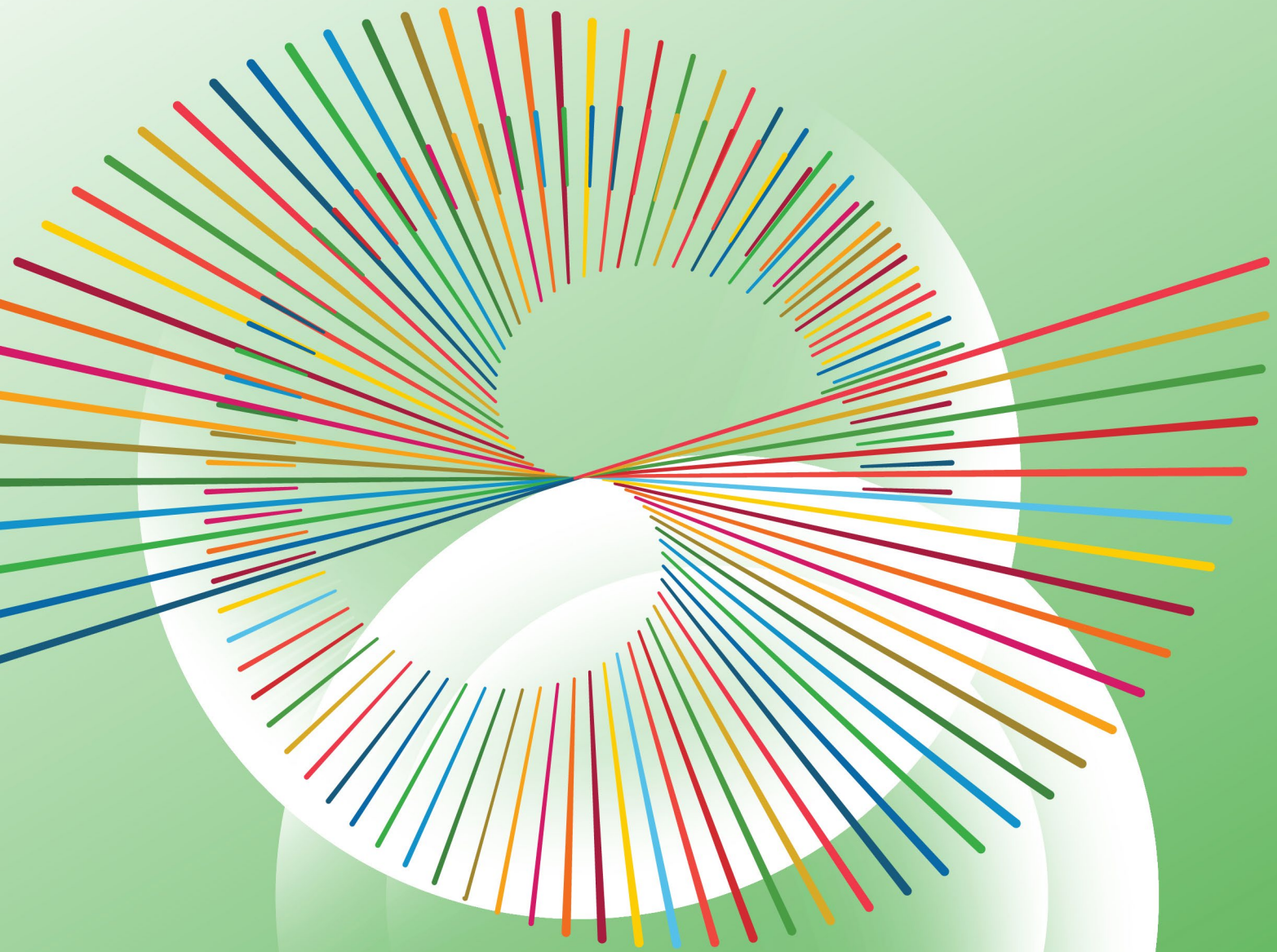




香港浸會大學

HONG KONG BAPTIST UNIVERSITY



# SUSTAINABILITY REPORT

2023

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.

HKBU is committed to integrating sustainability into every aspect of our education, research, day-to-day operations, and continuous development. This report provides an overview of our current academic and research endeavours that are aligned with the United Nations' 17 Sustainable Development Goals (SDGs). Additionally, it showcases our operational initiatives and engagement activities aimed at fostering a greater integration of the SDGs into the fabric of university life.



# SUSTAINABLE DEVELOPMENT GOALS

## Contents

SDG Mapping Approaches	4
SDG 01: No Poverty	5
SDG 02: Zero Hunger	8
SDG 03: Good Health and Well-being	13
SDG 04: Quality Education	24
SDG 05: Gender Equality	29
SDG 06: Clean Water and Sanitation	33
SDG 07: Affordable and Clean Energy	38
SDG 08: Decent Work and Economic Growth	46
SDG 09: Industry, Innovation and Infrastructure	51
SDG 10: Reduced Inequalities	56
SDG 11: Sustainable Cities and Communities	62
SDG 12: Responsible Consumption and Production	74
SDG 13: Climate Action	83
SDG 14: Life Below Water	89
SDG 15: Life On Land	94
SDG 16: Peace, Justice and Strong Institutions	97
SDG 17: Partnerships for the Goals	103
APPENDIX	107



## SDG MAPPING APPROACHES

HKBU's contributions to the SDGs have been mapped through a diverse range of methodologies. This approach ensures a comprehensive mapping of our efforts, allowing us to effectively measure and evaluate our progress in achieving the SDGs.

### Course mapping

HKBU has implemented a comprehensive mapping exercise to evaluate the integration of the SDGs within in our curriculum. Through a systematic review of our courses, this mapping exercise showcases our commitment to equipping students with the necessary skills and knowledge to address global challenges and complex societal issues both now and in the future.

To conduct this mapping exercise, HKBU has adopted an SDG keyword mapping approach. Leveraging text-mining techniques and methods, we have expanded upon SDG-related keywords sourced from the Elsevier's Scopus database, as well as documentation provided by the Sustainable Development Solutions Network and the United Nations. By analysing course titles, aims, objectives, and course outlines, we have identified a total of 536 courses at HKBU that incorporate SDG-related keywords.

### Research mapping

HKBU has utilised SciVal and Pure, the University's Integrated Research Information and Management System (IRIMS), to compile a comprehensive list of scholars and their publications aligned with each SDG for 2023. SciVal, an assessment tool for research performance, is an essential component of the Elsevier Research Intelligence ecosystem. It employs a machine learning model to map publications to the corresponding SDGs, enabling researchers and institutions to monitor and showcase their progress in achieving the SDGs. On the other hand, Pure is a computer system within the University's IRIMS that facilitates the reporting of research outputs and activities. Within Pure, research outputs are categorised with SDG tags using an algorithm, which utilises a keyword search string to determine the alignment of a research output with a specific SDG. Elsevier has tested the algorithm to ensure the accuracy in identifying relevant outputs and excluding the irrelevant ones.



## SDG 01: NO POVERTY

End poverty in all its forms everywhere.

## T&L Activities

### Working closely with community partners

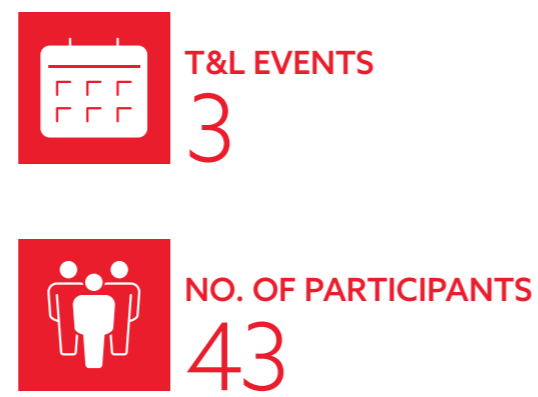
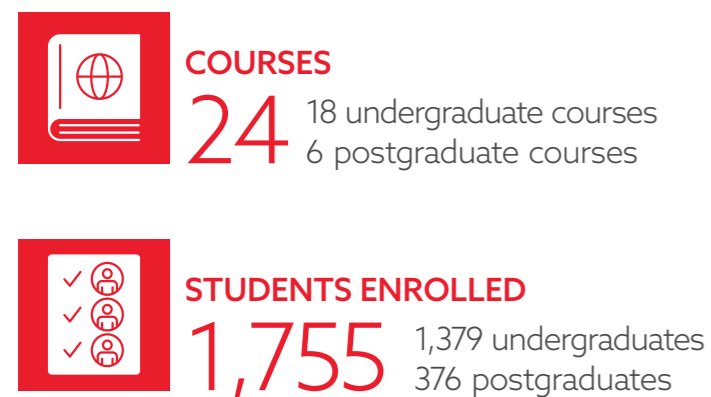
The course "Service-Learning in Sustainable Development", led by Dr Aries Wong of the Department of Accountancy, Economics and Finance, gave students a thorough understanding of socioeconomic and environmental challenges by working closely with community partners to provide direct services. They gained first-hand experience of poverty, socio-economic and environmental issues. The activities also addressed different SDGs, of which poverty is one of the main focuses. Students presented ideas to community partners and carried them out in their communities.



## HKBU Community Service Week



The Leadership Qualities Centre of the Office of Student Affairs organised a Community Service Week to nurture a caring spirit among students and promote a fairer and more inclusive society. Approximately 80 students created and organised activities for over 250 service recipients from six charitable organisations, including children from low-income families, underprivileged women and residents of subdivided flats. The students first received training led by professional social workers to gain a deeper understanding of the needs of the service recipients. They then designed and carried out various activities to offer the service recipients meaningful experiences that expanded their horizons.



## Research

### Experience of Chinese recent retirees on the effects of retirement on healthy ageing in Shenzhen and Hong Kong

Faculty of Social Sciences  
Author: Daniel W. L. LAI

While many of us look forward to a comfortable retirement, having adequate retirement savings has become a thing of the past. A surge in retirees struggling with financial difficulties has redefined healthy ageing. By exploring the perspectives on healthy ageing and the impact of retirement on retirees in Hong Kong and Shenzhen, the significance of maintaining financial independence and having sufficient social welfare provisions are emphasised. In Hong Kong, early retirees were yet to be eligible for senior citizen benefits. In Shenzhen, migrated retirees who receive pensions from their hometowns could barely support their lives in the city. In response to financial stress, retirees expressed a strong desire for re-employment and interest in community engagement, while age discrimination emerged as a barrier to their re-employment. The study hopes to raise awareness among policymakers and service providers of the importance of addressing the financial needs of retirees.



### When means-testing meets work-testing: A multi-level institutional analysis of claiming in-work benefits in Hong Kong

Department of Journalism  
Author: ZHANG Yin

This article addresses the lack of understanding regarding the experiences of individuals living in poverty and their interactions with the welfare system. Specifically, it focuses on the process of claiming in-work benefits (IWBs) for low-income families. The study presents a framework that analyses the experiences of these families at multiple levels of the welfare delivery system. Using the example of the Low-income Working Family Allowance (LIFA) in Hong Kong, which has a particular approach to IWBs, the research reveals the challenges faced by LIFA claimants, such as repetitive reassessments and difficulties in providing the required proofs for the means-testing and work-testing procedures. These experiences are influenced by broader societal factors in Hong Kong, such as long working hours and strict targeting of low-wage earners. This study contributes to the existing literature by examining the complexity of IWBs and their impact on individuals' experiences within the welfare system.



**SDG 02:  
ZERO HUNGER**

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

## T&L Activities



### Helping the needy through food analysis

In this service-learning course taught by Dr Gray Ho and Dr Lung Hong-lok of the Department of Chemistry, students learnt and trained in microbial, heavy metal and nutrient analysis. They used their knowledge of Chemistry and Analytic and Testing Science to ensure that surplus food is of a high standard. Students can contribute to the community with their classroom knowledge and skills by collecting surplus food from hotels or bakeries and delivering it to street dwellers, elderly services, or the homeless.



### “Replacing Hunger with a Smile” Bread Redistribution Service Programme

In collaboration with Foodlink, this service programme aimed to connect students with the community by collecting safe surplus food and beverages from bakeries and delivering them to those in need. This meaningful initiative was initiated by Dr Gray Ho, the Resident Master of C. L. Soong Hall. It allowed students to understand the problem of food waste, the challenges faced by low-income households, the homeless and others in need, and serve those in need.



UNDERGRADUATE COURSES

10



STUDENTS ENROLLED

374



T&L EVENTS

4



NO. OF PARTICIPANTS

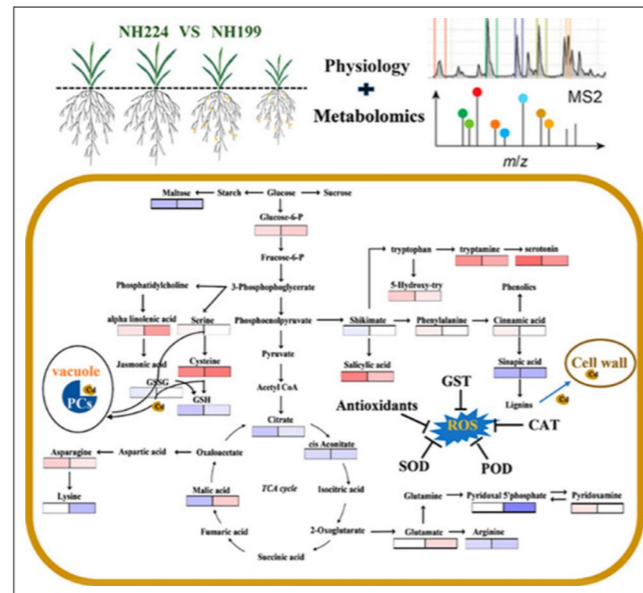
50

# Research

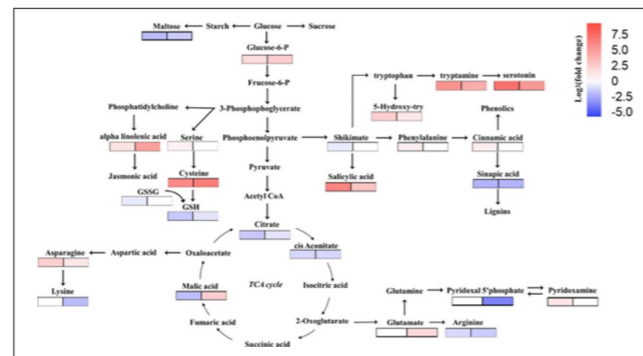
## Comparative metabolomics combined with physiological analysis revealed cadmium tolerance mechanism in Indica Rice (*Oryza sativa* L.)

Department of Chemistry  
Corresponding authors:  
Zongwei CAI, Lianguang SHANG

Using a comparative metabolomics analysis coupling plant physiological investigation approach, the tolerant mechanism to cadmium contamination of *Oryza Sativa* L. was studied. Amino acids biosynthesis, hormone metabolism, lipids-related metabolism, phenylalanine metabolism, and phenylpropanoid biosynthesis pathways were more active and highly associated with an antioxidant defence system, biosynthesis of the cell wall and phytochelatin, and the maintenance of plasma membrane stability. These findings provide insights into the metabolic profiles of rice following Cd stress and the screening and breeding of Cd-tolerant rice varieties.



Research strategy overview

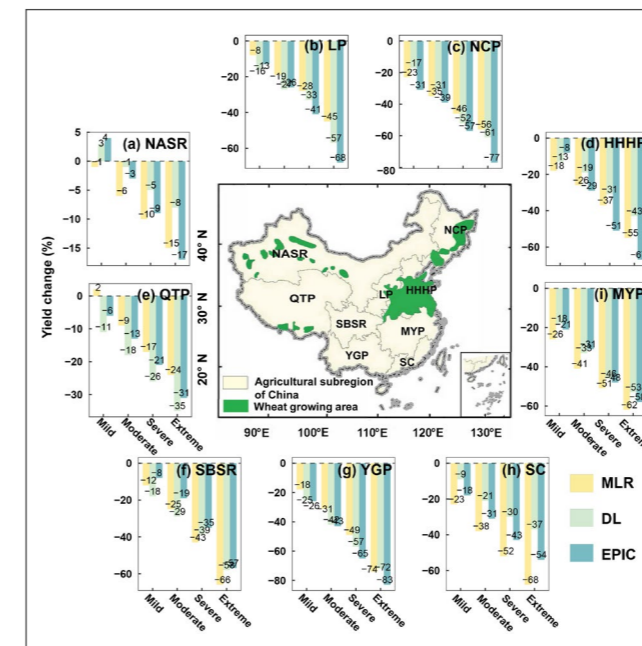


Key pathway affected upon cadmium contamination

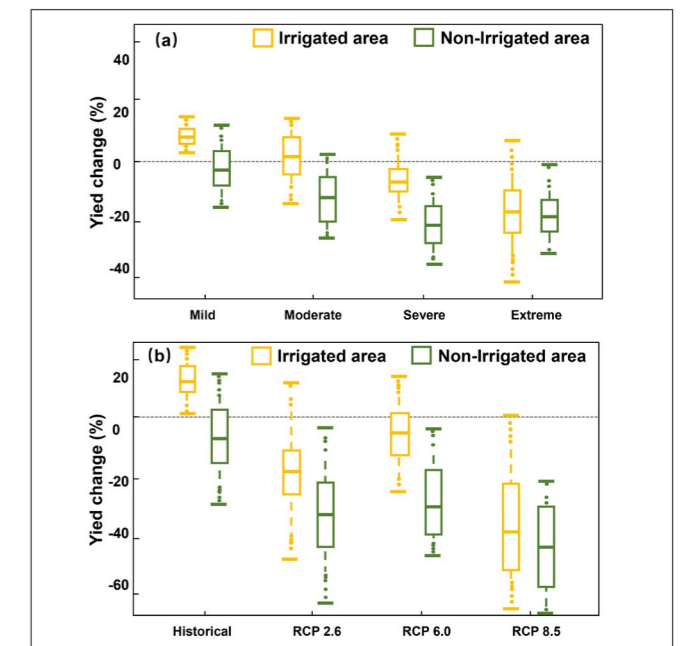
## Divergent effectiveness of irrigation in enhancing food security in droughts under future climates with various emission scenarios

Department of Geography  
Corresponding authors: YU Huiqian, LI Jianfeng

The SDGs of the United Nations (UN) put food security in high priority. Under climate change, knowing how severe weather affects food production is crucial. Moreover, we do not know how well irrigation works in different places. The study characterised droughts using the modified Palmer Drought Severity Index and looked into how droughts affect wheat yields in regions that water or do not water their crops. Multiple Linear Regression, Deep Learning, and the Erosion-Productivity Impact Calculator were used in this study. Future droughts are projected to get worse in different future scenarios. Under the high-emission future climate scenario RCP8.5, droughts may lead to a 32-49% drop in wheat yields, and the effectiveness of irrigation is minor. These results enable us to think more about how well irrigation works in a hot climate. The results also highlight the importance of climate change mitigation for food security.



Impacts of droughts with different intensities on wheat yields under RCP8.5



Drought induced wheat yields change between irrigated and non-irrigated areas

# Sustainability Initiatives

## Sustainable Procurement Policy and Sustainable Food Policy

The University's Sustainable Procurement Policy is dedicated to assessing the environmental impact of the procured products at every stage of their lifecycle, including the raw materials used, design, construction/manufacturing processes, operations and maintenance, environmental attributes, and supply chain management.

In line with this commitment, the Sustainable Food Policy aims to encourage responsible sourcing and consumption of sustainable food, with the goal of protecting ecosystems, preserving water resources, maintaining biodiversity, and mitigating the impacts on climate change. The University also ensures that unsustainable food is not purchased, sold, or consumed at its functions or catering outlets, which are operated or managed by the University. Moreover, the University offers a variety of sustainable food options to consumers.

## Campus Food Waste Tracking

The University participated in the Pilot Scheme on Food Waste Collection Services organised by the Environmental Protection Department. The scheme primarily focuses on collecting food waste generated from on-campus catering service. The food waste is collected on a daily basis by the contractor appointed by the Environmental Protection Department. Under the Pilot Scheme, the collected food waste is sent to O · PARK1, the resources recovery centre in Hong Kong which adopts anaerobic digestion technology to convert food waste into biogas for electricity generation whilst the residues from the process can be produced as compost for landscaping and agriculture use. This initiative aims to promote recovery of food waste in the university community.

## Office Pantries for Staff

Office pantries are set up to provide staff members with a space to find comfort, recharge, and enjoy refreshments. In addition to offering a diverse selection of snacks and beverages, they create opportunities for staff to interact, fostering collaboration and cultivating a friendly working environment.



## SDG 03: GOOD HEALTH AND WELL-BEING

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

## T&L Activities



## Providing free consultation and treatments to the elderly

In the "Orthopaedics and Traumatology of Chinese Medicine and Tui Na" course led by Mr Cheung Chun-hoi of the School of Chinese Medicine, students had the opportunity to provide free consultation and therapy to the elderly patients of the Hong Kong Society for Rehabilitation. The students not only provided Tui Na treatment to the service users, but also produced videos to guide the patients on acupressure and home exercises for pain relief. These educational videos enabled more people to learn about the basic treatments of Chinese Medicine for pain relief.



## Expressing feelings with creative art

The “Creativity, Well-being and Art Therapy” course instructed by Dr Renee Chiu of the Department of Social Work, included a range of art forms and modalities, such as painting, music and movement, encouraging students and service users to express themselves creatively. The course ended with a celebratory event where students were encouraged to create more artwork together and share their creations with the HKBU community. Students were able to apply their knowledge and skills in art therapy in this course.



## PUNCH for your health - Workshop on personal development

From October 2022 to April 2023, 22 students participated in the Thai boxing training and service programme organised by the Undergraduate Halls. After completing 16 sessions of training to enhance their physical fitness and mental resilience, the students undertook the important task of sharing Thai boxing and health management skills with 40 underprivileged children and teenagers from diverse ethnic backgrounds in a 5-hour session. In the closing ceremony, the underprivileged visited HKBU to experience the atmosphere of the university campus.

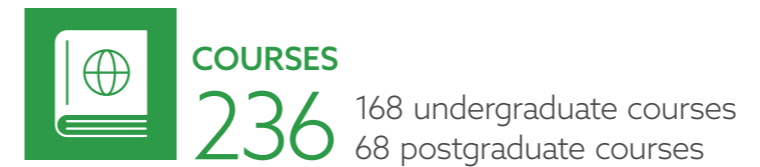


## Mental Health First Aid Standard Course

Thirteen students from various faculties took part in the 12-hour internationally accredited “Mental Health First Standard Course” during the Easter break. Upon completion of the course, students were able to identify symptoms of four common mental health problems – depression, anxiety, substance abuse and psychotic disorder. They learnt how to practise “ALGEE”, the skill of providing mental health first-aid assistance to others. All students enjoyed this enriching learning experience and were able to provide timely assistance to those in need.



Mental Health First Aid Standard Course – 11 & 12 April 2023 (Group J)





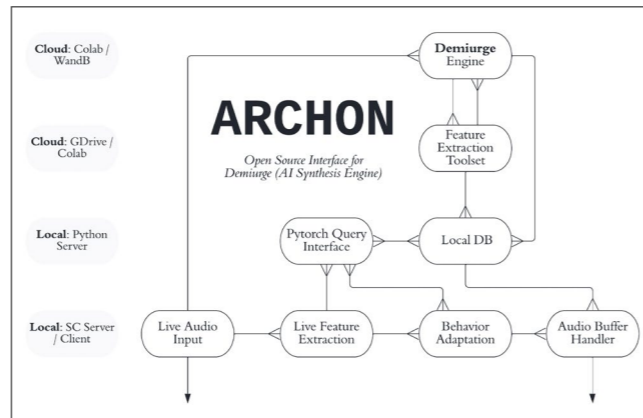
# Research

## Archon

Academy of Music

Authors: Roberto ALONSO TRILLO, Marek POLIKS

Archon and Demiurge are tools designed to revolutionise music creation. Archon is a user-friendly interface that can work with any audio stored on Google Drive. It is part of a broader vision to move away from traditional musical instruments and studio work, focusing instead on curating music by genre, mood and intensity. This innovative approach aims to free music from human limitations and biases. The project contributes to people's well-being by facilitating new forms of artistic expression, fostering cultural exchange and community engagement, and encouraging a fresh perspective on music and its role in society as a means for mental and emotional well-being. This aligns with the UN's objective of fostering good health and well-being for all.



# NEOS

## Archon

Works for violin, percussion, and machine learning environment

Marek Poliks · Roberto Alonso

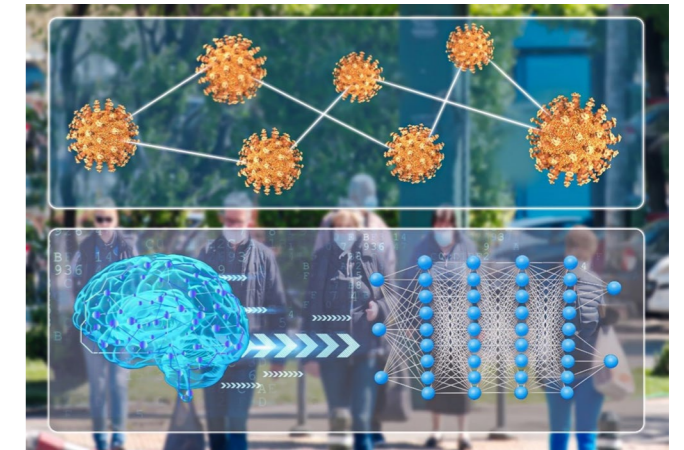


## Overcoming data heterogeneity, dependency, and noise: A novel spatio-temporal learning framework (corresponding to the publication title "TransCode: Uncovering COVID-19 transmission patterns via deep learning")

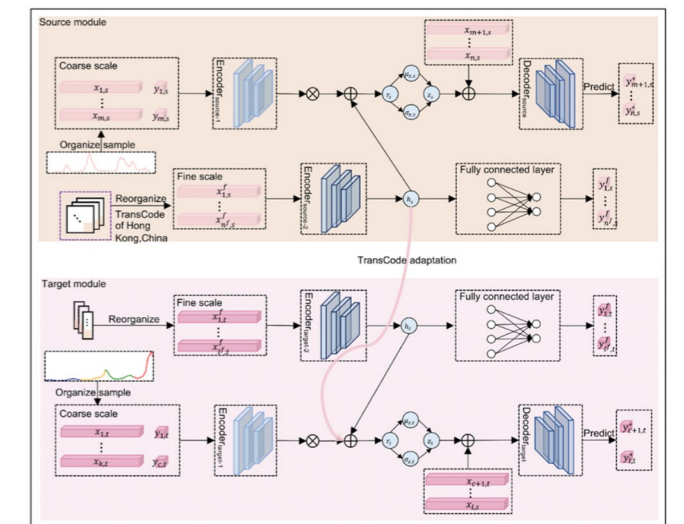
Department of Computer Science

Author: Jiming LIU

The research aims to answer a challenging and imminent question in infectious disease modelling and control: How can we accurately characterise the spatiotemporal heterogeneity of disease dynamics (which are determined by complex human mobility and contact behaviours), especially when available data are limited or even scarce? To this end, the research team has developed a novel deep transfer learning method to adapt the knowledge that they have learnt from the data-rich regions to the data-limited/scarce regions. Extensive validations on seven metropolises over the world demonstrate the effectiveness of the proposed method in transmission dynamics characterisation and risk prediction. Moreover, the transferred/adapted transmission patterns in the data-limited/scarce regions can be well explained in the real-world context. This work offers practical tools for intervention planning and operational responses in data-limited regions/countries, which are especially useful in the early stages of emerging infectious diseases, where data are usually scarce or even unavailable. Due to its methodological and practical value, this work has been published and selected as a featured article (similar to the Best Paper Award of a conference) by the top-tier interdisciplinary journal, Infectious Diseases of Poverty.



Disease transmission characterisation via deep transfer learning



The TransCode framework

The following two groundbreaking studies offer a promising direction for cancer treatment and the potential development of safe and effective drugs to treat melanoma, bringing new hope to patients with these devastating diseases and ultimately promoting the health and well-being of all.

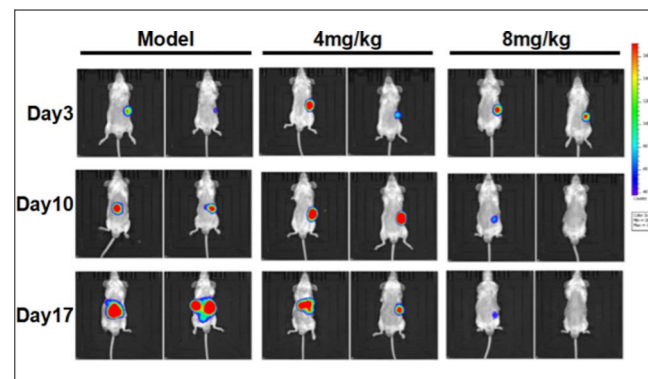
## Brevilin A as a potent anti-metastatic CRC agent that targets the VEGF-IL6-STAT3 axis in the HSCs-CRC interplay

School of Chinese Medicine

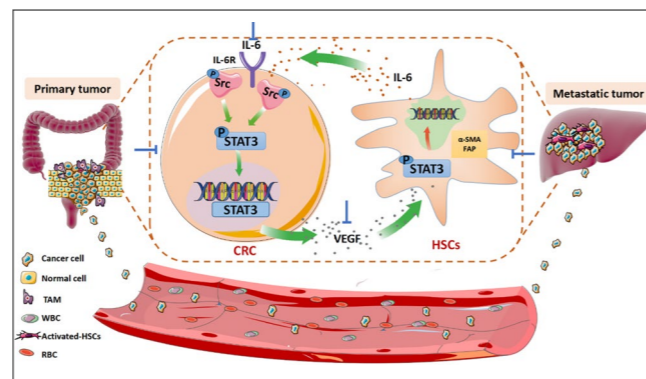
Authors: Xueying FAN, Mingjing MENG, Baoting LI, Jincheng TAN, Keyang XU, Shilin XIAO, Hiu-Yee KWAN\*, Zhongqiu LIU\*, Tao SU\*

\*Corresponding authors

Liver metastasis is the major cause of mortality in colorectal cancer (CRC) patients, which is influenced by the interaction between CRC cells and hepatic stellate cells (HSCs) in the hepatic tumor microenvironment. Here, we found that CRC cells release VEGF, which promotes the differentiation of HSCs into carcinoma-associated fibroblasts (CAFs). Additionally, HSCs release IL6, which activates STAT3 in CRC cells, thereby enhancing the metastatic potential of the cancer. Importantly, we found that brevilin A, a compound derived from *Centipeda minima* (L.) A. Br. et Aschers, targets the VEGF-IL6-STAT3 axis in the interaction between CRC cells and HSCs. This compound effectively inhibits colorectal liver metastasis and the growth of cancer. Our findings not only support the potential use of brevilin A as a therapeutic agent for treating metastatic CRC, but also provide a promising direction for the development of other therapeutic strategies that target the VEGF-IL6-STAT3 axis for the cancer treatment.



Brevilin A significantly inhibits colorectal liver metastasis in both time- and dose-dependent manners in the mouse model with colorectal liver metastasis. The signal emitted from the CT26-luc cells was detected using the IVIS Lumina XRMS Series III imaging system following the treatments with brevilin A. The top panel of the diagram illustrates the dosage of brevilin A, while the left panel represents the number of days for the treatments.



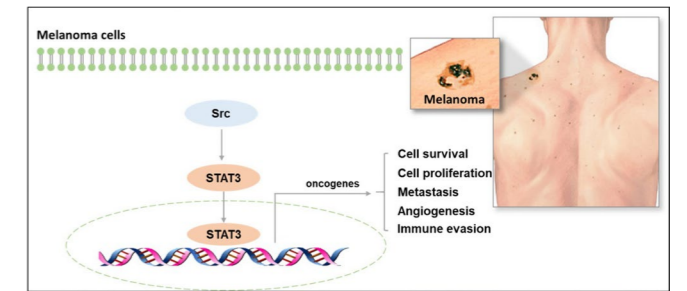
A schematic diagram showing the role of VEGF-IL6-STAT3 axis in the HSCs-CRC interplay and the mechanism underlying the inhibitory effect of brevilin A on CRC liver metastasis.

## Inhibition of STAT3 signalling contributes to the anti-melanoma effects of chrysoeriol

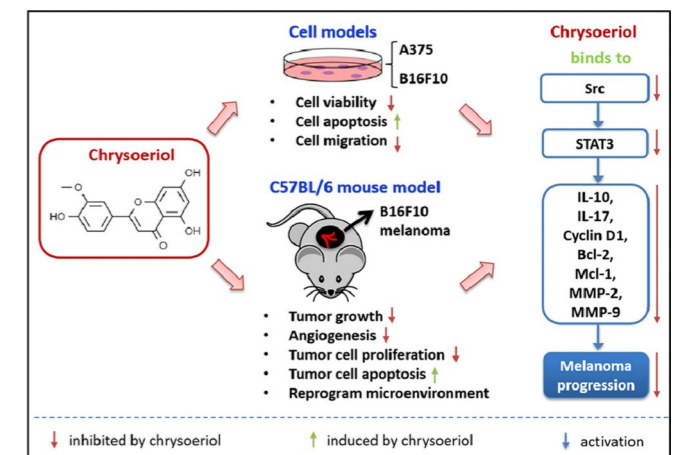
School of Chinese Medicine

Corresponding authors: LIU Bin, YU Zhi-Ling

Melanoma is an aggressive malignancy with a high mortality rate. STAT3 (signal transducer and activator of transcription 3), an oncoprotein that is related to tumor growth, metastasis, angiogenesis and immune evasion, is considered as an effective target for treating melanoma. Chrysoeriol is a flavonoid compound, and possesses anti-tumor activity in lung cancer, breast cancer and multiple myeloma, but whether it has anti-melanoma effects is still unknown. The research team found that chrysoeriol exerts anti-melanoma effects in cell and mouse models, and inhibiting STAT3 signalling contributes to the effects of chrysoeriol. They also found that chrysoeriol directly binds Src, a known upstream tyrosine kinase of STAT3, and suppresses Src activation, enabling further understanding of the mechanisms inhibiting STAT3 signalling by chrysoeriol. Moreover, chrysoeriol showed no obvious toxicity in normal keratinocyte cells and in mice. Thus, chrysoeriol has the potential to be developed into a safe and effective drug for treating melanoma.



STAT3 signalling promotes melanoma progression.



Inhibiting STAT3 signalling by directly targeting Src contributes to the anti-melanoma mechanism of chrysoeriol.

# Sustainability Initiatives

## Provision of Chinese medicine healthcare services to the public

The University aspires to provide exemplary and systematic Chinese medicine clinical services by bringing together doctors of the highest calibre to offer the best treatments that encompass both the physical and mental aspects and health.

Since 1999, the University has been leveraging its special expertise to provide a full range of quality Chinese medicine healthcare services to cater for the public's needs. The School of Chinese Medicine has been making continuous efforts to build its medical team and expand its clinical network. For over 20 years, the University has served more than 3.5 million patients via its extensive network of 10 self-run and seven jointly operated clinics across Hong Kong.

Various initiatives have been implemented to ensure the healthcare services are accessible and affordable for different groups. For example, different levels of discount are offered to elderly patients and credit card holders; discounted services are extended to individuals under the Comprehensive Social Security Assistance Scheme and elderly people in need in collaboration with partners.

To promote a deeper understanding of Chinese medicine within the community, the division extends the opportunity of free consultations on 1 May each year. Every July, the public can sign themselves up for free Chinese medicine body constitutional tests, and receive advice for better health management. Seminars/workshops are also provided regularly to the public with the objective of emphasising the importance of health education.

Apart from serving the community, these clinics also provide clinical teaching for Chinese medicine students and enable academics and Chinese medicine experts of the School of Chinese Medicine to conduct clinical studies to expound the effectiveness of Chinese medicine by way of evidence-based medicine.

## Chinese Medicine Hospital

As the contractor for the service deed of the first Chinese Medicine Hospital (CMH), HKBU is committed to promoting the standardisation and internationalisation of Chinese medicine, while incorporating sustainability into its medical service provisions and daily operations.

CMH is planned to commence operations in 2025 and will progressively offer in-patient, day-patient, out-patient, and community outreach services. The CMH will also offer Chinese medicine services in six specialist areas, including internal medicine, external medicine, gynaecology, paediatrics, orthopedics and traumatology, and acupuncture and moxibustion, along with a series of special disease programmes.

The establishment of the first CMH will elevate Chinese medicine education, research and services to new heights, with a specific emphasis on strengthening and raising Chinese medicine healthcare standards in Hong Kong in a sustainable manner.

## Health promotional and outreach programmes

The Medical Clinic Welcoming Programme is offered to first-year students annually for free. This comprehensive programme includes a range of essential health assessments such as height and weight measurement, blood pressure and pulse measurement, colour vision and visual acuity examination, as well as a review of health questionnaire.



Furthermore, throughout the year, students, eligible staff and their family members could have the opportunity to receive human papillomavirus vaccination and/or seasonal influenza vaccination at a concessionary rate through the collaboration with local medical institutions. Informative talks on topics such as emotional health, health diet were organised to promote both physical and mental health well-being among the University community.

The University regularly holds seminars and webinars for students, focusing on sexual and reproductive healthcare topics. Healthcare specialists are invited to share their knowledge and experience with the students. In August 2023, a talk on the topic "Common gynecological conditions and contraception" was conducted.



## Healthcare services

The University prioritises the health and well-being of its community by providing comprehensive healthcare options and promoting the integration of both Western and traditional Chinese medicine practices.

The University provides quality on-campus healthcare and medical services to ensure the well-being of the University community. Off-campus dental services are also available at a discounted rate, further extending accessible and affordable healthcare options to the University community. Students and staff have convenient access to medical services at the University Health Services Centre located on Ho Sin Hang Campus, which is run by an appointed medical group. In addition, the School of Chinese Medicine operates clinics both on and off campus. These clinics offer Chinese medicine clinical services at a discounted rate to students, eligible staff and their family members.

## Mental health support

In addition to promoting physical well-being, the University offers on-campus mental health support. The Counselling and Development Centre provides free and confidential counselling for eligible students, as well as consultation and referral services for staff. Our team of Psychological Counsellors is dedicated to assisting students who may be grappling with emotional distress, or any other concerns related to their well-being.

## Shared sports facilities

The University offers a diverse array of excellent facilities and recreational sports experiences for athletes, students, staff and their immediate family members, and alumni. Staff and students have the privilege of inviting guests from the general public to enjoy these facilities during their visit. The amenities include dance and table tennis rooms, a fitness centre, squash courts, an outdoor swimming pool, tennis courts, and multi-purpose halls suitable for various activities like badminton, basketball, and volleyball.

## Smokefree campus

Recognising the risks and hazards associated with direct, second-hand, and third-hand smoking, the University has implemented a stringent smoking ban throughout all areas of the campus. Furthermore, the University actively promotes and supports smoking cessation. To underscore the paramount importance of maintaining a smoke-free environment, the University has established a Smokefree Policy that applies to all members of the University community in both indoor and outdoor spaces within the campus premises.

## Fostering campus health and safety

To ensure the health and safety of the University community, a variety of policies and programmes are regularly implemented and executed. These initiatives, which include regular inspections, testing, and surveys, are launched and adhered to professional standards.

For example, for air quality monitoring, the University conducted a comprehensive annual survey of indoor air quality throughout the entire campus. A total of 321 samples were tested, and each one achieved either an excellent or good class according to the Indoor Air Quality Certification Scheme established by the Environmental Protection Department.

Additionally, regular food safety audits are conducted to manage the overall hygiene conditions and minimise the likelihood of food-related incidents at all catering outlets located within the 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



### Engaging local artists through graphic design

The service-learning course “Studio: Graphic Design” was led by Ms Pat Wong, Ms Heesun Seo and Ms Elaine Ng of the Academy of Visual Arts, in collaboration with Asia Arts Archive, a non-profit organisation dedicated to documenting contemporary art history. Through the course, students delved into research on local artists and their works, engaging in interviews with these individuals. The students also crafted unique zines for each participating artist, demonstrating their ingenuity and concerns about societal issues through their artistic prowess and graphic design skills. Their artwork was showcased in a public exhibition at Current Plans, a gallery located in the heart of Kowloon.



### Cultivating social consciousness through Chinese song lyric writing

Led by Professor Chow Yiu-fai of the Department of Humanities and Creative Writing, the service-learning course “Chinese Song Lyric Writing” aimed to foster students’ social consciousness and empathy through creative writing while honing their lyric writing skills. The chosen themes for the course were “Impermanence” and “Home”, and the students collected personal narratives from a diverse range of 36 individuals. This included homeless people, elderly individuals living alone, foreign domestic assistants, LGBT families, refugees, and more. Drawing inspiration from these accounts, the students crafted songs that narrated the stories of different social groups. In addition to creating lyrics, the students also composed the music and performed their songs during two concerts, bringing their desired messages to a wider audience. The concerts garnered attention from both news outlets and social media platforms, further amplifying the impact of this service-learning course.



## Learning about Korean culture

The International Office collaborated with the Consulate General of the Republic of Korea in Hong Kong and the Korean Cultural Center in Hong Kong to organise the Hallyu Haru! Korean Fiesta 2023, a vibrant event aimed at promoting cultural exchange. To kick off the festivities, Cheongsachorong, a traditional Korean lantern, was illuminated, and a toast with Omija-cha, a Korean herbal tea, was arranged. With the support of esteemed Korean institutions, this immersive cultural experience took place on campus and attracted over 1,500 members of the University community. The event featured a variety of engaging activities, including an outdoor Korean movie screening accompanied by Col-Pop tasting, and the Ddakji challenge inspired by the popular series "Squid Game." Participants could try on Hanbok, the traditional Korean attire, and enjoy authentic Korean street food. Additionally, there were demonstrations of Taekwondo and K-pop dance performances. Overall, the event provided an enriching platform for cultural exchange.



## Supporting students with physical impairment

Through innovative pedagogies, HKBU faculty members are committed to providing the "Best Student Experience" for all students, including those who face mobility challenges. In a workshop organised by the Centre for Holistic Teaching and Learning and the Unit for Students with Special Educational Needs, three speakers were invited to share their valuable insights on delivering and receiving support for high-quality teaching and learning. One of the speakers was an alumnus from the class of 2019 who shared his personal learning journey at HKBU. He also discussed his entrepreneurial venture, which focuses on developing computer software to benefit other physically-challenged learners.



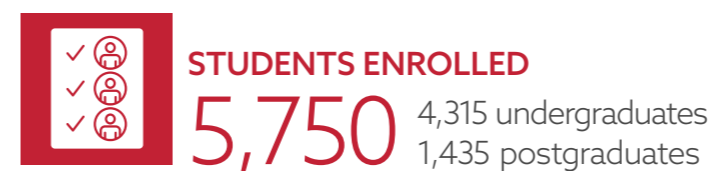
## Empowering students to pursue academic excellence and holistic development

Quality education transcends the boundaries of the classroom, extending to every facet of a student's life. The true essence of education lies not just in academic brilliance but in the holistic development that prepares students for real-world challenges. At the heart of this vision is the support from generous individuals and organisations that provides the financial backbone to such endeavours.

The Office of Student Affairs hosted the Scholarship and Financial Aid Donor Appreciation Reception in May 2023 to express the University's gratitude to donors for their generosity and unwavering support. The event was attended by nearly 250 donors, staff, and students, providing an opportunity for beneficiaries to personally thank the donors.

In the 2022-23 academic year, the University awarded over 2,800 scholarships and more than 150 bursaries, amounting to approximately HK\$96 million. In addition, HKBU's First-Generation University Student Fund had received HK\$10 million in donations since its establishment in 2017, benefiting over 1,700 students. Project SEED received donations totalling nearly HK\$12.5 million over the past three years. The HKBU SEED Fund, established under Project SEED in 2020, provided timely assistance to over 240 students in need and supported various initiatives, including service-learning and social innovation projects, student exchange programmes, as well as the Subsidised Internship Scheme and Virtual Internship Scheme.

To showcase the impact of the scholarships, two recipients from the School of Creative Arts shared their talents and learning experiences at the event. They expressed deep gratitude for receiving the scholarships, which not only recognised their achievements but also relieved their financial burdens, enabling them to pursue academic excellence and holistic development.

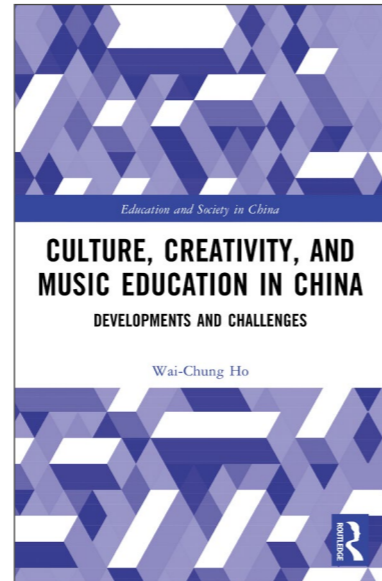


# Research

## Social change, culture and creativity: Music education in China

Academy of Music  
Author: Wai-chung HO

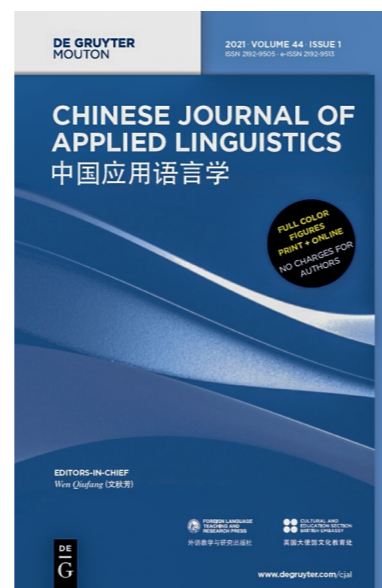
This research project investigates the relationships between social transformation, cultural diversity, creativity, and education reforms in music education in schools in China. The study employed a range of methodologies, including the analysis of official documents, approved music textbooks, and literature. Additionally, student questionnaires and in-depth interviews with students, teachers, and school leaders were conducted. An additional focus of this empirical research is to explore how teacher training, specialist knowledge, informed pedagogical decisions, and classroom practices intersect in the field of music education. By examining the impact of social change on creativity in music education, this project aims to cultivate culturally rich and creative practices that address the present-day educational challenges in China. Furthermore, this research contributes to a deeper understanding of the pivotal role that teacher expertise and informed decision-making play in advancing quality education and sustainability within music education and creative practices, particularly in the dynamic context of 21st century China.



## Developing assessment literacy for classroom-based formative assessment

Department of Education Studies  
Author: Ricky LAM

This special issue was developed over a period of 20 months and makes significant theoretical and practical contributions to the field of language assessment. The emphasis is always on prioritising learning how to teach rather than learning how to assess. The 10 articles in this special issue focus on the development of assessment literacy among schoolteachers and university instructors around the world, as they innovate learning-oriented formative assessment practices in diverse educational contexts, including Asia, Europe, and North America. This editorial explores the concept of classroom-based formative assessment and the reasons why stakeholders misinterpret and misuse this concept. The principal investigator and co-editor recommend that, in light of this dilemma, teachers should be encouraged to develop their language assessment literacy through formal teacher training and reflective practices from the bottom-up. However, they also acknowledge that, based on selected findings from this issue, the ongoing development of teacher assessment literacy in formative assessment strategies is progressing steadily but not quickly enough to keep pace with the ever-changing language assessment landscape.



## SDG 05: GENDER EQUALITY

Achieve gender equality and empower all women and girls.

## T&L Activities



## Illustrating the stories of our community

Under the guidance of Ms Pat Wong, students enrolled in the “Basic Illustration” service-learning course participated in drawing exercises held at the Pang Jai fabric market in Sham Shui Po. Leveraging their growing visual art skills, the students embarked on a meaningful collaboration with Hong Kong Shift, which is a social impact storytelling platform dedicated to promoting social inclusion and engagement, as well as raising awareness about the lives of shift workers, with a particular focus on gender perspectives. Through fieldwork that delved into the lives of these workers, the students gained a profound understanding of the challenges they face and their valuable contributions to society. This experience enabled the students to use their artistic talents to interpret and share the stories of shift workers, fostering a greater appreciation for their resilience and dedication.



## Celebrating shift workers through illustrations

Students participating in the service-learning course “Experimental Illustration” led by Ms Pat Wong produced artwork that was compiled into booklets for public distribution. These creative booklets were showcased at Form Society, a multipurpose creative venue located in Sham Shui Po. Utilising their burgeoning visual art skills, the students interpreted and conveyed the stories of shift workers in Hong Kong. This exhibition not only served as a platform for artistic expression but also encouraged viewers to engage in thoughtful dialogue and introspection regarding the lives of shift workers.



### COURSES

**6** 5 undergraduate courses  
1 postgraduate course



### STUDENTS ENROLLED

**379** 372 undergraduates  
7 postgraduates



### T&L EVENTS

**4**



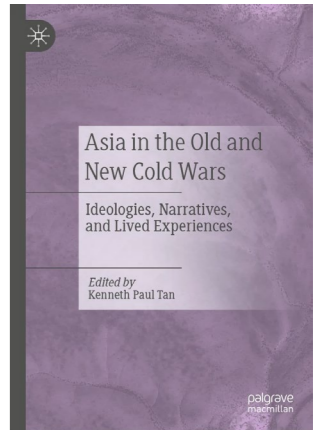
### NO. OF PARTICIPANTS

**68**

## Research

### Asia in the old and new Cold Wars: Ideologies, narratives, and lived experiences

Department of Journalism  
Editor: Kenneth Paul TAN



In commemoration of the 30th anniversary of the conclusion of the Cold War in 1991, Professor Kenneth Paul Tan has curated a collection of multidisciplinary essays. These essays selected from over 60 papers were presented at an HKBU conference organised by Professor Tan in 2021. The essays delved into critical analyses of various mediums such as films, television shows, novels, newspaper and magazine articles, tourist souvenir shops, art exhibits, museums, and other commemorative sites. These mediums engage with themes such as conflict, violence, trauma, displacement, marginalisation, ecology, ethnic and gender identity. The book sheds light on the complex relationships between the historic Cold War and its legacies, as well as their impact on ideological beliefs and identities in Asia today. In the face of a new Cold War era characterised by superpower rivalries, the book advocates moving away from grand narratives and strategies of high-level geopolitical events, and instead directs attention towards the lived experiences of ordinary and marginalised individuals.

### Working from the ground up: A participatory approach to community revitalisation in old urban neighbourhoods in Hong Kong

Department of Social Work  
Authors: FUNG Kwok-kin, HUNG Suet-lin\*  
\*Corresponding author



The project has developed the “Working from the Ground Up” model, which aims to facilitate researchers and practitioners to collaborate with disadvantaged groups. This collaboration takes into account disadvantaged groups’ perception of priorities in the community amidst the global context of neoliberal welfare policies. The project also focuses on a disadvantaged neighbourhood in Hong Kong, exploring both its challenges and assets. By centering on the female residents, the project provides a platform for them to voice their primary concerns regarding gender-specific safety threats. These concerns affect the women’s use of public spaces such as streets and parks, as well as staircases and inter-building alleys leading to the units where they live, and even the vulnerability of their housing units to robbery and theft. Through a process of prioritising their needs, the women have identified solutions that involve both individual behavioural changes and collective action in voicing their concerns. The resulting collective empowerment of women paves the way for future progress towards achieving gender equality.



# Sustainability Initiatives

## 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, as well as the criteria and accommodations as laid down in the relevant policy document. One pay scale, performance assessment and reward system are adopted for each type of staff. Individuals will be assessed on the basis of the job requirements and their relevant aptitudes, skills and abilities, and not on other irrelevant considerations, such as family background, family status, gender, place of origin, ethnicity, race, disability, age, faith heritage and sexual orientation.



The University strives to create an atmosphere of dignity and respect for all individuals at study and work, where any form of harassment or victimisation will not be tolerated. A Policy Statement on Equal Opportunities has been implemented and is consistently reviewed and updated to ensure its relevance. The University handles complaints about discrimination or harassment with utmost seriousness by promptly addressing them in strict confidence in accordance with established procedures.

All full-time staff must complete the mandatory compliance training, which includes a specific module on "Anti-discrimination laws of Hong Kong" to promote equal opportunities on the campus, and ensure staff are well-informed and committed to upholding the relevant laws.

To further raise awareness among staff, various initiatives promoting equal opportunities and respect for others have been implemented. These include internal communication messages and events commemorating International Women's Day, International Day of Friendship and celebrations of New Year's traditions from different cultures.

## Caring for staff with family

In addition to the 14 weeks of fully paid leave provided to female staff members who have completed 40 weeks of service before the start of their maternity leave, eligible male staff members are granted seven working days of paternity leave for each childbirth which is more than that provided for under the Employment Ordinance of the HKSAR Government.

The University acknowledges and respects the decision of staff members to breastfeed, and it ensures they can continue breastfeeding upon their return to work after giving birth. The University strives to create a suitable and welcoming environment that accommodates breastfeeding alongside work responsibilities. In addition, eligible staff members who choose to continue breastfeeding upon their return to work are provided with paid lactation breaks. The University has also designated places for lactation on campus.

Internal communication messages regarding parent-child relationships have been circulated to encourage positive interaction and dialogue within families.



## SDG 06: CLEAN WATER AND SANITATION

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

## T&L Activities



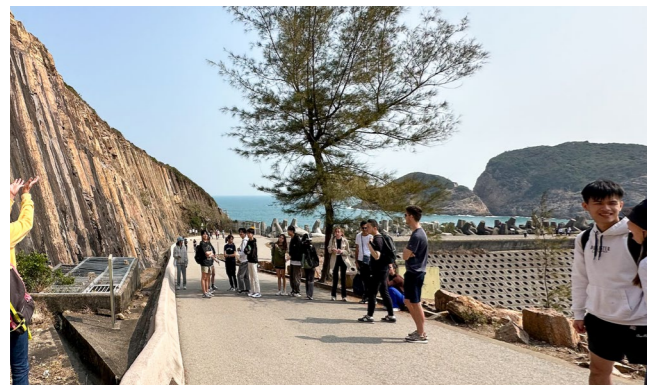
## Promoting climate literacy

Dr Emily Zong of the Department of Humanities and Creative Writing led the service-learning course titled "Climate Change Literature and Culture", aimed to educate students about important socio-environmental issues, including climate change, plastic pollution, and biodiversity. Throughout the course, students actively engaged in reflective and participatory activities, such as maintaining eco-journals and engaging in oral storytelling, fostering a sense of accountability and facilitating the generation of active knowledge. To further deepen their understanding and commitment, students actively participated in a clean-up project and established connections with environmental non-governmental organisations. Their efforts resulted in an exhibition held at TriAngle, along with the utilisation of various multimedia platforms to amplify climate literacy and inspire actionable change within the community.



## Eco tour promotes sustainability and preservation of natural resources

The Undergraduate Halls organised a guided eco tour to the High Island Reservoir (East Dam), one of the main sources of drinking water in Hong Kong renowned for its substantial water capacity. Dr HC Chiu, Hall Fellow of C.L. Soong Hall and former Geography lecturer, led the participants on an expedition to explore the High Island geo-area nestled within the Sai Kung East Country Park. Throughout the tour, participants encountered unique geological formations, including volcanic rock columns, faults, twisted rock columns, dykes, and sea stacks. They also learnt about the importance of preserving invaluable geological and topographical resources. Departing the tour with a renewed sense of purpose, participants were inspired to promote sustainability and bolster public consciousness surrounding the oceans, seas, and marine ecosystems. The eco tour to High Island was an enlightening and educational endeavour, underscoring the imperative nature of safeguarding our precious natural resources.



**COURSES**  
6 5 undergraduate courses  
1 postgraduate course

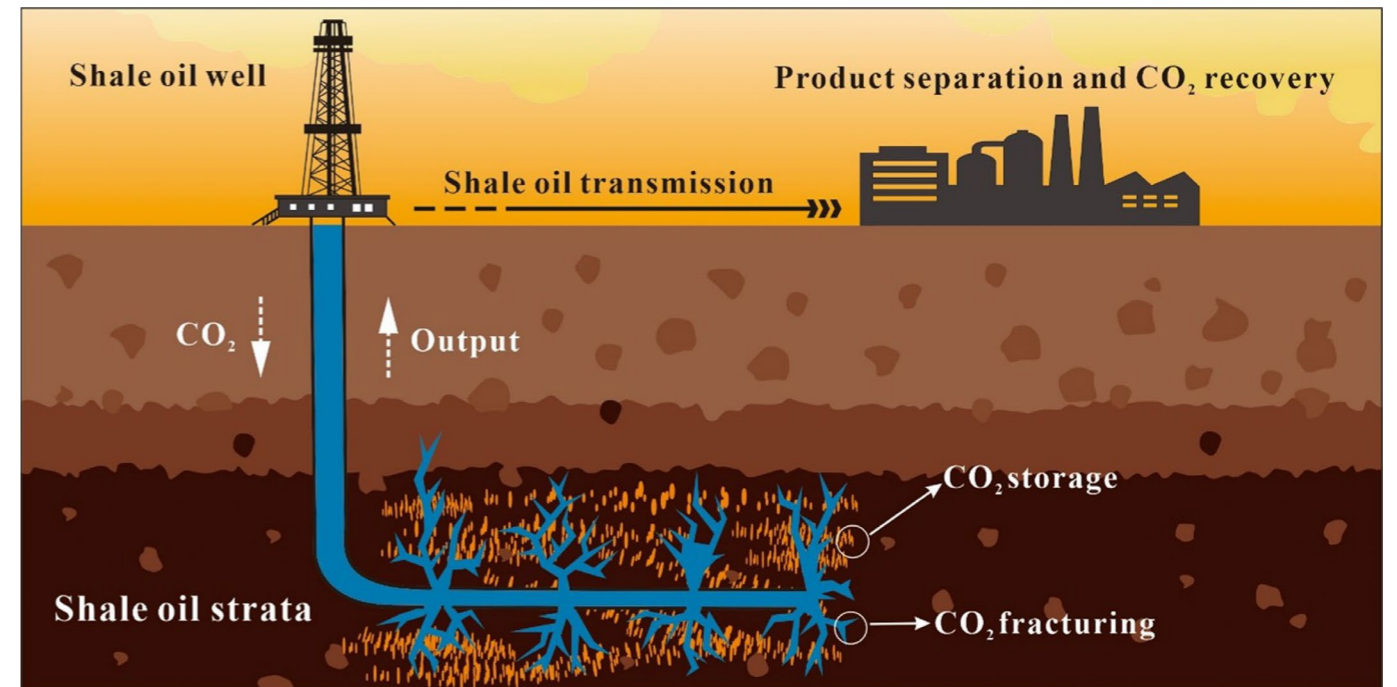
**STUDENTS ENROLLED**  
328 244 undergraduates  
84 postgraduates

**T&L EVENT**  
1

**NO. OF PARTICIPANTS**  
25

## Research

### Assessment of CO<sub>2</sub> fracturing in China's shale oil reservoir: Fracturing effectiveness and carbon storage potential



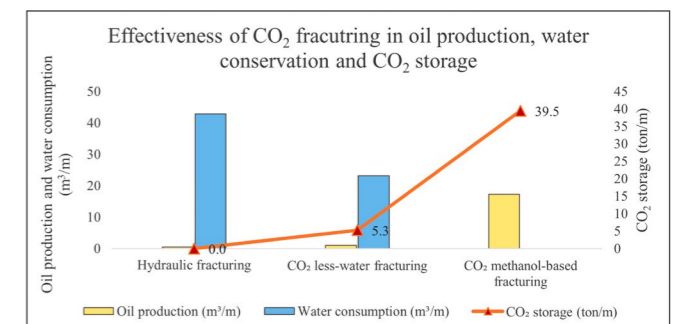
Schematic diagram of CO<sub>2</sub> Fracturing for Shale Oil Extraction

Department of Geography  
Author: GUO Meiyu

China's abundant shale oil resources play a crucial role in the nation's energy strategy. However, the conventional methods used to extract shale oil, such as hydraulic fracturing, consume substantial amounts of water and cause harm to the environment. To address these concerns, the research team has proposed an innovative approach known as CO<sub>2</sub> fracturing. This method aims to enhance the efficiency of shale oil extraction while simultaneously reducing water usage and storing CO<sub>2</sub> underground.

This study represents the first of its kind in China and focuses on evaluating the performance of CO<sub>2</sub> fracturing in comparison to traditional hydraulic fracturing techniques. The results have demonstrated that CO<sub>2</sub> methanol-based fracturing successfully eliminates the need for freshwater usage while effectively storing CO<sub>2</sub>, achieving an impressive storage rate of 82.5%.

This promising technology has far-reaching implications for China's progress towards its climate action objectives and its clean water and sanitation goals. This innovative approach reduces carbon emissions and minimises water consumption during shale oil extraction.



Effectiveness of CO<sub>2</sub> Fracturing in Oil Production, Water Conservation and CO<sub>2</sub> storage

## Flood management in South Asia: Reviewing approaches and challenges

Department of Geography

Authors: Md Lokman HOSSAIN, Md Humayain KABIR\*

\*Corresponding author

South Asia is known for being one of the world's most flood-prone regions, primarily due to its extensive river systems. The combination of geographical and climatic factors in this region leads to frequent and devastating floods that impact the lives and livelihoods of millions of people. This study focuses on the exploration of natural flood management strategies, with a specific emphasis on the experiences of Bangladesh, India, and Nepal. In these countries, flood management efforts encompass a combination of structural and non-structural measures. Structural measures, such as embankments, are implemented alongside non-structural approaches like vegetation restoration. While these measures have been put in place, several challenges persist. Limited participation, inadequate funding, and a shortage of skilled personnel hinder the effectiveness of flood management initiatives.

To achieve effective flood management, it is crucial to establish strong governance structures and ensure successful project implementation. This requires collaboration and cooperation among neighbouring countries in the region. By working together, these countries can contribute to the comprehensive management of floods across river basins.



## Sustainability Initiatives

### Sustainable water practices



A rainwater harvesting system installed for irrigation offers an ingenious solution to collect and store rainwater, ensuring its optimal utilisation for watering plants. By strategically capturing rainwater from rooftops, this innovative system reduces the dependence on municipal water sources. This not only conserves precious water resources, but also promotes sustainable practices in water usage.

### Supply of free and safe drinking water

Water bottle filling stations are available on campus for the University community, providing a safe and convenient option for users to access free drinking water and minimising the need for the disposal of plastic bottles.

### Oil Interceptors and Grease Traps

Oil interceptors and grease traps are installed to prevent the discharge of oily materials and any leaked petrol from catering outlets or carparks into the municipal water system. These systems effectively separate and confine oily substances, ensuring that only treated water is released into the municipal water system. By doing so, they play a crucial role in safeguarding the environment and maintaining the integrity of the municipal water supply.



**SDG 07:**  
**AFFORDABLE AND CLEAN ENERGY**

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

T&L Activities



**Renewable energy technology**

In the service-learning course conducted by Dr Chan Mau-hing, lecturer of Department of Physics, HKBU students taught the principles of renewable energy through physics experiments to students from St Teresa Secondary School and Hong Kong Teachers' Association Lee Heng Kwei Secondary School. Additionally, to increase the impact and foster deeper participation in the field of renewable energy education, students created instructional films together. They learnt how crucial their efforts are in preserving natural resources and creating a sustainable future together.



**Serve-cation to Bali**

Organised by the Office of Student Affairs, a group of students participated in the Serve-cation programme and visited a non-profit organisation in Bali, Indonesia, committed to providing sustainable solutions to used cooking oil recycling. The students learnt how the organisation collects used cooking oil from commercial restaurants and transforms it into high-quality biodiesel that can be used as fuel for vehicles; how the oil can be upcycled to produce commercial products like candles; how to differentiate between low-quality and high-quality biodiesel; and how the pandemic had affected the organisation's recycling operations due to the decreased volume of used cooking oil collected from restaurants. The use of biodiesel helps mitigate the adverse impact of climate change, reduce greenhouse gas emissions, and minimise health risks, while reducing poverty in Bali. Despite the challenges posed by the pandemic, the organisation remains committed to providing long-term sustainable solutions for used cooking oil recycling.



**COURSES**  
**26** 17 undergraduate courses  
9 postgraduate courses

**STUDENTS ENROLLED**  
**950** 580 undergraduates  
370 postgraduates

**T&L EVENTS**  
**3**

**NO. OF PARTICIPANTS**  
**34**

# Research

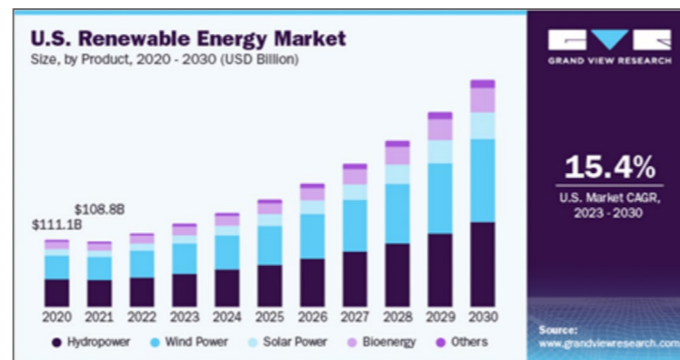
## Regional revenues of solar and wind generation in Texas

Centre for Sustainable Development Studies and Department of Accountancy, Economics and Finance

Authors: Chi Keung WOO, Jay ZARNIKAU, Chen-hao TSAI, Kanghua CAO, Han Steffan QI, Raymond LI\*

\*Corresponding author

Deep decarbonisation in response to climate change requires the construction of solar plants and windfarms to displace carbon-emitting power plants fuelled by coal and natural gas. Working with a team of international researchers, Dr Woo and Dr Cao used a large sample of 15-minute market data from Texas to estimate regressions that reveal how regional solar and wind revenues move with such fundamental drivers as natural gas price, system demand, nuclear energy, solar energy, and wind energy. The regression results thus obtained serve to project that incremental solar and wind capacity expansion of up to 55% and 35% respectively may have occurred as a market-based outcome without further government intervention for the 2023-2042 period. The policy implication of this finding is the deceleration of Texas's rapid and large-scale development of intermittent solar and wind generation resources that adversely affects the Texas electric grid's real-time operation and system reliability.



U.S. renewable energy market is expanding rapidly



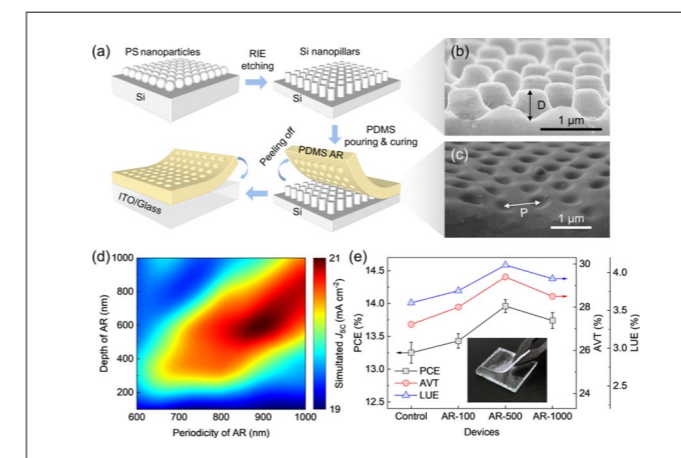
A windfarm in Texas

## Efficient and stable polymer solar cells: From new materials, built-in potential and interfacial engineering perspectives

Department of Physics

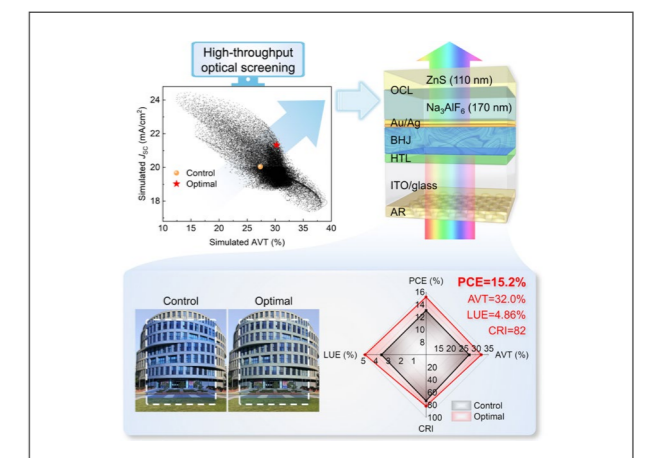
Corresponding authors: ZHU Furong, WANG Shenghao

This research contributes to affordable and clean energy by developing high-performance semi-transparent organic solar cells (ST-OSCs) that generate electricity. These ST-OSCs have the potential to provide clean and sustainable energy solutions for various applications, such as self-powered greenhouses and building-integrated photovoltaic systems. By achieving a record-high power conversion efficiency (PCE) of 15.2% and a high average visible transmittance (AVT) of 32%, these cells offer a promising option for affordable and clean energy generation. Implementing such technologies can help achieve the SDG 7 target of ensuring universal access to affordable, reliable, and modern energy services, while increasing the share of renewable energy in the global energy mix.



ST-OSCs with an AR coating

(a) Schematic diagram illustrating the fabrication process of the photonic-structured AR coating prepared using nanoimprint lithography. SEM images measured for the surfaces of photonic-structured (b) Si mould and (c) PDMS AR coating. (d) Contour map of the theoretical prediction of JSC as functions of the depth and periodicity of photonic-structures in the AR coatings used in the ST-OSCs. (e) PCE, AVT and LUE obtained for the control device and the ST-OSCs with the 900 nm pitch-sized PDMS AR coatings having different nanohole depths of 100, 500 and 1000 nm, e.g., AR-100, AR-500, and AR-1000. Inset in (e): photograph taken for the photonic-structured PDMS AR coating on the glass substrate.



A combination of low/high index optical coupling layer and 2-D photonic-structured antireflection coating, guided by high-throughput optical screening, is designed for semi-transparent organic solar cells, achieving simultaneously a record-high power conversion efficiency of 15.2%, a high average visible transmittance of 32%, a high light utilisation efficiency of 4.86%, and a favourable colour-rendering index of 82.

# Sustainability Initiatives

## Generation of renewable energy

In February 2023, solar photovoltaic panels were installed on the campus to generate renewable energy. As of 30 June 2023, this initiative has already generated approximately 200,000 kilowatt-hours of renewable energy, resulting in a reduction of 97 tonnes in carbon dioxide emissions. Looking ahead, the projected annual renewable energy generation will reach about 450,000 kilowatt-hours, which could potentially reduce carbon dioxide emissions by about 175 tonnes. The solar photovoltaic panels project has also been officially recognised under the Renewable Energy Feed-in Tariff Scheme by CLP Power Hong Kong Limited.

To enhance engagement within the University community, real-time updates on energy generation performance and data are made available to the public through the HKBU website (<https://hkbu-sustainability.hkbu.edu.hk/carbon-neutrality/renewable-energy.html>). The information is also easily accessible to students and staff through the HKBU mobile app.

## Five-year energy efficiency plan

In order to make significant strides towards reducing energy consumption and creating a more energy-efficient campus for the University community, the University has established a comprehensive five-year plan (2020-2025) focusing on enhancing building energy efficiency in both new and existing buildings. This plan involves the implementation of smart technologies to minimise energy use, as well as regular energy reviews to monitor and analyse energy consumption patterns.



1. Upgrade buildings to higher energy efficiency	
Green Building Policy	The University implemented a University Green Policy for Capital Projects and Major Addition and Alteration Projects for University Campus in November 2021. The Policy mandates that all new building and major renovations shall meet environmentally friendly standards, achieving a "Gold" or higher rating under the BEAM Plus assessments certified by the Hong Kong Green Building Council. Additionally, a minimum of 2% of the construction cost shall be allocated for installations and associated expenses for capital projects and major renovations costing over HK\$50 million for such purpose.
Retrofitting & Retro-commissioning (RCx)	<p>The University has been retrofitting existing buildings to improve energy efficiency and reduce energy consumption. This includes replacing traditional light fittings with LED ones and upgrading 13 central air conditioning units to more energy-efficient models.</p> <p>The University has enlisted external RCx professionals to analyse the energy performance of campus buildings and identify opportunities for optimising energy usage, reducing energy costs and improving the indoor environment. As an example, retro-commissioning and sequencing were applied to the chiller-system, resulting in an increase in operational efficiency.</p> <p>The above improvements are estimated to save approximately 1,000,000 kilowatt-hours of electricity annually, which is equivalent to reducing around 400 tonnes of carbon emissions.</p>

## 2. Plan to reduce energy consumption

Smart technologies for Building Management System	With the aim to further reduce electricity consumption, the University is evaluating the feasibility of implementing a smart campus system which utilises Internet of Things (IoT) technologies including data analytics, smart control of equipment and optimisation of equipment performance.
Smart housing management at student residence halls	To raise the awareness of residents about energy conservation and sustainable solutions, the University is assessing the viability of implementation of smart housing management at the Student Residence Halls.
Smart classrooms project	In 2023, all 67 planned classrooms have been converted into smart classrooms. This transformation involved upgrading the audiovisual equipment and installing motion sensors to control the lighting and air-conditioning, allowing convenient on/off functionality.
Occupancy sensors at open-plan office	In all newly renovated open-plan offices, occupancy sensors will be installed to enable smart control of lighting and air-conditioning system, which could ensure efficient energy usage and create a more comfortable working environment.
Fume cupboard replacement	50 fume cupboards were replaced with energy-efficient models with better motor efficiency and automatic sash closers to minimise air flow and conserve energy, resulting in an estimated annual electricity saving of 500,000 kilowatt hours (-58% or equivalent to approximately 200 tonnes of carbon emissions).



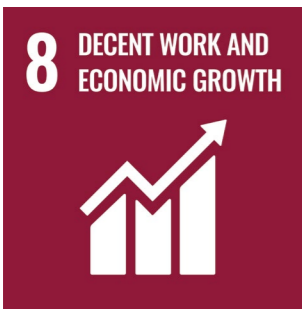
## 3. Carbon reduction and energy wastage identification

Periodic external energy audit	Energy audits are planned to be conducted for all buildings on all campuses in a rotational manner, with the goal of completing this process by 2025.
Annual internal carbon audit	A yearly carbon audit is conducted internally to keep track of carbon emissions and identify areas for improvement.
Review of hours of supply of air-conditioning	With the review conducted on the air-conditioning supply hours for offices and laboratories, the default air-conditioning supply hours for all non-academic office premises on campus are reduced by 10 hours per week.
Review of temperature setpoint	After reviewing the indoor temperature setpoints, the default lowest summer indoor temperature setting was adjusted from 22°C to 24°C on the University premises, except for those spaces with special needs.

## Performance indicators against baseline year

Compared to the baseline year of 2016-17, all performance indicators have shown improvement as a result of the implementation of various sustainability policies and projects.

Performance indicators		2022-23 against baseline year (2016-17)
Greenhouse gas (GHG) emissions	Per GFA (tCO <sub>2</sub> e/sq.m.)	-27.97%
	Per capita (tCO <sub>2</sub> e/FTE)	-34.55%
Energy consumption	Per GFA (kWh/sq.m.)	-7.51%
	Per capita (kWh/FTE)	-15.95%
Water consumption	Per GFA (c.m./sq.m.)	-20.60%
	Per capita (c.m./FTE)	-27.90%



**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



**Studio: Experience Design**

Following the service-learning course conducted by Mr Peter Benz, Mr Kingsley Ng and Dr Evelyn Kwok of the Academy of Visual Arts, which covered cultural theory and experience design, students used their knowledge and creativity to work on a community initiative for night workers. Students studied a range of case studies to understand the situation and requirements of night workers in preparation for the project. Students were also made aware of research results of the HKU Sleep Lab. In an exhibition at the Current Plans Project Space in Sham Shui Po, they created a spatial, social, and cultural sleep experience and shared it with the visitors.



Hong Kong Baptist University  
SUPPORTS THE SDGs

**Career consultation**

The Office of Student Affairs conducted 695 individual career consultation sessions, providing students with valuable opportunities to engage with external career advisors from esteemed companies and diverse industries. These sessions were specifically designed to equip students with essential job-searching skills and assist them in charting a successful career path. Through personalised guidance, students received expert advice tailored to their unique strengths and aspirations. With a wealth of industry experience, the advisors offered invaluable insights into current market trends and employer expectations, ensuring that students are well-prepared for the professional world.



**COURSES**  
**59** 42 undergraduate courses  
17 postgraduate courses

**T&L EVENTS**  
**63**

**STUDENTS ENROLLED**  
**3,980** 3,252 undergraduates  
728 postgraduates

**NO. OF PARTICIPANTS**  
**1,450**



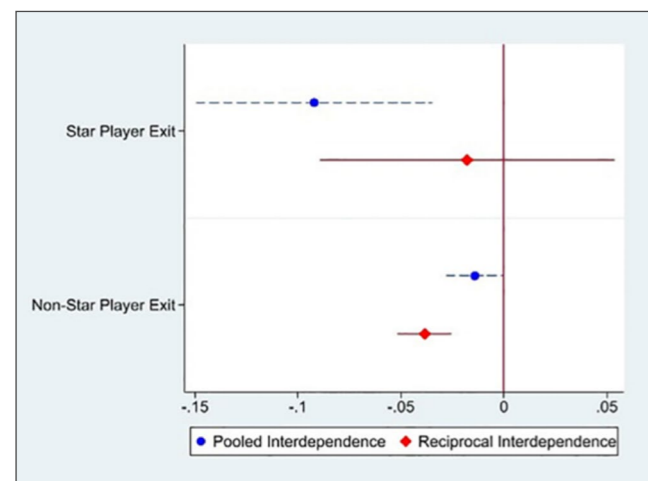
## Unpacking the “O” in VRIO: The role of workflow interdependence in the loss and replacement of strategic human capital

Department of Management, Marketing and Information Systems

Authors: Jongsoo KIM, Richard MAKADOK\*

\*Corresponding author

Retaining key employees is crucial for gaining a competitive advantage, but in this highly competitive business environment, it is inevitable to lose such employees. The research focused on organisational capability of managing the loss of key employees, which has been under-explored in the realm of managing human capital. Through an analysis of data from a professional sports industry, it is found that the departure of star players can have a more detrimental impact when teams have a workflow that is more individual-focused. However, this damage can be mitigated by the ability to recruit high-potential players. On the other hand, it is also found that the loss of non-star players has a greater negative effect when teams have a workflow that is more team-focused. Nevertheless, this damage can be alleviated by the capability to enhance the performance of the team’s existing players. Consequently, the findings suggest that organisations should develop capabilities that align with their specific workflow and take into consideration the relative risk of losing key employees versus non-key employees.



The impact of employee-exit on work-flow interdependence.

Component	External human capital acquisition capability (Factor 1)	Internal human capital development capability (Factor 2)
Change in an incumbent starting player's PER over the previous season	-0.0371	<b>0.4034</b>
Change in an incumbent rotating player's PER over the previous season	-0.0532	<b>0.5138</b>
Number of improved incumbent starting and rotating players	-0.3709	<b>0.9287</b>
Team-level improvements net of individual effects at an incumbent group	-0.0139	<b>0.1055</b>
Change in a newly hired starting player's PER over the previous season	<b>0.4105</b>	0.1424
Change in a newly hired rotating player's PER over the previous season	<b>0.4147</b>	0.0481
Number of improved newly hired starting and rotating players	<b>0.9950</b>	0.1003
Team-level improvements net of individual effects at a newly hired group	<b>0.1266</b>	0.0106
Percentage of variance explained	72.8	

Note: Bold print indicates the largest factor loading for each component.  
Abbreviation: PER, player efficiency rating.

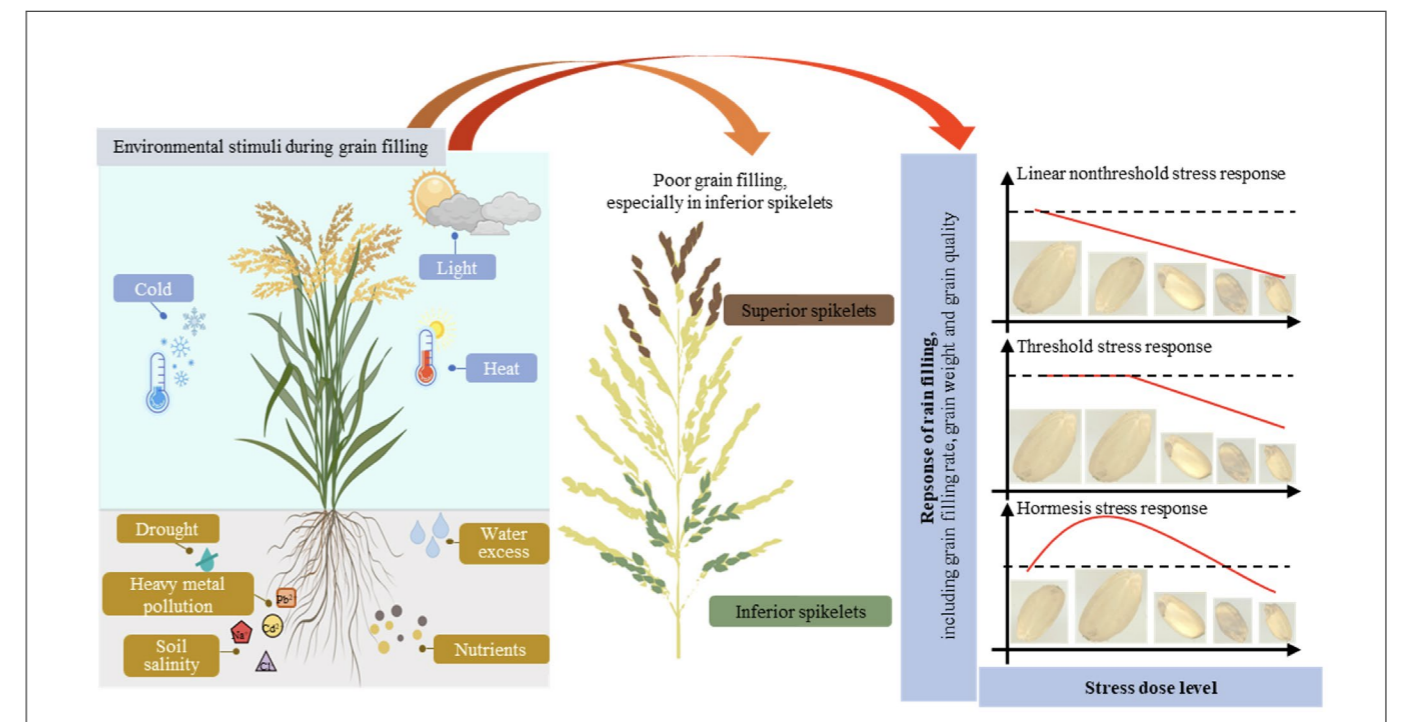
Decomposing human capital acquisition and development capability.

## Environmental stimuli: A major challenge during grain filling in cereals

Department of Biology

Author: ZHANG Jianhua

Light, temperature, water, and fertiliser are arguably the most important environmental factors regulating crop growth and productivity. Environmental stimuli, including low light, extreme temperatures, and water stresses caused by climate change, affect crop growth and production and pose a growing threat to sustainable agriculture. Grain filling stage is the final stage of growth and is also the most important stage in cereals, directly determining the grain weight and final yield. However, the grain filling process is extremely vulnerable to different environmental stimuli, especially for inferior spikelets which usually flower later during the pollination stage. Given the importance of grain filling in cereals and the deterioration of environmental problems, understanding environmental stimuli and their effects on grain filling constitutes a major focus of crop research. In recent years, significant advances made in this field have led to a good description of the intricate mechanisms by which different environmental stimuli regulate grain filling, as well as approaches to adapt cereals to changing climate conditions and to give them better grain filling. In this review, the current environmental stimuli, their dose-response effect on grain filling, and the physiological and molecular mechanisms involved are discussed. Furthermore, what we can do to help cereal crops adapt to environmental stimuli is elaborated.



Environmental stimuli and cereal responses during grain filling. Cereals are continuously exposed to different environmental stimuli (e.g., light, heat, cold, drought, and soil salinity) above and below ground. Stress dose-response relationships in grain filling are categorised based on their responses to the stress dose level into linear non-threshold stress response, threshold stress response, and hormesis stress response. The dashed line indicates the control.

# Sustainability Initiatives

## Employment practice

HKBU adheres to the Minimum Wage Ordinance in Hong Kong and the salary level at the University surpasses the subsistence level in Hong Kong. Internal guidelines have been established to provide relevant details and ensure strict compliance with the Ordinance.

The Policy on Anti-Slavery and Equivalent Rights for Outsourced Workers has been implemented to ensure the protection of labour conditions for workers, such as providing fair wages and competitive benefits that are in line with market standards and meeting all statutory requirements, which has been employed by the suppliers.

The Equal Opportunities Framework, as set up by the University, prohibits discrimination and harassment as they violate the rights, dignity and reputation of individuals, and create an unfavourable environment for learning and development. The University is dedicated to upholding good governance, accountability and a high degree of transparency. It also actively encourages staff, students and external parties to report any suspected malpractice, misconduct, irregularities or illegal activities at HKBU.

In order to promote the growth and development of staff members, various levels of support, both in terms of financial assistance and operational aid, are made available to eligible staff members. These support measures are provided in accordance with established criteria and procedures.

## Occupational health and safety

In accordance with the Health, Safety and Environment Policy, the University is dedicated to ensuring the health and safety of its employees to the best of its ability. As part of the effort to promote a safe working environment, all full-time staff members are obligated to complete compliance training, where one of the specific 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

### Community engagement for social sustainability

The service-learning course led by Dr Day Wong of the Department of Sociology worked with four NGOs that support environmental preservation, health and well-being, gender equality and educational parity. As a result of partnerships with these NGOs, over 1,100 service users participated in a variety of activities. Undoubtedly, these various partnerships with NGOs helped increase public awareness of the issues at hand, while giving students a chance to reflect on their volunteer experiences.



### Design for smart city: Towards a sustainable living

This General Education capstone course provided students with a comprehensive understanding of sustainable and socially responsible practices through a series of technological innovation training activities. In this course, students conducted research and evaluated key concepts related to "Smart Cities", such as AI and big data, and applied them to different aspects of society by employing interdisciplinary approaches. Through the partnership with elderly care centres, students designed smart healthcare solutions to monitor the health of the elderly, with the ultimate objective of enhancing and sustaining their quality of life despite resource constraints.





## HKBU WZQ Makers

During the summer, the first “HKBU WZQ Makers” event was organised by TriAngle of the Centre for Innovative Service-Learning in collaboration with the Wu Zhi Qiao (Bridge to China) Charitable Foundation. HKBU students and the elderly from the community visited Mui Tsz Lam Village to learn about its history, its rich Hakka culture and the challenges in the revitalisation of the rural area. The participants then formed teams to devise innovative proposals to address the issues. Above all, two Chinese Medicine students made use of their knowledge of traditional Chinese medicine and health and held community events to contribute to the revitalisation of Mui Tsz Lam.



## Skills Empowerment Scheme: Crowdsource learning community

Over 50 students joined the Google Crowdsource Learning Community to build their portfolios with certifications from Google. They interacted with trained facilitators and Googlers from around the world, making meaningful contributions that directly impacted Google’s AI. Students were awarded certificates of completion from the Crowdsource team at Google, along with other exciting opportunities.



### COURSES

**12** 9 undergraduate courses  
3 postgraduate courses



### STUDENTS ENROLLED

**800** 733 undergraduates  
67 postgraduates



### T&L EVENTS

**54**



### NO. OF PARTICIPANTS

**997**

# Research

## Interpreting in the age of Artificial Intelligence: Insights from "Big" interpreting data

Department of Translation, Interpreting and Intercultural Studies

Author: Jun PAN

This project delves into the intricate world of language interpreting. By unifying and expanding several existing collections, the study builds large datasets of interpreted speeches in various languages to decode the shared strategies used by interpreters. These strategies, employed under live interpreting and time pressure, illuminate the complex expertise of interpreters, providing valuable cross-domain insights.

This research provides insights into shared linguistic patterns in interpreting and training. The research outputs can inspire groundbreaking technologies, leading to spinoffs like Enter-Link, an all-in-one digital solution for real-time language services. Incorporating elements of artificial intelligence, service-learning and knowledge transfer, this digital platform aims to break down language barriers and make interpreting services more accessible.

The project exemplifies effective data sharing practices and policies. It showcases how data science can convert insights into impactful technological solutions and illustrates the power of blending language skills with digital prowess to address real-world challenges and enhance linguistic accessibility.



The launch of the Corpus of Chinese/English Political Interpreting Corpus, a 6.5 million on-line corpus on political interpreting.

**AI-POWERED TOOLS**  
in HIGHER EDUCATION SERIES

**Session 2**  
**Rethink, Revolve and Reshape :**  
Artificial Intelligence & Transformations in Teaching and Assessment

**Date:** 2 May 2023 (Tue)  
**Time:** 2:00 pm - 3:30 pm (HKT)  
**Venue:** Online via Zoom

International experts will participate in the panel discussion to examine the opportunities and difficulties of incorporating AI into the curriculum. The conversations would offer suggestions for integrating AI into teaching, learning, and assessment.

**International Speakers:**

- Mr. Kevin Henderson**  
Director, Digital Content & Programming, United Board, USA
- Dr. Ashok Immanuel**  
Head & Professor, Department of Computer Science, Christ University, India
- Dr. Janice Jun Pan**  
Associate Dean (Research), Associate Head & Associate Professor, Office of the Dean of Arts & Department of Translation, Interpreting & Intercultural Studies, Hong Kong Baptist University
- Dr. Maria Mercedes T. Rodrigo**  
Full Professor, Department of Information Systems & Computer Science, Learning Science Laboratory for the Learning Sciences, Ateneo de Manila University, Philippines

Enquiry: [chi@hkbu.edu.hk](mailto:chi@hkbu.edu.hk) / 3411-5301  
Registration: <https://chi1.bu.hkbu.edu.hk/regworkshop23gzh>

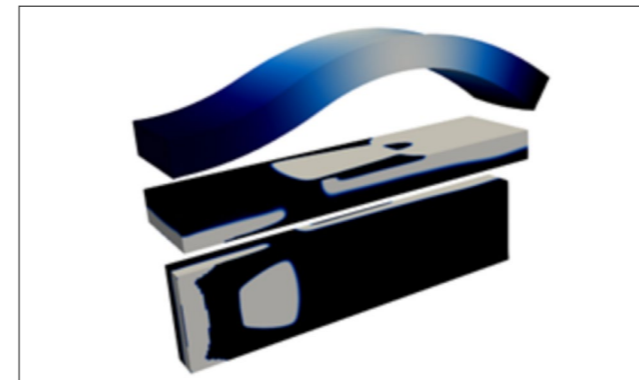
A number of selected public seminars and events featuring presentations by the Principal Investigator on the project.

## Mathematical studies of optimal designs in 4D printing

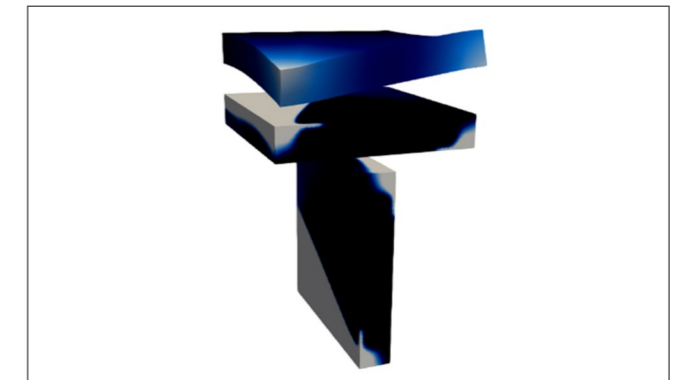
Department of Mathematics

Author: LAM, Kei Fong

4D printing refers to the newly developed field derived from using 3D printing to create objects from smart materials. These objects are capable of changing shape and functionality in response to various environmental stimuli, leading to promising capabilities in soft robotics, medical implants, textile and automotive industries. However, 4D printing has yet to be part of the manufacturing mainstream, due to unreliable mechanical behaviour after prolonged usage. In this project, it is proposed to overcome this issue by utilising a mixture of different smart materials and studying how to optimally distribute these different smart materials so that the overall structure exhibits the desirable shape change after applying a stimulus. Interesting mixtures have been created that allow the structure to bend and twist in ways similar to those seen in current applications. This work offers a mathematical rigorous approach to studying these optimal design problems in 4D printing.



Computed optimal distribution of two smart materials (coloured black and grey) in a structure shown in the front view (middle figure) and bottom view (bottom figure). After a stimulus is applied, this structure will produce a bending shape as shown in the top figure.



Computed optimal distribution of two smart materials (coloured black and grey) in a structure shown in the front view (middle figure) and side view (bottom figure). After a stimulus is applied, the two ends of one side of this structure will twist in opposite directions as shown in the top figure.



**SDG 10:**  
**REDUCED INEQUALITIES**  
Reduce inequality within and among countries.



Hong Kong Baptist University  
SUPPORTS THE SDGs

## T&L Activities



### Engaging with the elderly through the Tree of Life therapy

The goal of the service-learning course, "Matters of Life and Death", is to provide students with a comprehensive understanding of the complexities surrounding life and death by exploring various disciplines such as philosophy, religion, and psychology. As part of this course, students had the opportunity to engage with elderly people through the Asbury Methodist Social Service. The students implemented the Tree of Life narrative therapy, and facilitated meaningful discussions about the life stories, dreams, and hopes of the elderly individuals. As a gesture of gratitude and appreciation for their participation, students presented the completed Tree of Life diagrams to the elderly at the conclusion of the session.

### Raising awareness about social issues through translation services

Under the guidance of Dr Janice Pan of the Department of Translation, Interpreting and Intercultural Studies, students who enrolled in the "Translation Workshop" and "Community Interpreting" service-learning courses had the opportunity to translate materials and provide interpretation for workshops organised by institutions such as The Hong Kong Society for Rehabilitation, Mind HK, SLCO Community Resources, and the Children's Cancer Foundation. The experience allowed students to gain practical insights into the translation industry while actively contributing to the promotion of these organisations' services and raising awareness about the social issues they address. As a culmination of their efforts, the students unveiled Enterlink, a digital platform that offers free language services to those in need.



### Connecting with the community through cinema



In the General Education capstone course "Hong Kong Cinema, Culture, and Society", students explored the sociocultural significance of Hong Kong cinemas, while also forging connections with the local community. By conducting interviews with disadvantaged, grassroots, and marginalised individuals in Yau Ma Tei, students were able to capture their stories and produce meaningful documentaries. This unique service-learning experience nurtured students' compassion and empathy towards the local community, while also fostering communication and understanding among individuals from diverse backgrounds. Through the act of sharing cinematic experiences with the underprivileged, students not only developed media literacy skills but also gained critical awareness of the pressing issues surrounding inequality.



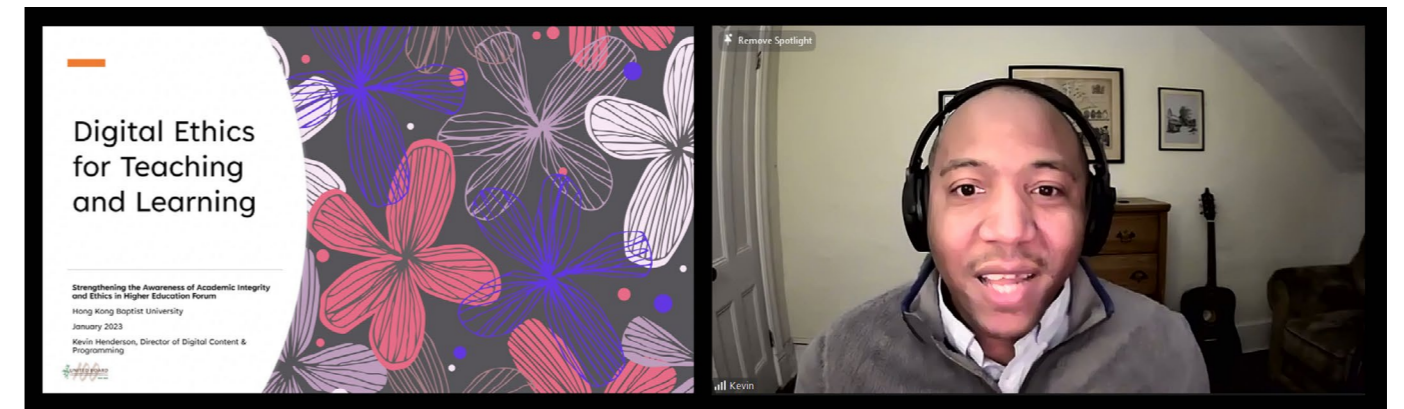
## Innovative project fostering a more inclusive society

“The Essence of Sundays” was a student-led social innovation project under the Centre for Innovative Service-Learning, with the goal of fostering a stronger connection between the local and migrant domestic worker community in Hong Kong. Led by a Filipina HKBU student who recognised the marginalisation faced by the large “Foreign Domestic Helper” (FDH) community, the project aimed to create a positive impact on public perception and interaction with migrant domestic workers. To achieve this, the student organised a series of six community art events held every other Sunday from March to May 2023. During these events, students cooked, performed, and actively engaged with migrant domestic workers through various activities and interviews that focused on self-expression. Through these events, the project provided an opportunity for FDHs to showcase their talents to the wider community, while also fostering connections and engagement between migrant domestic workers and locals.



## Strengthening the awareness of academic integrity and ethics

To enhance the understanding of academic integrity and ethics among educators and students in the digital learning and teaching environment, the Centre for Holistic Teaching and Learning held two scenario development competitions in August and October 2022. Participants from local and overseas institutions designed various scenarios about the integrity and ethics of their chosen disciplines. The winning designs were showcased at a ceremony and featured as the learning trails on the “AR Trails” mobile application. A representative from the United Board was invited to discuss the significance of digital ethics in teaching and learning.



### COURSES

**69** 47 undergraduate courses  
22 postgraduate courses



### T&L EVENTS

**95**



### STUDENTS ENROLLED

**5,802** 4,454 undergraduates  
1,348 postgraduates



### NO. OF PARTICIPANTS

**2,827**

# Research

## The paradox of digital participation in postdigital participatory art

Academy of Visual Arts  
Author: SHIN Gyung Jin

This study examines the concept of postdigital participatory art (PPA) in relation to the role of contemporary technology in shaping the participatory aspects of art. The initial promise of the Internet as a platform for autonomous and active participation has been overshadowed by the dominance of cognitive capitalism and consumer culture within online networks. The architecture of participation, originally designed to foster constructive engagement, has now become a means for online enterprises to maximise profits by converting participants' time, preferences, and consciousness as labour.

The study reveals the paradox of digital participation under these circumstances, using it as a lens to evaluate postdigital participatory art. Key issues explored include the parameters of democracy in network-based collaboration, the distribution of authority, and hierarchies among participants, and the ownership of co-authored artwork accessed through online platforms. Drawing on the philosophy of technology, Critical Theory, contemporary art criticism, digital art, and social science research, the study provides a multifaceted analysis that extends to the broader topics of digital participation and digital labour.

By shedding light on these issues, the study aims to lay the groundwork for a more comprehensive assessment of experimental forms of digital art. It emphasises the potential of critical discussions surrounding contemporary digitality to diversify or dismantle the traditional concept of participation.

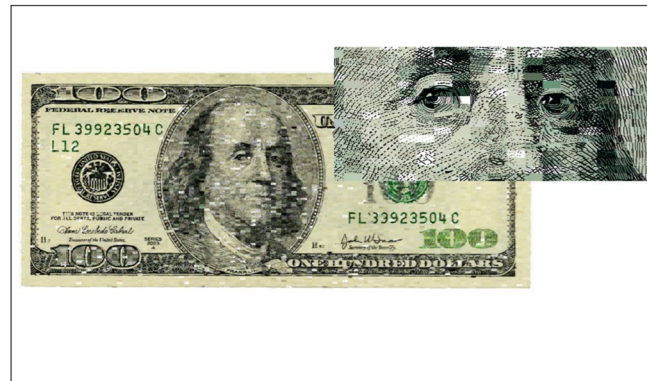


Figure shows an artwork example of participatory and collective authors in PPA. (Aaron Koblin and Takashi Kawashima, *Ten Thousand Cents* [2008])

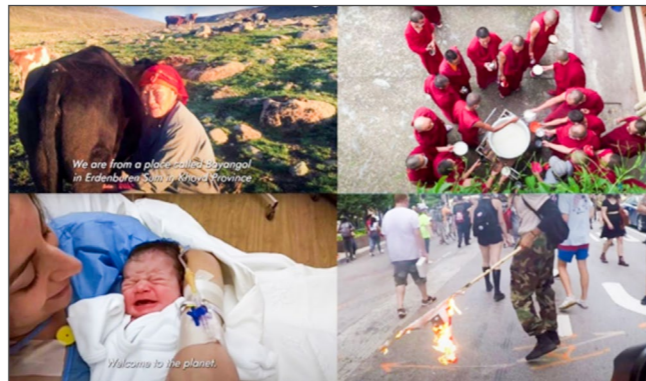
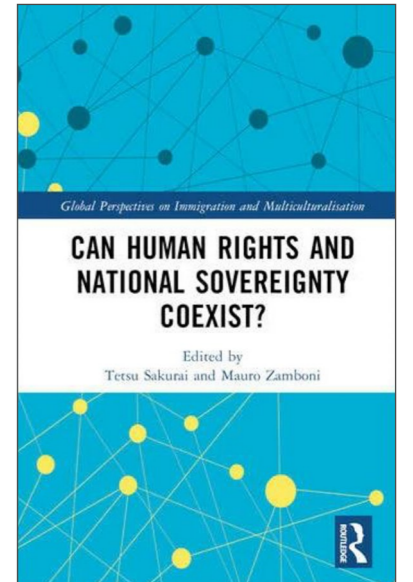


Figure shows an artwork example of participatory and collective authors in PPA. (Ridley Scott and Kevin Macdonald, *Life in a Day* [2020])

## Self-determination and immigration control

Department of Government and International Studies  
Author: IP Ka-Wai

For many individuals living in poor societies, migration may be their best hope to improve their prospect. However, the current international system allows states to unilaterally and arbitrarily restrict immigration without providing potential migrants with any alternatives to challenge these decisions. The study focuses on contemporary theories that defend the right of immigration control as a component of self-determination. It argues that migrants have an interest in being adequately represented in the decision-making process. The research proposes a procedural regime that does not advocate for open borders but instead places constraints on a state's right to restrict immigration, ensuring compatibility with the collective determination of migrants in a context of non-domination.



## Sustainability Initiatives

### Measures against discrimination

The University emphasises the importance of maintaining a respectful and dignified environment for both students and staff. Any form of harassment or victimisation is strictly prohibited and will not be tolerated. The University takes relevant complaints seriously and handles them in a timely manner with strict confidentiality, following the established procedures. In cases where mediation is not preferred or unsuccessful, an Equal Opportunity Panel, composed of an odd number of members from the pool of Equal Opportunities Advisers, will be convened to handle the complaint. The list of Equal Opportunities Advisers is publicly accessible.

Furthermore, a Task Force led by the Provost, Vice-President (Teaching and Learning), and Vice-President (Administration) and Secretary was established to provide guidance on matters concerning equal opportunities and diversity within the University. Additionally, the Vice-President (Administration) and Secretary has been designated as the University Diversity Officer to oversee diversity-related matters.

Barrier-free facilities, such as accessible toilets, braille signage at staircase railings, lifting platform, ramp, automatic entrance door and accessible parking space for wheelchair users, play a crucial role in diminishing disparities by ensuring equal access and opportunities for individuals with disabilities, fostering inclusivity and upholding the principles of equal rights.



# 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



### Promoting clean and renewable energy

Led by Dr Daphne Mah, Director of Asian Energy Studies Centre, the service-learning course "Sustainable Energy and Technological Innovation in China" provided students with the opportunity to learn about clean and renewable energy through engaging group projects and activities. Students were divided into teams and assigned various tasks, including conducting online research, creating an online map of solar energy resources, and organising solar workshops in primary schools to promote energy awareness. Throughout the course, students not only gained valuable knowledge about clean energy but also developed collaboration skills. They also explored the potential of public engagement as a means to help cities achieve their carbon-neutral goals.

### Providing compassionate care

In the service-learning course "Diagnostics of Chinese Medicine" led by Dr Li Hong and Dr Lam Chun-pong of the School of Chinese Medicine, students conducted consultations with over 40 senior citizens, utilising acupressure and ear acupoint pressing techniques to address their patients' ailments. To enhance the experience, students also organised visits to the Chinese Medicine Museum at HKBU. In the course, students not only acquired practical skills in acupressure, precise record-keeping and doctor-patient dialogues, they also developed a deep sense of empathy through their interactions with the elderly. This experience allowed them to recognise the significance of companionship, particularly in the care of older individuals.



### Preserving Hong Kong's fishery industry heritage

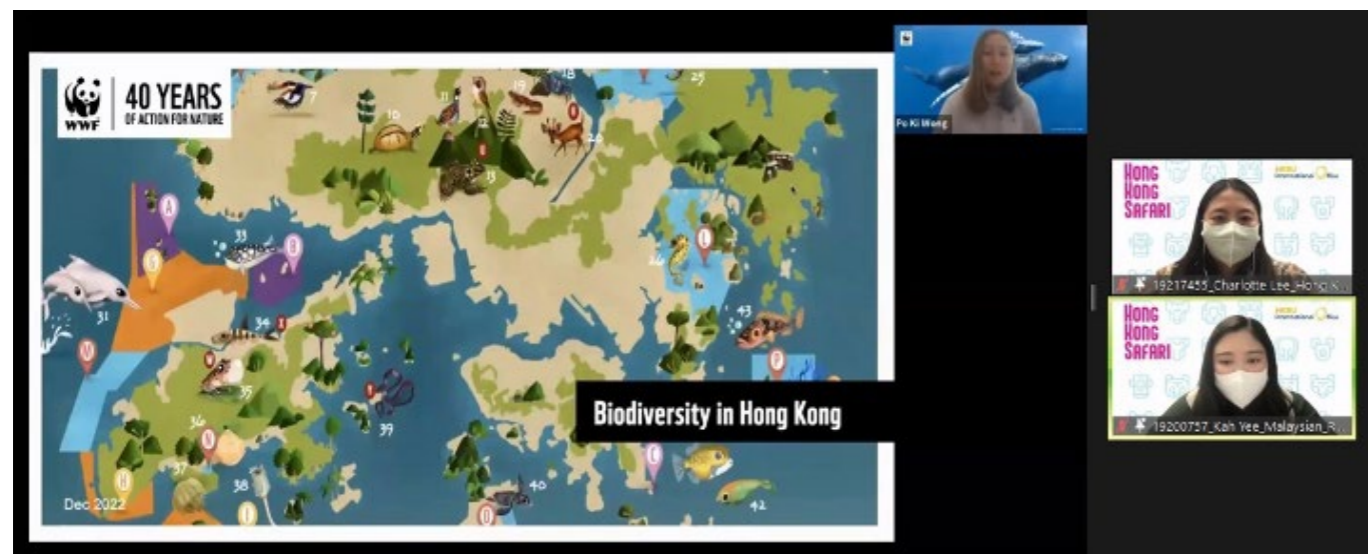
To safeguard and promote the cultural heritage of Hong Kong's fisherfolk and the fishery industry, the International Office organised a one-day field trip known as "Lamma Fisherfolk Village - A Day in the Life of a Fisherman". This unique programme allowed students from 14 countries to explore various aspects of the fishery industry's heritage, including fishing junks, floating houses, and the handicraft skills associated with marine products. Immersed in interactive fishing games, the students learnt firsthand about the importance of preserving the traditional fishery culture of Hong Kong. They also experienced the thrill of the dragon boat race, indulged in freshly made fish fillet buns, and participated in the creation of a delicious Hakka Cha-Guo. This immersive journey not only provided students with a memorable and enjoyable experience but also deepened their appreciation for the vibrant history and culture of Hong Kong's fishery industry.





## Promoting environmental awareness and marine conservation

To advocate environmental protection, the International Office and the World Wildlife Fund co-hosted a virtual event "Hong Kong Safari" for incoming exchange and local students. This engaging event aimed to introduce students to the ecological hotspots in Hong Kong while raising awareness about sustainability goals, wildlife, and biodiversity. The students also gained a deeper understanding of the environmental landscape of Hong Kong, including its iconic pink dolphins. By showcasing the importance of appreciating valuable marine resources, the event also highlighted the work of the Hoi Ha Marine Life Centre, encouraging students to understand the significance of marine conservation efforts.



**COURSES**  
**52** 42 undergraduate courses  
 10 postgraduate courses

**STUDENTS ENROLLED**  
**3,884** 3,389 undergraduates  
 495 postgraduates

**T&L EVENTS**  
**90**

**NO. OF PARTICIPANTS**  
**3,294**

## Research

### Modes of expression and representation in calligraphy tapestry

Academy of Visual Arts  
 Author: LAU Chak Kwong

Dr Lau has created a large-scale Chinese calligraphy tapestry aimed to inspire people to appreciate and enjoy life in the city. The artwork, displayed in the lobby of a commercial building in Hong Kong's busy San Po Kong district, measures 427cm x 561cm. It features two intriguing Chinese characters, "shan" (mountain) and "lu" (deer), depicted in oracle-bone script. These characters are inspired by verses from the Bible, specifically Psalm 121:1-2 and Psalm 42:1, which reference to mountains and deer. The lively and graceful brushstrokes of the calligraphy tapestry vividly portray a serene nature scene, inviting viewers to escape the hustle and bustle of city life.



In conjunction with this artwork, Dr Lau presented a paper titled "Modes of Expression and Representation in Chinese Calligraphy: Calligraphic Works as Aesthetic-object-cum-public-message and their Dynamics with Contexts of Use in the City of Hong Kong" at the 18th International Conference on Interdisciplinary Social Sciences. The paper examines how this calligraphy tapestry signifies the transformation of Chinese calligraphy, from a traditional art form with a limited audience to a more accessible visual culture that reaches wider audiences in alternative public spaces within the city centre.

## Deblurring traffic images in intelligent transportation systems

Department of Computer Science  
Author: DAI Hongning

The recent advances of surveillance cameras, artificial intelligence technologies, and 5G communications have led to the implementation of intelligent transportation systems (ITS) in urban areas. These systems utilise computer vision and deep learning algorithms to analyse images and videos captured by ITS cameras, extracting key traffic characteristics such as traffic jams to facilitate intelligent decision-making. However, the quality of these camera images is often compromised by blurring caused by moving vehicles, camera shake, or adverse weather conditions such as fog, rain, or snow.

Addressing this challenge, Dr Dai led a research study to develop a variant-depth neural network that effectively removes blurs from traffic images at low computational cost. Through a coarse-to-fine approach, the proposed method achieves state-of-the-art performance in deblurring, as demonstrated through extensive experiments conducted on traffic images. This project holds great potential in advancing the adoption of ITS and, consequently, in the development of sustainable cities.

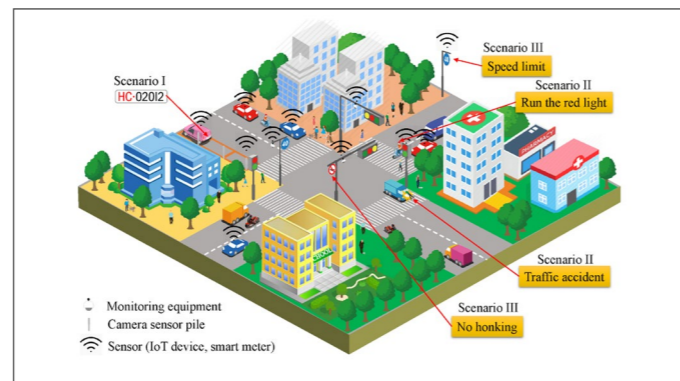
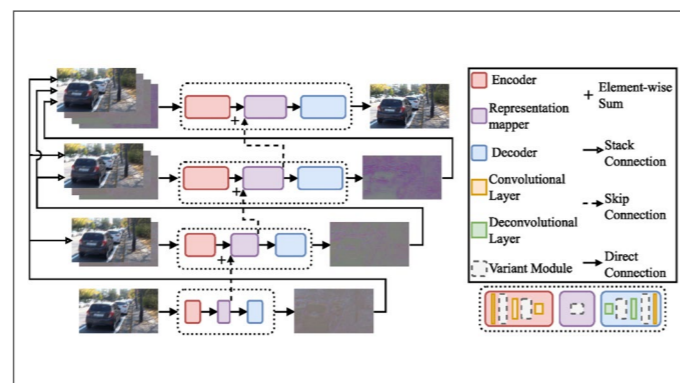


Image-deblurring scenarios in intelligent transportation systems: (I) license-plate recognition, (II) traffic-accident identification, (III) traffic-sign recognition.

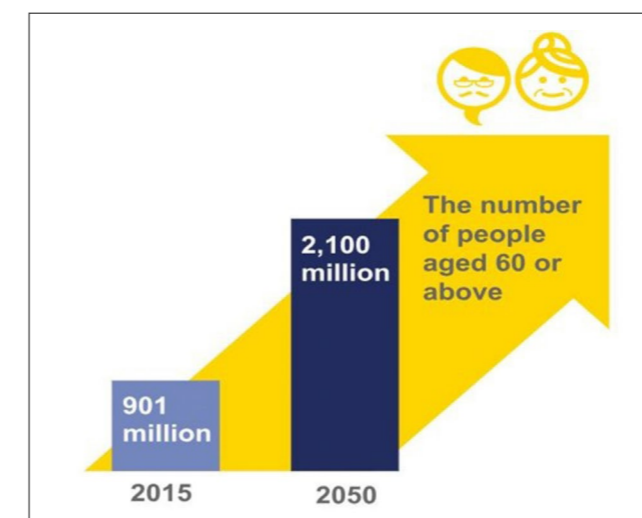


The graph describes the structure of the proposed variant-depth neural network (VDN), which is composed of four variant-depth sub-networks (represented by a dotted frame in the graph). Each sub-network is constructed with different depths of encoders and decoders. The VDN connects all the sub-networks through Stack Connection. The connection between two adjacent sub-networks is made through concatenations denoted by a solid line with a hollow arrow. At the same time, the outputs of the shallower sub-networks are also fed into the deeper sub-networks.

## Building an age-friendly city

Department of Social Work  
Author: GUO Yingqi

Dr Guo took part in a research project that studied how forms and characteristics of Asian public housing neighbourhoods affect dementia risk among the senior population in Hong Kong. The project aimed to assess the age-friendliness of each district and build momentum in developing an age-friendly community, recommend a framework to undertake continual improvement for the well-being of senior citizens, as well as arouse public awareness and encourage community participation in building an age-friendly city. The research findings showed that dementia among seniors in hilly public housing estates was negatively associated with the neighbourhood's walkability and accessibility and was influenced by walking paths. It was suggested that improved forms and characteristics of public housing neighbourhoods should include more accessible spaces and community facilities along walking paths for physical activities and basic daily needs.



According to the projections of the United Nations, the number of people aged 60 or above will rise from 901 million in 2015 to 2,100 million in 2050, rising from 12% to 22% of the total world population.



Eight domains of age-friendly city

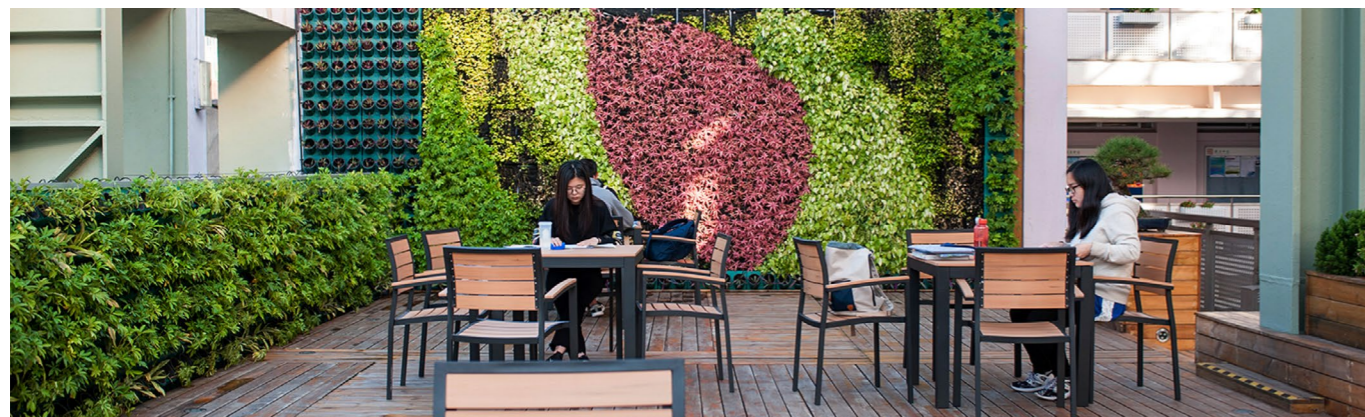
# Sustainability Initiatives

## Public access to campus space and facilities

The University campus is accessible by the general public, who could have the opportunity to use designated indoor and outdoor areas on campus, including the library, cultural heritage sites and green spaces.



<p>HKBU Library</p>	<p>Open to eligible users including:</p> <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>
<p>Cultural heritage:</p> <ul style="list-style-type: none"> <li>• Lui Seng Chun (declared as monument in 2022)</li> <li>• Kai Tak Campus (former Royal Air Force Officers' Mess)</li> </ul>	<p>Open to the general public</p>
<p>Green spaces including green roofs and gardens on Kowloon Tong Campus</p>	<p>Open to the general public</p>



## Fostering cultural exchange and community engagement



With the vision of being “a leading liberal arts University in Asia for the world delivering academic excellence in a caring, creative and global culture”, the University offers performance and event spaces that function as cultural hubs for both the University and its community. These venues foster harmonious exchange of ideas, culture and collaboration, and strengthen the bond between the University and the community.

### • Academic Community Hall

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

### • Tsang Chan Sik Yue Auditorium

With a seating capacity of 400, the auditorium is fully equipped with stage lighting and an audio-visual system as well as a VIP lounge. It serves as a multipurpose venue suitable for conferences, ceremonies, seminars, and a range of performances. In addition, the venue is barrier-free, ensuring accessibility for all.



## Preserving cultural heritage and nurturing creative talents

To creatively preserve and repurpose historic buildings, the University transforms historical premises into distinctive cultural landmarks. By doing so, it meets the demand from the arts community for affordable arts studios and exhibition spaces, fosters the growth of young creative talents in Hong Kong, and offers the public a relaxed environment to engage with arts and culture. Additionally, guided tours are available for these spaces, providing visitors with a deeper understanding of the historical significance and artistic value of these repurposed buildings.

### • Lui Seng Chun

The Lui Seng Chun building was chosen under Batch I of the "Revitalising Historic Buildings Through Partnership Scheme" initiated by the Government in 2008 and was declared as monument under the Antiquities and Monuments Ordinance in 2022. Following a competitive bidding process, the University was granted the opportunity to preserve and transform the building into a Chinese medicine healthcare centre. This project aims to breathe new life into the historic structure while providing valuable healthcare services to the community.



### • Jockey Club Creative Arts Centre

Established in 2008, the Jockey Club Creative Arts Centre (JCCAC) holds the distinction of being Hong Kong's premier artist village and arts centre converted from a former factory. As a self-financed registered charity and subsidiary of the University, JCCAC serves as a multidisciplinary arts and cultural venue open to the public. Its primary objective is to cater to the diverse needs of the arts community.



### • Kai Tak Campus

The Kai Tak Campus, formerly known as the Royal Air Force Officers' Mess, is a remarkable Grade I historic building showcasing a unique architectural style from the early 20th century. It serves as a venue for exhibitions, which are open to the public free of charge, providing an opportunity for visitors to immerse themselves in the cultural experiences offered by the University.



The first of its kind in Hong Kong, the Academy of Visual Arts (AVA) was founded in 2005. Nestled within the Kai Tak Campus, AVA houses the Centre for Research and Development in Visual Arts, along with a range of studios and an exhibition space, providing an immersive environment for teaching, learning, and showcasing the vibrant world of visual arts.

## Sustainable campus development and green policies



Over the years, the University has consistently expanded and renovated its facilities. The construction of campuses and buildings follows a set of principles and requirements, with a focus on incorporating technologies to enhance sustainability. To showcase the University's dedication to improving sustainability and promoting responsible practices on campus, a University Green Policy for Capital Projects and Major Addition and Alteration Projects for University Campus has been implemented for capital projects and major renovations. This policy ensures that every new construction or major renovation on campus is designed and constructed in an environmentally-friendly manner, adhering to recognised green building standards like the BEAM Plus certification scheme. Additionally, the University strives to avoid constructing on greenfield sites whenever possible.

### • CLP Smart Energy Award 2023

The Smart Energy Award, organised by CLP Power Hong Kong Limited, is an annual event aimed to acknowledge organisations for their exceptional efforts in energy conservation and carbon reduction. In 2023, the University was honoured with the prestigious Grand Award in the Energy Management category (Catering and Small and Medium Enterprises (SMEs), Non-governmental Organisations (NGOs), and Educational Institutes) following a comprehensive assessment of five key aspects, namely Green Leadership, Energy Saving and Performance, Technology, Creativity, Stakeholder Engagement. This recognition highlights the University's achievements in sustainable energy practices and underscores its commitment to environmental stewardship.



### • Green Building Award 2023

The Crop Science Laboratory is one of the latest examples of sustainable architecture on campus, which is purposefully designed with various green and sustainable features. The building has been shortlisted as a finalist in the Green Building Award 2023, specifically in the Existing Buildings category for Completed Projects – Institutional. The University is honoured to be acknowledged alongside with other exceptional projects and takes pride in its contribution towards a greener and more sustainable future.

### • Jockey Club Campus of Creativity

Currently under development, the award-winning Jockey Club Campus of Creativity has successfully registered for the BEAM Plus New Buildings Certification, highlighting its commitment to high sustainability standards.

### • Guided tours

Green buildings play a pivotal role in fostering sustainable cities and communities by effectively reducing energy consumption, enhancing air quality, and minimising waste. As part of our strategy towards carbon neutrality, the University always aspires to drive behavioural change. In line with this, guided tours for university students, secondary students, and visitors to showcase the solar photovoltaic panels and the Crop Science Laboratory are conducted. These tours serve as a platform to raise awareness about the significance of sustainable buildings and inspire individuals and communities to embrace similar practices.



The Crop Science Laboratory contains a green roof and a green wall, as well as air-quality improvement photovoltaic panels and a roof mounted vertical axis wind turbine. Built with low carbon construction and materials, it has an irrigation recycle system and smart automated building controls for lighting and heating, ventilation, and air-conditioning systems.



Guided tours



## Sustainable commuting

Echoing one of the four strategies defined in the carbon neutrality plan, the University has taken proactive measures to encourage sustainable commuting through the implementation of various initiatives.

### • Electric vehicles (EV) charging facilities

The University is actively upgrading its EV charging infrastructure on campus. A significant expansion plan aimed to increase the availability of smart charging facilities for EVs is underway. The goal is to cover a substantial portion of the University's private car parking spaces by 2026. As an initial milestone, the Jockey Club Campus of Creativity will see the installation of EV chargers in all parking spaces by 2024, with more enhancements to come in the future.

### • Motorcycle and bicycle parking facilities

The University offers designated parking spaces for motorcycles and bicycles, making it convenient for individuals who opt for low-carbon commuting.

### • Public transportation

Throughout the campus, prominently displayed signs guide individuals to the nearest Mass Transport Railway stations, promoting and encouraging eco-friendly commuting through public transportation. To facilitate convenient access to public transportation, the Kowloon Motor Bus Co. (1933) Ltd. has installed a KMB Fare Saver kiosk at the entrance of Shaw Tower on the Kowloon Tong campus. This initiative not only offers reduced fares but also serves as an incentive to induce more people to utilise public transportation.

## Sustainable employment practices

The University values work-life balance and supports colleagues in meeting personal and family needs. Eligible staff members are provided with staff quarters for convenient and comfortable living. This creates an inclusive and supportive environment for a positive working experience and a stronger university community.

Since April 2023, the Human Resources Office has been enhancing the well-being of the staff members and their affiliates through an Employee Fitness Programme. This programme offers a diverse range of courses, each tailored to individual interests, abilities, and fitness objectives, ensuring everyone can meet their unique health goals. In addition, various mindfulness programmes aimed at helping staff members alleviate stress and enhance their mental health have been also organised.

The University regularly highlights the importance of well-being through internal communications to staff. These messages offer useful facts and insights, while also reminding everyone of the value of self-care and overall wellness.



**SDG 12:  
RESPONSIBLE CONSUMPTION  
AND PRODUCTION**

Ensure sustainable consumption and production patterns.

## T&L Activities



### Passing on knowledge of enzyme technology

Through the service-learning course “Fermentation and Enzyme Technology” led by Dr Patrick Yue of the Department of Biology, students learnt about the composition, structures, and real-world applications of enzymes. Combining lectures with hands-on exercises, they gained a deeper understanding of this field. The students then put their knowledge into action and collaborated with De La Salle Secondary School, New Territories. They planned science presentations and engaging hands-on experiments that benefited the community. Moreover, the course enriched the learning experience of the secondary school students, and kindled their interest in science education and fostered a desire to pursue higher education.



### Addressing environmental issues through creative problem-solving

In the General Education course “Sustainable Design Thinking”, students were enabled to develop a critical and sustainable perspective on design practices. Through research and analysis of interdisciplinary concerns, students harnessed these insights to develop innovative product and system design. They designed solutions that aimed to address environmental issues and their outcomes were showcased at on-campus exhibitions. This experiential approach allowed students to understand the impact of their work and lifestyle choices on ecological, socio-economic, and cultural sustainability. By embracing a sustainable design thinking mindset and aligning their efforts with specific SDGs, students developed a desire for change and a heightened sense of awareness. The course also encouraged them to develop alternative solutions that can contribute to a more sustainable future.



## Promoting sustainable lifestyle at student residence

The Undergraduate Halls at HKBU recently organised a seminar aimed at promoting a sustainable lifestyle among hall residents and other students. The seminar, led by Mr Terence Hon, the Hall Fellow of C. L. Soong Hall and co-founder of GreenPrice, focused on tackling the issue of food waste. One of the key concepts introduced during the seminar was the idea of “best-before” items, which are high-quality, unopened, and intact food products that are close to their expiration date. Instead of being thrown away, these items are offered to households at a significantly reduced price, extending their lifecycle and preventing them from ending up in landfills. The seminar also provided participants with valuable insights into food recycling and waste reduction, highlighting the alarming levels of food and grocery wastage in Hong Kong and globally. As a result, participants were encouraged to reconsider their consumption habits and were inspired to engage in food recycling by redistributing short-dated items they had at home or in their hostels to those in need.



## Research

### Mandatory CSR disclosure and analyst forecast properties

Department of Accountancy, Economics and Finance

Authors: Haina SHI, Byron Yang SONG, Huifeng XU\*, Xiaodong XU

\*Corresponding author

The disclosure of corporate social responsibility (CSR) activities has gained attention from stakeholders worldwide. In China, this interest led to the implementation of stand-alone CSR reporting requirements for certain listed companies by the two stock exchanges since 2008. In a study conducted by Dr Song and his co-authors, they examined the impact of these mandated CSR reports on earnings forecasts made by financial analysts.

The findings of their study revealed that when companies were required to provide CSR reports, the analysts made more accurate forecasts about the companies' earnings. This improvement in forecast accuracy was particularly pronounced when the CSR reports were of high-quality and included information about the companies' long-term goals. These findings underscored the value of mandatory CSR reports in enabling financial analysts to make improved predictions.



Figure of the earnings forecasts

**COURSES**  
**51** 31 undergraduate courses  
 20 postgraduate courses

**T&L EVENTS**  
**9**

**STUDENTS ENROLLED**  
**3,955** 2,931 undergraduates  
 1,024 postgraduates

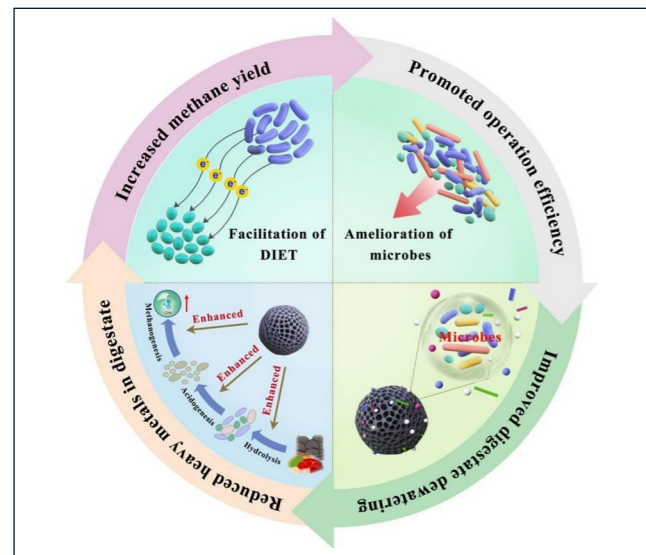
**NO. OF PARTICIPANTS**  
**108**

## Improving food waste treatment technology in Hong Kong

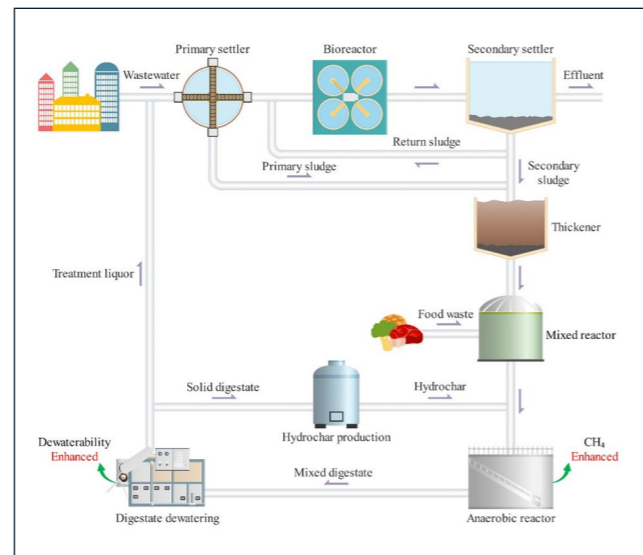
Department of Biology  
Author: ZHAO Jun

The management and disposal of bio-wastes have become increasingly challenging due to their growing volume. To maintain a sustainable environment, anaerobic digestion (AD) has emerged as a promising method as it not only reduces waste but also recovers methane energy. However, AD processes often encounter disruptions, leading to unstable performance.

In this study, the focus is on investigating the potential of hydrochar addition to AD systems to improve their performance. The study highlights the various benefits of hydrochar addition in AD systems, such as increasing methane yield, improving operation efficiency, enhancing digestate dewatering, and reducing heavy metals in the digestate. The mechanisms underlying the positive effects of hydrochar are explored, including its role in regulating electron transfer, influencing microbial community structure, impacting bio-processes within the AD system, and responding to specific reaction conditions. The study concludes by emphasising the impact of hydrochar properties in improving AD performance, and it aims to provide guidance for the application of hydrochar-mediated AD technology in maximising bio-waste resource recovery while suggesting areas for further research.



Hydrochar mediated anaerobic digestion of bio-wastes.



A proposed concept to enhance food waste and sewage sludge resource recovery, with the reduction of hydrochar preparation from digestate, and reutilisation in a wastewater treatment plant.

## Sustainability Initiatives

### Ethical sourcing policies

To ensure sustainable practices, the University has implemented the Sustainable Procurement Policy and Sustainable Food Policy. The Sustainable Procurement Policy follows the “cradle-to-grave” principle, which considers the environmental and social impacts of products throughout their lifecycle. Similarly, the Sustainable Food Policy promotes responsible behaviour in sourcing and consuming sustainable food. It prioritises the protection of land and water ecosystems, the preservation of water resources, the maintenance of biodiversity, and the mitigation of the University’s impact on climate change. These policies exemplify the University’s dedication to sustainability and its commitment to making responsible decisions in procurement and food consumption.

### Hazardous substance management

To ensure the highest standards of safety and environmental protection, the University has implemented strict regulations for the management and disposal of hazardous substances on campus. These regulations are enforced through the Dangerous Goods Management System, which tightly controls the usage of chemicals and dangerous goods. The system has undergone continuous improvements to ensure consistent data formatting and the streamlining of information exchange.

Recognising the importance of staying ahead of emerging challenges, a comprehensive study was conducted to explore the feasibility of integrating real-time location tracking technology into the existing system. This study aimed to enhance the effectiveness of chemical safety management and regulatory compliance monitoring, providing valuable guidance on potential enhancements to accommodate the ever-growing research activities on campus.

In line with its commitment to sustainable practices, the University has also developed the Waste Management Policy, which outlines the appropriate disposal of hazardous and clinical materials. By adhering to this policy, the University not only emphasises safety but also contributes to environmental preservation and protection.



## Reducing plastic consumption and disposable items

The University has been making strides in its ongoing efforts to minimise the usage of plastic and disposable items, while fostering a culture of sustainable and responsible consumption. The Waste Management Policy states the University's commitment to minimising the single use of disposal materials, products, and plastics. By promoting and embracing this policy, the University aims to create a greener and more environmentally conscious community. Through various initiatives and awareness campaigns, the University encourages students, faculty, and staff to adopt sustainable practices and reduce their ecological footprint.

### • "ben don go!" programme

The Environmental Campaign Committee has launched an innovative initiative called "ben don go!" in Hong Kong universities to promote sustainability. The scheme aims to encourage students and staff to adopt reusable meal containers by offering convenient lending services. A dedicated booth has been set up on campus where participants can borrow these containers free of charge.



To participate in the scheme, individuals can register using their University ID card or make a \$20 deposit per container. After using the containers, participants are not required to wash them, but they must ensure they are empty before returning them to the service point.

To maintain hygiene standards, designated tableware washing company will wash and sterilise the used containers on a daily basis. This ensures that the containers are clean and ready for reuse, promoting a sustainable and environmentally friendly approach to meal consumption on campus.

### • Joint-U reusable meal container lending programme

A joint university programme has been implemented across eight universities to reduce single-use materials generated by catering services. This innovative programme aims to combat waste by offering free lending services for reusable meal containers on campus. Individuals can simply borrow a meal container from a conveniently located lending machine, fill it with their desired meal at the canteens, and return it to a designated machine once they have finished.

This programme enables students and staff to actively contribute to environmental preservation by replacing disposable meal containers with reusable alternatives. By participating in this initiative, individuals not only make a positive impact on the environment but also gain valuable insights into responsible consumption practices.



### • Green catering initiatives

In a continued commitment to sustainability, the University has implemented more rigorous sustainability-related requirements in our contracts with new caterers and during contract renewals. These updated requirements have been designed to reduce waste generation. Notably, we have implemented a prohibition on the use of disposable tableware for dine-in orders, encouraging caterers to explore more sustainable alternatives. Additionally, we have increased the environmental levies for disposable tableware used in takeaway orders, incentivising customers to opt for reusable options.



## Sustainable waste management and reduction initiatives

The University is actively implementing various pilot initiatives to promote sustainable practices and reduce resource consumption and waste generation. As part of this commitment, a separate waste management system has been established on campus, with dedicated recycling facilities to encourage recycling and minimise landfill waste.

In line with the University's vision for a sustainable campus, a Waste Management Policy has been developed, following the waste reduction strategy of "Use Less, Waste Less". This policy aims to promote resource circulation and establish a sustainable waste management framework.

With the collective effort of the University community, significant progress has been made in waste management since the baseline year of 2016-17. Particularly, there has been a 19% reduction in municipal solid waste, while recyclables have seen a remarkable 100% increase. These improvements demonstrate the positive impact of sustainable practices and the University's commitment to creating a greener environment.

### • Joint-U clothing swap programme

To promote sustainable fashion, the University has organised clothing swap events on campus. These events go beyond exchanging clothes, as they strive to transform attitudes, behaviours, and knowledge. The events also create awareness and change perceptions about sustainable consumption and production. Clothes collection boxes are placed throughout the campus, and Pop-up Clothing Swap Markets are set up periodically.



• **Joint-U programme: Smart energy metres and behaviour-activated showerheads at student residence halls**

As part of the Joint-U programme’s sustainability initiatives, the University has implemented several measures at students’ residence halls to encourage responsible consumption through behaviour changes. Smart energy metres, behaviour-activated showerheads, and consumption performance dashboards have been installed to promote awareness and enable informed decision-making.

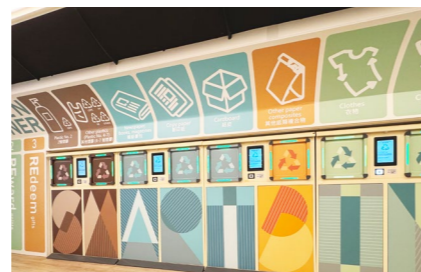


The behaviour-activated showerheads feature an innovative LED lighting system that changes to different colours for every 10 litres of water used. This gentle visual reminder helps users track and manage their water consumption while showering. Additionally, the data on water consumption will be accessible on an Internet of Things data platform for analysing the usage patterns. By combining technology with behaviour-change strategies, the University aims to empower individuals to make more sustainable choices and contribute to a greener future.

• **Green Corner: Reward-based smart recycling programme**

The Green Corner, a newly launched store on campus, is a dedicated space equipped with smart recycling bins. It serves as a catalyst for promoting recycling among staff and students by offering a captivating incentive system. By recycling, individuals could earn points that are redeemable for various gifts and rewards.

In line with this initiative, the University is developing a reward-based programme called BU Coins. This programme aims to incentivise students to actively participate in energy-saving and sustainability initiatives. By engaging in sustainable behaviours, individuals can earn valuable points through the BU Coins programme. The points can then be redeemed for a range of rewards, creating a cycle of encouragement and motivation for sustainable practices. Through the combination of the Green Corner and the BU Coins programme, the University is fostering a culture of recycling, energy conservation, and sustainability on campus. These initiatives not only benefit the environment but also empower individuals to contribute to a more sustainable future.



• **Green Pitch: Reallocation of waste and recycling bins**

The Government’s municipal solid waste charging policy is set to be implemented in April 2024. In preparation for this, the University is proactively taking steps to enhance material recycling. As part of a comprehensive waste management strategy, various recycling stations will be established, and waste and recycling bins will be redistributed across the campus. These initiatives aim to encourage and facilitate recycling practices among staff and students. One notable addition to the campus is the newly established Green Pitch, which was launched in May 2023. Strategically located at various spots on campus, Green Pitch serves as a dedicated area for waste recycling. With its slogan “Pitch In to Pitch Right”, Green Pitch actively encourages staff and students to participate in recycling activities with proper sorting and disposal methods.



**SDG 13: CLIMATE ACTION**

Take urgent action to combat climate change and its impacts.

T&L Activities

**Enhancing service-learning in energy education**

Dr Daphne Mah, Director of Asian Energy Studies Centre, created service-learning opportunities for students in the “Energy Problems and the Environment” course. Students showed special education students at Hong Chi Morninglight School in Yuen Long how to utilise drone cameras to capture videos of solar rooftops. Additionally, students had the option to participate in a research trip to Seoul during the winter break to study sustainable energy regulations. The trip facilitated an intercultural exchange of information on energy research.



**Learning about energy policy and analysis**

In Dr Daphne Mah’s service-learning course “Energy Policy and Analysis”, students were assigned various tasks to enhance energy awareness. These tasks included conducting research, developing an online solar map, and organising solar seminars. As part of a virtual inter-city deliberative discussion workshop, students collaborated with four other Asian institutions to generate innovative ideas on engaging citizens in their respective cities’ carbon-neutral initiatives.



## Tackling environmental issues with creativity

The General Education Office hosted the annual "CONNECT US – University Students and the Society" GE Student Assignment Competition. This competition showcased the exceptional works by students, focusing on a range of environmental issues that directly impact our daily lives. As part of the event, students presented their insights, reflections, and innovative solutions to address the pressing issue of global warming.



## Reducing electronic waste for a sustainable future

The Centre for Innovative Service-Learning's TriAngle, in collaboration with CNEX Foundation Hong Kong, organised an impactful environmental documentary screening and sharing session. The focus of the session was on the electronic waste crisis in Ghana, Africa. The documentary, titled Blame Game, sheds light on the global crisis of electronic waste disposal and highlights the dire living conditions and toxic air pollution faced by the people of Agbogbloshie. A group of 38 HKBU students attended the screening, deepening their understanding of the environmental challenges in Africa. Following the screening session, Ctrl Z from the Caritas Computer Workshop shared their efforts in recycling unwanted computers, repairing broken ones, and distributing them to underprivileged individuals. This initiative not only enhances technological literacy in society but also contributes to reducing electronic waste. The event left all participants feeling inspired and prompted them to reflect on their own roles in combating electronic waste.



**COURSES**  
**21** 18 undergraduate courses  
 3 postgraduate courses

**STUDENTS ENROLLED**  
**2,335** 2,237 undergraduates  
 98 postgraduates

**T&L EVENTS**  
**4**

**NO. OF PARTICIPANTS**  
**34**

## Research

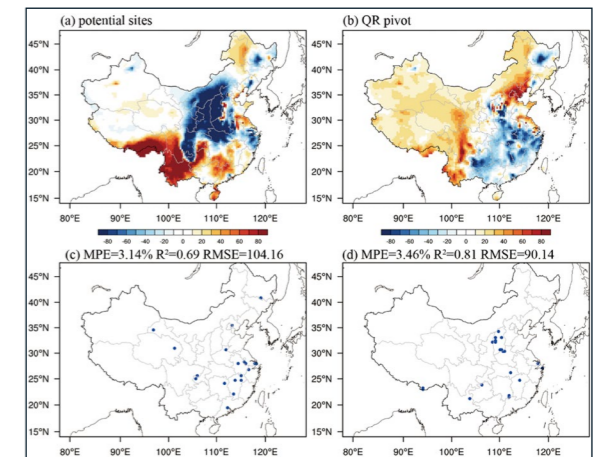
### Placing methane monitoring sites in China to better assist carbon management

Department of Geography

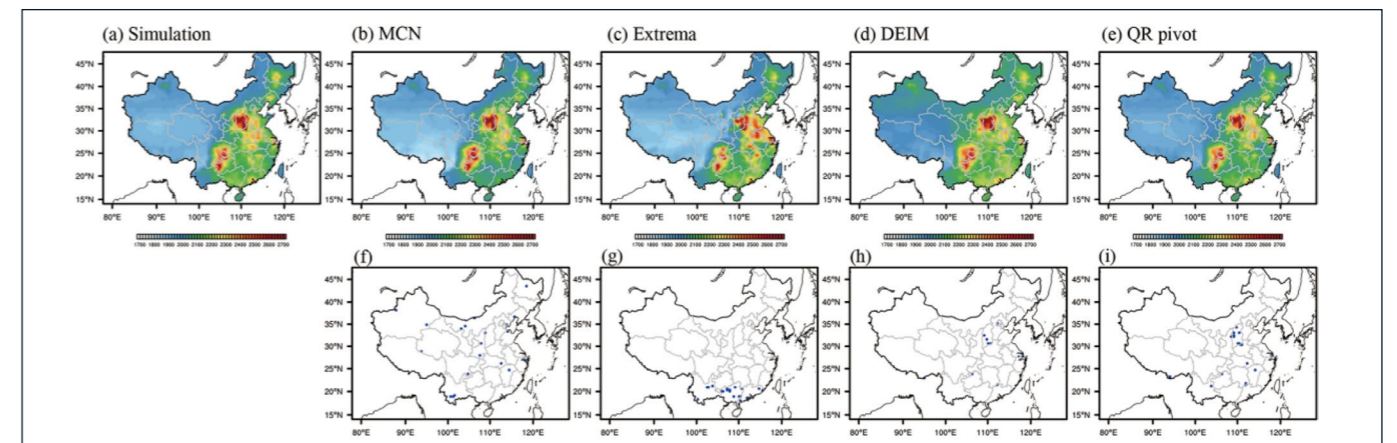
Authors: Meng GAO, Xiaorui ZHANG\*, Chenhong ZHOU\*, Yuzhong ZHANG\*, Xiao LU\*, Xiang XIAO\*, Fan WANG\*, Jun SONG\*, Yike GUO\*, Kenneth K. M. LEUNG\*, Junji CAO\*

\*Corresponding author

Methane (CH<sub>4</sub>) is a potent greenhouse gas, and China has the largest anthropogenic emissions. However, current CH<sub>4</sub> monitoring in China is insufficient for carbon management. Led by Dr Gao Meng, this study used the Weather Research and Forecasting model coupled with a greenhouse gas module and satellite-constrained emissions to simulate the spatiotemporal distribution of CH<sub>4</sub> over East Asia in 2017. Model evaluations using both satellite retrievals and ground observations showed reliable performance. Four proper orthogonal decomposition-based sensor placement algorithms were compared and found to capture key spatial features of surface CH<sub>4</sub> under an oversampled condition. The QR pivot algorithm exhibits superiority in capturing high CH<sub>4</sub>, and it offers the best reconstruction with both high efficiency and accuracy. The research findings provide valuable insights for methane monitoring site planning.



Differences between simulated and reconstructed surface CH<sub>4</sub> concentration.



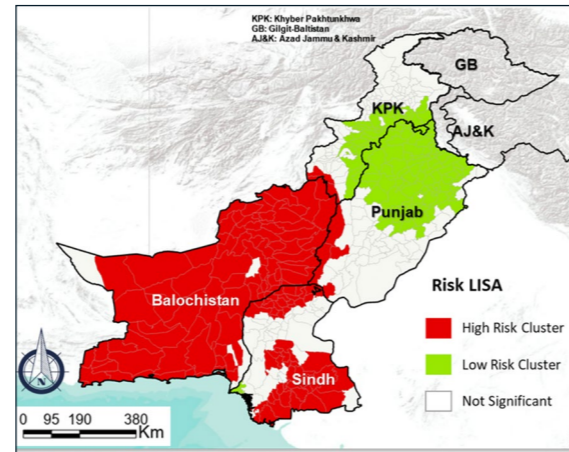
Spatial distributions of mean surface CH<sub>4</sub> concentrations across China.

## Characterising drought risk to facilitate climate action

Department of Geography  
Author: Sajjad MUHAMMAD

While droughts cause significant socio-economic impacts, existing literature tends to focus on understanding them as a hazard, and few address other important factors like vulnerability and resilience. This study address this gap by conducting a drought risk assessment in Pakistan and analysing its implications for sustainable development, particularly in relation to SDG 13 "Climate Action". In a multi-dimensional approach that integrated drought hazard, vulnerability, and resilience, the study developed a high-resolution national Drought Risk Index for Pakistan. Geoinformation tools were employed to identify spatial patterns and hot/cold spots of drought risk.

The findings revealed an increasing north-south geographical risk disparity, with a growing proportion of hot spots in recent years, indicating a worsening drought situation. The frameworks proposed in the study can be adopted by other countries, especially those expected to face increased droughts due to climate change, for effective achievement of SDG 13 goals and progress towards a more sustainable future.



High drought risk hot spots across Pakistan.

## Pursuing climate solutions amid competition among nation-states

Department of Humanities and Creative Writing  
Author: LO Kwai Cheung

The essay "Nation-States' Rivalry and Climate Change" was an invited contribution to the "Performing Against the Catastrophe" Forum organised by the academic journal The Drama Review for the Stanford University Consortium Issue. In the essay, Professor Lo discusses how planetary-scale climate change solutions must be enforced through nation-states, yet the current world system drives severe competition among nation-states to pursue environmentally destructive development. The essay explores how China and the United States can cooperate on climate issues, as the two countries are the top two carbon emitters in the world. This short essay is part of Professor Lo's larger research examining ecological civilisation in the Anthropocene era.



# Sustainability Initiatives

## Carbon neutrality commitment

HKBU is committed to achieving carbon neutrality and has implemented various policies and strategies to support this goal. The University has established a range of policies and guidelines, including the Sustainability Policy, University Green Policy for Capital Projects and Major Addition and Alteration Projects for University Campus, Sustainable Procurement Policy, Sustainable Food Policy and Waste Management Policy. These policies serve as a framework for sustainable development and operations.

In 2019, HKBU developed a five-year energy management plan that outlines specific actions to reduce greenhouse gas (GHG) emissions. The effectiveness of these actions is reviewed annually to ensure progress towards the reduction targets. In 2023, HKBU prepared a Carbon Neutrality Strategy Plan, which sets medium-term and long-term targets for achieving carbon neutrality in alignment with Hong Kong's carbon neutrality roadmap. The targets are as follows:

- Medium-term target: Reduce Scope 1 & 2 GHG emissions by 50% by 2035/36
- Long-term target: Achieve carbon neutrality for Scope 1 & 2 GHG emissions by 2044

HKBU has further developed decarbonisation strategies in four key areas:

1. Energy saving & green buildings: This includes energy-saving projects, maintaining energy-efficient operations, developing on-site renewable energy, and pursuing green building certifications for new developments and major renovations.
2. Green transport: The University aims to install EV chargers at new carparks, upgrade and increase the number of EV chargers at existing carparks and replace all traditional gasoline-powered vehicles with EVs.
3. Waste reduction: The University is implementing sustainable procurement and green catering practices, reward-based incentive programmes, and expanding recycling facilities to increase waste reduction and recycling rates.
4. HKBU engagement: To raise awareness and encourage responsible consumption, the University organises staff and student engagement activities, events, educational programmes, and installs energy performance dashboards at public areas.

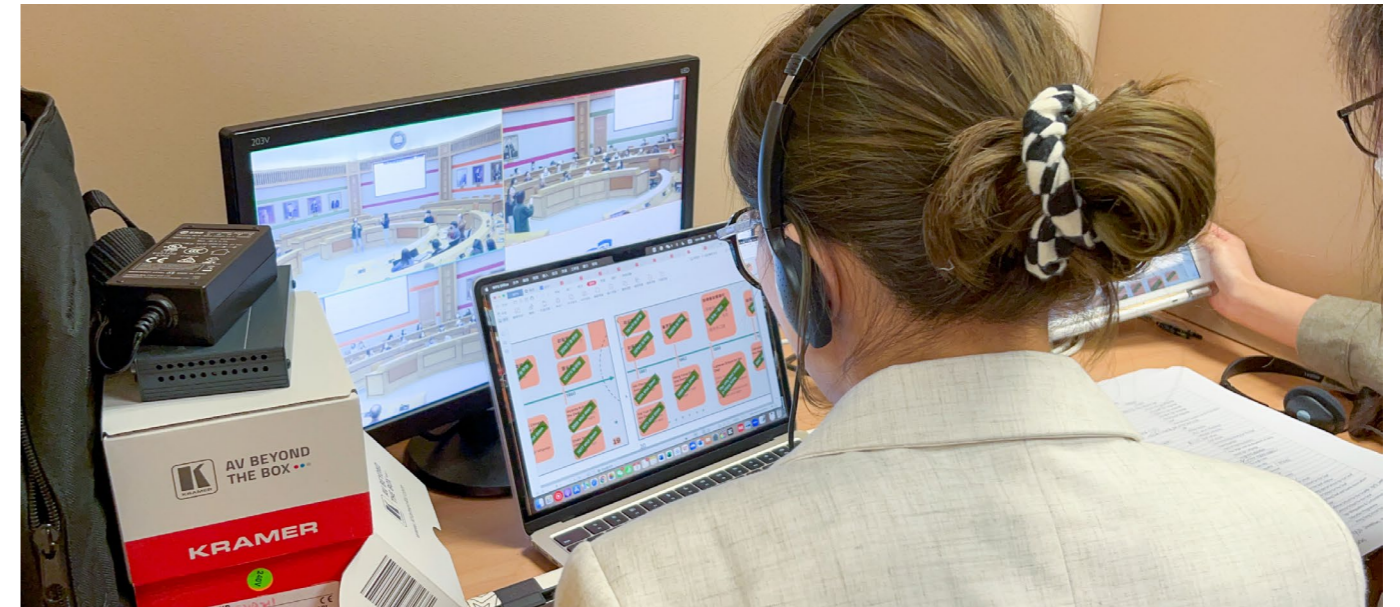
Furthermore, the University has established the Carbon Neutrality Policy, which is publicly available on its thematic sustainability website (<https://hkbu-sustainability.hkbu.edu.hk/carbon-neutrality.html>). This policy guides the University's operations and development as it progresses towards its decarbonisation roadmap.



## SDG 14: LIFE BELOW WATER

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

## T&L Activities



## Raising awareness of marine resources through interpreting

In two service-learning courses led by Dr Zhou Nan of the Department of Translation, Interpreting and Intercultural Studies, undergraduate and postgraduate students collaborated to offer language interpretation services. They partnered with organisations including the Hong Kong Maritime Museum, Blue House, HK News-Expo, and the Sign Language Workshop to provide guided tours for community partners and public events. By working with organisations like the Hong Kong Maritime Museum, students gained a deeper understanding of various aspects of marine resources firsthand. They also raised awareness and educated the public about marine resources through the guided tours.



## Photography workshop raises awareness about marine ecosystems

In November 2022, the HKBU International Association hosted a photography workshop called "Boundless Oceans, Vast Skies: Encapsulating the Beauty of Hong Kong" on a night boat trip. Attended by 40 international and ethnic minority students, the event aimed to highlight the importance of preserving and protecting marine ecosystems. Supported by the Office of Student Affairs and Global Engagement Squad, the workshop also promoted sustainable practices and explored the relationship between land and sea. Students gained an enriching learning experience through cultural exchange, artistic expression and connectivity with Hong Kong's natural beauty.



## Guided excursion deepens understanding of cultural heritage and ocean conservation

The Office of Student Affairs organised a guided boat tour through the Aberdeen Harbour, enabling students to witness the historical changes and fishermen culture. Participants experienced the scenic journey on a classic sampan, passing landmarks of Aberdeen while learning of the area's origins as a fishing village. Through the event, students gained a deeper understanding of Hong Kong's cultural heritage and appreciated the significance of ocean conservation and the sustainable use of marine resources. The guided excursion deepened the understanding of both local traditions and environmental stewardship.



 UNDERGRADUATE COURSE  
1

 STUDENTS ENROLLED  
21

 T&L EVENTS  
3

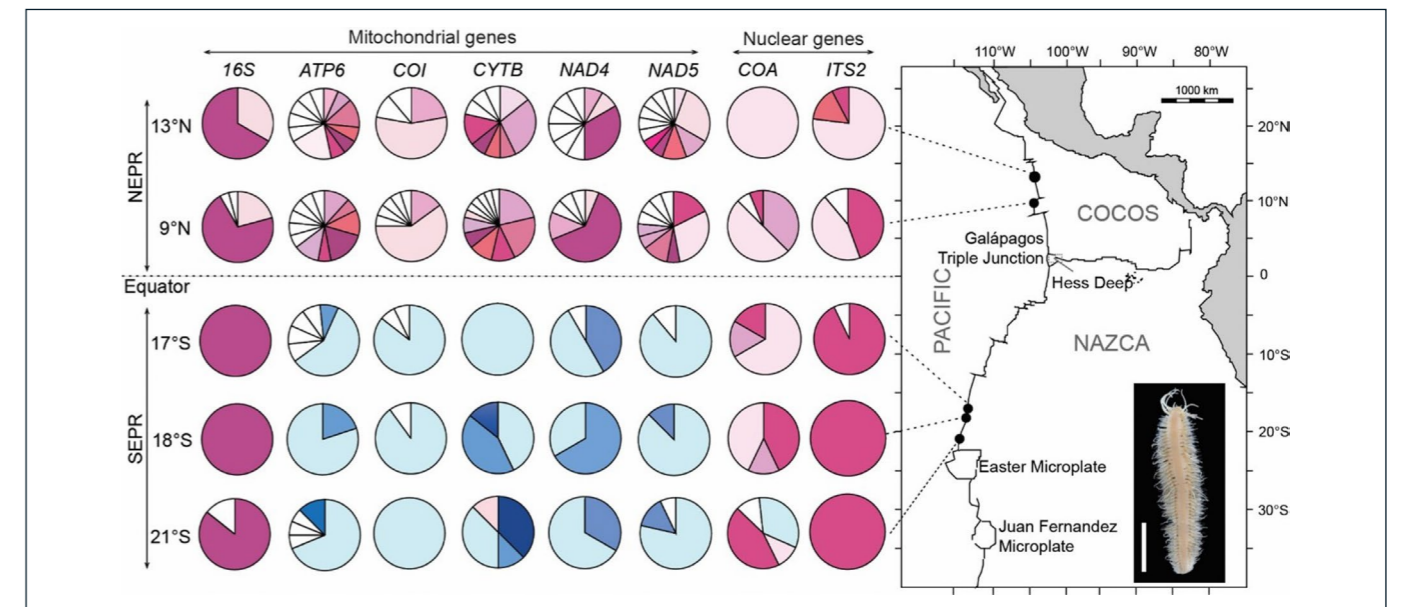
 NO. OF PARTICIPANTS  
67

## Research

### Study on genetic connectivity of hydrothermal vent species facilitates conservation planning

Department of Biology  
Author: QIU Jianwen

Genetic connectivity is crucial for deep-sea hydrothermal vent species. In this study, Professor Qiu reassessed the connectivity in the annelid genus *Hesiolyra* along the East Pacific Rise (EPR). Previous work based on a short gene segment found a major clade spanning 13°N to 21°S with no divergence among five *Hesiolyra* populations, and a minor clade with ~1% divergence. The study used multiple gene markers and found a distinct southern clade that is likely a different species. Divergence was also observed between the northern and southern populations of *Hesiolyra bergi*, estimated at 0.45 million years ago. The northern population exhibited higher diversity, indicating past gene flow. The equatorial region acted as a dispersal filter between populations. These findings suggest that separate biogeographic regions exist and they should be considered as different units in conservation planning along the EPR.



Geographic distribution of divergent haplotype of *Hesiolyra bergi* from East Pacific Rise at six mitochondrial and two nuclear loci.

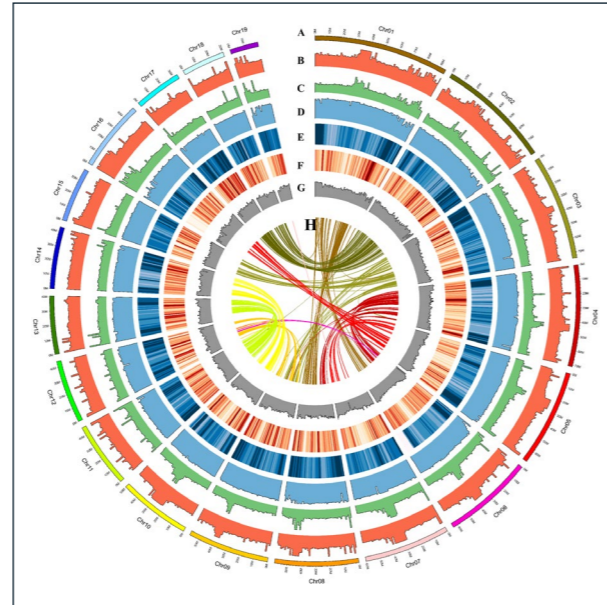
# A chromosome-level assembly of the Japanese eel genome

Department of Biology

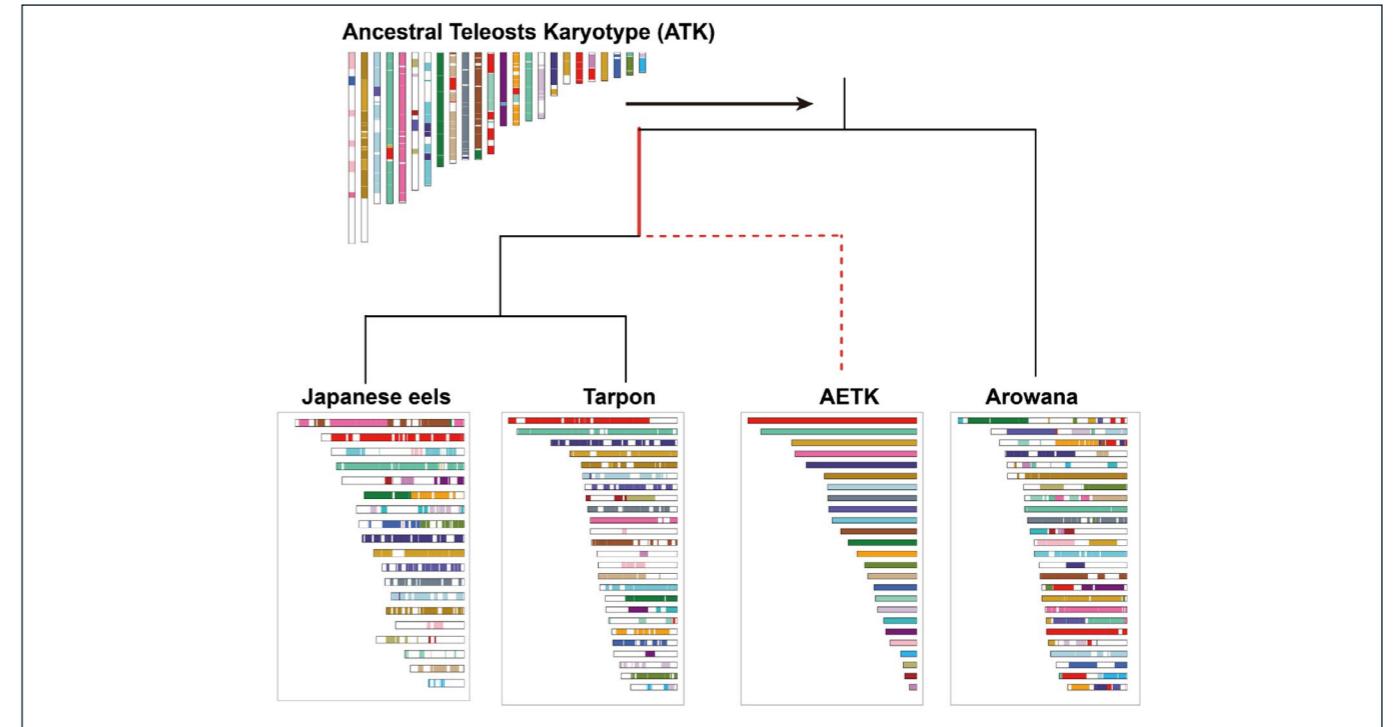
Authors: WANG Hongbo, WAN Hin Ting, WU Bin, JIAN Jianbo, NG Alice Ho Man, CHUNG Claire Yik Lok, CHOW Eugene Yui Ching, ZHANG Jizhou, WONG Anderson On Lam, LAI Keng Po, CHAN Ting Fung, ZHANG Eric Lu, WONG Chris Kong Chu\*

\*Corresponding author

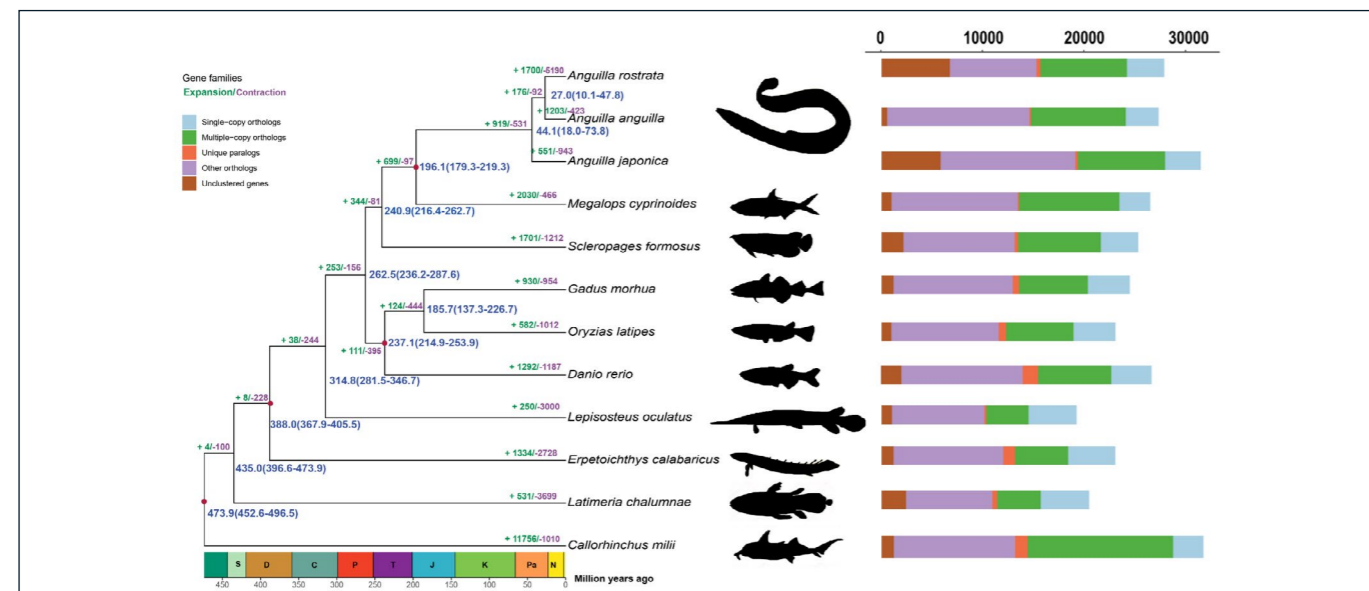
Japanese eels (*Anguilla japonica*) serve as critical indicators of the healthiness of the coastal environment and resources for aquaculture. Using genome sequencing, Professor Chris Wong led a research that presented a high-quality genome assembly of the Japanese eel, and showed that large chromosomal rearrangements occurred during the third round of whole-genome duplications. Several chromosomal fusions and fissions reduced the number of ancestral pro-chromosomes in the *Anguilla* lineage from 25 to 19. A phylogenetic analysis of expanded gene families showed that olfactory receptors and voltage-gated calcium channels were greatly expanded. Both gene families play a part in olfaction and neurophysiology. Additional tandem and proximal duplications are made to obtain immune-related genes for adaptive advantages. Using genome assembly, the research discovered how Japanese eels evolved and identified adaptive and disease-resistant alleles for conservation.



The genome landscape of the Japanese eel (*Anguilla japonica*).



A model for the distribution of chromosomal segments in the genomes of the Ancestral Teleosts Karyotype (ATK), based on arowana, eel/tarpons (AETK), Japanese eels, and tarpons. AETK is the common ancestor of tarpons and eels.

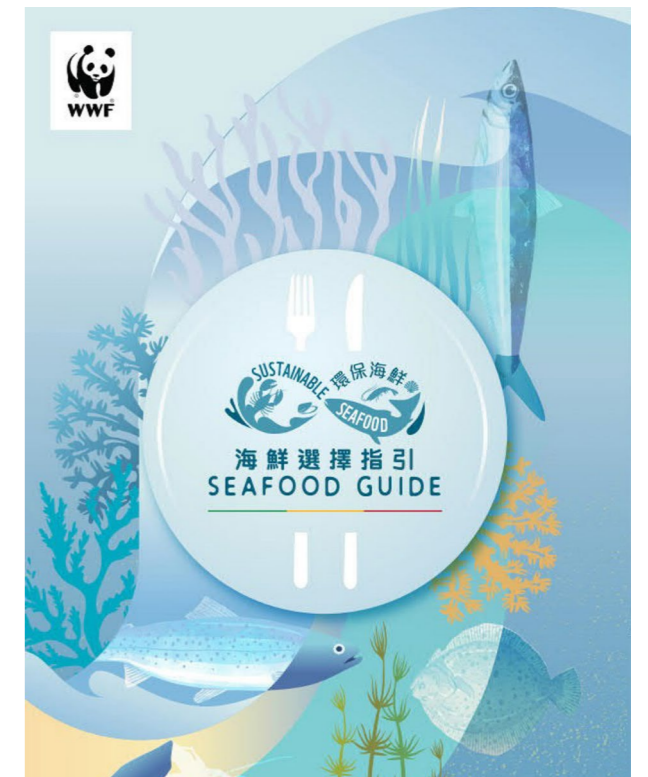


Phylogenetic relationship, divergence times, and gene families of the *Anguilla* species and relevant bony and cartilaginous fishes.

# Sustainability Initiatives

## Preserving life under water

To prioritise the protection of marine ecosystems, the University has implemented sustainable practices in its food selection. As part of this commitment, the University strictly adheres to the latest [WWF Hong Kong's Seafood Guide](#) and refrains from purchasing, selling, or serving any food items categorised as "Avoid" in on-campus catering outlets. This policy also extends to all on-campus and off-campus events and activities organised or managed by the University, ensuring that only sustainably produced seafood is consumed. By following these guidelines, the University actively contributes to the conservation of marine biodiversity and supports sustainable seafood practices.





## 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

#### Sharing knowledge on environmental health and toxicology

In his biology course "Environmental Health and Toxicology", Dr Patrick Yue of the Department of Biology incorporated service-learning to enrich student learning. Students learnt about toxic chemicals and biological responses, and they then mentored younger pupils from De La Salle Secondary School, New Territories on the topics, conducting case studies, workshops, and experiments. By teaching young students about environmental health and toxicology, HKBU students helped spark their interest in biology and inspired them to further explore the field in their future studies.



#### Enhancing knowledge of rural-urban development

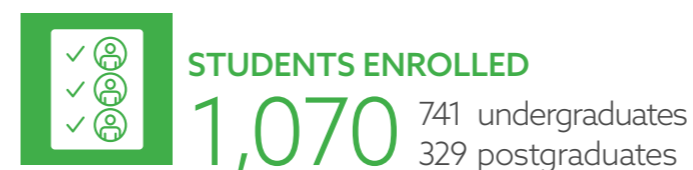
In the service-learning course "Current Issues in Hong Kong and China" led by Dr Daniel Kwok of the Department of History, students learnt about topics related to rural-urban development. They visited Lam Tsuen Valley to experience Hong Kong's farming culture. Partnering with Gift from Land, a non-profit organisation promoting local agriculture, students also met with boat people in Sai Kung. This gave the students a better understanding of the boat people's history and efforts to preserve their culture.



Hong Kong Baptist University  
SUPPORTS THE SDGs

#### Engaging activities raise awareness on animal care

Themed "Animals in our Community", the 2022-2023 Social Innovation Makers programme organised by the Centre for Innovative Service-Learning's TriAngle focused on human-animal relationships through a series of workshops. Twenty-four participants learnt about rescue efforts and challenges faced by stray animals and animal rescue organisations. They visited the non-profit organisation "Home for Homeless Dogs" to understand dog care difficulties and developed innovative solutions to address the issues. In the programme's competition, a student team won the championship with their project which centred around Hong Kong wild boars. The team then led a hiking event combined with a "Wild Boars Quest" puzzle game at the Aberdeen Country Park. Participants safely observed the boars and learnt conservation methods through this interesting and meaningful hike.





# Research

## Rediscovering our bond with the land since eons ago through multi-dimensional experiences

Academy of Film  
Performer: Annie CHEUNG

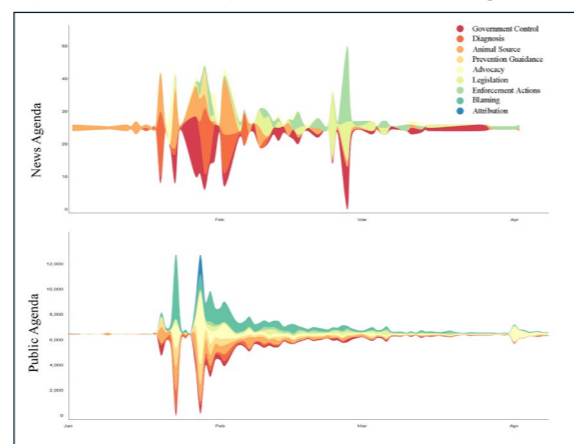
Ms Annie Cheung took part in *The Sublime Progressions*, a performance that blended multi-dimensional soundscapes, lighting, projections, scenery, and performances. The production was led by the artist group Vividly, and it explored themes of migration and diaspora by species and tribes, taking audiences on a journey through time and space in Tai Kwun. This site-specific performance offered audiences the chance to rediscover their connection to the land and revelations of life, overcoming challenges and venturing into the unknown.



## Exploring the dynamic agenda setting of wildlife issues on social media

Department of Interactive Media  
Author: SHI Jingyuan

This study focused on the impact of the COVID-19 pandemic on wildlife-related issues and how they were discussed on social media. The researchers used big data analytics to analyse over 110,000 social media posts made between January and April 2020. They found that the agenda-setting effect of wildlife-related issues on social media was not a one-way process, but rather a dynamic interaction between news outlets and the general public. This means that the discussions and priorities surrounding wildlife management and conservation on social media were influenced by both the news agenda and the public's agenda. Understanding this dynamic interaction is important for addressing wildlife-related issues in the context of public health and sustainability. This study aligns with the SDG 15 "Life On Land", which aims to protect and restore ecosystems and promote sustainable use of terrestrial resources.



The change of news agenda and public agenda on social media from January to April 2020.



## 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.

## T&L Activities



## Sustainable peace: conflict-resolution and reconciliation of divided communities

This General Education course enabled students to discover the emerging fields of "Peace and Conflict Studies" and "Transitional Justice". It emphasised the importance of understanding the political and socio-economic interests, as well as the cultural sentiments of different social actors. By participating in various cognitive and experiential learning activities, such as role-plays, simulations and comparative reflections, students were equipped with the necessary skills for conflict analysis. They were also trained to apply transferable conceptual tools in conflict resolution and post-conflict reconciliation to promote peace and justice in their communities.





## Roundtable conversation on European politics

Students had the chance to engage with European politics in Professor Alistair Cole's service-learning course. By participating in a roundtable conversation on the crisis between Russia and Ukraine, they gained a better understanding of the complicated political environment of Europe and an in-depth understanding of European politics, which in turn helped them better understand international and political topics.



## Government and politics of Hong Kong

This year, the service-learning course led by Dr Kenneth Chan of the Department of Government and International Studies, was conducted in conjunction with the Hong Kong Public Opinion Research Institute (HKPORI). During the press conference, two students presented the survey findings on behalf of HKPORI. Students travelled to the Sham Shui Po centre of Windshield Charitable Foundation and had the opportunity to learn more about the difficulties encountered by grassroots communities in Hong Kong and how government policies would affect their lives as a result of this interaction.



## Joint-university Korean cultural appreciation night

Three Korean students from HKBU performed at the VI6E Concert organised by the Korean Students' Union in Hong Kong (KSUHK) on 26 March 2023 to promote multiculturalism. The event received support from the Office of Student Affairs, marking the first time HKBU students participated in KSUHK's concert. Over 90 students from six local universities, including HKBU, formed different bands, choirs and dance groups to showcase their talents, promote cultural exchanges and build friendships. The event attracted more than 350 people, including Mr Baek Yong-chun, Consul-General of the Republic of Korea in Hong Kong, and representatives from Korean institutions in Hong Kong. HKBU's participation in KSUHK and the renaming of the concert from VI5E to VI6E symbolised the growing importance of diversity and cultural collaboration. By providing a platform for students to express their unique talents and celebrate different cultures, the concert contributed to SDG 16 by fostering inclusivity, promoting peace and strengthening institutions. It served as a reminder that through the power of music and cultural exchange, harmonious and just societies can be built, transcending boundaries and nurturing understanding among diverse communities.



## IA Holi

The Holi event organised by the HKBU International Association (HKBU IA) brought more than just a colourful and festive cheer – it also exemplified the principles of SDG 16. As students gathered at Upper Cheung Sha beach, the vibrant hues of biodegradable colours filled the air, creating a joyful atmosphere that transcended cultural boundaries. In the spirit of Holi, the celebration fostered peace and inclusivity. Students from diverse backgrounds joined together, joyfully embracing the festival's traditions and exchanging warm greetings. The event became a platform for cultural understanding and unity, reinforcing the values of peace and harmony within the university community. Moreover, the conscious decision to use biodegradable colours showcased the commitment to justice and strong institutions. By prioritising sustainable practices, HKBU IA demonstrated its dedication to environmental responsibility and preserving the planet for future generations. The event served as a reminder that sustainable choices can be integrated into cultural celebrations, promoting a greater sense of responsibility and accountability.



 **COURSES**  
**36** 24 undergraduate courses  
 12 postgraduate courses

 **STUDENTS ENROLLED**  
**2,934** 2,488 undergraduates  
 446 postgraduates

 **T&L EVENTS**  
**31**

 **NO. OF PARTICIPANTS**  
**739**

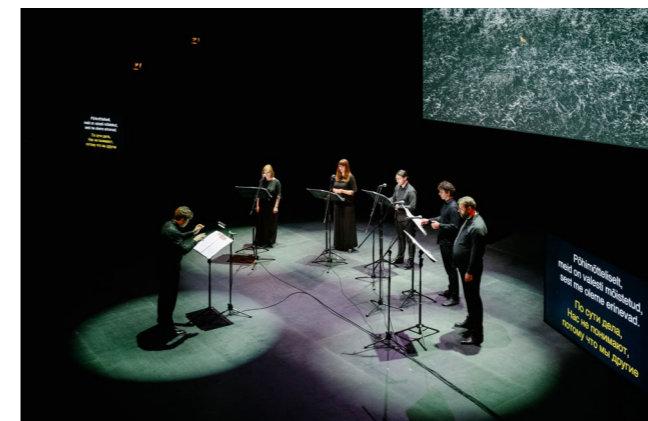
## Research

### Russia: Today

*Academy of Music*  
 Author: BIRMAN Eugene Alexander

*Russia: Today* (2020) is a combination of ethnography, sociology, and interdisciplinary artistic research, which commenced in 2017 as part of a European Union National Institutes of Culture and Austrian Foreign Ministry initiative (Trauma & Revival). It was later supported by the European Network of Opera Academies, Helsinki Festival, and the HKBU Start-up Grant, and awarded the Guggenheim fellowship in 2018 for its future impact on the discourse over Russian identity. The work has since been featured on radio and TV programmes in the EU and Russia. The resulting work is a 50-minute-long staged vocal work, setting lyrics crowdsourced from hundreds of participants of the project across Russia, the former Soviet Union, and the present-day European Union, asking questions of Russian identity, past, present, and future in four different languages and among participants ranging from elementary schoolchildren to WWII veterans. It premiered on the EU-Russia border in September 2021, and was reviewed by various international publications and national classical music radio programmes. The project has been called a “powerful” (Telegraph), “eerily prescient” (New York Times), “hour-long immersion in the complexities and contradictions of contemporary Russia” (Financial Times). The production then toured Russian cinemas from October to November 2021, occasionally accompanied by mixed mode (live + Zoom) discussions between Dr Birman and local/international artists and political leaders. The work debuted in London at Kings Place at a feature concert on 16 February 2023, with EXAUDI presenting *Russia: Today* to British audiences for the first time. The project also has its own website, focusing on the expansive research materials and public-oriented work of the project:

<http://www.russiatoday.live>.



## Establishing community mental health facilities: A comparative review of Hong Kong and international jurisdictions

Department of Social Work

Authors: Vincent W.P. LEE, Daniel W. L. LAI\*

\*Corresponding author

This study aimed to compare the process of the establishment of community-based mental health facilities in Hong Kong and other selected jurisdictions. The 'NIMBY' (Not In My Back Yard) sentiments are generally prevalent across jurisdictions in the case of setting up sensitive community facilities. In Hong Kong, there is a lack of systematic measures to promote the public acceptance of service users and the understanding of their service access rights. Since Hong Kong's town planning and mental health care systems are very different, a mixed-model approach is thus proposed for a more robust consultation mechanism and facility establishment to balance the needs for public involvement and enhance the existing legal framework to protect the vulnerable and minority groups. While the authority should set up an inter-departmental working group to collect local residents' views, regular mental health education programmes throughout the territory are essential to raise awareness of mental health and reduce discrimination against people in recovery.



## SDG 17: PARTNERSHIPS FOR THE GOALS

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

### T&L Activities

#### Human-computer interaction

In the service-learning course conducted by Dr Jin Yucheng and Dr Chen Li of the Department of Computer Science, students gained knowledge of designing and creating software applications. The Shatin District Community Centre for the Golden-Aged of the Evangelical Lutheran Church of Hong Kong collaborated with students to visit the elderly and ask them about their usage patterns for mobile applications. Students then built mobile applications that were senior-friendly. By the end of the semester, they had developed a variety of applications that could do everything from calculating the nutritional value of daily meals to delivering the most recent health information. This course encouraged intergenerational communication and helped students develop empathy for the elderly.



## Acupuncture – clinical practice

During the service-learning course conducted by Dr Li Hong and Dr Zhang Shi-ping of the School of Chinese Medicine, each group of students made three visits to elderly patients in need. They devised treatment plans and provided preliminary diagnoses using what they had learnt in class. Additionally, they helped local Chinese medicine practitioners administer acupuncture treatments. Along with helping them advance professionally, this service-learning course also helped them build a stronger sense of social responsibility and compassion for the elderly.



## Chinese culture in the community

Students of this General Education course learnt about meditation at a community coffee shop while understanding Chinese culture. In the seminar, the lecturer of the course and community partners shared why and how they organised the innovative course activities for students. The students also shared their outside-classroom learning experiences in the community.



 T&L EVENTS  
194

 NO. OF PARTICIPANTS  
5,991

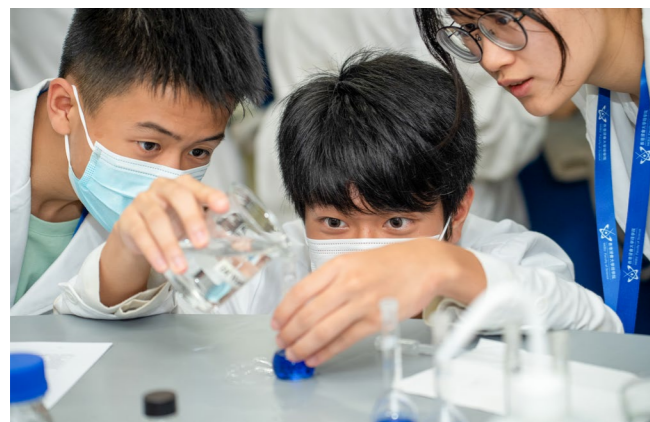
# Research

## Science Festival 2023: Go Smart Go Sustainable!

Faculty of Science

Partners: Huawei, NVIDIA, Pong Yuen, Hong Kong Organic Resource Centre, HKBU Metaverse, HKBU's Visualisation Research Centre and Estates Office

The Science Festival, organised annually by the Faculty of Science, is a key event that promotes sustainability and collaboration. It serves as a platform for fostering partnerships and driving sustainable development. The festival offers a variety of activities like workshops, guided tours, demonstrations, and talks, all centred around the theme of "Go Smart Go Sustainable!". The primary audience is secondary school students with a focus on sparking their interest in science and technology, especially in relation to sustainability and the Hong Kong Smart City Blueprint 2.0. Through interactive experiences and engagement with scientists, students gained a better understanding of scientific topics and related career opportunities. The festival also extends to the wider community through outreach events like a green science talk and a green campus hunt, raising awareness about sustainability and empowering individuals and communities to contribute to a sustainable future.



Participants of HKBU's Science Festival immersed themselves in hands-on activities and explored the fun in science.



Through various activities at the festival, participants can learn about sustainable practices and how they can make a positive impact on the environment.

## APPENDIX: Recognition, Memberships, External Charters and Awards

HKBU has been granted a number of sustainability recognitions, memberships, external charters and awards, which affirm the University's efforts and commitments to the environment.

Organisation	Recognition / Membership / External Charter
The International Sustainable Campus Network	Member
United Nations Sustainable Development Solutions Network	Member
Environment and Ecology Bureau, HKSAR Government	Certificate of Carbon Emission Reduction 2022 (O · PARK)
	Wastewi\$e Certificate (Excellent Level)
	Energywi\$e Certificate (Excellent Level)
	Hong Kong Green Organisation <i>[under renewal process]</i>
	Carbon Reduction Charter - Carbon Audit Green Partner Charter on External Lighting
Electrical and Mechanical Services Department, HKSAR Government	Energy Saving Charter 2023
	4T Charter
Hong Kong Sustainable Campus Consortium	Institutional Member
Business Environment Council	Council Member
Hong Kong Green Building Council	Institutional Member
Green Council	Founding Member of the Sustainable Procurement Charter
Institute of ESG & Benchmark	Corporate Founding Member
Food Wise Hong Kong	Signee of the Food Wise Charter

Organisation	Award
Hong Kong Green Building Council & Professional Green Building Council	Jockey Club Campus of Creativity (JCCC)
	- Green Building Award 2021 - Merit Award (New Buildings Category: Projects Under Construction and/or Design - Institution)
CLP Power Hong Kong Limited	CLP Smart Energy Award 2023 - Grand Award Winner (Energy Management Award - Catering and SMEs, NGOs, and Educational Institutes)