

# SUSTAINABILITY REPORT

2022



# PREFACE

Founded in 1956, Hong Kong Baptist University (HKBU) aims to be a leading research-led liberal arts University in Asia for the world delivering academic excellence in a caring, creative and global culture. HKBU is dedicated to nurturing the future generations of civically engaged community members, and shouldering the responsibility to foster them with humanity and care for the natural world through a broad range of undergraduate and postgraduate programmes up to the doctoral level. As one of Asia's finest institutions of higher education, the University prides itself on the attraction for talents from all around the world, as well as having a vibrant and active alumni network.

The outbreak of COVID-19 pandemic has continued to make significant impact to the world and is a wake-up call for us to better manage our relationship with nature. Apart from preventing further environmental degradation, more proactive actions should be taken to preserve our ecosystems in order to attain a sustainable future. According to the World Meteorological Organization, the years 2015-2022 were the eight warmest on record in terms of global temperature while greenhouse gas emissions continue to rise and the climate continues to change. As the world is getting back to normal after the pandemic, it is time for everyone to resume doing their part for a sustainable future. At HKBU, we are committed to incorporating sustainability in our education, research as well as day-to-day operations and continuous development.

In 2015, the United Nations set up 17 Sustainable Development Goals (SDGs), which aimed to call for actions by every sector in the world to achieve a better and more sustainable future. It is our responsibility to support the United Nations' call by contributing our efforts towards achieving the SDGs. This report gives an overview of how our curriculum, teaching and learning (T&L) activities, research, and sustainability strategies and initiatives align with the SDGs.



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SDG 01:  
**NO POVERTY**

End poverty in all its forms everywhere.

**T&L Activities**



**Service-learning in fighting poverty**

Students taking part in Dr Aries Wong's General Education Capstone course "Service-Learning in Fighting Poverty" explored the poverty issues through lectures and community engagement. Apart from learning various poverty concepts and theories, students gained first-hand experience of the poverty issue and interacted with grassroots in Hong Kong through direct participation in the community programmes they developed in collaboration with NGOs.



**No Boundaries with COVID-19**

In the seminar "No Boundaries with COVID-19", students reviewed the global pandemic of coronavirus with World Vision Hong Kong, investigated its destructive effects on developing countries, as well as explored ways and assistance that we could offer to help them fight COVID-19.



COURSES



**28**

STUDENTS ENROLLED



**1,607**

T&L EVENTS



**8**

NO. OF PARTICIPANTS



**179**

### What is holding farmers back? Endowments and mobility choice of rural citizens in China

Department of Geography

Corresponding authors: Dr Pu HAO, Dr Shenjing HE

The dominant narrative of migration in China underscores mass poverty alleviation and improved standard of living due to utility maximisation that exploits the income gaps between farming and urban jobs and between inland and coastal regions. However, the assumption that people are free to move out of their countryside homes does not hold true for all rural citizens. Drawing on national survey and fieldwork data, this research reveals that good health, adequate education and non-local family livelihoods increase the propensities of out-migration while a lack of these endowments bars rural citizens from moving. Those who are less endowed are apt to hold onto the less desirable livelihood promised at home or a nearby place, following a risk-averse pathway that results in immobility and persistent poverty. The findings unravel the sorting mechanism of rural endowments that shapes migration patterns and divergent life outcomes, propelling the reproduction of trans-regional inequalities.



SDG 02:

## ZERO HUNGER

End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

## T&L Activities



Learning about rice farming in Hong Kong

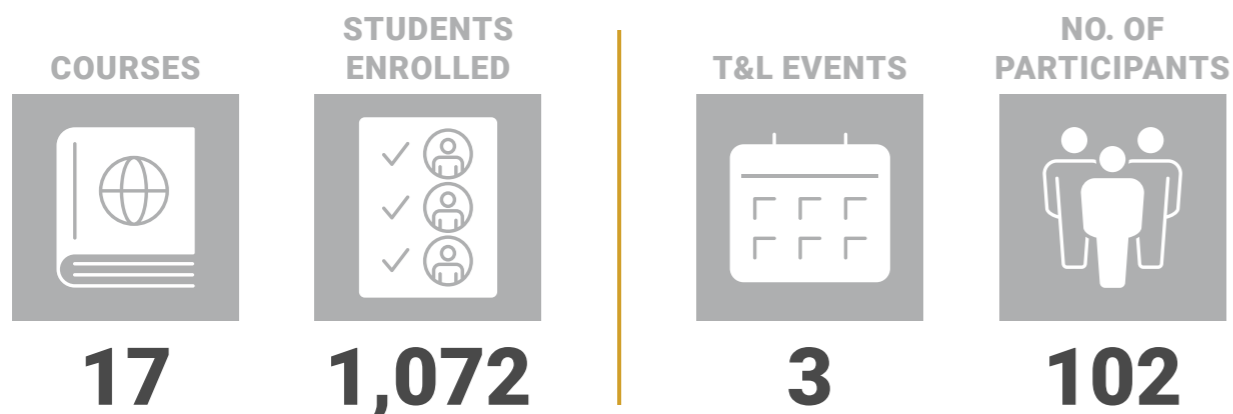
This service-learning course "Current Issues in Hong Kong and China" taught by Dr Kwok Kam-chau focused on agricultural diversity and the development of the New Territories. Students visited the rice paddies in Lam Tsuen and interacted with the local farmers and villagers. They then made use of their historical knowledge and research methods to help the community partner, Gift From Land, with research work, collecting articles, books and historical documents about rice farming and production in Hong Kong as well as the agricultural history of Lam Tsuen Valley.





Serving the needy in the community

Students of the HKBU Student Leadership Corps programme learned how to serve the community and enhanced their personal qualities through training workshops and community visits. During the community visits, they distributed supplies and food to the needy in the community, and gained an in-depth understanding of the social issues of society.



### Moving from risky to response-able care

Department of Humanities and Creative Writing  
 Authors: Dr Bethaney TURNER\*, Dr Daisy TAM

\*Corresponding author

The article examines the practice of food rescue in cities, understood as the collection of surplus food from retail outlets to donate to those in need. SDG 12 – Responsible Consumption and Production sets out to “halve per capita global food waste at the retail and consumer levels ...” At all levels, the recuperation and redistribution of surplus food has been upheld as the solution to the problem of waste in the food system as well as represented as the means of demonstrating care within a moral economy – care for the hungry and care for the environment.

The article critically examines the work of food rescue, by drawing on empirical fieldwork and interviews, to highlight that not all models of food donation are equal, that certain practices could shift the risk onto vulnerable communities. The article argues that a more response-able form of care is needed to enable more sustainable practices, which we acknowledge as part of the wider need for change in our food system.



### Sustainability Initiatives

#### Sustainable Procurement and Food Policy

Under the Sustainable Procurement Policy, the University undertakes to consider the impacts of products on the environment, natural resources and biodiversity throughout its whole lifecycle. The considerations apply to the raw materials used, its design, construction or manufacturing processes, operations and maintenance, environmental attributes, as well as the supply chain management of the suppliers.

With the Sustainable Food Policy in place, the University endeavours to promote responsible behaviour to source and consume sustainable food to support the protection of the ecosystem on land and in water, the preservation of water resources, in addition to maintaining biodiversity and minimising the impact of climate change. No unsustainable food is purchased by the University, sold and consumed at the University's functions as well as its catering outlets. Choices of sustainable food are also offered to the consumers.





SDG 03:

## GOOD HEALTH AND WELL-BEING

Ensure healthy lives and promote well-being for all at all ages.

### T&L Activities



Helping patients on pain relief

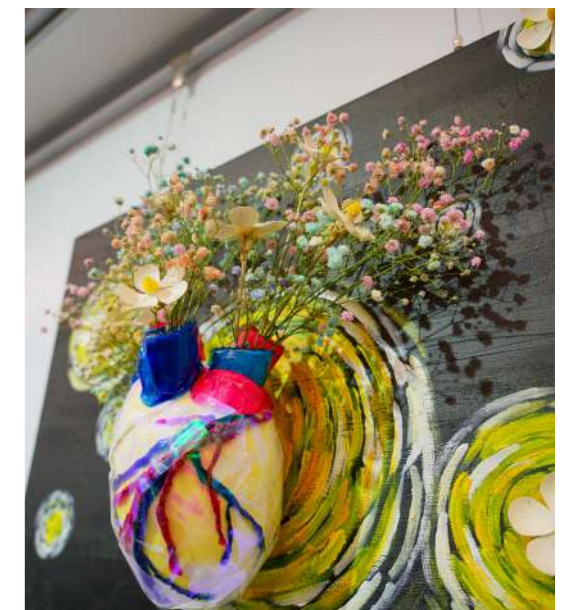
Through Mr Cheung Chun-hoi's service-learning course "Orthopaedics and Traumatology of Chinese Medicine and Tui Na," students learned to interact with patients who suffered from chronic diseases as well as their caretakers. Throughout the academic year, not only did they provide Tui Na treatment for the service users, they also produced videos that guided the patients on how to locate different acupressure points and demonstrated different home exercises for pain relief. These educational videos were further shared with patient self-help groups in the hope of helping patients on various fronts and raising awareness of the diseases concerned.



### A journey of art therapy



Students of Dr Joshua Nan's service-learning course "Creativity, Wellness and Art Therapy" interviewed art therapists and artists who used art as a means to enhance the well-being of various special population groups. At the end of the course, an art exhibition was organised for students to showcase their artwork and share their creative art-making experience with the general public.





**Promoting positive ageing**

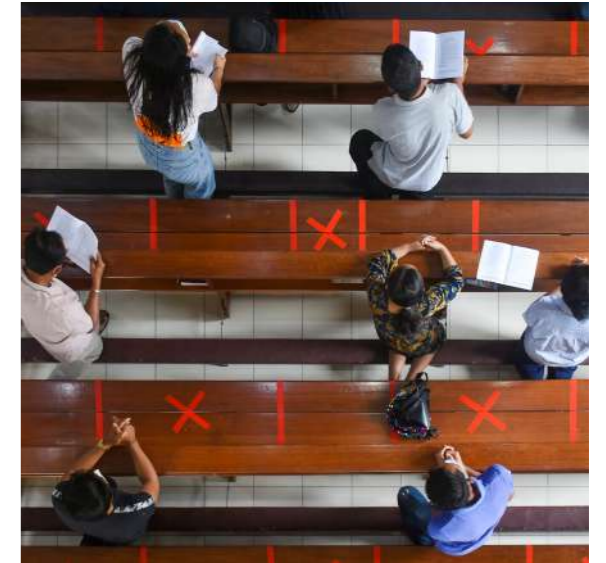
Through the Positive Ageing Learners Programme which aims to strengthen inter-generational communication, students received training from Hong Kong Red Cross on elderly care skills and chronic disease health management. Under the guidance of the Association for Engineering and Medical Volunteer Services, students served the seniors in our neighbouring Wong Tai Sin community, either through engaging the seniors in a series of learning programmes on positive ageing, or by providing caring packs and home appliances to improve the living quality of the seniors in social isolation.



**The ethical challenges to Christian healing in the COVID-19 pandemic**

Department of Religion and Philosophy  
Author: Dr KWOK Wai-luen

From its very beginning, the message and practice of the Christian faith have been inextricably related to healing. Historically, the Church has dispensed medicine and taken care of the sick during pandemics. Christianity's caring service has been well respected by the public throughout its history, and in pre-modern society, Christian healthcare services often contributed substantially to the psychological and physical well-being of many people. In modern society, however, the role of the Church has been replaced by the public healthcare and medical systems. Particularly during the COVID-19 pandemic, the Christian understanding and practice of healing has sometimes been accused of endangering public health. This paper therefore investigates the ethical landscapes behind the change of public opinion and the strategies used by Christian churches to meet this challenge. It explains how religious organisations should act for good health and well-being of the public in the contemporary world.



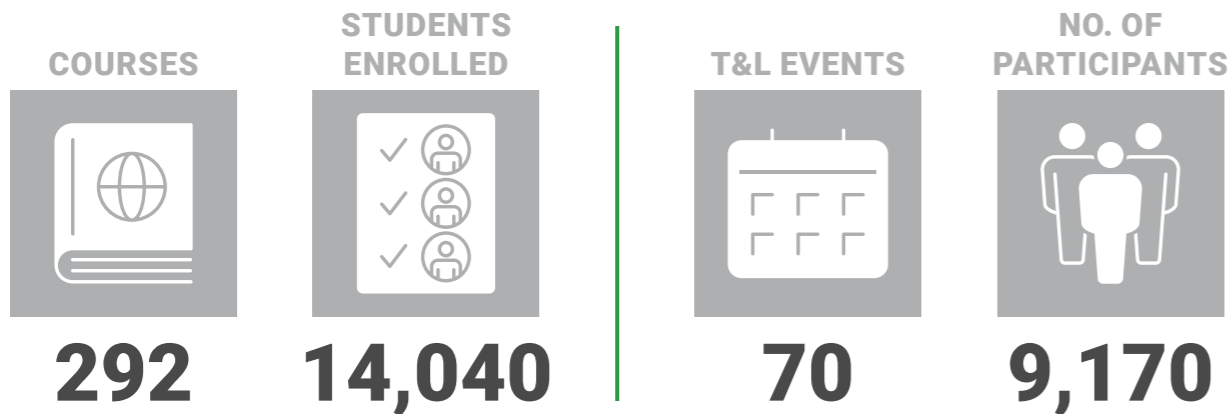
**Mechanical Resonances: 8 Mundos**

Academy of Music  
Composer: Dr Camilo MENDEZ; Performer: Mr Juan Carlos HIGUITA

The work Iridescent Resonance is the first part of the compositional cycle Mechanical Resonance. The pieces in this cycle are based on two different sources of inspiration, the poem *Canción de la Noche Callada* (*Song of the quiet night* in English) by Colombian poet Aurelio Arturo, and adjectives that describe different cloud formations: Iridescent and Noctilucent clouds for example. Arturo's poem, which is the fifth poem of the collection entitled *Morada Al Sur* (*Dwelling South* in English), contains metaphors about nature that inspired Dr Mendez to compose the pieces and the cloud formations serve as visual representations of the different textures that appear on each work, with both sources of inspiration complementing each other. In Iridescent Resonance, Dr Mendez modifies the sound of the violin placing aluminium foil on top of the strings and the bridge of the instrument, organising ethereal gestures, almost translucent, cyclically.



The foil is secured in a way that the foil will resonate or rattle when the strings are touched.



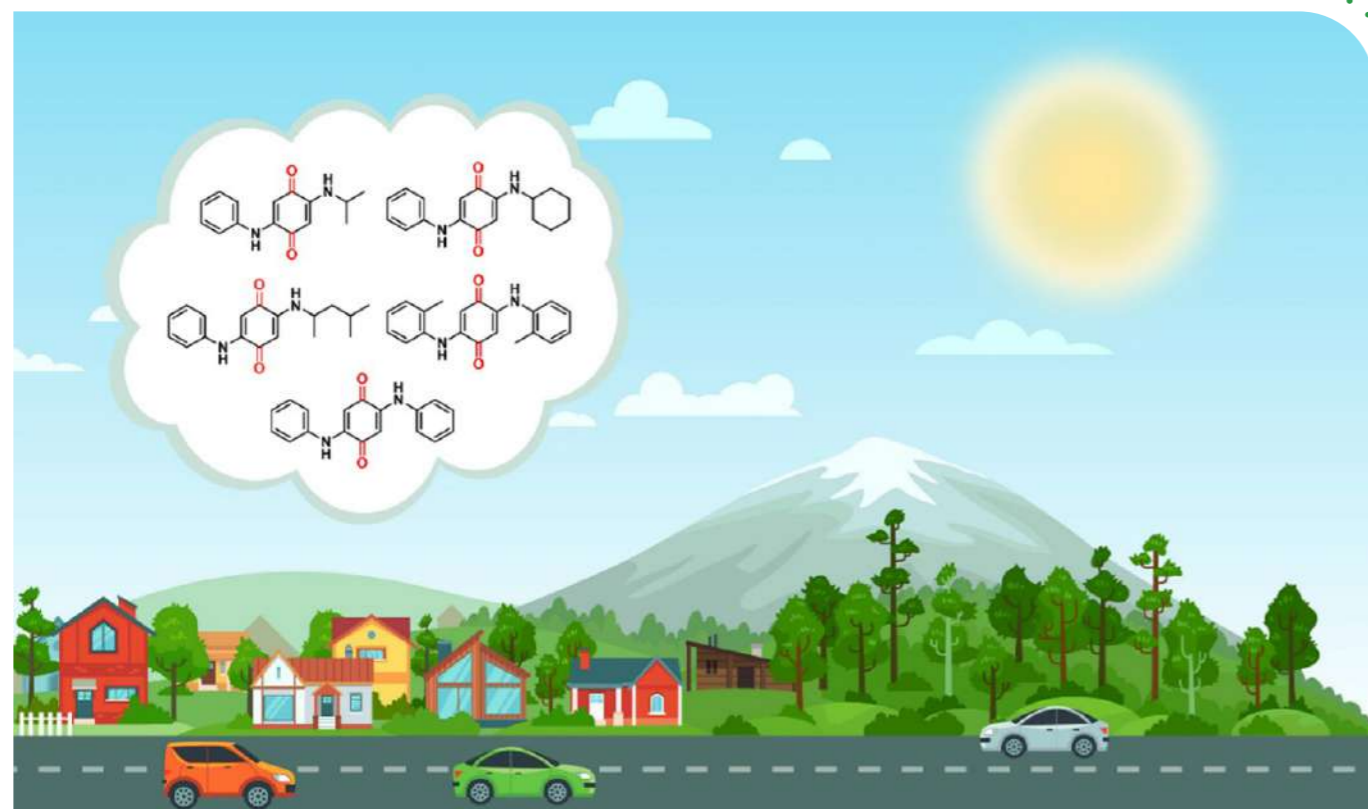
## New evidence of rubber-derived quinones in water, air, and soil

Department of Chemistry

Authors: Guodong CAO, Wei WANG, Jing ZHANG, Pengfei WU, Xingchen ZHAO, Zhu YANG, Di HU, Zongwei CAI\*

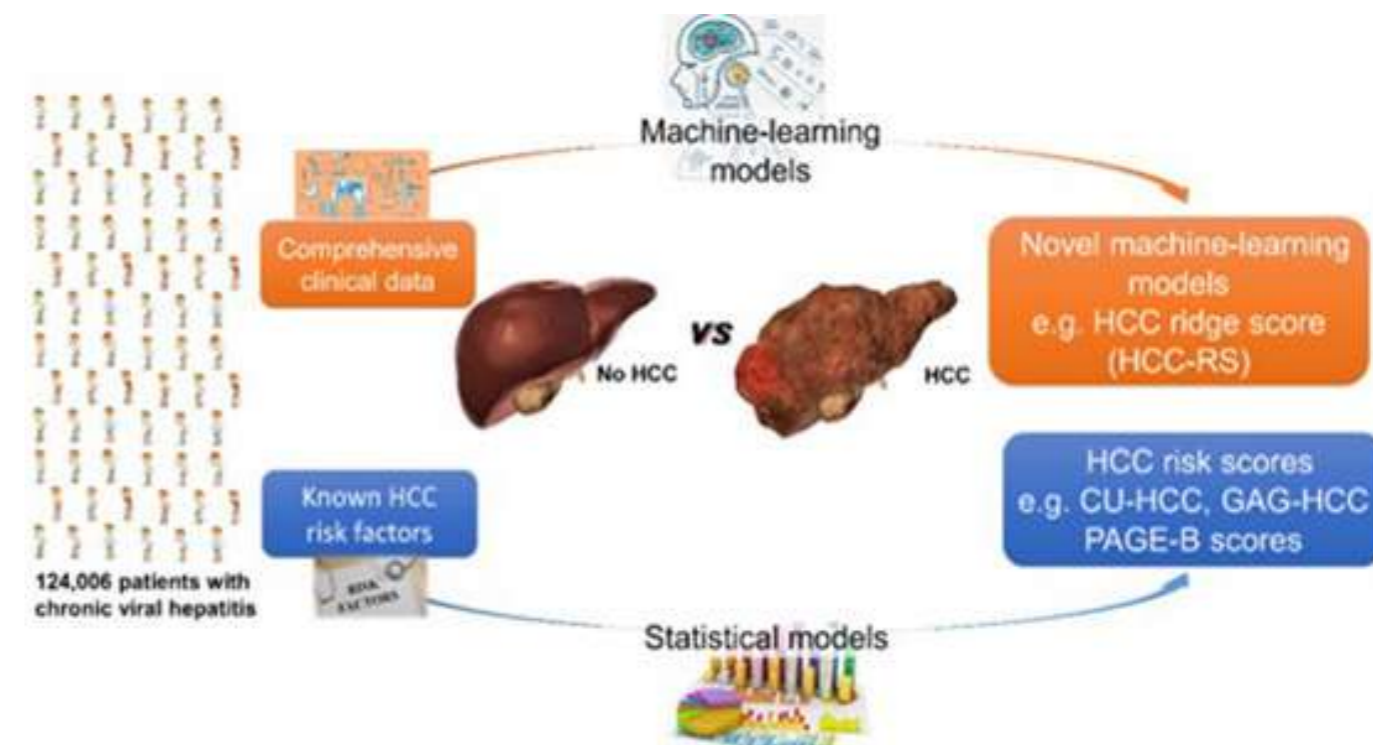
\*Corresponding author

p-Phenylenediamines (PPDs) antioxidants have been extensively used in the rubber industry for the production of tires, belts, hoses and cables for decades, while their transformation products and associated human health risks remain largely unknown. In this research, we have identified five rubber-derived quinones, named PPDs-quinones, as the transformation products of PPDs antioxidants in urban runoff, roadside soils, and air particles in Hong Kong. All of the identified sources are closely related to mankind's activities. Using self-synthesised standards, the levels and distribution of these newly discovered contaminants in different environmental matrices were determined. Our results suggested that these quinones exhibited considerable levels in the environment and even higher human exposure doses than their parent compounds. Such findings emphasize the necessity for interrogating ecological and human health risks of these newly discovered quinones and call for regulatory guidance for mitigating their environmental impacts in the near future.



Five rubber-derived quinones were identified as the transformation products of PPDs antioxidants in urban runoff, roadside soils, and air particles in Hong Kong SAR, which exhibited considerable levels in the environment and higher exposure doses to Hong Kong citizens than their parent compounds.

## Novel machine learning models outperform risk scores in predicting hepatocellular carcinoma in patients with chronic viral hepatitis



Department of Computer Science

Authors: Grace Lai Hung WONG, Vicki Wing-Ki HUI, Qingxiong TAN, Jingwen XU, Hye Won LEE, Terry Cheuk-Fung YIP, Baoyao YANG, Yee Kit TSE, Chong YIN, Fei LYU, Jimmy Che-To LAI, Grace Chung-Yan LUI, Henry Lik-Yuen CHAN, Pong-chi YUEN\*, Vincent Wai-Sun WONG\*

\*Corresponding author

Hepatocellular carcinoma (HCC) is the second most common cause of cancer death in the Asia-Pacific region, therefore accurate risk prediction of HCC is helpful in reducing mortality. Existing HCC clinical risk scores usually include a few known risk factors and/or preselected parameters. Instead, machine learning is a comprehensive tool that has arisen in recent years for model development, which allows automatic selection of important parameters for prediction. HCC ridge score (HCC-RS) built from machine learning modelling offers a higher accuracy than that of existing HCC clinical risk scores. These models may be incorporated into electronic medical health systems to develop appropriate cancer surveillance strategies and reduce cancer death. For example, HCC-RS can be incorporated into existing clinical management systems to assist physicians for identifying high risk liver disease patient groups so as to reduce the risk for progression to HCC. More importantly, HCC-RS has the potential to benefit a much wider population of patients, as electronic health records have been universally adopted in nearly all hospitals worldwide.



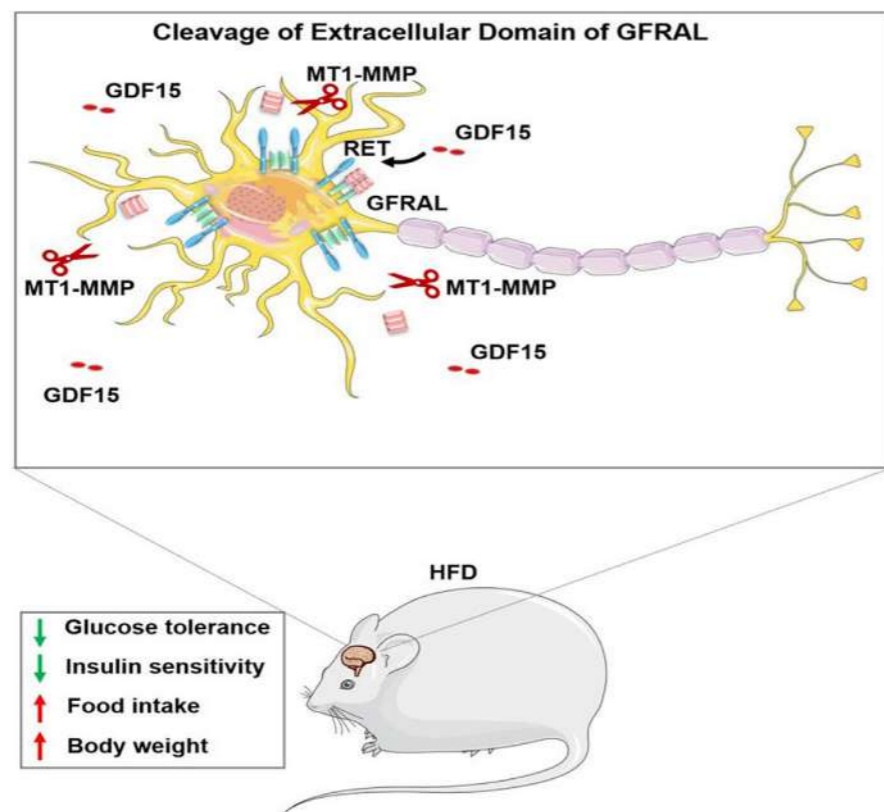
## Body weight regulation via MT1-MMP-mediated cleavage of GFRAL

School of Chinese Medicine

Authors: Chi Fung Willis CHOW, Xuanming GUO, Pallavi ASTHANA, Shuo ZHANG, Sheung Kin Ken WONG, Samane FALLAH, Sijia CHE, Susma GURUNG, Zening WANG, Ki Baek LEE, Xin GE, Shiyang YUAN, Haoyu XU, Jacque Pak Kan IP, Zhixin JIANG, Lixiang ZHAI, Jiayan WU, Yijing ZHANG, Arun Kumar MAHATO, Mart SAARMA, Cheng Yuan LIN, Hiu Yee KWAN, Tao HUANG, Aiping LYU, Zhongjun ZHOU, Zhaoxiang BIAN\*, Hoi Leong Xavier WONG\*

\*Corresponding author

Obesity increases the risk of life-threatening diseases, such as diabetes and cancer. The most effective way to tackle obesity is to reduce food consumption, but obese people often encounter difficulties in regulating their dietary habits. Identifying a factor regulating our sense of satiety is crucial for the development of therapeutic approaches for obesity. We recently identified a proteolytic enzyme called MT1-MMP which regulates the mechanism of issuing satiety signals in the human brain. Growth and differentiation factor 15 (GDF15) is a hormone sending out satiety signals by binding with the neuron receptor called GDNF-family receptor  $\alpha$ -like (GFRAL). In obesity, MT1-MMP is activated in the hindbrain where it clips GFRAL from neurons and blocks GDF15 from binding to GFRAL, thus keeping the neurons from transmitting the satiety signals. MT1-MMP inhibition promotes weight loss in obese mice. The results suggest that MT1-MMP is a potential therapeutic target for developing innovative anti-obesity treatments.



## Bile acid–microbiome interaction promotes gastric carcinogenesis



School of Chinese Medicine

Authors: Shouli WANG, Junliang KUANG, Hongwei ZHANG, Wenlian CHEN, Xiaojiao ZHENG, Jieyi WANG, Fengjie HUANG, Kun GE, Mengci LI, Mingliang ZHAO, Cynthia RAJANI, Jinshui ZHU, Aihua ZHAO\*, Wei JIA\*

\*Corresponding author

Stomach cancer (GC) is the sixth most common cancer worldwide, causing nearly one million deaths in 2020. It is a major health problem associated with various factors, including bile reflux gastritis (BRG). However, the specific mechanisms underlying this association are not fully understood. To unravel the mystery of gastric cancer and provide new strategies for disease prevention and control, comprehensive research was conducted to explore the role of reflux bile acids (BAs) and microbiome in gastric cancer. The results showed that bile reflux promotes gastric cancer by initiating a pro-inflammatory signalling pathway. This carcinogenic effect can be alleviated by cryptotanshinone, a plant-derived inhibitor of STAT3. Cryptotanshinone is a natural product that can be used as an alternative strategy to promote healthy stomach function and prevent cancer. It has the potential to be developed as an effective and low-cost therapeutic for cancer treatment, thereby contributing to the goal of ensuring healthy living and promoting well-being.



### Fight against the COVID-19 pandemic

During the fifth wave of the pandemic in Hong Kong in early 2022, the University has established a transdisciplinary team of experts and supporting personnel and contributed to the territory's fight against the pandemic on various fronts:

- Free online Chinese medicine consultation services were provided to COVID-19 patients under quarantine in the community with no critical symptoms who do not require hospitalisation. The service, which included consultations via video-conferencing, medicine prescription and dispensing, has served more than 41,000 patients, close contacts and carers.
- HKBU Chinese Medicine Telemedicine Centre Against COVID-19 was set up in two weeks' time as an integrated hub to handle appointments, consultations, and drug delivery matters.
- Appointed by the Social Welfare Department of the HKSAR Government, the University, as one of the operators of the Kai Tak Holding Centre, dispatched a team of Chinese medicine practitioners to provide Chinese medicine-based treatment services to the resident elderly COVID-19 patients with mild symptoms.

To recognise the team's contributions to society, the HKBU Chinese Medicine Team Against COVID-19 was presented with the Hong Kong Spirit 2022 group award at the 2022 Hong Kong Spirit Event of Celebrating the 25th Anniversary of Hong Kong's Returning to the Motherland.



## Ensuring health and safety on campus during the pandemic

To ensure the health and safety of the students and staff in the midst of the COVID-19 pandemic, the University has implemented campus access control measures and stepped up the sanitation efforts.

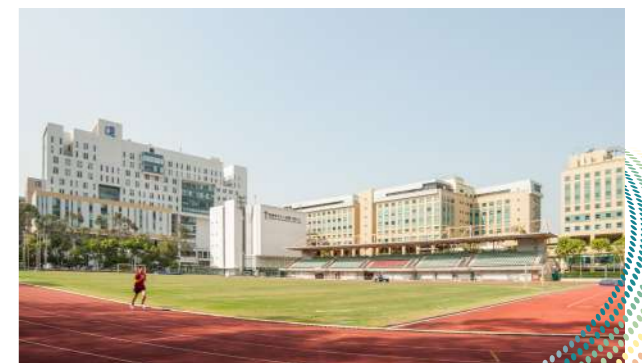
- Common facilities on campus were disinfected regularly and hand sanitisers were provided in the common areas and facilities including lift lobbies, meeting rooms and classrooms.
- Additional cleaning and disinfection were made to the venues that the patients had visited to prevent transmission of infection.
- Two disinfection robots received from donation were used to perform regular disinfection in common areas and facilities on campus.



## Boosting physical health

The University provides a series of outstanding facilities and recreational sporting experiences for athletes, students, staff and their immediate family members, and alumni. The facilities include rooms for dancing and table tennis, fitness room, squash courts, outdoor swimming pool, tennis courts and multi-purpose halls which can be used for various activities such as badminton, basketball, and volleyball.

Students and staff are also eligible to use the sports facilities at the Joint Sports Centre, which is jointly owned by the City University of Hong Kong, Hong Kong Baptist University and the Hong Kong Polytechnic University. Located next to the Shaw Campus, the Centre has a natural grass soccer pitch, an all-weather running track, facilities for field events, four tennis courts, a golf practice area, and a multi-purpose court for soccer, volleyball, basketball and handball activities.





### Promoting health on campus

The University provides quality health and medical services to the University community and off-campus dental services. Medical services are available for students and staff at the University Health Services Centre located on Ho Sin Hang Campus operated by an appointed medical group. In addition, Chinese medicine clinical service is provided to students, eligible staff and their family members at a special discount at the clinics operated by the School of Chinese Medicine.

The regular free Medical Clinic Welcoming Programme was offered to the students from August to September 2022. The Programme covered height and weight measurement, blood pressure and pulse measurement, colour vision and visual acuity examination and health questionnaire review. Through the collaboration with a local medical institution, the University students, eligible staff and their family members could receive 9-valent Human Papillomavirus vaccination and/or seasonal influenza vaccination at a concessionary rate.

The University also regularly holds seminars and webinars to students on sexual and reproductive healthcare topics. In June 2022, healthcare specialists were invited to share the knowledge and experience with students.

Apart from physical health, on-campus mental health support is also available. The Counselling and Development Centre provides free, confidential individual counselling to eligible students who have experienced emotional distress or have any concerns in well-being. The Centre also provides consultation and referral services for faculty and staff. Our Psychological Counsellors would help those students who experience emotional distress or any concerns in well-being.



## Upholding campus health and safety

To ensure the health and safety of the University community, various policies and programmes including inspections, testing and surveys are implemented and conducted regularly in accordance with professional standards.

### • Smoke-free policy

Recognising the risks and hazards of direct, second-hand and third-hand smoking, the University strictly prohibits smoking in all areas on campus and actively promotes smoking cessation. To elevate the importance of a smoke-free campus, the University has implemented a Smokefree Policy which applies at all times to all members of the University community in all indoor and outdoor areas on campus.

### • Air quality monitoring

An annual campus-wide indoor air quality survey was conducted with over 340 samples tested, of which 100% achieved the excellent or good class under the Environmental Protection Department's IAQ Certification Scheme.

### • Food safety and hygiene monitoring programme

The Environmental Hygiene Inspection and Food Safety Programme was enhanced to manage the overall hygiene conditions and minimise reoccurrence of food-related incidents at all catering outlets on campus.





**SDG 04:**  
**QUALITY EDUCATION**

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.



Hong Kong Baptist University  
SUPPORTS THE SDGs

**T&L Activities**

**Putting knowledge into practice**

Students of Dr Kimmy Cheng’s service-learning course “Organisational Event Planning and Management” applied event management principles and practices and organised events for the Corporate Social Responsibility team of South China Morning Post (SCMP) as well as the Nesbitt Centre. For the former, students assisted in the planning and execution of a flagship fundraising event under SCMP’s annual charity campaign Operation Santa Claus; for the latter, they conducted a series of events on campus, including a charity sale and a talent show, to promote Nesbitt’s services to the BU community.



**Expanding an interdisciplinary course into a social inclusion event**

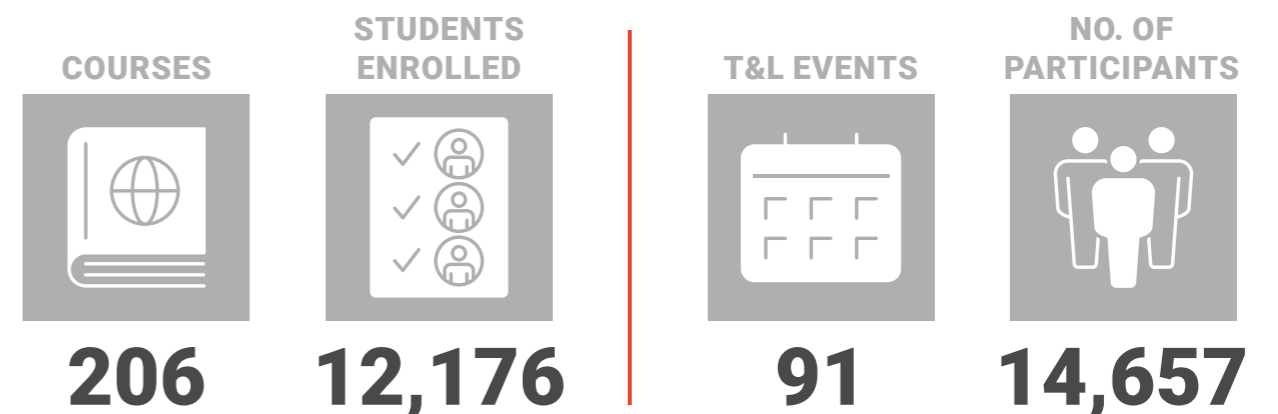
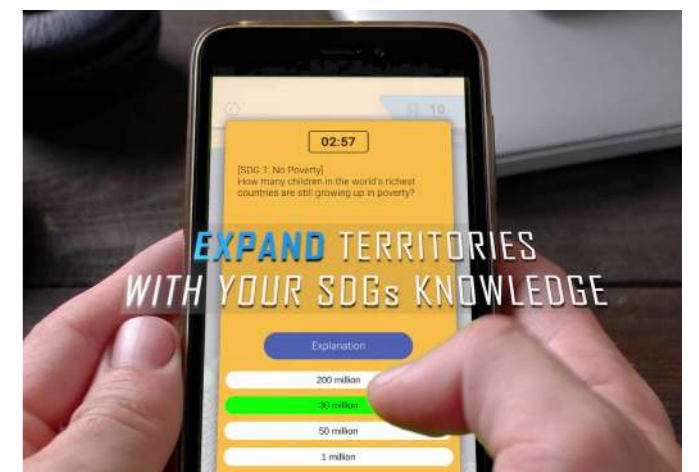
Faculty members of HKBU discussed with Professor Tim Woo of Hong Kong University of Science and Technology his journey in expanding his interdisciplinary course into an annual educational and social inclusion event. Participants gained new insights into maximising the impact of an interdisciplinary course beyond higher education through cultivating among students a variety of skill sets for community engagement.



**T&L Activities**

**Collaborating to compete on SDGs online**

The United Nations SDGs International eTournament aimed to raise students’ awareness of SDGs and enhance their online collaboration skills with team members of diverse backgrounds. 1,088 students from around the world formed teams, after which they worked on game strategies and competed with other teams on SDGs knowledge. The team led by one student from BNU-HKBU United International College, with members from institutions in Hong Kong, India and the Philippines, won the championship.



### Citizenship and creativity education in China's school music education

Author: Professor HO Wai-chung (Academy of Music)

School music education has made an important contribution to increasing our understanding of sustainable development in education. With a particular reference to China's music education, the main purpose of this study was to analyse how multidimensional citizenships in school music education are put into practice and analysed through creative ways in educational settings. Citizenship education and creativity education are considered contentious concepts, connected to diverse social and cultural backgrounds. With a view to consolidating with Chinese authorities regarding the national education curriculum, this paper argues that music education for multiple citizenships in school has attempted to adopt diverse cultures to educate students on the values of personal development, core socialist values, global identities with the integration of traditional Chinese culture, and popular and other world music cultures while balancing personal, national, and global citizenship traits to achieve a cultural understanding of sustainable development.



SDG 05:

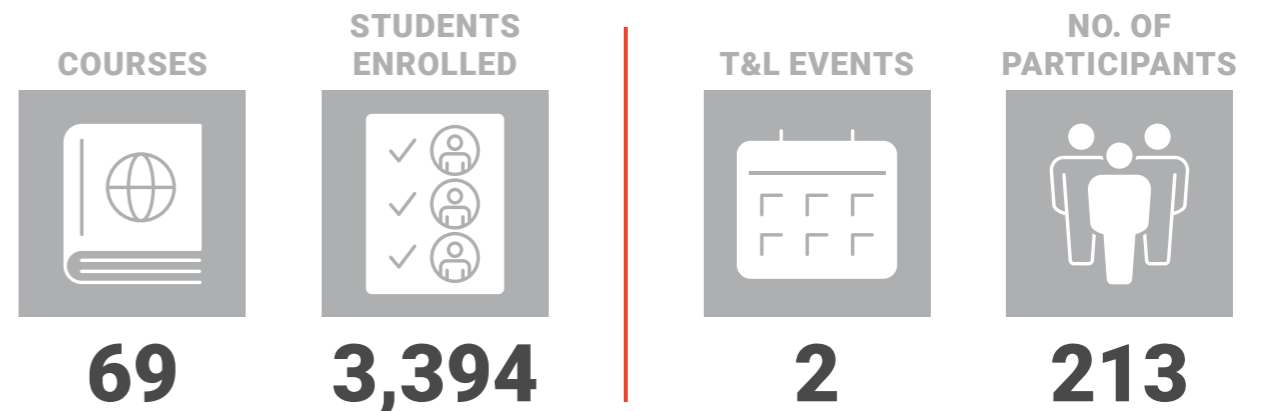
## GENDER EQUALITY

Achieve gender equality and empower all women and girls.

### T&L Activities

#### Examining heritage through lenses of gender, class and race

In Dr Chen Fong-fong's service-learning course "An Introduction to Gender, Class and Race," students conducted oral history interviews in groups, then engaged in archival research individually, and examined the history of Hong Kong's textile industry through the lenses of gender, class, and race. Workshops were organised and students had a chance to examine the machines and objects in the Centre for Heritage, Arts and Textile permanent collection and connected with the stories of former factory workers.



### **Gendered differences in family reunion motivations, female breadwinning status, and patriarchal persistence in gender relations in young African migrant doctoral student families in Hong Kong**

Department of Sociology

Author: Mr Bamidele Emmanuel OLA

The ethnographic study, "Gendered differences in family reunion motivations, female breadwinning status, and patriarchal persistence in gender relations in young African migrant doctoral student families in Hong Kong" contributes to discussions on three sustainable development goals - SDG 5 (Gender Equality), SDG 8 (Decent Work and Economic Growth), and SDG 10 (Reduced Inequalities) by examining the daily lived experiences of African migrant couples (aged 20 - 40 years) residing in Hong Kong. It shows how females from Africa sacrifice personal development in pursuit of common residence with their doctoral student husbands. In Hong Kong, these women assume "dependent status" and are prohibited from participating in the local labour force or earning personal income - despite being university graduates. This interruption in personal development seems anti-development. Totally dependent on husbands, women perform all household chores and fairly participate in household decision-making processes. Together, the study highlights how complex interactions of culture and unforeseen consequences of immigration policies could impede gender development and disadvantage women.



### **Equal opportunities**

As an equal opportunities employer, the University ensures that individuals will be selected, appointed, promoted, developed and treated fairly on the basis of consistent selection criteria, i.e., the job requirements for the respective staff grades, as well as the criteria and accommodations as laid down in the relevant policy document. Accordingly, individuals will be assessed on the basis of the job requirements and their relevant aptitudes, skills and abilities.

The University acts to ensure dignity at study and work. Harassment or victimisation of any form will not be tolerated. A Policy Statement on Equal Opportunities has been in place and updated regularly. Complaints about discrimination or harassment are taken seriously by the University and handled promptly with the strictest confidence according to the established relevant procedures.

To promote equal opportunities on the campus, starting from June 2022, all full-time staff are required to fulfil the compliance training requirements, where one of the training topics is "Anti-discrimination laws of Hong Kong".



### **Support to staff with family**

Maternity leave of 14 weeks on full pay is granted to female staff members who have completed 40 weeks of service before the commencement of the leave. Such practice also complies with the Employment Ordinance of the HKSAR Government.

Paternity leave of seven working days is provided to eligible male staff members on each occasion of childbirth. A male staff member is entitled to paternity leave on full pay if he has no less than 40 weeks of continuous service with the University immediately before the day of paternity leave.

The University recognises staff members' choice to breastfeed and supports them to continue breastfeeding upon returning to work after delivery. An appropriate and friendly environment such as lactation room for breastfeeding is provided to staff members so that breastfeeding is compatible with work. The University also provides paid lactation breaks to cater for the need of eligible staff members who plan to continue breastfeeding upon returning to work.



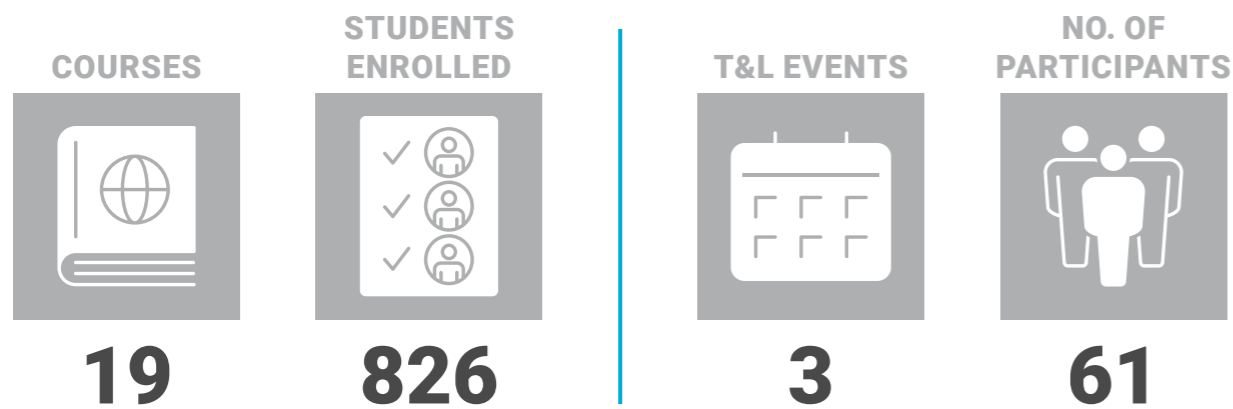


SDG 06:

## CLEAN WATER AND SANITATION

Ensure availability and sustainable management of water and sanitation for all.

### T&L Activities



### Research

#### An assessment of the health sustainability of sanitation in Ghana: A quantitative analysis

Department of Government and International Studies

Authors: Ibrahim BASIRU, Vincent Ekow ARKORFUL, Yi XU, Eugene Kwasi GYEKYE, Abu Hanifa IBRAHIM



Despite improvements in global sanitation, Africa, including larger parts of Ghana, remain saddled with a myriad of environmental challenges including open defecation, posing substantial population wide health and water quality threats. The study, anchored on SDG 6, relied on both primary and secondary data to interrogate inroads made in the sanitation system of the Kumasi metropolis, Ghana, and our results of data analysis based on the descriptive statistical approach revealed a significant improvement in sanitation systems. Though this explains sanitation challenges as the underpinning reason for the spread of diseases, further results of data revealed minimal deaths, attesting to not only improvements in healthcare, but also, portraying the nuanced character of sanitation as an endeavour that requires tact. To advance the interconnected SDG goals, precisely goal 6 - Clean Water and Sanitation, the study, as part of the sustainable measures to ensure a healthy population, recommends to stakeholders to strengthen sanitation policies.

### Sustainability Initiatives

#### Provision of free and quality drinking water

More water bottle filling stations have been installed on campus for the University community. These stations provide users with safe, convenient and free drinking water without using disposable plastic bottles.

To ensure the quality of the water, drinking water samples from bottled and filtered water dispensers on campus are tested quarterly in accordance with international guidelines and standards. An HKBU Water Map is also made available publicly to facilitate the University community members to find the nearest water bottle filling stations.





SDG 07:

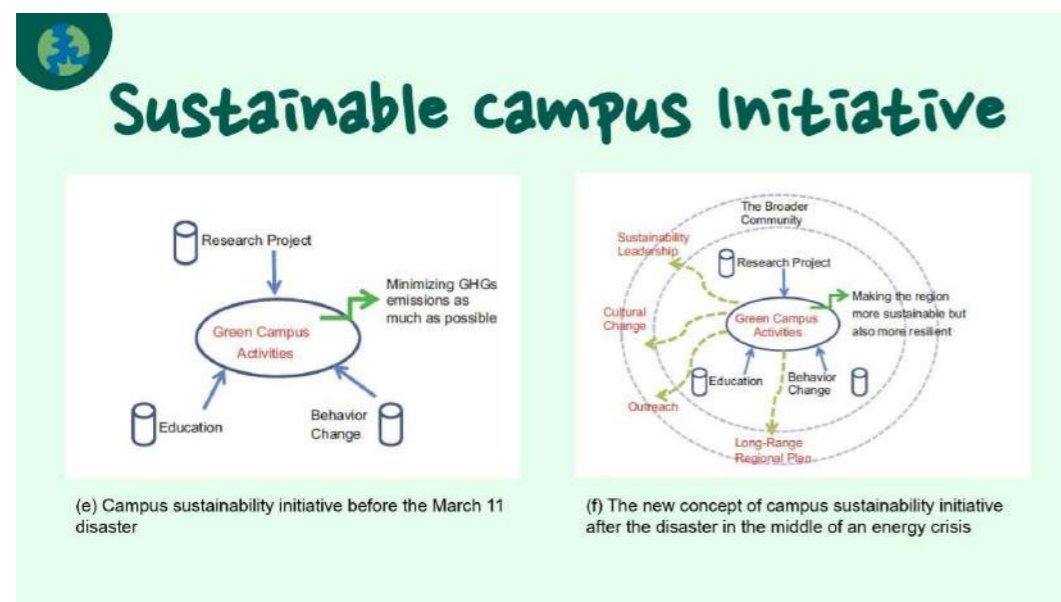
## AFFORDABLE AND CLEAN ENERGY

Ensure access to affordable, reliable, sustainable and modern energy for all.

### T&L Activities

#### Cross universities' discussion on sustainable energy transition

At an online workshop co-organised with the Korea Advanced Institute of Science and Technology, Kyoto University, National Taiwan University and Sun Yat-sen University, students of Dr Daphne Mah's service-learning courses, namely "Sustainable Energy and Technological Innovation in China" and "Energy Policy and Analysis", joined students from universities across regions to discuss the role of universities in facilitating sustainable energy transition. During the workshop, they discussed and analysed the pros and cons of three specific options: making gradual improvements to comply with sustainable standards, establishing sustainable "living labs" in the community, and actively engaging with society through start-ups.



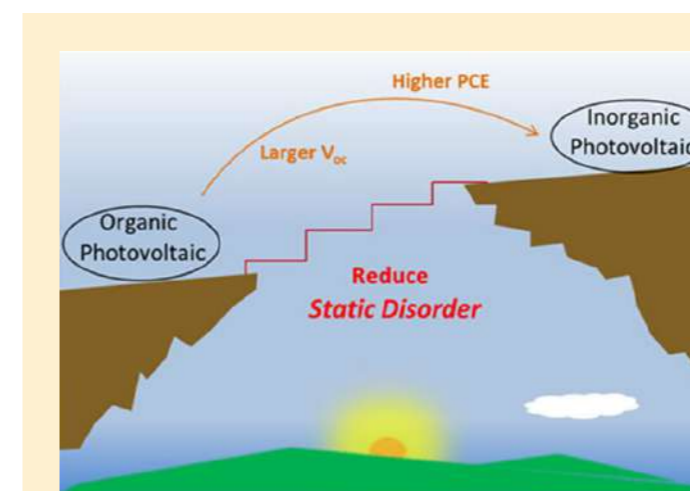
### Research

#### Unravelling Urbach tail effects in high-performance organic photovoltaics: dynamic vs static disorder

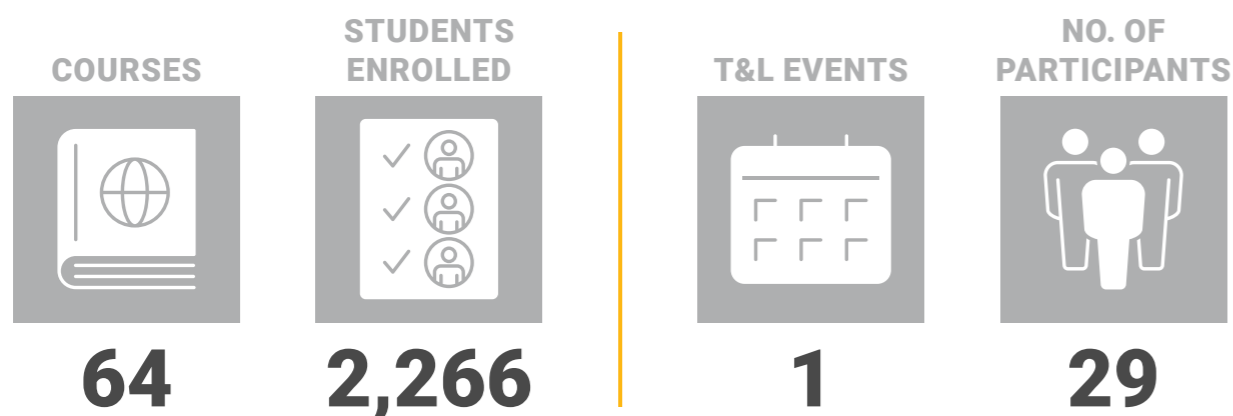
Department of Physics

Authors: Chujun ZHANG, Sudhi MAHADEVAN, Jun YUAN, Johnny Ka Wai HO, Yaxin GAO, Wei LIU, Hui ZHONG, He YAN, Yingping ZOU, Sai Wing TSANG, Shu Kong SO

Plastic solar cells, also known as organic photovoltaics (OPV) cells, are made from light-absorbing semiconducting organic materials. OPV cells are extremely appealing because they are light and flexible, and hence a source of portable clean energy (SDG 7). Despite these merits, OPV cells need to improve their power conversion efficiencies (PCEs) to 20% or beyond in order to compete with inorganic PV cells such as silicon solar cells. A hurdle in PCE improvement lies in the limited electrical conductivity of organic materials that constitute such a PV cell. In a research paper that appeared in *ACS Energy Letter 2022*, Professor Shu-kong SO and his research team identified the static energetic disorder, which results from distortions of organic molecules due to twisting, as a key limiting factor for the electrical conductivity. Strategies to design un-distorted molecules were proposed. The outcome is expected to lead to OPV cells with high PCEs.



Organic photovoltaic (OPV) cells contain organic materials to absorb sunlight. They are light, flexible and promising as a source of affordable green energy. Their power conversion efficiencies (PCEs) can be enhanced by reducing the distortions (twisting), i.e., the static disorder, of the organic materials inside the cell. Such a strategy can lead to highly efficient solar cells that rival the current, predominant inorganic PV cells in the market.





## Five-year energy efficiency plan (2020-2025)

To ensure good progress in reducing energy consumption and achieving a more energy-efficient campus for the University community, the University has put in place a five-year energy efficiency plan (2020-2025) which aimed at improving building energy efficiency for new and existing buildings, implementing smart technology to reduce energy consumption, and conducting energy reviews to track energy consumption.

### 1. Upgrade buildings to higher energy efficiency

- **Green Building Policy**

The University established a "University Green Policy for Capital Projects and Major Addition and Alteration Projects for University Campus" to govern the requirements of green buildings. Every new building and major renovations within the campus shall be designed and constructed in an environmentally friendly manner, and shall achieve a "Gold" rating or above under the BEAM Plus New Building Assessment, or the optimum rating under the BEAM Plus Fitting Out Assessment, both certified by the Hong Kong Green Building Council. In addition, funding of not less than 2% of the construction cost shall be set aside for capital projects and major addition and alteration projects which cost over HK\$50 million each.

- **Retrofitting**

Retrofit, upgrade and modify the energy performance of existing building assets in order to enhance energy efficiency or reduce energy demand during their lifetime. Under various renovation projects, conventional light fittings were gradually replaced by LED light fittings. In addition, 13 central air conditioning units are being replaced with models of higher energy efficiency through various projects supported by the University Grants Committee under the Alterations, Additions, Repairs and Improvements Block Allocation and the replacement has been completed in early 2023.

- **Retro-commissioning**

The University has invited external Retro-Commissioning professionals to conduct detailed and systematic analysis of the energy performance of buildings on campuses in order to identify opportunities for optimisation to reduce energy costs and improve the indoor environment.

- **Renewable energy**

Approximately 1,800m<sup>2</sup> of solar photovoltaic (PV) panels will be installed on the Kowloon Tong campus, and the projected annual power generation will be around 450,000 kWh. The PV project has been recognised under the Renewable Energy Feed-in Tariff (FiT) Scheme of CLP Power Hong Kong Limited and completed in early 2023.

### 2. Plan to reduce energy consumption

- **Smart technologies for building management system**

The University is assessing the viability of the implementation of a smart campus system utilising Internet of Things (IoT) technologies in order to reduce electricity consumption through big data analytics, smart control of equipment and optimisation of equipment performance.

- **Smart housing management at Student Residence Halls**

The University is assessing the viability of the implementation of smart housing management at the Student Residence Halls to raise the awareness of residents about energy conservation and sustainable solutions.

- **Smart classrooms project**

Thirty-six classrooms have been transformed into smart classrooms by upgrading the audio-visual equipment and installing motion sensors for on/off control of the space lighting and air-conditioning. Going forward as planned, all the remaining 31 classrooms will also be transformed into smart classrooms by August 2023.

- **Occupancy sensors in open-plan office**

Occupancy sensors will be installed in all newly renovated open-plan offices for smart control of lighting and air-conditioning system.

### 3. Carbon reduction and energy wastage identification

- **Periodic external energy audit**

Energy audits were conducted in six buildings on the Kowloon Tong campus by an external energy auditor in 2021. It is planned that all the buildings on all campuses will be audited on a rotational basis by 2025.

- **Annual internal carbon audit**

An annual carbon audit is conducted internally to keep track of carbon emissions and identify areas for improvement.

- **Review of hours of supply of air-conditioning**

The air-conditioning supply hours for offices and laboratories were reviewed to optimise the usage during non-office hours. Upon review, the default air-conditioning supply hours for all non-academic office premises on campus were reduced by 10 hours per week starting from June 2022.

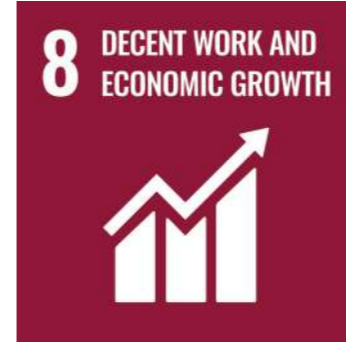
- **Review of temperature setpoint**

Based on the review of indoor temperature setpoints on the campuses, the lowest summer indoor temperature setting was adjusted from 22°C to 24°C on the University premises by default starting from May 2022, except the spaces with special needs.

## Sustainability Initiatives

### Performance indicators against baseline year and previous year

Performance indicators		2021-22 Against Baseline Year (2016-17)	2021-22 Against Previous Year (2020-21)
Greenhouse gas (GHG) emissions	Per GFA (tCO <sub>2</sub> e/sq.m.)	-33.57%	-1.04%
	Per capita (tCO <sub>2</sub> e/FTE)	-37.70%	-4.03%
Energy consumption	Per GFA (kWh/sq.m.)	-10.28%	-0.44%
	Per capita (kWh/FTE)	-16.07%	-3.48%
Water consumption	Per GFA (c.m./sq.m.)	-16.11%	+2.43%
	Per capita (c.m./FTE)	-21.67%	-0.94%



SDG 08:

## DECENT WORK AND ECONOMIC GROWTH

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

### T&L Activities



### Financial planning: a pre-emptive approach

This general education capstone course helped students realise the importance of personal financial planning to their future and have a flavour of the social impact should they do not do it properly. Through this course, students can understand how to build a disciplined financial plan in an early stage to achieve the financial goals and non-financial goals in their lives.



### A taste of heritage and glass painting

At a guided tour at the Cattle Depot Art Park in To Kwa Wan, the only pre-war slaughterhouse remaining in Hong Kong, students gained an understanding of the history and the social and cultural functions of this Grade II historic building. Renovated in 2001, the front area of Cattle Depot was converted into an artist village and creative space, while its rear portion has been revitalised and developed into the Cattle Depot Art Park. With an artistic atmosphere, the Western red-brick building with pointed tile roofs appeals to many visitors. After the tour, students attended a workshop on glass painting led by the artists of a studio and learned how to make their own artwork creatively.



### Virtual Global Taster Programme

The Virtual Global Taster Programme engaged 363 overseas students through its rich interactive activities including real-time Cantonese workshops and live virtual cultural immersion tours, allowing new friends from overseas to get to know the way Hongkongers live, study and work in this important and leading international centre of finance and trade. The mega speed-networking sessions also created an efficient platform for youngsters around the world to forge global connections and share topics including, but not limited to, culture, health, education and youth employment.



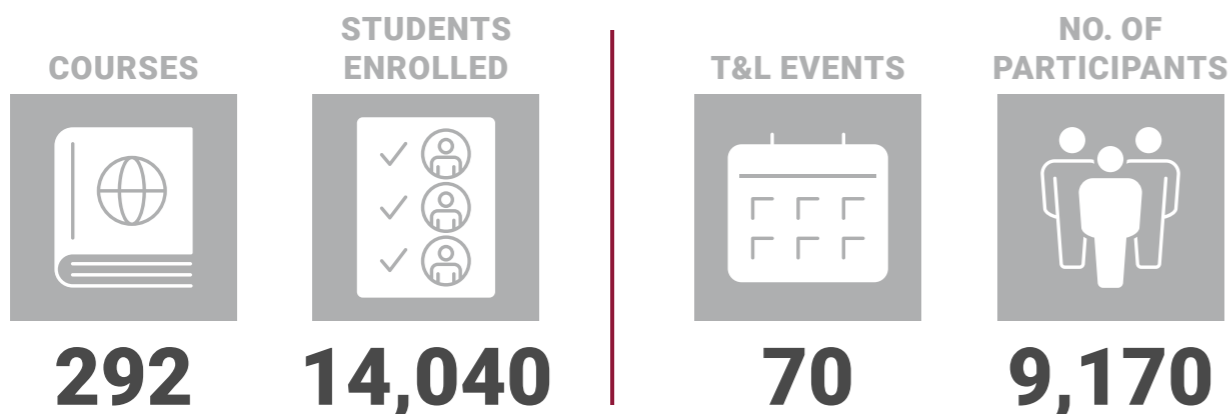
### Minimum wage and corporate investment: evidence from manufacturing firms in China

Department of Accountancy, Economics and Finance  
 Authors: Heng Griffin GENG, Yi HUANG, Chen LIN\*, Sibol LIU

\*Corresponding author

Dr Liu published an article investigating the effects of minimum wages (MWs) on corporate investment decisions among Chinese manufacturing firms. In China, MW policies vary across more than 2,800 counties. The study revealed that corporate investments increase as a result of MW hikes. The impact is stronger for firms that are labour-intensive, that cannot sufficiently pass labour cost on to consumers, that have better access to finance, and that are located in regions with better contract enforcement. Firms make more investments in fixed assets (e.g. equipment) and adopt new technologies to offset growing labour costs caused by the higher wage floor.

The research findings aim to provide insights for policy formulation on minimum wage in order to promote sustained, inclusive and sustainable economic growth.



## Sustainability Initiatives

### Employment practice

The University has proper salary and remuneration policies in place to attract and retain the best talent. Internal guidelines are available to explain the details and ensure compliance with the Minimum Wage Ordinance in Hong Kong.

The Policy on Anti-Slavery and Equivalent Rights for Outsourced Workers is in place to commit that the labour conditions of the suppliers' workers are protected by ensuring that they receive fair wages and competitive benefits comparable with the market and meeting the statutory requirements.

Under the Equal Opportunities Framework, discrimination and harassment violate the rights, dignity and reputation of the individual, undermine the environment necessary for the advancement of learning, and will not be tolerated. Committed to maintaining good governance, accountability and a high degree of transparency, the University encourages staff, students and external parties to report any suspected malpractice, misconduct, irregularity or illegality at HKBU.

To encourage staff development, different levels of support, both financially and operationally, are provided to eligible staff in accordance with the established criteria and procedures.



### Occupational health and safety

Under the Health, Safety and Environment Policy, the University is committed to ensuring, as far as reasonably practicable, the health and safety of all persons employed by the University.

To promote occupational health and safety, all full-time staff are required to fulfil the compliance training requirements since June 2022, where one of the training topics is "Occupational Safety and Health Ordinance".



SDG 09:

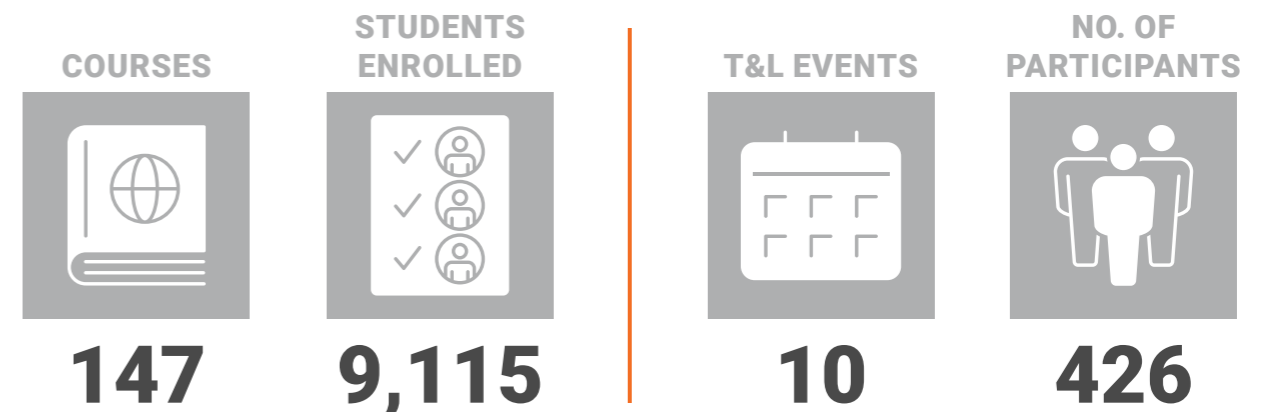
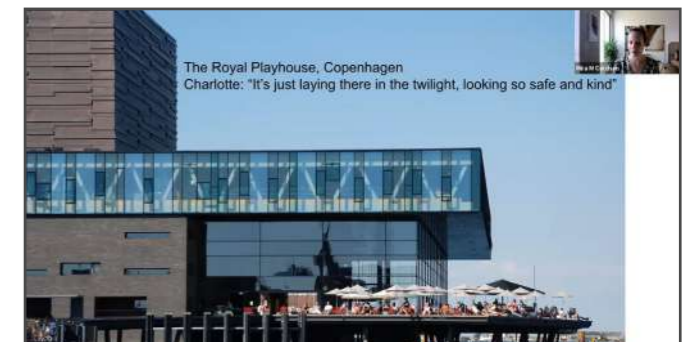
## INDUSTRY, INNOVATION AND INFRASTRUCTURE

Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.

## T&L Activities

### Aesthetic well-being through architecture and nature in Copenhagen

People seek inspiration and well-being in nature though most of them live in the cities. How do Danish architects and landscape architects work to grow nature back into the cities? How can architecture be empowered by aesthetics and built according to man's well-being? In this webinar organised by the Office of Student Affairs, students shared the insights with Ms Mira M. Cordsen, Owner of Experiencecph.com and co-founder of the association "Asgers Garden - Rooftop Farm in Ørestad".



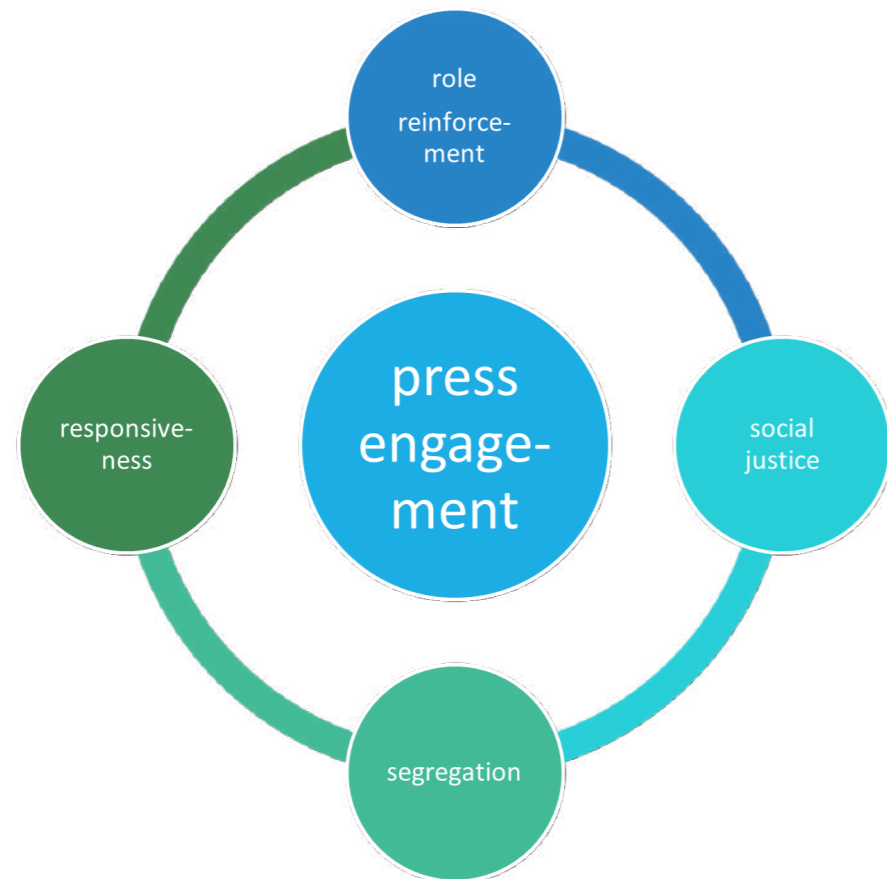
## Managing media relationships among Asian organisations: a grounded theory approach

Department of Communication Studies

Authors: Liane W.Y. LEE, Leslie S.C. YIP, Kara CHAN\*, Bradley R. BARNES

\*Corresponding author

A study among journalists was conducted to examine their perception of effectiveness of corporate communication practitioners' efforts in fostering media relationship. The study found that journalists have increased access to information and communications technology to fulfil their roles. Appropriate infrastructure has been in place for a responsive and transparent communication with corresponding corporate communication counterparts. The study found that journalists in Asian societies paid much emphasis on social justice and inclusiveness issues. Journalists also reported that they attempted to segregate from the influence from corporate communication practitioners to preserve the integrity of their news. The study provides insights for Asian companies, especially those small and medium enterprises, to develop quality, reliable, as well as resilient information and content creation infrastructure to support economic development. It also provides insights for Asian companies to support research and domestic technology development in enhancing mutual understanding and information exchange with news organisations.



## The third model of ergonomic chair for Chinese astronauts on landing

Academy of Visual Arts

Author: Ms Qin Lai-yin

Astronauts suffer from intense nausea after their return to Earth from Shenzhou space missions due to the changes in their cardiovascular system caused by prolonged exposure to microgravity. The weightlessness in space alters the bodies of astronauts, especially their bones and muscle strength.

Landing chairs were designed to provide immediate full-body support and comfort to astronauts upon their re-arrival on Earth, to better re-adjust to gravity. The third generation of landing chairs developed for the Astronaut Center of China, through intensive user interviews and prototype testing, has improved the ergonomics with better fitting to the astronauts with or without spacesuits, and re-engineered structures with multi-adjustable-sitting-angles. Certain decorative parts were fabricated with the latest 3D printing technology and materials to reduce the weight of chair, making it easy for transiting to their next locations.

Echoing SDG 9, the landing chair illustrates how innovative industrial design can solve real-world problems by applying human-centred design approaches. In addition, the design infused artistic value of the Chinese culture and referred to ancient Chinese sedan chairs in the design to highlight the significance of the nation's space programme.





SDG 10:

# REDUCED INEQUALITIES

Reduce inequality within and among countries.



Hong Kong Baptist University  
SUPPORTS THE SDGs

## T&L Activities



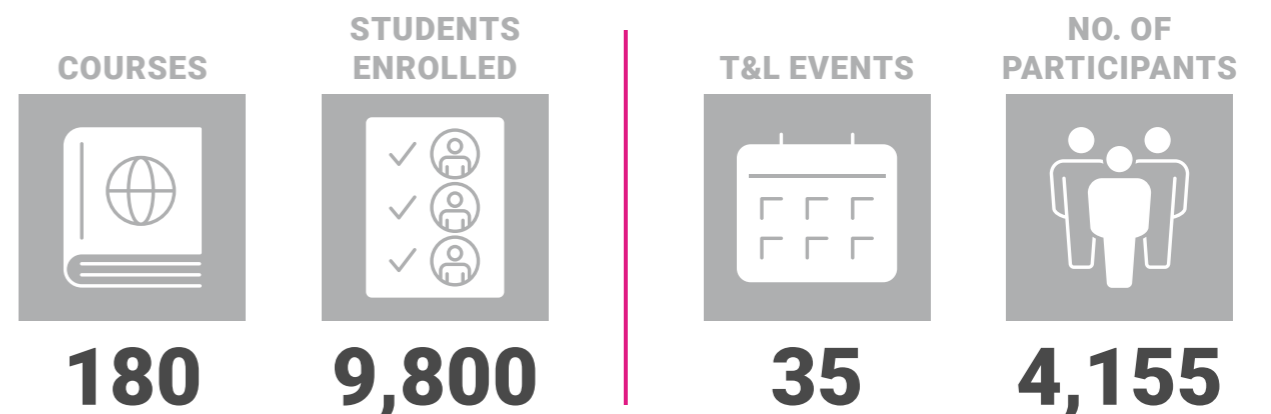
### Understanding sports and disability in the Hong Kong Chinese media

This general education capstone course leads students to dissect the social and cultural dimensions of the challenges that para-athletes are facing and reflect on what role sports reporting can play in addressing the social issues and bringing potential changes. It helps develop graduates from different disciplines who can decipher the importance of leadership practised by sustainable leadership and situational leadership.



### Ongoing SEN inclusion and training programmes for students

Our Counselling and Development Centre works with a wide range of community partners to organise ongoing SEN (Special educational needs) inclusion and training programmes for students. The Inclusion Student Ambassador Programme (ISA) engages students in providing peer support for SEN students, such as launching individual campus tours for, and offering live chats with, prospective and new SEN students, initiating solutions in enhancing campus accessibility for SEN students. As for SEN training for individual students, there is an array of learning opportunities made available to equip students with the skills to engage SEN students more effectively in inclusive learning, so as to enhance their awareness about inclusion, mental health well-being, campus accessibility and learning-related adjustments for SEN students. Significant events include Mental Health Events, Mental Health First Aid Standard Course, Stargaze Camp For All And The Blind, special educational needs exchange tour, seminars on web/mobile application accessibility, etc. In AY2021/22, 770 students and 10 community partners were engaged in these initiatives.



## Research on impacts of TREATS Sports for All Programmes

Department of Education Studies  
Author: Professor Atara SIVAN

The study examined the impact of four inclusive sports programmes on participating students with special educational needs (SEN) and volunteers. These programmes are part of Sports for All project offered by TREATS, a Hong Kong registered charity organisation that promotes social inclusion. The study adopted mixed methods design with questionnaires and interviews conducted before and after the programmes' participation. Results indicated positive changes among both SEN students and volunteers. Students demonstrated increase in personal and interpersonal attributes including confidence, persistence, courage, communication, proactivity, leadership, empathy, and social etiquette. Volunteers showed understanding of SEN students, patience and appreciation of their abilities. Active engagement with SEN students enhanced volunteers' realisation of the importance of understanding special populations' needs, eradicating preconception about them, and initiating more contact with them. These positive results demonstrated the programmes' contribution to social inclusion by eliminating inequality, attending to disadvantaged populations' needs and providing equal participation through experiential learning of recreational activities.



Kin-ball participants in TREATS Sports for All Project

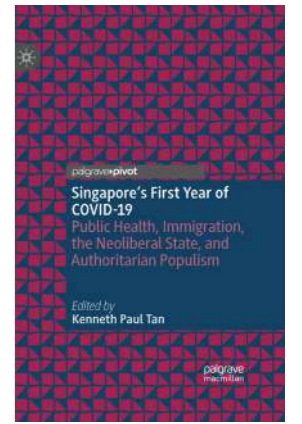


Inclusive Sailing Race in TREATS Sports for All Project

## Ready for the post-pandemic world?

Department of Journalism  
Author: Professor Kenneth Paul TAN

This is the concluding chapter of an edited book that analyses the strengths and weaknesses of the Singapore model of governance and policymaking through the lens of the first year of its management of the COVID-19 pandemic. Singapore's government, made up of very capable technocrats with a pragmatic outlook and a focus on results, were quick to react to problems as they surfaced, never taking its eye away from the unsentimental task of keeping its globally embedded economy going as a vital part of national survival. Its management of the pandemic crisis was lauded internationally. However, hidden in plain sight of this success model has been an over-reliance on a large pool of low-waged and low-skilled migrant workers, who are often exploited, marginalised, even abused, and housed in giant, poorly maintained dormitories, segregated from the mainstream community. The chapter discusses the disastrous impact of COVID-19 on these dormitories, exposing the social injustice of the system and its negative impact on the Singapore brand.



## Sustainability policies

### Measures against discrimination

The Policy Statement on Equal Opportunities stated that the University acts to ensure dignity at study and work. Harassment or victimisation of any form will not be tolerated. Complaints about discrimination or harassment are taken seriously by the University and handled promptly with the strictest confidence according to the relevant procedures. An Equal Opportunity Panel made up of an odd number of members from amongst the Equal Opportunities Advisers will be set up to handle the complaint if mediation is not preferred or becomes unsuccessful. The list of Equal Opportunities Advisers is accessible by the public.

In addition, a Task Force led by the Provost, Vice-President (Teaching and Learning), and Vice-President (Administration) and Secretary was formed to advise matters related to equal opportunities and diversity at the University. Also, Vice-President (Administration) and Secretary is appointed as the University Diversity Officer to oversee matters in relation to diversity.

Furthermore, the Talent100 initiative seeks academic staff from all over the world regardless of race, nationality, creed and religion.



SDG 11:

## SUSTAINABLE CITIES AND COMMUNITIES

Make cities and human settlements inclusive, safe, resilient and sustainable.



Hong Kong Baptist University  
SUPPORTS THE SDGs

### T&L Activities



### Improving smartphone accessibility by the elderly

To address the accessibility issues of new technologies, students of Dr Jin Yucheng's service-learning course "Human-Computer Interaction" interviewed older adults in Hong Kong about their everyday habits and difficulties in using their smartphones. Students then applied the knowledge learned from the course and designed prototypes - modified versions of existing apps - that could potentially solve the problems encountered by the elderly.



### Hoşgeldiniz! (Welcome) Grand Bazaar, Istanbul

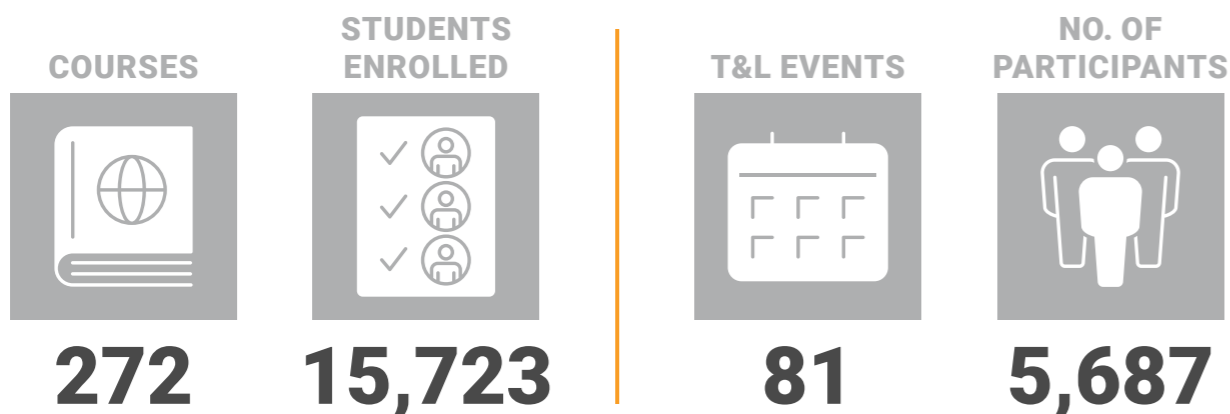
Collaborating with the Turkish Consulate General in Hong Kong, the International Office brought about the Hoşgeldiniz! (Welcome) Grand Bazaar, a one-of-a-kind opportunity that explored the rich cultural heritage of the famed Mesir Macunu Festival. As part of the Intangible Cultural Heritage of Humanity by UNESCO, the festival is dedicated to celebrating a herbal paste candy said to have therapeutic properties. The 1,026 participants have also discovered rich Turkish cultural heritage through the tasting of Turkish coffee and food, exploring the "Ebru" art marbling and handicrafts and enjoying Turkish folk dance and songs.





### “Make a Little Thing” Achievement Showcase

Students of the Social Innovation Makers (SIM) Programme of TriAngle of the Centre for Innovative Service-Learning participated in a series of social innovation workshops and collaborated with three community partners to create positive social impacts. Although their work plans have largely been hindered by the pandemic, the three SIMMER teams strived to put their ideas into actual practice. These valuable “little things” include: a squeezing game promoting traditional hand-carved mahjong, songs depicting the unique landscape of To Kwa Wan, and an online fun day enhancing social inclusion for the mentally-challenged students.



### Molecular characterisation of organic aerosols in Taiyuan, China: seasonal variation and source identification

Department of Chemistry

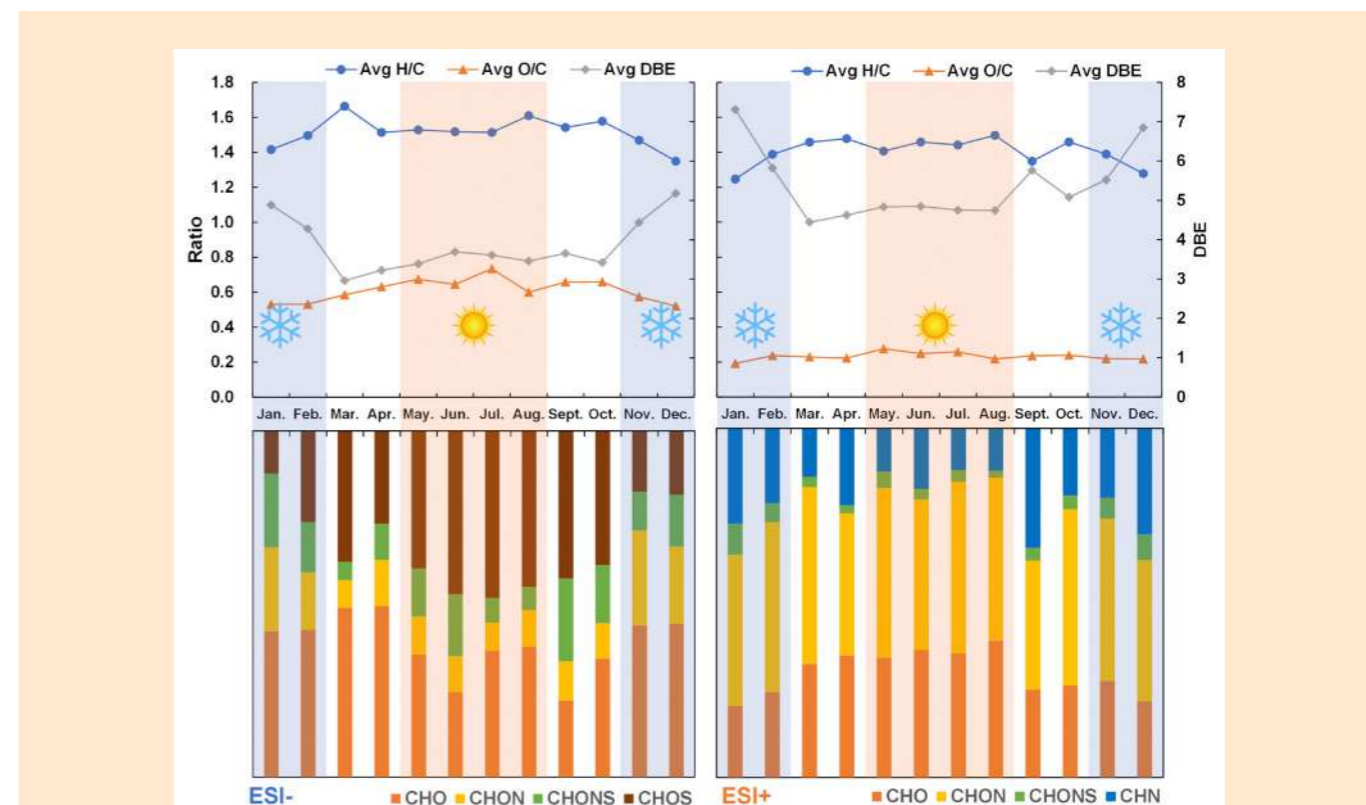
Authors: Wei WANG, Yanhao ZHANG, Bin JIANG, Yanyan CHEN, Yuanyuan SONG, Yingtao TANG, Chuan DONG, Zongwei CAI\*

\*Corresponding author

A sustainable and safe living environment is crucial for human well-being, with clean and healthy air playing a vital role. Molecular characterisation of organic aerosols in typical cities can identify their sources, chemical composition, and potential health risks. Variations were seen across seasons, with a reduction in airborne hazardous components during the COVID-19 epidemic.

These findings emphasise the need for sustainable urban planning and management strategies to promote inclusive and resilient cities. By identifying sources of air pollution and emphasising the importance of ongoing research, evidence-based policy decisions can reduce greenhouse gas emissions, promote sustainable energy sources, and improve transportation infrastructure.

This research can provide valuable insights for developing effective policies and interventions to address air pollution and promote sustainable urban development in rapidly urbanising cities worldwide. Such efforts are critical for achieving the Sustainable Development Goals (SDGs), given the growing urban population and associated environmental challenges.



Significant variation in the chemical composition of organic aerosols in Taiyuan during 2018. The molecules were highly unsaturated in winter with a larger double-bond equivalent (DBE), while highly oxidised in summer with larger oxygen-to-carbon ratios (O/C).

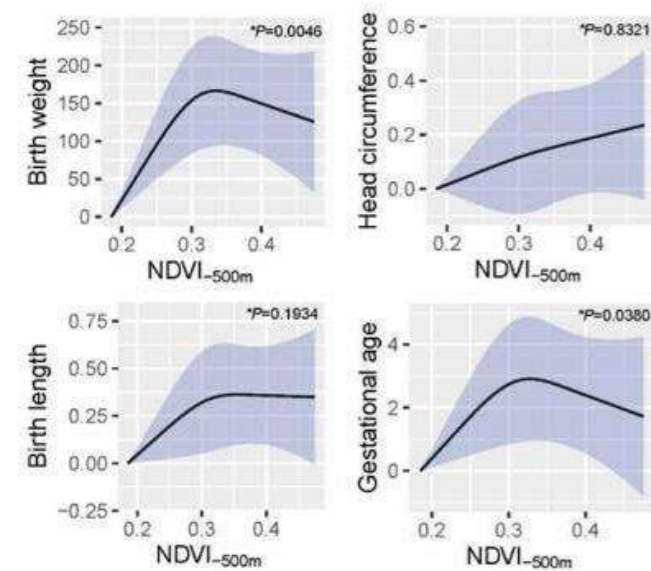
## Is greener better? Associations between greenness and birth outcomes in both urban and non-urban settings

Department of Geography

Authors: Xiang XIAO, Meng GAO, Yang ZHOU, Shu Li XU, Luke D. KNIBBS, Joachim HEINRICH, Shyamali C. DHARMAGE, Lidia MORAWSKA, Shao LIN, Bin JALALUDIN, Xubo SHEN, Yuanzhong ZHOU, Guang Hui DONG\*

\*Corresponding author

Adverse birth outcomes, such as preterm birth and low birth weight, are not only determinants of infant mortality and morbidity in both developing and developed countries, but also risk factors for poorer health in later life. The “green” spaces covered by vegetation, referred as “greenness”, are now recognised as one of the protective built environment factors, with accumulating evidence that suggest greenness is also associated with better birth outcomes. In this paper, we found that the surrounding greenspace exposure might increase gestational age, birth weight and birth length in urban dwellers. Further analysis illustrated that the health benefits could be larger when increasing greenness levels from low to medium, compared with increasing greenness from medium to high levels. The study might have implications for developing Sustainable Cities and Communities that more effort should be made with priority to places with relatively low green space levels, such as the densely populated city.



Exposure to greenness at relatively low normalised difference vegetation index (NDVI) levels were positively associated with improved birth outcomes whereas attenuated and even opposite patterns were observed when exposed to high levels of greenness. Black lines show the predicted mean difference of outcomes in a range of NDVI values, given that all other covariates are at their respective means. Gray shade shows the 95% confidence intervals.

Footnote: Birth weight was in grams (g), head circumference and birth length in centimeters (cm), and gestational age in days (d). Nonlinear models were adjusted for the following covariates: maternal age, working status, education level, family income level, PM2.5 levels, month of birth and distance to major roads. \*P-value for nonlinearity test.

Nonlinear associations between greenness (NDVI<sub>500m</sub>) and birth outcomes

## Public access to campus buildings and facilities

The University campus is open to the general public. The general public and eligible members are allowed to enter selected outdoor and indoor campus spaces, such as the library, cultural heritage and green spaces.

HKBU Library	Open to eligible users including: <ul style="list-style-type: none"> <li>• HKBU students</li> <li>• HKBU staff and their eligible family members</li> <li>• Alumni</li> <li>• Students from other tertiary education institutions</li> </ul>
Cultural heritage: Lui Seng Chun Kai Tak Campus (former Royal Air Force Officers' Mess)	Open to the general public
Green Spaces including green roofs and gardens on Kowloon Tong Campus	Open to the general public / eligible users ( <a href="https://sustainability.hkbu.edu.hk/index.php/wwrd/listing/cid/6.html">https://sustainability.hkbu.edu.hk/index.php/wwrd/listing/cid/6.html</a> )



## Arts and heritage contribution

Being an institution that is committed to being “a leading liberal arts University in Asia for the world delivering academic excellence in a caring, creative and global culture”, the University provides performance and event venues that serve as cultural centres for the University and its community, providing a direct link between town and gown.

- **Academic Community Hall**

The auditorium has two floors with a seating capacity of 1,346. It is suitable for concerts, musicals, variety shows, ceremonies, religious functions and seminars. It has also been serving as the competition venue for the Hong Kong Schools Music and Speech Festival for decades.



- **Tsang Chan Sik Yue Auditorium**

The auditorium is equipped with stage lighting and audio-visual system, with a seating capacity of 400. It is suitable for conference, ceremony, seminar, and different types of performance. It also consists of a VIP lounge and supports barrier-free access.



## Preserving cultural heritage

To adopt creative approaches in preserving historic buildings and expanding their usage, the University transforms historical building premises into unique cultural landmarks that meet the arts community's need for affordable arts studio and display facilities, nurture young creative talents for Hong Kong and provide a relaxed environment for the public to experience arts and culture.

- **Lui Seng Chun**

The Lui Seng Chun building was included in Batch I of the “Revitalising Historic Buildings Through Partnership Scheme” initiated by the Government in 2008 and, after a bidding process, Hong Kong Baptist University was selected to conserve the building and convert it into a Chinese medicine healthcare centre. The Lui Seng Chun building was also declared a monument in 2022.



- **Jockey Club Creative Arts Centre**

Opened in 2008, the Jockey Club Creative Arts Centre (JCCAC) is the first factory-turned artist village and arts centre in Hong Kong. JCCAC is a self-financed registered charity and Hong Kong Baptist University's subsidiary. The multidisciplinary arts and cultural venue is open to the public and is dedicated to meet the arts community's need.



- **Kai Tak Campus**

The Kai Tak Campus is the former Royal Air Force Officers' Mess, which is a Grade I historic building with a unique early 20th century colonial architectural style. Exhibitions are often held at the premises and are open to the public for free visit.



## Energy-efficient renovation and building

The University has continuously undergone expansion and renovation over the years. Campuses and buildings are built in accordance with various principles and requirements, and technologies are used to meet the sustainability standards. To demonstrate the commitment of the University to continuously improving the sustainability performance and promoting responsible behaviour on campus to combat global warming, the University has established the University Green Policy for Capital Projects and Major Addition and Alteration Projects for University Campus. The Policy is applicable to every new building or major renovation within the campus that they shall be designed and constructed in an environmentally friendly manner, adhering to the well-known green building standards such as the BEAM Plus certification scheme. In addition, the University avoids building new construction on greenfield sites where possible. For instance, the Jockey Club Campus of Creativity is being built on the former institutional campus site.

- **Jockey Club Campus of Creativity**

In April 2022, the development of Jockey Club Campus of Creativity was presented with the Merit Award under the “New Buildings Category: Projects Under Construction and/or Design – Institutional” at the Green Building Award 2021. The Award, which is co-organised by the Hong Kong Green Building Council and the Professional Green Building Council, aims to recognise and commend the excellence and contribution of the project towards a sustainable built environment. The development project has also been registered under the BEAM Plus New Buildings Certification.



## Sustainability Initiatives

### Sustainable commuting

The University implements various initiatives to encourage sustainable commuting.

- Electric vehicles (EV) charging facilities**  
 There are 16 electric vehicle (EV) chargers on campus. The University targets to extend the smart charging facilities for electric vehicles in 64 parking spaces covering 30% of the car parking spaces for private cars on all University campuses by 2026. Medium EV chargers will be installed in all 29 parking spaces on the Jockey Club Campus of Creativity in 2024 as the first phase of the project.
- Motorcycle and bicycle parking facilities**  
 Motorcycle and bicycle parking facilities are provided on campus to facilitate people opting for low-carbon commuting.
- Public transportation**  
 Signage is provided on campus indicating the direction to the nearest Mass Transport Railway (MTR) stations to encourage sustainable commuting through public transportation.



### Sustainable employment practices

The University encourages enhancing work-life balance and enabling colleagues to better meet their personal and/or family needs.

Remote work arrangement during the pandemic was discretionary. Student experience, research and service provision were considered when the University decided whether full/hybrid remote work arrangement would be allowed.

Staff quarters are also provided to eligible staff members.



SDG 12:

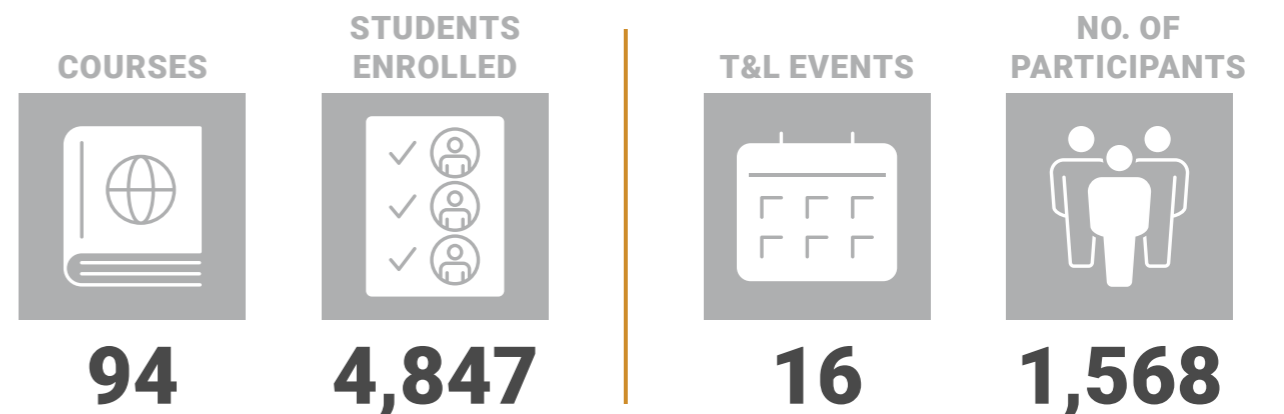
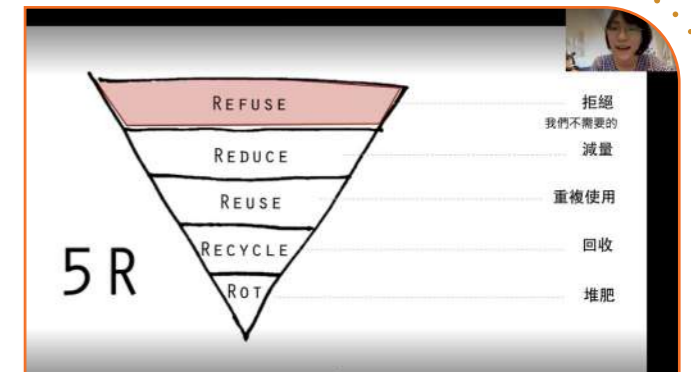
## RESPONSIBLE CONSUMPTION AND PRODUCTION

Ensure sustainable consumption and production patterns.

### T&L Activities

#### Dwelling in a waste-free apartment

Ms Jessica Shang, a Taiwanese author who got to know the concept of zero waste from her translation of the English book, "Zero Waste Home", practises minimalism in daily life and tries not to make a piece of trash if possible. In a sharing session organised by the Leadership Qualities Centre, students learned much from Jessica of how she has embarked on a waste-free lifestyle by accumulating small changes in her daily habits.



### Recent progress in microbial fuel cells for industrial effluent treatment and energy generation: Fundamentals to scale-up application and challenges

Department of Biology

Authors: Rangabhashiyam SELVASEMBIAN, Joyabrata MAL, Radha RANI, Rupika SINHA, Roma AGRAHARI, Ighalo JOSHUA, Arockiasamy SANTHIAGU, Nirakar PRADHAN

In this review article, we critically analysed technological advancement in industrial liquid-waste abatement and resource recovery using microbial fuel cell (MFC) technology. The MFC technology works on the basic principle of a redox reaction, where the microorganisms act as a biocatalyst to oxidise pollutants in the wastewater for electricity production. This state-of-the-art technology can be harnessed to promote the zero-liquid discharge concept in industries. Though the MFC technology has shown promising prospects at pilot scales, its large-scale application is impeded owing to higher costs and low power densities per unit area of electrodes. We provide information and strategies based on the most up-to-date literature for future research to make MFC technology widely implementable. More information can be found here:

<https://doi.org/10.1016/j.biortech.2021.126462>.



### Ethical sourcing policies

The University has developed the Sustainable Procurement Policy and the Sustainable Food Policy. The Sustainable Procurement Policy is designed to exercise responsible procurement practices by adopting the "cradle-to-grave" principle in its procurement decision-making process, aiming to minimise the environmental and social impacts throughout the whole lifecycle of the products purchased. The Sustainable Food Policy is formulated to promote responsible behaviour to source and consume sustainable food to support the protection of the ecosystem on land and in water, preservation of water resources, maintaining biodiversity and minimising the impact on climate change. These policies also apply to all our service providers and supply chains.

### Management of hazardous substances

Hazardous substances management and disposal are strictly regulated on campus. Since 2004, the usage of chemicals and dangerous goods (DG) on campus has been regulated through the online Dangerous Goods Management System (DGMS). The DGMS has been enhanced to standardise data format and facilitate information exchange.

To further increase the overall effectiveness of chemical safety management and regulatory compliance monitoring, a feasibility study on the enhancement of DGMS using real-time location tracking technology was carried out. The study provided a roadmap for possible enhancements to cater for the increasing research activities according to the University's Institutional Strategic Plan 2018-2028.

The University has developed the Waste Management Policy which states the commitment on proper disposal of hazardous and clinical materials.



## Minimisation of plastic use and disposable items

The University has continuously made progress in minimising the usage of plastic and disposable items, as well as encouraging sustainable and responsible consumption.

The University has developed the Waste Management Policy which states the commitment to waste management including minimising the single-use of disposal materials, products and plastics.

- **Green Event Regulations**

A set of Green Event Regulations has been formulated to reinforce sustainable practices when University events are organised. Students and staff are urged to follow the regulations in order to minimise single-use disposable waste and food waste, and conserve energy and resources.



- **No Straw University Campaign**

90% reduction in straw consumption has been recorded since the launch of the No Straw University campaign. The campaign is well received by the University community and at the same time the revenue from straw requests collected by the caterers is, in fact, minimal.



- **Green Catering Initiatives**

The University encourages students and staff to adopt green eating habits. We aim to reduce the waste generated from catering through the implementation of various measures and initiatives. More stringent sustainability-related requirements have been introduced in contracts with new caterers or during contract renewal to minimise waste generation at source. The updated requirements include the prohibition of the use of disposable tableware for dine-in orders as much as practicable and an increase in environmental levies for disposable tableware for takeaway orders.



## Waste disposal measures and waste reduction

Several pilot initiatives are in place to encourage sustainable behaviours among the University community as part of the University's continuous commitment to reducing consumption of resources and waste generation. Municipal solid wastes and recyclables are treated separately by providing various recycling facilities on campus to encourage recycling and reduce the amount of wastes ending up in landfills.

The University has developed the Waste Management Policy which adopts the waste reduction strategy "Use Less, Waste Less", and strives to establish a sustainable campus through resource circulation.

Under the concerted effort of the University's community, noticeable improvements were noted in the waste management when compared against the baseline year 2016-17. Specifically, the municipal solid waste was reduced by 32% while the recyclables increased by 26%.

- **Regular waste audits**

Regular waste audits are conducted to analyse the waste generated on campus. Data collected are studied and used in policies planning in relation to waste management and reduction.

- **Collection of recycling data**

Integrated recycling stations are provided on the campus with different recycling material streams included. Recycling data are regularly collected from downstream recyclers to study the recycling trends and behaviours of the University community.

## Sustainability Initiatives

- Waste reduction programme**

To tie in with the Government's municipal solid waste charging policy, which could be implemented in the second half of 2023 the earliest, the Waste Management Policy was put in place by the University. A six-month pilot scheme involving four buildings on the Kowloon Tong campus was carried out to collect data and identify current practices such that waste reduction strategies can be better formulated. Besides, recycling and green practices are encouraged by setting up integrated recycling stations, re-distribution of waste and recycling bins and promoting green catering practices.

- University Green Café (University Recycle Centre)**

A modern Green Café (University Recycle Centre) of approximate 30m<sup>2</sup> will be built on the ground floor of Jockey Club Academic Community Centre/Madam Chan Wu Wan Kwai School of Continuing Education Tower. Smart recycling machines, which are capable of recycling 7 different types of recyclables, will be installed with seating provided. The target completion date is August 2023.

- Minimisation policies extended to caterers**

The University's minimisation policies also apply to the outsourced catering outlets on campus. For instance, caterers are required to separate food waste for recycling and provide biodegradable takeaway boxes as far as practicable.

- "ben don go!" Programme**

To encourage staff and students to bring their own meal containers and reduce the use of disposable tableware, a booth was set up on the campus in October 2022 to provide free reusable meal containers lending services.



SDG 13:

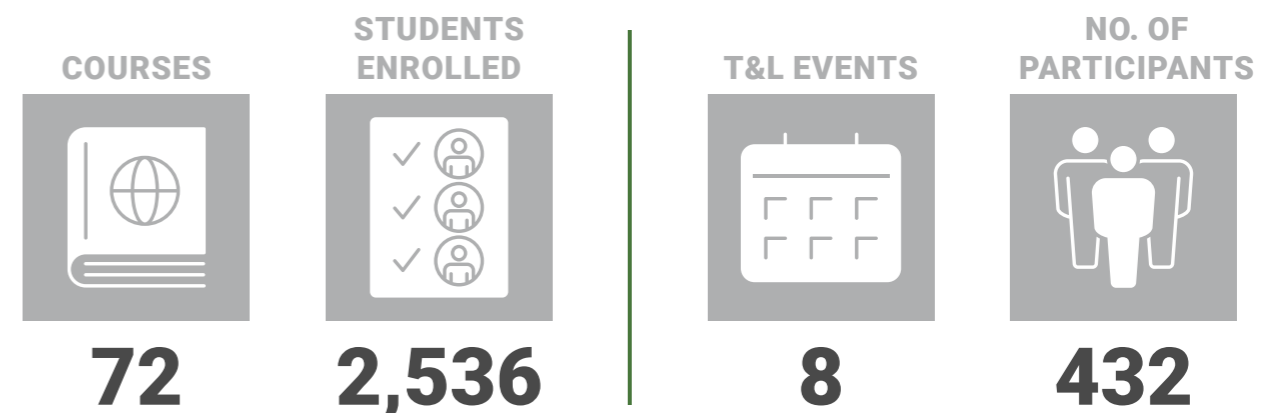
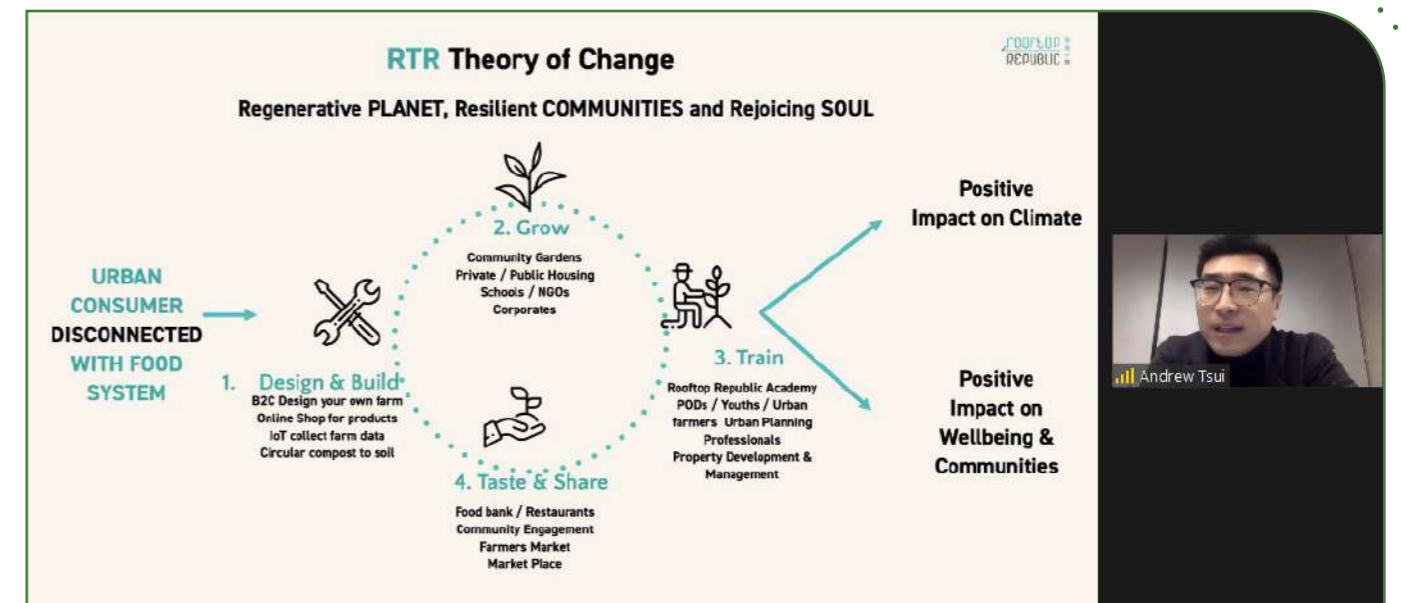
## CLIMATE ACTION

Take urgent action to combat climate change and its impacts.

## T&L Activities

### Social value of urban rooftop farming

Is agriculture impossible in this densified city? In a sharing session organised by the Leadership Qualities Centre, 134 students learned from Rooftop Republic Urban Farming about their mission to promote sustainable living practices and explored the possibility of urban farming by fully utilising the underused spaces and how micro-farming positively impacts our community.

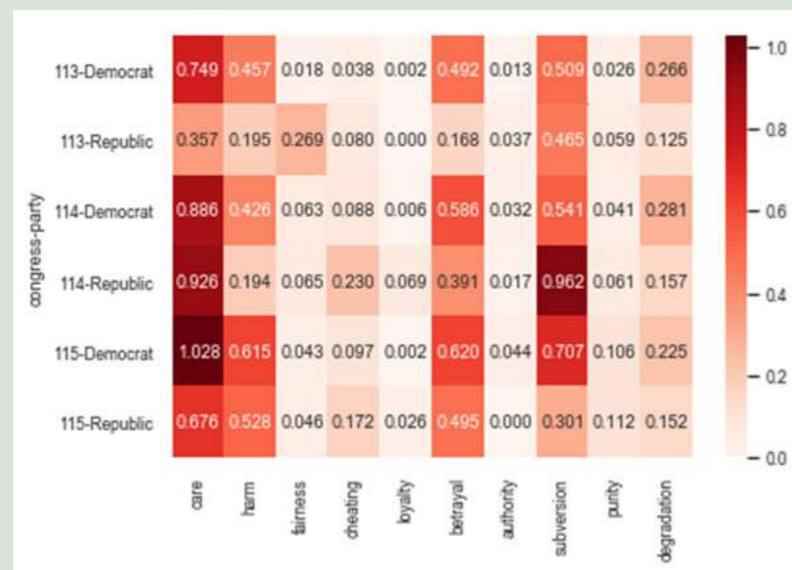


## Political identity, moral foundations and polarisation on climate change: moral-language use by US political elites in climate change discourse

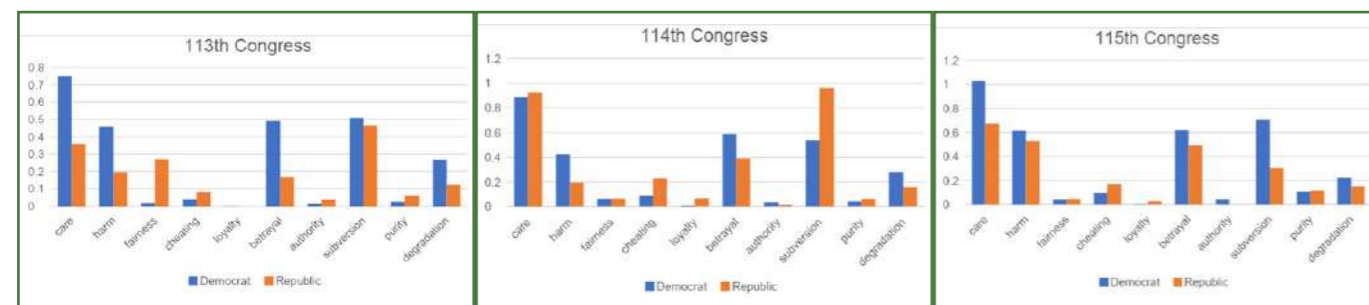
Department of Journalism

Authors: Celine Yunya SONG, Jonathon SCHULDT, Connie YUAN

Climate change has long been a polarised and politicised issue in the US. How can communication scholars gain insight into the different ways that partisans think about the issue of climate change? Building on the conceptual framework of the Moral Foundations Theory and the moral framing of climate issues across partisans, the present study seeks to explore differences in moral-language use regarding climate change among US political elites through a quantitative text analysis of a corpus of Twitter messages posted by accounts that belong to Democratic and Republican members of the Congress. To what extent did the topical attention shift across each congress? How did the partisan differences evolve in the moral-language usage discussing climate issues, as the parties gained or lost political power? To the extent that elites act as opinion leaders and morality can function as a strong motivating factor in the politics of talk, our findings have important implications for climate change policy and particularly the opportunity for issue advocacy.



Heatmap of Moral Frame Dimensions



Moral Frame Scores for Democrats and Republicans

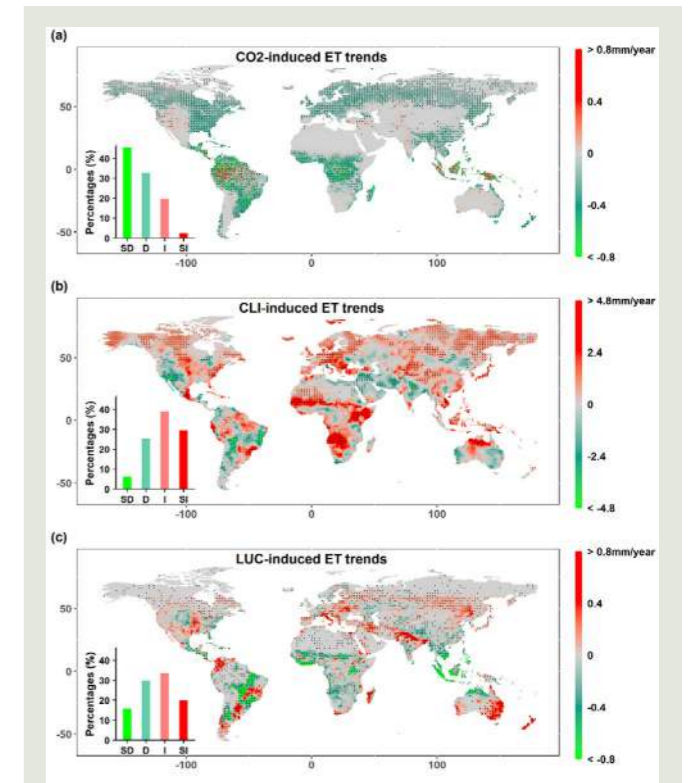
## Response of global land evapotranspiration to climate change, elevated CO2, and land use change

Department of Geography

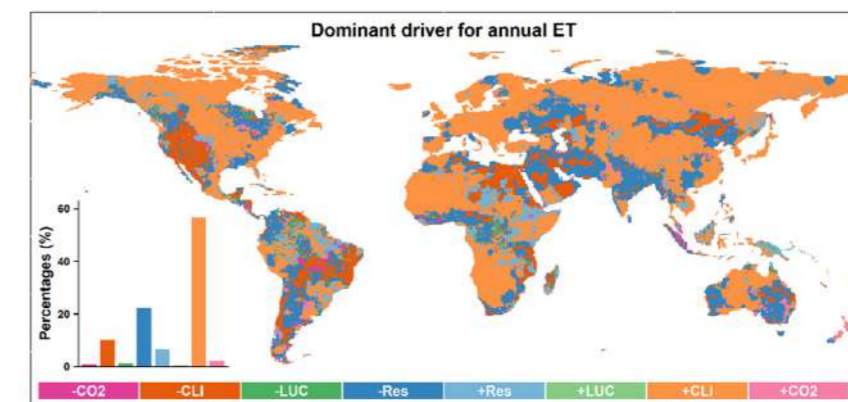
Authors: Jianyu LIU, Yuanyuan YOU, Jianfeng LI, Stephen SITCH, Xihui GU\*, Julia E.M.S. NABEL, Danica LOMBARDOZZI, Ming LUO, Xingyu FENG, Almut ARNETH, Atul K. JAIN, Pierre FRIEDLINGSTEIN, Hanqin TIAN, Ben POULTER, Dongdong KONG\*

\*Corresponding author

Dr Jianfeng LI and scholars from an international research team bring together an optimal fingerprint method and an extended Budyko framework to detect and attribute the impacts of elevated atmospheric CO2 concentration, climate change, and land use change on land evapotranspiration. This paper, published in *Agricultural and Forest Meteorology*, one of the top journals in the Forestry field according to Journal Citation Reports, contributes to improving scientific understanding of causes of evapotranspiration change at different temporal and spatial scales. The research team found that climate change is the dominant factor controlling evapotranspiration change. Elevated CO2 is the second contributor and leads to decreasing evapotranspiration in most areas, especially in the areas covered with dense vegetation. The results contribute to SDGs 13 and 15 by improving the scientific understanding of ecological service evaluation and water availability assessment, as well as the environmental impact caused by climate change, particularly land evapotranspiration.



This study examined spatial patterns of the impacts (mm/year) of atmospheric CO2 concentration, climate change, and land use change on land evapotranspiration trends during 1980–2017.



The study identified the spatial pattern of the dominant driver controlling evapotranspiration trends on an annual scale.



## Sustainability Initiatives

### Sustainability-related policies and guidelines

In accordance with the Sustainability Policy, the University aspires to attain the highest possible standards of low carbon campuses and to cultivate a culture in which sustainability and environmental responsibility permeate our everyday learning, teaching and research activities. It also committed to taking on social responsibility in outreaching and partnering with the wider community to achieve a sustainable society. HKBU strives to surpass applicable standards of sustainability in facilities and will monitor the impact of daily operations in the natural world. To contribute to carbon neutrality, the University is now actively setting the carbon reduction targets to better monitor our sustainability performance.

Green spaces benefit our environment and reduce heat island effect. Our newly built Crop Lab is a greenhouse for farming incorporated with sustainability elements such as Air Improvement PhotoVoltaic (AIPV) System, wind turbine and green wall.



SDG 14:

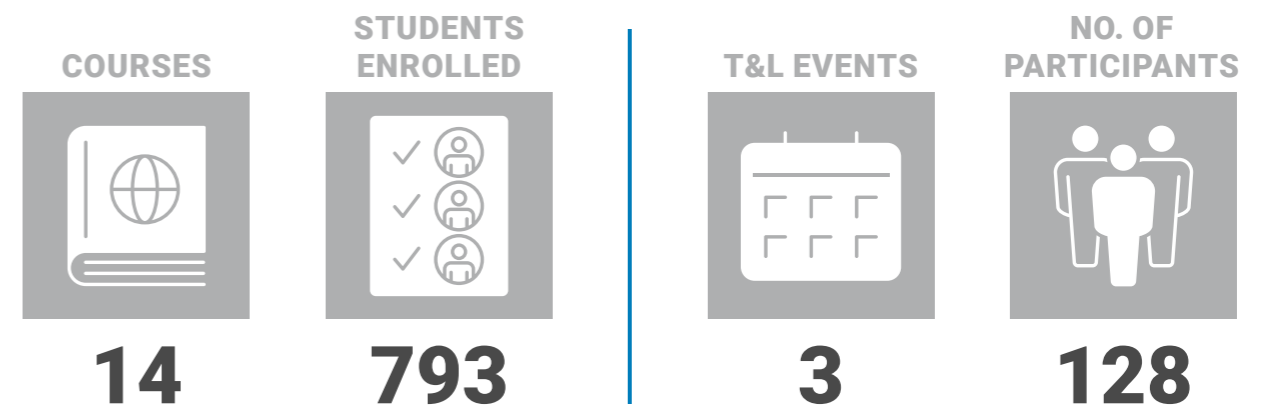
## LIFE BELOW WATER

Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

## T&L Activities

### Passing on knowledge of fermentation and toxicology

Through workshops for secondary school students on the topics of basics in biology and micro-plastics, students of Dr Patrick Yue's service-learning courses, namely "Fermentation and Enzyme Technology", and "Environmental Health and Toxicology" passed on their knowledge while exploring more on the knowledge application of fermentation and toxicology, realising their relevance to everyday life and society at large.



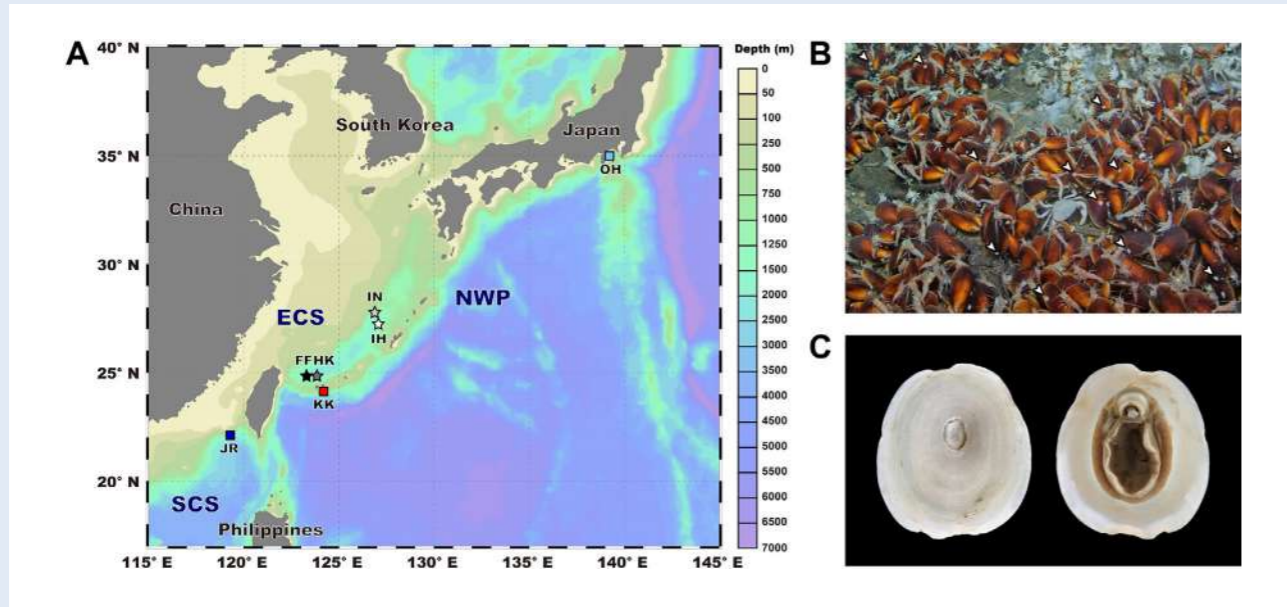
## Hidden historical habitat-linked population divergence and contemporary gene flow of a deep-sea patellogastropod limpet

Department of Biology

Authors: Ting XU, Yan WANG, Jin SUN, Chong CHEN, Hiromi Kayama WATANABE, Junlin CHEN, Pei Yuan QIAN\*, Jianwen QIU\*

\*Corresponding author

Deep-sea hydrothermal vents and hydrocarbon seeps are rare oases of life. Biological communities inhabiting these ecosystems are often distributed in widely separated habitats, yet little is known how they are genetically connected. To fill this knowledge gap, we analysed the divergence and gene flow of the limpets *Bathycyma nipponica* from four vents and three seeps distributed across 2,400 km in Northwest Pacific using population genomics and physical ocean modelling. We found four habitat-linked (i.e. three seeps and one vent) genetic groups, with the vent group established via opportunistic invasion of a few limpet larvae from a nearby seep. We discovered three historical seep-to-vent migration events, and weak contemporary seep-to-vent gene flow. Physical ocean modelling underlined the potential roles of seafloor topography and ocean currents in shaping the genetic divergence, contemporary migration, and local hybridisation of these limpets. This study meets the United Nation’s SDGs (Goal 14) as it provides new knowledge that is critical for designating marine protected areas for conservation of marine life that are threatened by the increasing mining and gas hydrate extraction activities in the deep ocean.



## Protecting life under water

To support the protection of the ecosystem under the water, the University includes sustainability considerations in choosing food items. Specifically, no unsustainably produced food items under the “Avoid” category in the latest [WWF Hong Kong’s Seafood Guide](#) shall be purchased, sold and/or consumed at all on-campus catering outlets, and in the on/off-campus events and activities that are organised or managed by the University.





**SDG 15:**  
**LIFE ON LAND**

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

**T&L Activities**



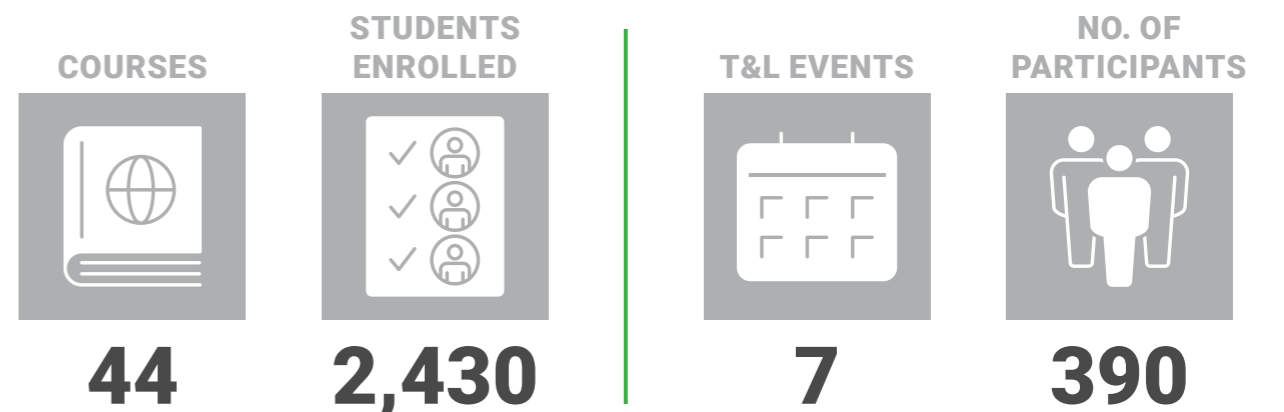
**Understanding bees' role in environmental protection**

To understand the important role of bees contributed to the entire biodiversity, students of TriAngle@CISL's Social Innovation Makers (SIM) Programme participated in a local beekeeping tour on 23 Oct 2022 led by a social enterprise, Beetales. During the tour, Harry, the founder of Beetales, explained that due to global warming and the wide use of chemical pesticides, there has been a rapid decline in the bee population, affecting the plants and food production in the long run. This inspired the students to think one step further and create an innovative solution for bee protection and conservation.



**Green Quester Programme:  
Lamma Island Zero Waste Hiking**

The littering problem in the countryside has become a growing concern in Hong Kong. Students of the undergraduate halls joined the Lamma Island Zero Waste Hiking and explored how to produce as little waste as they could while enjoying the beauty of nature. The activity was initiated and hosted by the student group Green Questers.



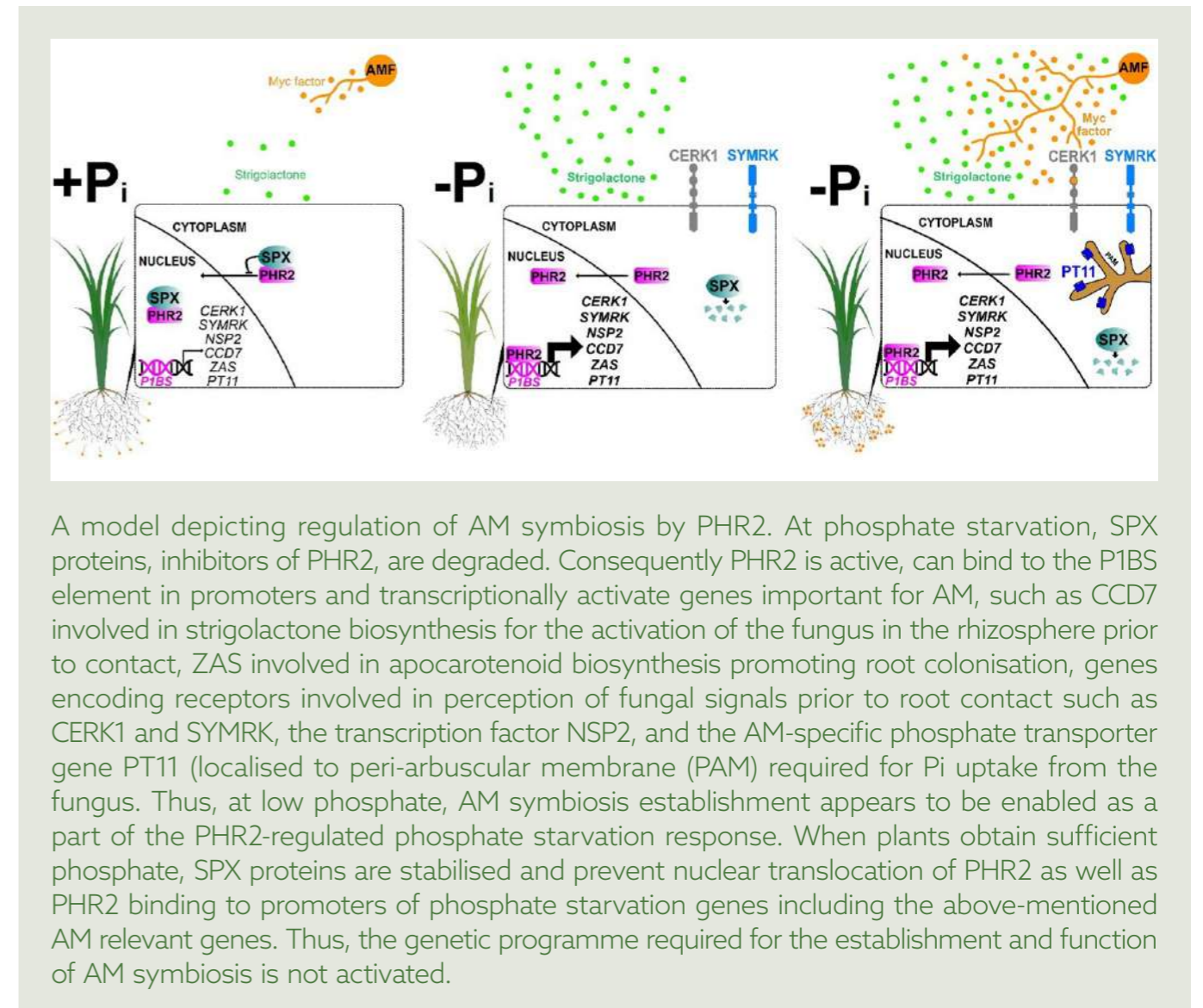
## PHOSPHATE STARVATION RESPONSE transcription factors enable arbuscular mycorrhiza symbiosis

Department of Biology

Authors: Debatosh DAS, Michael PARIES, Karen HOBECKER, Michael GIGL, Corinna DAWID, Hon Ming LAM, Jianhua ZHANG\*, Moxian CHEN\*, Caroline GUTJAHR\*

\*Corresponding author

The research group led by Professor Zhang Jianhua collaborated with its counterparts in Technical University of Munich (TUM), Germany, found a transcriptional regulator in rice that can help rice to cope with low phosphorus nutrition condition through enhancing the symbiosis with fungi in a form called arbuscular mycorrhiza. Arbuscular mycorrhiza (AM) is a common symbiosis between the roots of the majority of land plants and *Glomeromycotina* fungi and help plants obtain many nutrients. When rice is growing under low phosphorus condition, a situation very common in agriculture, AM fungi can increase its colonising of the inside of roots. So far, the mechanistic basis for this phosphate-dependent plant response is not clear. Professor Zhang's group has demonstrated that a major transcriptional regulator for this phosphate starvation responses in rice is found and named it as PHOSPHATE STARVATION RESPONSE 2 (PHR2). When this gene is knocked out, root colonisation of the resulted mutant (PHR2) is drastically reduced. With enhanced PHR2 expression, AM root colonisation, mycorrhizal phosphate uptake and rice yield in field with deficient phosphorus nutrition are all increased. They also identified the genes targeted by PHR2 and how this gene coordinates with others in the plant phosphate starvation response.





# SDG 16: PEACE, JUSTICE AND STRONG INSTITUTIONS

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

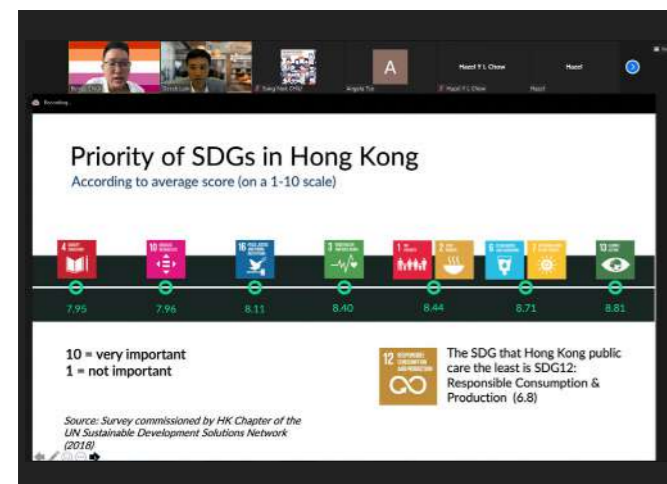
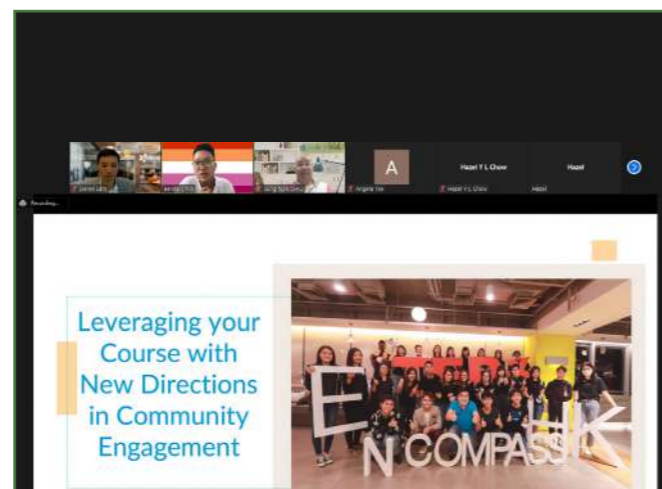


Hong Kong Baptist University  
SUPPORTS THE SDGs

## T&L Activities

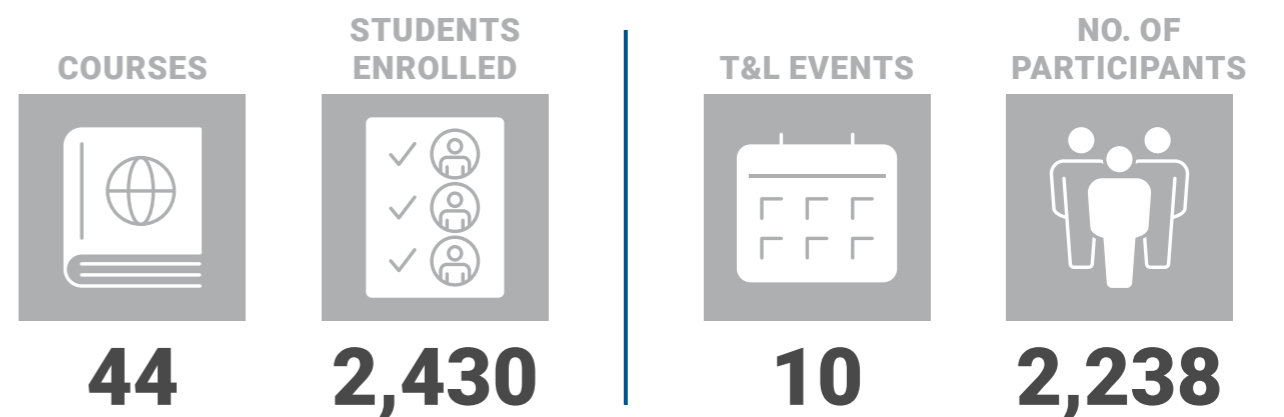
### Leveraging your course with new directions in community engagement

With the growing interest in sustainability and SDGs in recent years, there are vast opportunities for NGOs and social enterprises to engage students in learning core competencies in critical thinking, collaboration and problem-solving when handling societal issues. Ms Benita Chick of Encompass HK shared her experience with faculty members on ways to achieve effective community engagement and suggested ways to enhance experiential learning and service-learning opportunities at HKBU.



### Doxing, privacy and current issues

This general education capstone course covers the disciplines of law, journalism and social science, aiming at developing students' awareness of doxing as a social issue and developing their ability to tackle it with a multi-disciplinary approach.



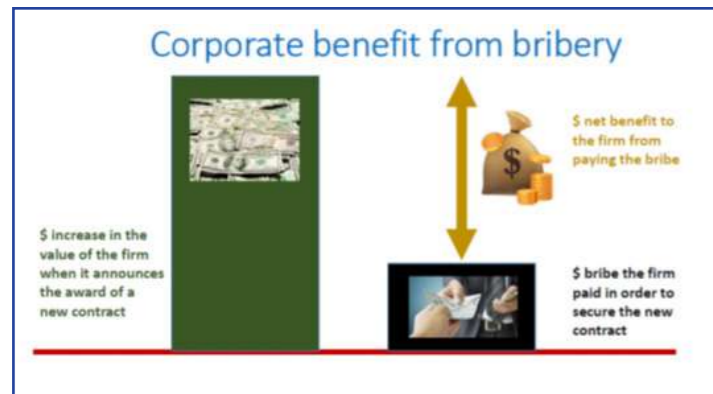
## What determines the return to bribery? Evidence from corruption cases worldwide

Department of Accountancy, Economics and Finance

Authors: Yan-Leung CHEUNG, P Raghavendra RAU, Aris STOURAITIS

The article analysed a hand-collected sample of large-scale corporate bribery around the world, and found that many companies earned large returns per dollar of bribe they paid, that did not necessarily disappear when firms were caught. While political regime didn't matter overall, the benefits were smaller in democratic countries that mandate public disclosure of politicians' sources of income. There was weaker evidence on the impact of corruption perceptions and general law-enforcement efficiency, and no support for many commonly held hypotheses about bribery. These findings can inform anti-corruption policies, help build effective institutions, and promote justice for sustainable development. They also highlight how little we really know about bribery at the micro level.

The article was published in the top-tier journal *Management Science* and the findings were reported in *The Economist* magazine, *The Business Times* (Singapore), and *Handelsblatt* (Germany). They were shared in the School of Business's research webinar in November 2022.



17 PARTNERSHIPS FOR THE GOALS



SDG 17:

## PARTNERSHIPS FOR THE GOALS

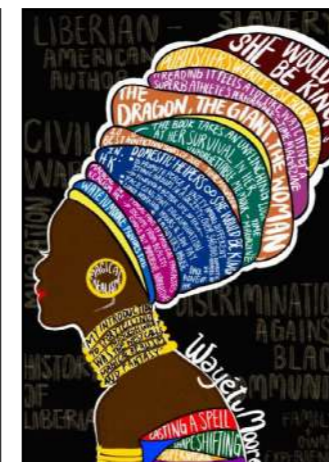
Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

## T&L Activities



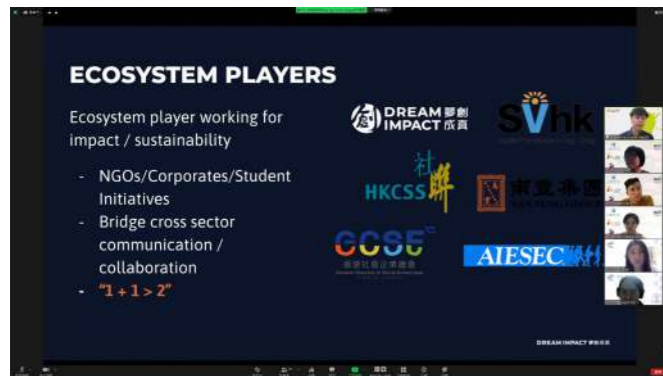
## Rebranding blackness

Students of Dr Emily Chow-Quesada's service-learning course "The Art of Storytelling" were given the opportunity to interact with African communities in Hong Kong via the Africa Center Hong Kong. They researched on African writers/literary texts and created posters which were disseminated to selected secondary schools and other communities so as to foster inter-cultural and inter-generational exchanges.



### Knowing more about social enterprises in Hong Kong

Setting up a social enterprise is not easy and could take years. What resources are available for social entrepreneurs in Hong Kong? How could students create positive social impacts through social entrepreneurship? In an online seminar, Mr Michael Ip of Dream Impact, one of the biggest communities of socially-minded entrepreneurs in Hong Kong that provide space and resources for social enterprises to enhance their social impact, shared his experience in supporting the development of social enterprises, and provided useful tips including ways to secure funding, mentorship, training support and even investments in a seminar.



### HKBU-University of Lincoln (UoL) Double Degree Programme in Bachelor of Science (Honours) in Applied Biology (HKBU) and Bachelor of Science (Honours) in Ecology and Conservation (UoL)

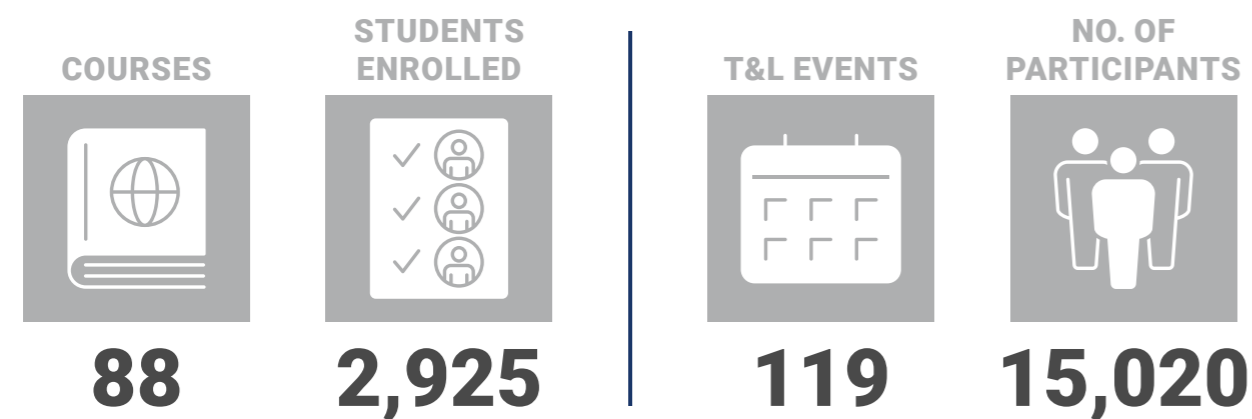
Department of Biology  
Author: Dr LEUNG Anna Oi Wah

To contribute to SDG Goal 17 (Partnerships for the Goals), Hong Kong Baptist University (HKBU) and University of Lincoln (UoL) have augmented collaborative efforts by offering a Double Degree Programme in Bachelor of Science (Honours) in Applied Biology (HKBU) and Bachelor of Science (Honours) in Ecology and Conservation (UoL) since 2021-22.

In this "3+1" Double Degree programme, students in the Environmental Science concentration of the Applied Biology programme study at HKBU for three years to gain fundamental and advanced knowledge and skills in environmental science and management to address current and topical environmental and human health-related issues and problems. The final year of studies of the four-year undergraduate programme is carried out at the University of Lincoln, UK, in its Ecology and Conservation programme which provides the students with a firm grounding in the principles of ecology and conservation to address local and international challenges pertaining to the conservation of biodiversity. HKBU's commitment to SDG Goal 17 fosters quality education to address various sustainable development goals.

Topics of the research projects, supervised by the University of Lincoln, of the first cohort of students of the double degree programme:

- CHOI Pik-wai: A behavioural and welfare analysis of the captive Bengal tigers in zoos
  - This project is related to animal behaviours in zoos. Behavioural observation is one of the indicators for assessing the welfare of captive animals.
- CHIM Nga-yin: The intraspecific variations of morphological functional traits and abundance of *Plantago lanceolata* between urban and peri-urban sites in Lincoln, UK
  - This project investigates the impacts of urbanisation on the British native plant species, *Plantago lanceolata*, and examines whether there are divergences in terms of morphological functional traits and plant abundance between urban and peri-urban populations through field survey.



Assessing the soil in the woodland



Wildfowl and Wetland Trust Slimbridge Wetland Centre