools and space to create. What they do after that is up to them. The fact they are creating such awesome things demonstrates their tremendous potential."

He stressed that his students cannot provide legal advice, only research, but given the rate of development of new technologies, there was plenty for them to get stuck into. "Areas like AI and blockchain are so cutting-edge that there is often no established law, so students are able to do impactful research in this fast-moving space and work with companies immersed in these areas.

"I want LITE Lab@HKU to be the initial go-to destination if you're a tech start-up, social entrepreneur or NGO and have a legal-related guestion," he said. "I also hope we can help the legal profession adapt to the changing world." Those goals will move further forward this summer when LITE Lab launches a new website to showcase its work.





TANG

Areas like AI and blockchain are so cutting-edge that there is often no established law,

so students are able to do impactful research in this fast-moving space and work with companies immersed in these areas.



CUTTING-EDGE COURSE FOR FUTURE SURGEONS

A free online learning course challengingly entitled asks 'So You Want to Be a Surgeon?' is attracting big interest in Hong Kong and abroad.



raery Professor Stephen Ch eung, Serena H C Yang Professor in Vascula Surgery, performing an endovascular aortic repa

"Surgery is a challenging subject that requires not only skills and craftsmanship but also knowledge and timely judgment and decision," said Course Director Dr lan Wong Yu-Hong, who is also Clinical Assistant Professor sub-specialising in esophageal and upper gastrointestinal surgery in HKUMed. "Sometimes that gives students the impression that both the training and the working hours are long and they may choose against pursuing surgery because they want to embark on their career earlier or in a pursuit that is less hard work. Through this MOOC [massive open online course], we wanted to show them not only what the work involves but also what it really means to pursue this profession."

In short, it is designed for those who want to become a surgeon but are not sure where to start, what it takes, and how to get there. The target audience is primarily senior high school students and university students who are considering exploring a career in surgery.

The course, which is Asia's first multidisciplinary surgery MOOC, came about when the Centre for Education and Training (CET), Department of Surgery, was revamping its teaching videos with the help of the Technology-Enriched Learning Initiative (TELI) and decided to expand the platform into a MOOC and introduce this specialty.

Multiple instructors

More than 34 instructors feature on-screen in the MOOC, providing their time and expertise and sharing their experience of more than 15 subspecialties in surgery, ranging from simple haemorrhoids and gallstone diseases to lifesaving cancer operations, transplantation and open-heart surgery. In addition, seven worldrenowned overseas surgical experts share their experiences of working in the profession.

"Of course, all the TV dramas have portrayed the excitement of being a surgeon!" said Dr Wong. "And these world experts and our local instructors underline the truth behind the fiction - they unanimously agree that the job satisfaction and excitement surpass any difficulty they may have encountered during their training. Despite the advances

in pharmacological development, surgery remains the irreplaceable mainstay of treatment in surgical oncology, structural defects, trauma, transplantation, emergencies, and many more. In the MOOC, we reveal the real-world spectrum of diseases that we are facing every day."

Around 3,500 people worldwide enrolled for the first six-week, instructor-based course, and the number is still growing as the self-paced modules continue. To date, there are more than 4,500 participants from 125 countries or regions – more than 1,600 are from Hong Kong; followed by Mainland China and the US. Some 65 per cent of the participants are aged 25 vears or under.

Asked how COVID-19 has impacted interest in joining the medical professions of any type, Dr Wong said: "We are seeing a lot of respect and appreciation for healthcare professionals locally and internationally during this time of the pandemic. It is indisputable that society needs better holistic care and a shorter waiting time. Although as surgeons our specialty is not at the frontline against COVID-19, everyone in the medical field is affected.

"We had to postpone patients' endoscopy and surgery, and we were squeezed out of surgical wards as they were urgently needed to be transformed into 'step-down' wards for accommodating COVID-19 patients. Now, after several waves of COVID attack, we need to catch up with the patients in the gueue. However, surgery, as a specialty with unique expertise, cannot be trained in one day. This is another reason we have introduced the MOOC to encourage students and trainees to start early by exploring their interests."

Hands, heads and technology

Going back to the fundamentals, Dr Wong described the meaning of the discipline – in the beginning and today. "The word surgery comes from the Latin 'chirurgia' or the Greek 'cheiro' (hand) and 'ergon' (work) - basically, surgeons use their hands to heal patients. But we also show participants that nowadays, not only do we use our hands – and our heads - to heal patients, but we also have



Dr Ian Wong at the Teaching Innovation Production Studio filming for the surgery MOOC.

the latest technology like augmented/virtual reality, 3D printing, image enhanced surgery, genetic counselling and therapy, robotic surgery, and minimally invasive surgery, etc. incorporated in our daily practice. We have dedicated a session too to describing how female surgeons are thriving in this field, it is no longer male-dominated."

In addition to TELI's contribution, filming and producing the videos, the cross-disciplinary project involved research, administrative and IT staff from the Centre for Education and Training, as well as the Department of Surgery who bridged the communication gap between different parties and oversaw the production of the whole course. PR and social media teams from the Li Ka Shing Faculty of Medicine helped publicise it to 125 regions and countries, and 25 medical student volunteers were involved in discussing the MOOC's content as well as proofreading, subtitling and maintaining the social media content.

The team are planning to push forward a second round of the course later this year, and looking further ahead, Dr Wong said: "We are hoping to extend the MOOC to more countries and regions outside Hong Kong, particularly places where information on surgical education is limited. We have also realised that the content may be useful for other healthcare-related professionals and are reaching out to other medical areas such

as nursing, pharmacy, traditional Chinese medicine, physiotherapy and nutrition. We are also planning to modify the content within the course and translate the voice-overs into Cantonese so it can work as a tool to improve patient education within our locality too."



YU-HONG

Despite the advances in pharmacological DR IAN WONG development, surgery remains

the irreplaceable mainstay of treatment in surgical oncology, structural defects, trauma, transplantation, emergencies, and many more. In the MOOC, we reveal the real-world spectrum of diseases that we are facing every day.



HONG KONG HISTORY IN PICTURES

A rare collection of photos chronicling Hong Kong modern history since the 1860s has been acquired by HKU Libraries, which has put on display an initial exhibition of highlights from this visual treasure trove.

The collection of more than 24,000 images, was amassed by Frank Fischbeck who first came to Hong Kong in the 1970s as a photojournalist for *LIFE* magazine. In this capacity, and later as Managing Director of FormAsia Books he began taking photos documenting daily life and important moments in the city's recent history. Along with his own pictures he collected historical photos dating from the 1860s to the 1960s, which reveal Hong Kong as it evolved into a major international city.

Of his own images, Mr Fischbeck said: "Images associated with politics are the hardest ones

to capture. Experience taught me to dress appropriately for the occasion. I had to place myself in the shoes of the attendees, that I don't stand out as a journalist or photographer but blend into the audience and that I am, as far as possible, unobtrusive."

HKU Libraries will store, preserve, catalogue, digitise and maintain the collection. An initial exhibition, entitled *Hong Kong Historical Photos from the Frank Fischbeck Collection*, reveals some of the treasures contained in the collection, and presents an exciting visual account of modern Hong Kong history.

First to march through the Cross Harbour Tunnel was the Band of the Brigade of Gurkhas, led by Major H.C.R. Bently, performing at the tunnel opening on August 2, 1972. (Caption courtesy of FormAsia Books)



Frank Fischbeck's picks



"The Luk Yu Teahouse in Central is a Hong Kong institution and long favoured by locals and visitors to the city. It still retains its atmosphere of old-world dignity with polished wood panels and dented teapots, but these days there are no more spittoons," said Mr Fischbeck.

Selected historical pictures

I had to place

myself in the

shoes of the

FISCHBECK I don't stand out

as a journalist or photographer but

I am, as far as possible, unobtrusive.

blend into the audience and that

MR FRANK

attendees, that



The Qing court was still in power in September 1909 when Governor Lugard posed on the steps of Government House with members of the Legislative Council and with the royal visitor from Peking, Prince Tsai Hsun. On Lugard's left is Yuan Shu-hsun, Viceroy of Canton. (Caption courtesy of FormAsia Books)



This striking photograph, taken from the tailgunner position at an altitude of several hundred feet, shows a loose formation of five US Army Air Force bombers on a raid over the Hong Kong Whampoa Docks. The Kowloon Peninsula and the north shore of Hong Kong Island are all in full view. (Caption courtesy of FormAsia Books)



"Gerns of vernacular architecture can still be found in the New Territories. Saved from extinction by their seclusion and inaccessibility, their very neglect has proven to be their salvation." Mr Fischbeck spent a lot of time documenting the fast disappearing villages of the New Territories.



Even at the end of the 19th century, it was not uncommon to see carts pulled through the streets of urban Hong Kong by bullocks when farmers brought their produce to market. (Caption courtesy of FormAsia Books)



A classic image marking the end of the Japanese occupation: the Japanese Gestapo Chief, Colonel Kanazawa, head of their Gendarmerie, is arrested at the entrance of the Peninsula Hotel on September 29, 1945. British Marines with weapons provocatively poised keep a watchful eye on the Colonel, with arms folded and still wearing his samurai sword, and his aides.

(Caption courtesy of FormAsia Books)



Visit the virtual exhibition

STOPPING THE ROT EARLY

A service providing free dental health checks in local kindergartens seeks to solve the common problem of tooth decay among young children in Hong Kong.



Surveys have revealed that early childhood caries (ECC) is prevalent in Hong Kong, with more than half the children aged under five experiencing oral health problems. Professor Chu Chun-hung, Associate Dean (External Relations) of the Faculty of Dentistry, puts this down to lack of parental attention to good oral health, saying: "Children suffering from ECC often snack frequently and have not been taught effective oral hygiene practices. They are too young to brush their teeth properly, and their parents fail to assist them to brush. Many parents do not realise the importance of oral health and overlook the consequence of ECC."

Left untreated, ECC will lead to serious tooth decay causing pain and infection, which starts locally but can spread systemically and affect the nutrition, general health, growth and development of the child. To tackle the situation, the Faculty of Dentistry launched the 'Jockey Club Children Oral Health Project', an outreach community programme sponsored by the Hong Kong Jockey Club Charities Trust.

"The service is free of charge and aims to promote oral health in infants by providing outreach dental services to more than 180,000 preschool children in more than 1,000 kindergartens in Hong Kong," said Professor Chu. "It provides oral health education, dental screening and silver diamine fluoride (SDF) therapy to arrest – that is, stop and harden – ECC in kindergarten children.

"SDF solution effectively helps slow down tooth decay, and is safe to use in children causing no significant impact on general health. When SDF is applied to cavities it turns black, indicating that the active decay has been stopped successfully. It is widely used in countries such as the US, Australia and Japan."

COVID-19 has hampered the team's efforts a little. But, despite the suspension of kindergartens several times during 2019– 2020, the Faculty was able to deliver the



From left: Professor Edward Lo Chin-man, Professor Chu Chun-hung and Professor Cynthia Yiu Kar-yung.

service to 137 kindergartens. In 2020–2021, more than 700 schools have agreed to participate in the service.

Professor Chu is leading the project, alongside Professor Edward Lo Chin-man, Tam Wah-Ching Professor in Dental Science, and Professor Cynthia Yiu Kar-yung. "Professor Lo is a specialist in community dentistry. Professor Yiu is a specialist in paediatric dentistry and I am a specialist in family dentistry," said Professor Chu. "We use our expertise to develop and monitor the service, while project manager Dr Tammy Duangthip, who has extensive clinical and administrative experience, works with eight full-time dentists and other supporting staff to implement it."

Annual screening

With parental consent, the team provide annual dental screening, and topical application of SDF on caries of the children. An individual report on each child's oral condition is sent to his/her parents after the dental screening, and each kindergarten receives a summary report about the general dental health of the children in their care.

"In addition, we educate the parents on oral health," said Professor Chu. "Our dentists highlight the common dental problems of preschool children and the findings of the child's oral health status. If a child has severe tooth decay, we arrange an individual consultation with the parents, aiming to help them improve the oral health of their child."

The team also provide training for the kindergarten teachers through lectures and hands-on workshops to empower them to talk to the children about oral health. "It is important to involve kindergarten teachers and parents because they are important stakeholders in this service," said Professor Chu.

All kindergartens invited

The Faculty of Dentistry began to develop the 'Jockey Club Children Oral Health Project' in September 2019, and in 2019–2020 invited selected kindergartens to participate. Then in September 2020, they made the decision to invite all kindergartens in Hong Kong to participate.

"Our team did an oral health survey in 2016, which found that over 55 per cent of five-yearold children had tooth decay," said Professor Chu. "Similar to previous surveys, we found that more than 90 per cent of ECC went untreated. The prevalence and severity of



Professor Chu teaching kindergarten kids to brush their teeth properly.

the condition revealed that an outreach dental service was urgently needed to manage ECC in preschool children.

"We hope that the project will not only help with the immediate problem of remedying ECC in children, but also act as an introduction for these youngsters to dental services and be the starting point for a new mindset in Hong Kong's communities, namely, to ensure lifelong oral health you must start from a very young age."



The service is free of charge and aims to promote oral health in infants by providing

outreach dental services to more than 180,000 preschool children in more than 1,000 kindergartens in Hong Kong.



COPY THIS

Associate Professor of Law, Ms Alice Lee, has been partnering with students, alumni and colleagues in other disciplines to develop legal resources for classrooms and the community.

What is 'teaching'? For Ms Alice Lee, recipient of the 2019 University Distinguished Teaching Award, the most satisfying teaching is a partnership in which students, as much as their teacher, contribute content to the discussion. She has taken that philosophy beyond the campus and into the community with the project Copyright Classroom, which started at HKU and has spread to other institutions and government departments in Hong Kong.

"Copyright education is necessary for teachers and students in every subject because they will use copyright materials and they need to know how to do this lawfully," she said.

"But different disciplines and departments have different requirements. I worked with colleagues from other faculties and units to understand what their students or staff would like and need to know about copyright."

The result is a collection of 11 five-minute animations on copyright issues in fields ranging from entertainment, performance and research and presentation to news reporting, design and art.

Three of her former students joined her in scripting, production and narration of the videos, which have been uploaded to the YouTube channel Copyright Classroom. Colleagues from Law, Engineering, Architecture, the Centre for the Enhancement of Teaching and Learning and the Knowledge Exchange Office were also on the team.

Ms Lee also worked with a select group of secondary school students under HKU's

Academy for the Talented, who produced two additional videos on the Creative Commons, which are now part of the animated series.

Public education

Since uploading the videos last year, she has been invited to introduce the Copyright Classroom to the Hong Kong University of Science and Technology, Hong Kong Baptist University, and the Education University of Hong Kong. The Vocational Training Council and the government's Buildings Department and Intellectual Property Department have also used the resources, with the latter inviting her to do a Chinese-language version. The Hong Kong Reprographic Rights Licensing Society, meanwhile, has provided links to the videos on their website.



Ms Alice Lee (second from right) works together with her students and former students – Brian Tan, Daniel Chan, Uncle Siu and Phoebe Woo – for the Copyright Classroom project.



Ms Alice Lee (right) and her student Marcus Yuen (left).



A series of videos have been produced to promote creative and ethical use of copyright works in education.

"The Copyright Classroom started off as a project for university students and teachers, but it has evolved into a kind of public education. I'm very pleased that it can have this wider impact and that people are approaching me to work with them. I love collaboration, not just with teachers and students but also people outside academia," she said.

That eagerness to collaborate has also underpinned several other recent projects involving Ms Lee, one led by alumni and three led by a student.

HKU LAWLYPOP was initiated with alumnus Billy Ng (LLB 2002, PCLL 2003) who remembered how hard it was to graduate during SARS in 2003 and wanted to help current students cope during the pandemic. He helped recruit other law graduates to record dozens of short videos in which they offer professional tips and wisdom, reflect on career choices, and encourage students to have hope and persevere.

"Since students have not been able to meet practitioners face to face, we provided this channel to learn from others' experiences." Ms Lee said. "We also want students to consider more career options beyond practising as a lawyer. With a legal education, you actually have more options.

"I'm an example of that. I did the LLB but I have never wanted to be a lawyer. My happiest time has turned out to be when I go into the classroom and see my students."

Building an ecosystem

The student-led projects, meanwhile, were inspired by Marcus Yuen, who graduated last year in government and law (BSocSc[Govt&Laws]& LLB). He first approached Ms Lee in 2017 to discuss his project Outreach Legal Talks, which provides legal knowledge to people living in subdivided flats. The project won the inaugural Law for Change Student Competition that year that was organised by the global NGO, Public Interest Law Network.

Marcus then organised the Legal Advice Programme, again with Ms Lee's assistance, to recruit students to provide research and other assistance to law firms in their pro bono work. The programme enables students to learn more about legal practice while helping to fill a real need.

And last year, they launched SELECT – Student Experiential Learning Community Service Task Force - under which the Faculty of Law provides recognition and assistance for student-led experiential learning projects, such as coordinating mass emails for the different projects, reserving classrooms and providing timelines for students to join. The idea is to make these initiatives more sustainable. "Alice's support has been essential to the healthy development of these initiatives," Marcus said, "Most importantly, we have been able to establish an ecosystem of teacher-student collaboration and studentmanaged projects."

For Ms Lee, these are all win-win situations. "Everything we do is to benefit not just the target groups but also the students themselves. They can learn how to share their knowledge in a more comprehensive way and present themselves to others outside the legal profession. So there are multiple beneficiaries."



View Copyright Classroom's YouTube channel



View HKU LAWLYPOP's YouTube channel



LEE



Copyright education is necessary for teachers and students in

every subject because they will use copyright materials and they need to know how to do this lawfully.



GLOBAL THINKER ACTS LOCALLY

Professor Peng Gong has spent much of his career modelling Earth systems and devising ways to assess and manage climate change and other stressors. He now steps aside from that big picture to take on change at the local level as Vice-President and Pro-Vice-Chancellor (Academic Development) at HKU.

Professor Peng Gong likes to push at traditional boundaries. As an Earth scientist, he has published in the medical journal The Lancet and developed research programmes that look at multiple contributors to climate change and biodiversity loss, such as human transportation systems and urbanisation.

He is taking a similarly broad-minded approach to his new position as Vice-President and Pro-Vice-Chancellor (Academic Development), where he succeeds Professor Terry Au Kit-fong. His official duties are to recruit world-class faculty, facilitate a culture of academic excellence and enable faculty to succeed at every stage in their careers, but he sees a higher purpose.

"I've been observing Hong Kong for some time and I noticed that since 1997, its higher education has been booming and expanding, but the city itself has stayed with its traditional role as a finance and trade centre. It hasn't taken much advantage of innovative technologies. I feel universities could fill some of the gaps and engage

better with the development of the city," he said.

"I'm also curious to see how universities are related to local development. At this stage in my career, I also want to make more direct contributions."

That career has taken Professor Gong from China to North America and back. He obtained his PhD from the University of Waterloo in Canada, joined the University of California, Berkeley, in 1994 and became full professor in 2001. In 2016, he became the founding Chair of the Department of Earth System Science at Tsinghua University, and Dean of Science in 2017.

At Tsinghua, one of his key achievements was to break down disciplinary barriers to embrace atmospheric science, oceanography, ecology, geography, computer science - just about everything relating to land and the environment. Economics became of interest, too, as well as the public health impact of pollution, biodiversity loss and climate change.

In 2018 he was also appointed as the only Chinese member of the advisory board of Future Earth, a United Nations-affiliated research programme that is aiming to build knowledge and solutions to the biggest challenges to global sustainability.

Many attractions

Despite the diversity of his interests, he has been singular about his motivation, which he also brings to his new position: "I have the whole Earth in my heart and in my mind. That is a unique perspective that I hope I will be able to contribute to this great university of HKU."

A global outlook underpins Professor Gong's ideas about recruitment. He believes attracting top-flight academics from around the world is essential to HKU's success – and that HKU and Hong Kong itself have the attractions to achieve that.

"The culture and spirit of the city, its diversity and global networks, are all conditions that

a lot of other places are lacking," he said. "Hong Kong is still the most unique and culturally diverse city in China. It also has a legacy of giving strong support to higher education. All of this will help us attract world-class talents."

HKU's strong standing in the world is also a draw, although he recognises that the University could do more to improve its infrastructure and sharpen its focus. The Senior Management Team are now working on those goals to aid its recruitment of the world's best scholars.

"We want to support sunrise disciplines that can push the frontiers of knowledge. Every department will know who are best in their field. We need the whole University to act and welcome those who are strong," he said.

Professor Gong also hopes to streamline procedures to make things easier for staff. "My impression is the University runs very well. The staff are professional, everyone knows their role and people support each other in a

very nice way. When I told colleagues overseas that I was coming here, they had good words to say about HKU," he said.

"I'm excited to be here and I want to learn and work with colleagues at HKU to make it even better and hopefully make people happier."



PENG GONG frontiers of

need the whole University to act



We want to support sunrise disciplines that **PROFESSOR** can push the knowledge. Every department will know who are best in their field. We and welcome those who are strong.



ENGINEER OF GROWTH

Vice-President and Pro-Vice-Chancellor (Research), Professor Max Shen, will oversee ambitious plans to expand the resources and impact of research at HKU.

HKU may be ranked among the top universities in the world (22nd by Quacquarelli Symonds), but like everywhere in Hong Kong, its provision of space is anything but world-beating.

Engineering and science labs and offices, for instance, are squeezed into spaces that are a half or less that provided in many other top universities. Even senior management make do with offices that cannot accommodate meetings of more than two or three people.

Imagine, therefore, what the University could achieve if it had more facilities and staff. This is the enviable challenge facing the new Vice-President and Pro-Vice-Chancellor (Research), Professor Max Shen, who comes to HKU with a strong reputation in industrial engineering and system optimisation and 16 years as a professor at the University of California, Berkeley.

"HKU is a top-notch university, however, we can still make improvements in many areas, including our research productivity. When we examine the data closely, we realise that many of our professors lack resources. They can't afford to maintain large research groups, which for many academic areas, are essential for conducting high-impact, large-scale research projects," he said.

That situation is about to change. The Hong Kong government and the University are investing to attract more research talent, including professors and PhD students. The University is also negotiating for more space in Shenzhen. Professor Shen will be closely involved in both initiatives, which he believes will take HKU to new heights.

Recruiting to expand

"We are in a unique position to attract the best talents here. In other places, like the US, many universities are recruiting just to replace retired faculty. But here, we are recruiting with the purpose of getting more faculty. This is really exciting," he said.

The outcome of that will be better research productivity and greater impact. "I don't want to encourage people to count beans, but I think we're lacking in policy to encourage people to work on bigger and more impactful research. I want to look into incentives for that. I will listen and try to help our researchers get the resources they need," he said.

Professor Shen acknowledges that many faculties are already performing strongly, but the Science and Engineering Faculties, in particular, lack space.

To expand capacity, the University plans to build the Tech Landmark, consisting of four buildings housing 10 interdisciplinary research institutes. But even when all four are built, he cautions that more space is still needed. The negotiations with Shenzhen for a second campus there will make room for growth.

"The idea is one university, two campuses, and students and professors could travel freely between the two. We have a beautiful campus here in Hong Kong but little space for new buildings. I feel if we can work with the Greater Bay Area and get more resources and build more labs, we will help HKU's research really take off and attract more talent," he said. "It is like a snowball effect, once the ball gets rolling, it will pick up speed."

Data drive

Professor Shen is also intent on plugging research gaps. He is personally involved in setting up an institute of data science at HKU – something many top and local universities already have in place. A few hundred scholars from around the world have applied to join the institute, including several leaders in their fields. The plan is to recruit 20–30 researchers in computer science, applied mathematics, statistics and optimisation, who will develop tools and systems that can be applied to many disciplines, from science and engineering to medicine, social science and the humanities.

"We have a late start, but we also have the unique opportunity to catch up and lead. With this institute, we can unify all researchers on data-related topics and make a huge impact," he said.

Professor Shen says he would also like researchers to continue to address the difficult topics facing Hong Kong during this time of transition. "We need them to come up with ideas to guide governments on what the best way is for Hong Kong society to move forward. This is a sensitive subject, but I think we have to encourage researchers to work in these areas."

All told, with more space and resources, plus fine-tuning recruitment of graduate students, Professor Shen believes HKU will be an appealing option for top candidates. "You have a great city in Hong Kong, with great people, it's safe and enjoyable and really liveable, and now we have resources for top researchers. Who wouldn't want to come?"

Professor Shen is a case in point. "I could have stayed at Berkeley on cruising speed and gone a long way. But now, I have the responsibility to figure how to take HKU research to the peak. That really interests me. I feel like I have some good ideas to help research here get better."





MAX SHEN

You have a great city in Hong Kong, with great people, it's safe and enjoyable

and really liveable, and now we have resources for top researchers.





HUMAN RIGHTS SCHOLAR IS NEW DEAN OF LAW

The Faculty of Law has turned to one of its own to lead it through a period of challenge for the legal profession and the law in Hong Kong. When Professor Fu Hualing – Warren Chan Professor in Human Rights and Responsibilities – was first approached to succeed Professor Michael Hor as Dean of Law, he hesitated. He was not from a common law jurisdiction (although he studied and worked in Toronto for seven years before coming to Hong Kong) and he was aware of sensitivities around having a Mainland Chinese lead the Faculty. But as he considered the challenges facing Hong Kong, he began to change his mind.

"After the protests in 2019, I began to think that maybe I can serve some function. The legal and political issues around Hong Kong's interactions with China are entangled. The Dean should have an understanding of that larger political background and the very delicate issues involved, and someone coming from outside Hong Kong may have difficulties. So I thought I could give the position a try," he said.

After one year as Acting Dean – and 23 years since joining HKU's Faculty of Law on July 1, 1997 – Professor Fu was appointed late last year as full-time Dean of Law.

The job is daunting because of the centrality of rule of law to the practice of 'One Country, Two Systems' in Hong Kong and the central role the Faculty has played in this. Two of his predecessors – Professor Albert Chen Hung-yee, Cheng Chan Lan Yue Professor in Constitutional Law, and Professor Johannes Chan Man-mun – were closely involved in the political process that shaped Hong Kong's constitution. Professor Fu will continue the tradition of having a public role but wants to expand the focus. "My audience is not only the lawyers and judges of Hong Kong, but also the scholars, lawyers and judges of the Mainland. I think I can be an effective bridge between the two places so we can position ourselves as not only a law school in Hong Kong, but one that can promote reciprocal understanding and mutually beneficial interaction between Hong Kong and the Mainland, and have a positive influence on legal education in China," he said.

Platforms for dialogue needed

The Faculty is already strong in scholarship on Chinese law and has had long-standing exchanges with law schools there. But the National Security Law (NSL) that came into force in Hong Kong last July 1 has created uncertainty about rights and freedoms across the city and its relationship with the Mainland.

Concerns have arisen about the scope and implementation of the NSL, illustrated by the denial of bail to figures such as media tycoon Jimmy Lai Chee-ying. Some worry student advocacy activities may also be affected. However, Professor Fu points out that teaching and learning have continued as before, as has research – in fact, Hong Kong legal scholars have a moral duty to Hong Kong people to research new topics arising from the NSL.

"My perspective is that people who are critical remain critical. They may be frustrated and doubtful about the future, but that doesn't affect the way they express themselves in their academic writing," he said.

He also believes there is room to manoeuvre within the new law. "The demand for

constitutional reform, rule of law, rights, freedoms – you cannot just take that away by passing a law. I don't think that was the intention either," he said.

"But we cannot solve our difficulties by shouting at each other. Governance means engaging the other side to address their concerns and achieve agreement. We need to build platforms for dialogues, where you reach out your hand first. For now, this is hard to imagine because we are still in the initial operational phase of the NSL which is unfolding at the time of a pandemic."

Inspired by human rights lawyers

The Faculty can help facilitate and promote such dialogue, given its long record contributing to constitutional debate about 'One Country, Two Systems' and the Basic Law. "We did that in the past and we will continue to do it. It's a limited role but nevertheless a contribution that each of us can make," he said.

"I'm optimistic about Hong Kong, and China as a whole. My faith is partly due to my belief in moral concepts like the rule of law, and partly motivated by people I know on the ground who are making sacrifices and won't give up."

He notes that young human rights lawyers in Hong Kong are starting to follow a similar path to that of human rights lawyers on the Mainland – a group he has studied since 2007. The latter numbered only about 30 when he started and have expanded to hundreds today. They have successfully brought cases related to gender, sexual and disability discrimination.

"The more political ones have stopped their activities [which increasingly led to detention in recent years], but the others have continued. They are still working on things like domestic violence and equality rights," he said. "These lawyers are an inspiration to me because if they think they can achieve something, why would I not have confidence in that?"

Professor Fu also believes that more democratic accountability is essential in the long run. "I don't think it can be avoided. At the end of the day, you have to allow people to have their voice heard and to participate in decision-making on matters relating to their future. I don't think any government can ignore this."



PROFESSOR

FU HUALING

At the end of the

day, you have to allow people to have their voice heard and to

participate in decision-making on matters relating to their future. I don't think any government can ignore this.



HUMANS IN THE WILD

Dr Hannah Mumby of the School of Biological Sciences and the Department of Politics and Public Administration has published a new book that captures the everyday experiences and heartbreak of studying elephants on the ground. It has also cemented her research path studying interactions between humans and wild animals.

Unusually for an ecologist, Dr Hannah Mumby's first interest was anthropology. She switched track to study the ecology of big mammals beyond primates – especially elephants – to see if it could lead to new guestions about our own species. But the more she studied the creatures, the more fascinated she became with them. Until, a decade later, she came full circle and realised humans need to be part of this picture, too.

"Generally, when you study big mammals there is interaction with humans. Rather



The Secret Lives of Elephants: Birth, Death and Family in the World of the Giants Author: Hannah Mumby Publisher: HarperCollins Year of Publication: 2021

than trying to erase that impact, I thought the interaction itself could give interesting information," she said.

The inspiration for this switch came after writing a book for the general public, called Elephants: Birth, Life and Death in the World of the Giants, that was published last year. It features observations about elephants and stories of her own experiences.

"What you report in academic papers is about one per cent of the actual experience of what it feels like to be there with the animals, how your heart races when you mess up and an elephant charges you or the heartbreak when you see a poached elephant with its tusks removed or feet removed or even its skin. Or when you see a family group playing together in the water.

"After I wrote the book, I wanted to try to open up the research a little bit more and bring in the human dimensions and interactions."

Mutual effects

That realisation also coincided with Dr Mumby's arrival in Hong Kong in early 2019 from Cambridge University, just after she finished her draft of the book. She set up the Applied Behavioural Ecology and Conservation Lab that studies animals on the one hand – such as their genetic networks and vocalisations - and human-wildlife interactions on the other.

In Nepal, for instance, she and her team have been studying the relationship between

mahouts and their elephants. She wanted to know the mahouts' thoughts about recent changes to elephant care, such as stopping elephant rides and instead having visitors walk alongside the animals, and rather than chaining, letting them move freely around corrals and interact with each other.

"The responses from the mahouts to this were very nuanced. They liked that elephants could move around. However, they were also concerned about the elephants spending a lot more time with other elephants because that meant they might not listen to the mahout as much and maybe there would be a risk to safety if the elephant isn't as responsive," she said.

Apart from elephants, Dr Mumby's team are looking at Hong Kong's wild boar population, for which there are increasing anecdotal reports of sightings and interactions with humans. Part of the research is analysing media reports to find who is speaking, in what language, and what they say, among other factors. Another study is investigating the impact on boars' diet and behaviour when people leave out food for them. The team have also just started studying human-buffalo interactions on Lantau Island.

Conservation 'a necessity'

But her greatest passion remains the elephant and how to protect this vulnerable animal. "Some of my experiences have been beautifully exciting, like having a baby elephant named after me in Myanmar. Some have been just tragic – elephants hit by trains,



Baby elephant Hannah in Myanmar with her mother and auntie. (Courtesy of Moritz Muschick)

the poaching crisis, and the impact that has on researchers and rangers. In my book I'm trying to say, what do we do next? What could we be funding more? Is there hope?"

There are already a lot of organisations and researchers on the ground tracking and trying to protect the elephant and she would like to see more stable, long-term support for them. "One of my biggest concerns about conservation is that we've made it a luxury. People do it from philanthropy rather than as a necessity, and it can seem like whim as to what gets funded. But it shouldn't just be charity. It's essential to our future because it's essential to the functioning of ecosystems."

Dr Mumby also recognises the flip side to this: conservationists tend to demonise people as

the problem. "Every conservation textbook I read is essentially about how everything was perfect until humans messed it up. As an academic community, we've internalised this narrative. We have to frame people as the solution as well. Of course, people are going to do things that damage the environment in order to live, but we still have to see them as the solution.

"I don't have any illusions that I can make miracles happen, but I still have a bit of wild hope," she added.

Elephants: Birth, Life and Death in the World of the Giants was released by HarperCollins in May 2020. A paperback version titled The Secret Lives of Elephants was out this spring.



Interviewing mahouts in Nepal. (Courtesy of Matthias Egeler)



DR HANNAH MUMBY

Every conservation textbook I read is essentially about how everything was perfect until

humans messed it up. As an academic community, we've internalised this narrative. We have to frame people as the solution as well.

"





Dr Mumby's team have also started studying human-buffalo interactions on Lantau Island



CHILDREN OF THE QUAKE

Japan's reputation for calm in the face of natural disaster is hard-earned, says Dr Janet Borland, who has written an historical account of the country's rocky road to disaster preparation that puts children at the centre.

After Tōhoku was rocked by the Great East Japan Earthquake and tsunami in 2011, many commentators were struck by the absence of violence, looting and chaos, which they attributed to the innate calmness of the Japanese character. To Dr Janet Borland, Assistant Professor of Japanese Studies, that assertion was a call to arms.

Having lived through the Kobe earthquake in 1995 and as an historian of Japan, she decided to set the record straight with *Earthquake Children: Building Resilience from the Ruins of Tokyo.* Her book, which won the 2020 Hong Kong Academy of the Humanities First Book Prize, chronicles the difficult path the country has hewn in coping with natural disasters.

The catalyst for Japan's transformation was the Great Kantō Earthquake, which struck Tokyo on September 1, 1923. It resulted in the deaths of more than 100,000 people and led to fundamental changes in a society that, despite a history of major earthquakes, was wholly unprepared. There had never been drills or practice responses, and most buildings were built of wood.

"Fires burned for three days, rumours spread, and Koreans were massacred. People were anything but calm and orderly as Tokyo descended into chaos. The government needed to use martial law to restore order," Dr Borland said.

"In the immediate aftermath of the disaster, concerns about children were paramount. Not only had they witnessed traumatic scenes of death and destruction, but two-thirds of Tokyo's children also lost their homes and schools.

"However, just because children were the youngest and most vulnerable members of

society did not mean that they were absent, voiceless, or invisible in the ruins of Tokyo. In fact, the opposite was true."

Stirring a response

One group – teachers – were determined to resume normal routine to help children's recovery. A month after the quake, they resumed lessons amid the rubble and encouraged students to write about their experiences, which included everything from the fires to their pets or toys or friends they missed to their nightmares and noises that made them afraid.

The essays became part of a promotion by the government to commemorate the earthquake and rally people around the goal of reconstruction, and they were published in seven volumes. "Children were seen and



Children studying inside a tent classroom at Taimei Primary School, Tokyo, in 1923.



HKU students paid a visit to the MORIUMIUS sustainable education centre in Miyagi to learn about the 2011 earthquake and tsunami.



A child outside the ruins of Taimei Primary School, Tokyo, in 1923.

portrayed as harbingers of hope, agents of recovery, symbols of resilience, and ambassadors of gratitude," she said. Their plight also stirred emotional responses in adults, which the government used to its advantage during Tokyo's reconstruction.

Dr Borland believes these essays and the focus on children – by teachers, physicians, seismologists, architects and politicians – were a first step towards Japan's preparedness today.

All 117 wooden primary schools that had been destroyed by the earthquake and fires were rebuilt using reinforced concrete by 1930. Slowly, lessons were added to the national curriculum on what people should do and how they should act following a disaster. After a particularly destructive typhoon in 1959, the government fully strengthened disaster education in schools, and, tellingly, designated September 1 as National Disaster Prevention Day. Evacuation drills and disaster response training are now conducted on that date across the country.

"1923 was the origin of Japan today as a resilient nation," Dr Borland said. "Since then, children, schools and education have been the primary tools through which officials have sought to build a disaster-prepared society and a disasterresilient nation."

Power of education

Dr Borland points out, however, that every natural disaster is different and disaster

preparedness requires regular and ongoing revision, as the 2011 disaster reminds us. "The magnitude 9.0 earthquake was the fourth largest in history, yet many buildings survived the earthquake due to preparedness measures. Tragically, it was the tsunami that caused 93 per cent of the deaths," she said.

Since 2017, Dr Borland has taken HKU students on a field trip to Miyagi and Fukushima prefectures to meet survivors and learn about their experiences. One person they meet is Fujimoto Nodoka, who was 11 at the time of the Tōhoku quake. "A key message Nodoka promotes is 'tsunami tendenko', which means to save your own life and evacuate to higher ground immediately after an earthquake, without searching for friends or relatives," she said. "Nodoka now has a role in the community to share her story and inform people about what to do when an earthquake and tsunami strike."

Dr Borland, reflecting on her own earthquake experience, hopes to achieve a similar goal. "There's a lot of personal interest tied up in my story and I think that's true of many earthquake survivors. We share a desire to teach people the lessons we learned so future generations can be better prepared." That includes teaching her students at HKU. "The field trip inspired one of my students to move to Rikuzentakata and work in international relations. She now teaches the 'tsunami tendenko' message to people visiting the Iwate Tsunami Memorial Museum. To me, that is testimony to the power of education."



Earthquake Children: Building Resilience from the Ruins of Tokyo Author: Janet Borland Publisher: Harvard University Asia Center Year of Publication: 2020



BORLAND

Since [1923], children, schools and education have been the primary tools

through which officials have sought to build a disaster-prepared society and a disaster-resilient nation.



IT TAKES A VILLAGE

A book about China's first and most dynamic Special Economic Zone, Shenzhen, argues that its dazzling success owes as much to its indigenous villagers and migrant workers as to central policymakers.

Shenzhen, located just across Hong Kong's border with southeastern China, has been described variously as a modern metropolis, Asia's Silicon Valley, an economic hub and an overnight city. Forty years ago it was viewed as a rural backwater, until Deng Xiaoping named it a Special Economic Zone (SEZ) and to the world Shenzhen seemed to transform overnight.

It is held up as a modern Chinese miracle, but Dr Juan Du's book *The Shenzhen Experiment* aims to debunk this myth of instant city and to challenge the established misconceptions of



The Shenzhen Experiment: The Story of China's Instant City Author: Juan Du Publisher: Harvard University Press Year of Publication: 2020 top-down planning as the key to its success. Instead, the book reveals a reality in which Shenzhen's prosperity is equally driven by farmers, oyster fishermen, vibrant night markets and the aspirations of millions. "I provide humanistic narratives that convey the importance of history, ecology, politics, culture, and people," said Dr Du. Since its publication, the book has been widely reviewed by international media and scholarly journals across various disciplines, and it received the 2020 Book of the Year Award from Arizona State University's Institute for Humanities Research.

Published by Harvard University Press in 2020, *The Shenzhen Experiment* is the culmination of years of research, teaching and community engagement in Shenzhen by Dr Du. During its research and writing over the past 10 years, Dr Du, who is Associate Professor and Associate Dean in the Faculty of Architecture, has published and exhibited extensively on Shenzhen, as well as on multiple related social-ecological issues of China's rapid urban transformation.

Her first visits to Shenzhen were in 2005 and she initially found the city to be "affluent, professional, efficient, sanitised, designed for fast cars and faster people". In the ensuing decade of research and practice in the city, Dr Du came to realise that, ironically, the great achievements of Shenzhen in the past four decades have also served to overshadow its deep history and culture.

In the book Dr Du argues that Shenzhen has in fact been an important centre of governance

and commerce for over a millennium, and that the region's commonly overlooked long history and unique culture had a profound influence on the establishment of Shenzhen in 1979, as well as the SEZ's rapid and successful development. Leading up to the Ming and Qing dynasties, many villages and markets had been established and prospered in the area that later became Shenzhen, and the remnants still exist today.

Local efforts

"Shenzhen's earliest industry and economy were the result of local efforts during a highly specific time, in a very unique geography," said Dr Du. "Much of Shenzhen's industry and infrastructure resulted from the informal responsive efforts of its formerly rural population (namely, those indigenous villagers in today's urban villages). It was the pre-existing rural population that took the opportunity to establish housing and meet other basic needs for most of the new migrant workers. Shenzhen's invisible and 'unplanned' populations are key to understanding the complex nature of urban construction, land expropriation, property rights, and housing affordability."

Many of the 'protagonists' within the book had intimate relationships with Hong Kong or were Hong Kong residents. Through people, relationships and events, the book also reveals nuanced ways that Hong Kong has influenced the development of Shenzhen and vice versa – including knowledge, experience, policy and culture.



Cheap housing in the urban village is often the first point of arrival for migrants is like the ones seen here in Baishizhou. (Courtesy of Juan Du, The Shenzhen Experiment, Harvard University Press, 2020)



Shenzhen's post-1979 urbanisation patterns are determined by both the natural geography and the pre-existing townships and villages. (Courtesy of Juan Du, The Shenzhen Experiment, Harvard University Press, 2020)

Asked what lessons other urbanising countries can learn from the Shenzhen experience, Dr Du said: "First and foremost, we must recognise the complex dynamic between top-down and bottom-up processes that shaped the city's developmental history. Under the pre-1979 communist ideology, the centralisation of political power was absolute. The SEZ policies gave unprecedented law-making and law-breaking powers to the Guangdong provincial government. The fact that the central government delegated political power in order to permit local trial and error, at the risk of undermining central control, is both a testament to the strength of reform-minded leadership and a reflection of the urgency for change during that specific historical moment."

Dr Du suggested that policymakers seeking to replicate Shenzhen's success must "recognise that 'instant cities' do not spring up from a blank slate, and consider a long view of the past in addition to projecting the future. They must consider people, recognising that local entrepreneurs, leaders, and most importantly residents – like the many individuals featured in this book – have a vital role to play in the development of any city."

But, she concluded, the greatest lesson that Shenzhen has to teach for other aspiring SEZs is the lesson of purpose. "One of the most problematic misconceptions about Shenzhen is calling it merely an 'illustration' of the effectiveness of SEZ policies. I question the

Cheap housing in the urban village is often the first point of arrival for migrants into Shenzhen. Rental information is mostly found posted on handwritten posters,



DR JUAN DU

The fact that the central government delegated political power in order to permit local trial

and error, at the risk of undermining central control, is both a testament to the strength of reform-minded leadership and a reflection of the urgency for change during that specific historical moment.



assumption that Shenzhen's success mainly results from SEZ policies. By extension, I do not subscribe to the assumption that the SEZ policy is the most effective instrument to emulate, or to learn from, in the case of Shenzhen. Shenzhen's success is founded on the efforts of local city makers to create not just a 'zone', but a real city."

TRUE COLOURS

An exhibition at the University Museum and Art Gallery (UMAG) sheds light on a body of work instigated by a Belgian artist who collaborated with indigenous artists in the Congo in the 1920s.

The unique artistic collaboration began with Georges Thiry, a man who worked for Belgium's colonial offices in Elisabethville (now Lubumbashi) in the Congo in 1926. His curiosity was piqued when he saw wall murals of crocodiles and birds in the town and arranged to meet the artist behind them, Albert Lubaki. Thirv launched a series of workshops with Lubaki and other local artists in the community, and out of these workshops a hybrid art form was developed that would later become a celebrated phenomenon.

UMAG Director Dr Florian Knothe came up with the idea of displaying a selection of Congolese works created from the 1920s through to 1960 in an exhibition called Colours of Congo: Patterns, Symbols and Narratives in

20th-Century Congolese Paintings, and of making its development a collaborative project. The collective effort saw Dr Knothe working with a team from the African Studies Programme at HKU integrated by Dr Estela Ibáñez-García, Temporary Assistant Professor, Mr Clifford Pereira, Visiting Research Associate, and a group of undergraduate students, as well as with Congo specialist Dr Thomas Bayet and private collectors based in Brussels.

Personal connections allowed for unprecedented access to extensive archives and art collections – such as the Dierickx, Loos and Moonens Archives and the Royal Museum for Central Africa in Tervuren, Brussels - and enabled this diverse team of curators to develop the exhibition into a wide-ranging

overview of the art and artists, giving viewers a taste of what fascinated Thiry about an artistic community whose work articulates what life was like under colonial rule through scenes that chronicle changing realities.

"The exhibition and accompanying volume of essays examine this group of paintings as artworks worth considering on their own merits, describing the techniques used and their inherent beauty and highlighting how their iconographic contents reflect daily life within the Congolese village communities," said Dr Knothe. "Both the curators and the students studied different aspects of the cross-cultural and inter-dependent culture of the late colonial years and added their voices to an unprecedented, descriptive as well as



Célestin Kabuya Untitled (Lakebed) Gouache on paper, 40 x 61 cm Signed 'Kabuya Cel.' ca. 1956 Pierre Loos Collection (Image courtesy of Michael De Plaen)



Mwenze Kibwanga Untitled (Metamorphoses) Oil on panel, 39 x 48 cm Signed 'MWENZE KIBWANGA 54' Pierre Loos Collection (Image courtesy of Michael De Plaen)



critical discussion of the exhibited Congolese artistic achievements."

Added Dr Ibáñez-García: "A close reading of these paintings reveals how Congolese artists articulated and represented their own experiences during colonial times. A critical reading of how the Europeans used and interpreted those creations is also revealing of their own worldview. This in-flux dimension of the world as it changes with the position and stance of the individual is at the core of what humanities are about."

For the students involved in developing the exhibition, the course brought research and teaching into close dialogue, fostered active learning and critical thinking, and let the students co-construct knowledge by themselves.

Curatorial strategies

"Our undergraduate students started by examining the type of knowledge that is produced through curatorial strategies," said Dr Ibáñez-García. "They focussed on the relevant role that exhibitions played in the understanding of African arts and African history during the 20th century, as well as how those exhibitions in turn contributed to a reconsideration of the issues and core concepts in Western art history in the recent past. After this critical and theoretical analysis, the students adopted the role of researchers and curators thus experiencing first-hand the complexity and relevance of curatorial work through the collaboration with UMAG."

Dr Knothe's contribution included showing them what goes on 'behind the scenes' of the museum world, revealing the intricacies of curatorial work, and sharing with the students a selection of images of the paintings that would be displayed in the exhibition.

"A core dimension of this learning experience was to help the students reflect upon the implications of representations of the Congo through its art," said Dr Ibáñez-García. "What they discovered along the way was that both exhibitions and artworks are meaningful constructs that shape reality. Through a close reading of the paintings from a contextual and interdisciplinary perspective, the students discovered that art can give voice to those who were muted for a long time if approached from their own perspective."

Narratives in 20th-Century Congolese Paintings Date: From now till August 29, 2021 Venue: 1/F, TT Tsui Building, University Museum and Art Gallery

Dr Knothe concluded: "Our exhibition and the accompanying book discuss a little-known phenomenon. The historical and sometimes religious, as well as the varied contemporary and 'lived' experience inspired the paintings we discuss. However, their impact on the African continent and abroad is immeasurable and as diverse as the sources they are based upon."



Visit the virtual exhibition



Colours of Congo: Patterns, Symbols and





A close reading of these paintings reveals how Congolese artists articulated and represented their

own experiences during colonial times. A critical reading of how the Europeans used and interpreted those creations is also revealing of their own worldview. This in-flux dimension of the world as it changes with the position and stance of the individual is at the core of what humanities are about.



PORTRAIT OF THE ARTIST AS A YOUNG WOMAN

An exhibition to mark the centenary of the birth of one of HKU's most illustrious alumni, Eileen Chang, reveals important new information about the start of her extraordinary literary career and her relationship with the University.



As one of China's most influential writers. Chang has of course been the subject of other exhibitions, but there is plenty that is new in this centennial celebration - Eileen Chang at the University of Hong Kong: Historic Images and Documents from the Archives. Professor Nicole Huang, Chairperson of the Department of Comparative Literature in the Faculty of Arts and a renowned 'lifelong' Chang scholar, curated this centennial celebration in collaboration with the University Museum and Art Gallery (UMAG), and described her excitement at these new discoveries.

"The HKU archives proved both rich and fruitful, the archivists did a wonderful job,"



Eileen Chang's HKU student registration and transcript. (Courtesy of the University Archives of HKU)



Minutes of the Arts Faculty Board meeting, report on Eileen Chang selected to win a Ho Fook scholarship, May 22, 1941. (Courtesy of the University Archives of HKU)

she said. "As a Chang scholar, I felt almost as though this stuff was just waiting for me to find it, as if it were my destiny! What we found includes more information about her time at the University, and also discoveries that cleared up some misunderstandings.

"Previously, we knew she was here and that the war prevented her from graduating, but in the past we had insufficient information about her daily life," she continued. "We found clear evidence that she lived off campus in Our Lady's Hall, a large house located up the hill on Po Shan Road, which was the first HKU women's hostel and was run by nuns of the French Convent School. Now we have a clear picture of where she lived, we can even picture her daily trips up and down the path that connected campus and Our Lady's Hall. To numerous Chang readers, this clarification is much appreciated."

Charismatic teachers

The archives also revealed more about the kind of liberal education she received at HKU, and the factors that contributed to her becoming a writer. "In 1942, she became a literary sensation, and the narrative has always been that this happened overnight," said Professor Huang. "But her education at HKU played a huge role in her success: she took classes with the charismatic history teacher Norman France, and she took Chinese literature and history classes with Professor Hsu Ti-shan, a towering intellectual figure in pre-war Hong Kong."



Faculty of Arts group portrait, Fall 1941. (Courtesy of the University Archives of HKU)



Our Lady's Hall. (Courtesy of the University Archives of HKU)

France would be killed during the war, but he appears in fictional form in Chang's essay 'From the Ashes' and her novels Little Reunions and The Book of Change. It is widely believed that the Chinese literary professor in Chang's short story 'Jasmine Tea' was modelled after Professor Hsu.

"Before we knew little about her studies, but now we find it all traces back," said Professor Huang. "France and Hsu were both top-class teachers and they played a major role in developing her intellectual powers, shaping her views of history and influencing her style of writing."

References to HKU and her friends, teachers and associates here liberally inhabit Chang's books. There's even a description of the Fung Ping Shan Library – which, nearly 80 years on, is housing this exhibition in her honour -

where, surrounded by books, she felt like 'a child in a cake shop' (The Book of Change).

The face of war

Undoubtedly too, Chang was at HKU at an important time in its development. "The 1930s saw a major reform in how liberal arts were taught at the University – a liberalisation of the arts education," said Professor Huang. "During the early years of HKU, there were few women. Beginning from the early 1930s, more women enrolled every year and by the late 1930s, female students in the Faculty of Arts even outnumbered male students. Gender dynamics on campus were changing, and Chang had come from a background of war brewing in China. It was a meaningful moment in the University's history, and all of this would play a part in how and what she wrote. She was at HKU when the Japanese invaded. She stared into the face of war, and writing-wise this was pivotal. She decided to write and to write with a great sense of urgency. The overnight literary sensation in Shanghai grew directly out of her years in Hong Kong."

The narrative that emerges from the exhibition and the new archival discoveries explains why HKU was important to Chang and why the writer would become important to HKU. "It is a two-way relationship," said Professor Huang. "It defines the University's role as guardian of Chang's literary heritage, and it also marks her as a unique window from which we illuminate an important chapter in the history of this great institution."



PROFESSOR NICOLE HUANG

She was at HKU when the Japanese invaded. She stared into the face of war, and writing-wise this

was pivotal. She decided to write and to write with a great sense of urgency. The overnight literary sensation in Shanghai grew directly out of her years in Hong Kong.





/isit the virtual exhibition

The University of Hong Kong Bulletin reports on activities, events and research initiated by members of the University. It aims to keep the local and international communities informed of new breakthroughs and achievements in all of our faculties and disciplines.

Editorial Team

Chief Editor:	Trinni Choy, Acting Director of Communications
Managing Editor:	Shirley Yeung, Publications Manager
Editor:	Yu Nga-wing
Copy Editors:	Kelvin Au, Sendy Leung
Writers:	Teri Fitsell, Kathy Griffin
Design and production:	Matisse Design Limited

Contribution and Feedback

With special thanks to staff and students who kindly contributed their time and their photographs to the *Bulletin*. We welcome contributions of content for publication. Items should include the author's name and University contact details. Please direct contributions, comments or suggestions to the Communications and Public Affairs Office at *bulletin@hku.hk* for consideration.

Care for the Environment



While our publication is printed on environmentally friendly paper, we urge you to share your copy with friends and colleagues to help reduce our carbon footprint. Alternatively, you may like to read the *Bulletin* online at *bulletin.hku.hk*



If you would like to opt-out of receiving a printed copy and subscribe to the electronic version of publications from the Communications and Public Affairs Office, please visit *hku.au1.qualtrics.com/jfe/form/SV_38F3lhDR0jCuxwh?Q*





