

The university of hong kong THE REVIEW 2019



Vision Mission

The University of Hong Kong, Asia's Global University, delivers impact through internationalisation, innovation and interdisciplinarity. It attracts and nurtures global scholars through excellence in research, teaching and learning, and knowledge exchange. It makes a positive social contribution through global presence, regional significance and engagement with the rest of China.

The University of Hong Kong will endeavour:

- To advance constantly the bounds of scholarship, building upon its proud traditions and strengths
- To provide a comprehensive education, benchmarked against the highest international standards, designed to develop fully the intellectual and personal strengths of its students, while extending lifelong learning opportunities for the community
- To produce graduates of distinction committed to academic / professional excellence, critical intellectual inquiry and lifelong learning, who are communicative and innovative, ethically and culturally aware, and capable of tackling the unfamiliar with confidence
- To develop a collegial, flexible, pluralistic and supportive intellectual environment that inspires and attracts, retains and nurtures scholars, students and staff of the highest calibre in a culture that fosters creativity, learning and freedom of thought, enguiry and expression
- To provide a safe, healthy and sustainable workplace to support and advance teaching, learning and research at the University
- To engage in innovative, high-impact and leading-edge research within and across disciplines
- To be fully accountable for the effective management of public and private resources bestowed upon the institution and act in partnership with the community over the generation, dissemination and application of knowledge
- To serve as a focal point of intellectual and academic endeavour in Hong Kong, China and Asia and act as a gateway and forum for scholarship with the rest of the world



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Cultivating Our Potential

I have completed my first full year as President of HKU against a backdrop of challenging times for Hong Kong as a whole. Yet despite these events, the University has kept its focus on our academic mission and had a fruitful and productive year. HKU (and Hong Kong institutions as a whole) welcomed large, new and unprecedented injections into research funding by the Hong Kong government, as well as improved access to funding from Mainland China. We launched innovative undergraduate programmes built around interdisciplinarity and leadership development. We also boosted our support for incubating start-ups and spin-offs by HKU students and staff. Our academic output remained strong and we continued to attract top students. There is much to look forward to as the University works to capitalise on these opportunities and move towards reaching its great potential.

provide substantial funds to support

Research Opportunities

The headline development of the year was the legislative approval of the government's InnoHK scheme, which provides up to \$500 million to each research project in the fields of medicine and engineering. This is well beyond any previous funding provision by the government. HKU submitted very strong proposals and we are confident that several of these will be approved. At the same time, we continued to perform strongly in other governmentfunded schemes, including the General Research Fund which granted us \$163 million for 217 projects in 2019, the most of any Hong Kong institution. We were also the first to benefit from new rules that allow Hong Kong scholars to apply directly to the National Key R&D Program of the Ministry of Science and Technology for funds that will be used for research conducted in Hong Kong, when Professor William Lu Weijia from the Li Ka Shing Faculty of Medicine received a RMB27.44 million grant.

While these results are very satisfying, the University can and must do even better to ensure we carry our momentum forward and capitalise on the new opportunities before us. Recruiting the best scholars from around the world remains a top priority and we added fuel to that effort in 2018–19 with the launch of the Presidential PhD Scholarships and Post-doctoral Fellowships, which will young scholars and their research in addition to that provided by the Hong Kong government. We plan to recruit up to 100 scholars in each category over three years. We also invited young scholars to visit Hong Kong in October, for the Meeting of Minds@HKU Forum, to present their research and check us out. And we will soon launch a very ambitious programme to recruit 50 leading senior scholars from around the world – the cream of the crop. Enriching our talent pool will ensure we have solid foundations for future success.

Another priority is to focus our energies in our areas of strength, where we can have the most impact addressing the grand challenges of our times. This year, we launched InnoTech, through which we will establish 10 interdisciplinary research institutes over the next five or six years. We have already received a \$150 million donation from the Lee Shau Kee Foundation for the Institute of the Mind, which will bring together scholars from medicine, engineering and social science to investigate the workings of the brain to benefit both people and computer chip development. To support the InnoTech institutes and our other research, we plan to build the Tech Landmark, which will contain a cluster of four buildings on the Main Campus. Funding has already been secured for two of the buildings and construction will start very soon.

'Out-of-the-box' Learning and Innovation

Our teaching and learning programmes also continued to go from strength to strength in 2018-19. HKU continues to attract top students from Hong Kong, the Mainland and abroad because of the very rich learning experience we offer, including guaranteed overseas and Mainland learning experiences for students who wish to pursue this, innovative forms of teaching and learning, opportunities to learn beyond their major, support for student entrepreneurs and more. The quality of our teaching was recognised in 2019 when the Common Core team was awarded the UGC [University Grants Committee] Teaching Award. The Common Core was launched in 2012 and attracted global acclaim for its innovative, interdisciplinary approach to learning. The experience we gained from this has given us the confidence to launch a full programme in September 2019 based around interdisciplinarity and leadership development - the Bachelor of Arts and Sciences. Graduates of this programme will have skills in critical thinking, leadership and big data analysis, which will enable them to tackle the challenge of our times.

On innovation and entrepreneurship, the University has been supporting students, as well as staff and alumni, through iDendron, which provides space, networking and training





The Tech Landmark, a complex of four towers planned for 2024, will house 10 institutes serving as national platforms with global impact

opportunities. iDendron was launched in 2017 and has so far been a launch pad for more than 50 start-ups and spinoffs. The University is keen to bolster our impact further and encourage the translation of our research, ideas and enthusiasm into new products and services. In July 2019 we launched the iDendron Incubation Programme to provide intensive mentoring and training for budding young entrepreneurs. We have also created a new post of Chief Innovation Officer to develop a strategic plan for advancing innovation at HKU and supporting the development of our research outputs into real-world applications.

Having said all that, I believe it is also important to bear in mind that scholarship is at the heart of HKU's activities, whether that be teaching and learning or research. Innovations and applications are natural extensions of our scholarship, but our utmost priority is to promote the creation and acquisition of knowledge.

Valued Partnerships

A key factor in the University's ability to develop new knowledge, recruit the best scholars and teachers, and have impact in society is our partnerships and relationships. At any given

moment, our scholars are engaged in hundreds of research collaborations with partners from around the world. Our InnoHK proposals include partnerships with Harvard, Cambridge, MIT and other outstanding institutions. The Greater Bay Area is



also offering many opportunities for Hong Kong scholars to launch new research and innovation activities. In teaching, we have dual degrees with institutions such as University College London, Sciences Po and the University of California, Berkeley, and in 2018–19 we announced new dual degrees with Tsinghua University and Peking University.

Such partnerships require resources. While the Hong Kong and Mainland China governments have been generous, there are many competitors for these funds. Moreover, we also want to grow, with plans over the next five years to build the Tech Landmark and five new hostels for student accommodation. I have been active over the past year meeting with industry partners and other interested parties. HKU's alumni have been generous and we are fortunate to have so many enthusiastic friends and supporters from the community. I will continue to seek external support beyond the government to help HKU secure much-needed support for our research and teaching ambitions.

Moving Forward

One final thing to note is that while our scholars and students are working towards a better future, the University itself must ensure its inhouse operations are aligned with that goal. This year's *Review* reports on our ongoing efforts towards achieving the United Nations' Sustainable Development Goals. This will be a long-term project and progress may not be immediate, but we are



determined to mitigate our impact and contribute to the future of the planet.

Closer to home, the University also values its position as a major pillar of Hong Kong society. The social movement of recent months has put Hong Kong, including HKU, to the test. Student safety is a high priority and we have been doing all we can to provide students with support and assistance. The University has also been working hard to promote civilised and rational discussion and debate in adherence with our core values of academic freedom, freedom of speech, freedom of assembly and respect for others' cultures and perspectives. Our commitment to



these values is unerring and they will continue to be at the heart of all we do.

The past year has been a time of great progress for both the University and for me. I have met regularly with all the Deans, student groups and other stakeholders to get the pulse of HKU and I have now started to visit individual departments to deepen my understanding of activities and aspirations across the campus. One thing that rings loud and clear is that HKU has a great pool of talent, energy and ambition. My task ahead will be to work very hard, in collaboration with the University community, to steer HKU towards new heights of excellence and fully realise its potential.

Professor/Xiang Zhang

President and Vice-Chancellor December 2019

CROSSING BOUNDARIES

New interdisciplinary degrees launched in 2018–19, in addition to our existing requirement that all students learn beyond their major, are enabling HKU to produce graduates with the critical thinking skills and adaptability to address the challenges of the 21st century.

In July 2019, 15 students from the Faculty of Science adopted the role of eco-leaders and teamed up with 17 HKU alumni and HKU Foundation members in the HKU East Africa Wildlife Eco-Tour led by Dr Billy Hau from the School of Biological Sciences to experience the legendary Great Migration and promote nature conservation.





The inaugural Global Liberal Arts Design Experiments (GLADE) symposium was held at HKU in June 2019.

HKU is a leader in Hong Kong in embracing interdisciplinary education. Our innovative Common Core, which attracted widespread interest from around the world when it was launched in 2012, has given us deep experience in bringing together students from different disciplines to address the complexities of 21st-century life from multiple perspectives. In 2019 we ramped up that approach with the launch of the Bachelor of Arts and Sciences (BASc), a rigorous curriculum that crosses intellectual boundaries and cultivates leadership abilities.

More than 100 top-performing students were admitted to the BASc programmes in September 2019, which include a general BASc and five BAScs in Financial Technology, Applied Artificial Intelligence (AppliedAI), Design+, Global Health and Development, and Social Data Science. Students acquire both broad and specialised knowledge - for example, in the BASc(AppliedAI) they learn the fundamental science and engineering skills for building AI systems, as well as the philosophical and ethical questions that AI evokes – and undergo training in leadership and big data and attend a Foundations of Human Knowledge

course that looks at intellectual development across human history, from ancient China and ancient Greece up to the present day.

The Common Core itself, meanwhile, continued to gain recognition and evolve in 2019, when it received the UGC [University Grants Committee] Teaching Award (Team) for teaching excellence. Only three teaching awards are bestowed across Hong Kong each year, so this was a great honour. The Common Core also expanded beyond our campus, with the launch of the China Liberal Arts Summer Sessions (CLASS) with partner institutions in the Mainland and of Responsive4U, a UGC-funded \$15 million programme to share General Education and Common Core courses among HKU, the Hong Kong Polytechnic University, the Hong Kong University of Science and Technology, and the Chinese University of Hong Kong (see page 14). In addition, the Common Core team has taken the lead to bring together researchintensive universities from around the world that are committed to enhancing holistic liberal arts education through the formation of the Global Liberal Arts Design Experiments (GLADE), which

held its inaugural symposium at HKU in June 2019. The team is now initiating collaborations on sharing modules, courses and projects through the co-creation of a Global Civic University that will focus on relationships between universities and their host urban localities.

Apart from encouraging students to cross disciplinary boundaries, the University also wants them to cross physical ones. Our Horizons programme provides every student with the opportunity to have a learning experience in Mainland China and overseas if they so wish. To support that goal, the highly successful Project Mingde – which originated in the Faculty of Engineering in 2003 and has built schools, dormitories, toilets and bridges in impoverished communities in Mainland China and Vietnam - has now become the University-wide programme Horizons Project Mingde Individual units of the University have also taken the initiative to launch their own external programmes with partners, such as the Sau Po Centre on Ageing which offered a summer programme on ageing with Peking University for both undergraduate and postgraduate students.

Internationalisation is also shaping many of our programmes. The University has dual degrees with some of the world's top universities, which allow undergraduate students to study at and be conferred degrees by both institutions. In 2018-19, we announced a new dual degree in Law and Business with Peking University, which admitted its first students in September 2019, and two new dual degrees with Tsinghua University in Business and Economics and Computer Science and Technology, which will be available soon. These are in addition to our existing dual degrees with such institutions as University College London, Sciences Po and the University of California, Berkeley.

HKU's commitment to both excellence and opportunity is enabling the University to attract high-performing





Dentistry students in the University's Horizons Project Mingde went to Guangxi to provide dental examinations and oral hygiene education to villagers.

2019, our student intake again registered the highest average HKDSE [Hong Kong universities across the four core subjects of Chinese, English, Liberal Studies and scores. We also admitted the very best Hong Kong, the Mainland and overseas. relevant and fit-for-purpose in preparing exciting and difficult challenges facing

11

top scorers

11 HKU candidates achieved 5** in six or more subjects in the Hong Kong Diploma of Secondary Education Examination (HKDSE).

8,000+

global and Mainland China experiences

Students went to Mainland China and all five continents to undertake learning activities of all durations and academic levels.

99.3%

employment

For the 13th consecutive year, graduates achieved full employment (including the pursuit of further studies). The figure is for UGCfunded students who graduated in 2017–18.

75

students with special backgrounds

64 local non-Chinese speaking students were admitted through JUPAS, the most of all the universities, as well as 11 students with special educational needs.

First-hand Experience

Experiential learning continues to be an integral part of education at HKU, with opportunities to engage in discipline-based and service learning in Hong Kong, Mainland China and overseas.

Architecture as Object and Place

Field trips to historic and culturally noteworthy sites in Mainland China are deepening Architecture students' appreciation of both the architectural qualities of the structures they visit and the societies from which they emerged. In spring 2019, one group of students went to mountainous Jiyuan in Henan to study classical temple architecture, while another visited a rural area in Zhejiang to study vernacular dwellings, including a traditional family courtyard house.

Owen Miu Ho-yeung, a third-year student of Bachelor of Arts in Architectural Studies, travelled to Zhejiang to investigate traditional domestic architecture. "I initially thought we would see very rigid and conservative forms of architectural expression, but I came to realise that traditional Chinese buildings can be as flexible and adaptive as modern

Architecture students went to Henan to study classical temple architecture

particularly impressed him. "We had to survey the complex and it gave me a thorough picture of what is meant by the term 'Chinese architecture'. This field trip made me understand the beauty behind this sophisticated architecture and its cultural implications," he said.

buildings," he said. The family courtyard

Classmate Johanna Li Yin went to Henan and produced surveys, maps and drawings of the temple and surrounding area. "We had the rare opportunity to go inside the altar of the temple, where usually only Taoists are allowed to enter to do rituals. We witnessed their everyday rituals and daily life. We also were able to talk to local people and get a better understanding of their living conditions," she said.

An Enriching Year

Starting from 2018–19, all third-year MBBS students embark on an 'Enrichment Year' in which they take charge of their learning by studying a non-medical

subject, pursuing research, earning an extra degree, and / or undertaking service work. The first cohort returned refreshed and recharged, as the following examples illustrate.

Chan Wang-yeung went to impoverished Yongping county in Yunnan province to study the healthcare system and make recommendations to county officials. "This reminded me that public health is not only a matter of health but also involves multiple stakeholders and complex resource allocation," he said He also interviewed women there about perinatal depression. "The most impactful moment was when an interviewee told me about the failure of her first pregnancy. It made me realise that doctoring is not just about curing physical diseases but also helping heal patients' mental wounds."

Evelyn Chan Hui-yi went to Yale University as a visiting student where she studied anthropology, gender studies, global affairs and computer



Professor Wang Weijen from the Faculty of Architecture giving a lecture to HKU students in a village in Zhejiang



Evelyn Chan Hui-yi (second from right in the first row) went to Yale University as a visiting student.

science, and volunteered with a healthcare outreach programme for the homeless and the student-run Yale Living History Project. "We listened to patients tell their life stories and wrote their narratives into their medical records. This helped us learn more about them as human beings instead of just patients," she said.

Caitlin Yeung Hon-ning had a busy year studying a full-time Master of Public Health programme at HKU; accompanying former Director-General of the World Health Organization (WHO) and Director of Health in Hong Kong, Dr Margaret Chan, to a conference in Bangkok; working as a part-time research assistant in the Department of Family Medicine and Primary Care on a project about the challenges faced by low-income families; and doing monthly home visits to chronically-ill elderly patients. "My varied experiences truly broadened my view on health in my community and beyond. I hope one day to combine my public health research skills with moral integrity to improve health in my community," she said.

Four Countries in Four Weeks

Science students visited coastal areas in four countries over the summer to deepen their awareness of climate change and understand the interactions between different agents in tropical, sub-tropical and temperate coastal systems.

The experiential learning course, organised by Dr Thiyagarajan Vengatesen and Professor Gray Williams of the Swire Institute of Marine Sciences and the School of Biological Sciences, required students to spend a week in Hong Kong studying coastal ecology and



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sustainability, then a week in Penang to study tropical coastal ecology with the Centre for Marine and Coastal Studies of the Universiti Sains Malavsia. The students then spent more than two weeks in the Gulf of Maine, visiting coastal communities in the US and Canada in a programme organised with Northeastern University.

The students worked in groups focusing on one of four topics - food security, biodiversity and ecosystem services, coastal zone uses, or stakeholder engagement – and produced a report at the end comparing their observations from Asia and North America on that topic.

Trista Zhang Zheng, a third-year BSc student who was in the stakeholder engagement group, said the experience enabled her to see how biodiversity, policy, economics, landscape and other factors interacted. "I learned to stay humble as a decision-maker because we will never know enough about a system and we will never know better than the participants in this system. It is a simple thing to say we should engage with different stakeholders, but in reality the complexity is beyond expectation," she said.



A mini mobile microscopic laboratory on board which enables students to examine the live organisms in their samples.

(Courtesy of Professor Brian Helmuth of Northeastern University)

Creative Approaches

Experimentation has taken hold among HKU's educators, with the launch of innovative new majors, teaching techniques and initiatives to help local and non-local students integrate on campus.



(From left) Emad Akhras, Gitanjali Pies and Kelvin Cheung from the new Bachelor of Arts and Sciences (BASc) programme.

BASc in the Limelight

HKU's new Bachelor of Arts and Sciences (BASc) programme found ready takers among students attracted to its interdisciplinary education, training in leadership, big data and critical thinking, and its focus on the key developments of our times.

Emad Akhras, who is originally from Syria and lived and studied in the UK, is enrolled in the BASc in Applied Artificial Intelligence programme. "The interdisciplinary aspect is truly fascinating. I had been thinking it would be extremely dull to pursue either an abstract science course or a purely humanities-oriented course and I could not find the right balance until I saw the BASc. It offers me rich scientific content related to what I am interested in doing in the future, as well as a powerful foundation in literary and background theories." he said.

Gitanjali Pies is enrolled in the generalist BASc. "What stood out for me is the flexibility it offers to study a wide range of subjects and 'personalise' my major. I also like that I am allowed to double major in another field of interest, such as economics or psychology. That way I can study deeper into one area once I find that passion," she said.

Kelvin Cheung was motivated to enrol in the BASc in Global Health and Development programme by the broad perspectives taken on a subject of deep interest to him. "Global health is a complex phenomenon that cannot be viewed from a solely scientific and medical perspective. It requires an awareness of how economics, law, politics and human rights are intrinsically linked to health." he said.



Virtual reality (VR) tools are used for nursing education to help students understand the patient's perspective.

Standing in Another's Shoes, Virtually

What does it feel like to have a psychotic episode? The symptoms may be gleaned from a textbook, but written words cannot replicate the auditory and visual hallucinations and delusional thoughts that these patients undergo. Recognising the limitation this presents to caregivers, the School of Nursing has worked with HKU's Technology-Enriched Learning Initiative (TELI) to develop virtual reality (VR) tools that let students see and hear the world from the perspective of patients.

Dr Janet Wong Yuen-ha, who oversaw the project, said: "VR education can integrate cognition, emotion and sensation into the learning process, which is very useful for nursing education, so we have applied it to depict the journeys of psychiatric patients suffering from psychosis, anxiety disorder and mood disorder."

Fifth-year BNurs student Christy Chan Hei-yin felt both students and patients benefit from this form of learning. "After using VR, we can really experience how a patient feels - it is hard to differentiate hallucinations from reality. If we have more empathy towards patients and put ourselves in their shoes, and try to think from their perspective, patients will see

that we, as nurses, really care about them and would like to help them. This will benefit the treatment process," she said.

Table Talk

Internationalisation on campus can be tricky. Putting people together in the same place does not guarantee they will interact. The Centre of Development and Resources for Students (CEDARS) therefore has been developing programmes to help local and non-local students bridge the cultural gap.

The newest is CHATnCHILL, in which local students lead non-local students on short excursions to Hong Kong sites



The Eat To-Gather programme pairs a local and two non-local students, who enjoy a meal with a local family.

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and culture. Leo Dai Chun-kit, a fourth-year BEcon&Fin student, has led visits to the Peak and the Tai Kwun arts and heritage centre. "A large part of our work is making conversation because we want to create a relaxing environment where international students have a chance to talk with local students and each other. I have met a lot of people from different countries and I have learned that relationship-building depends on letting other people understand you, even if you are not speaking in your mother tongue," he said.

The Eat To-Gather programme, which started three years ago, pairs a local and two non-local students, who enjoy a meal with a local family to experience ordinary Hong Kong life. The local student helps the other students understand local etiquette and customs. Ivan Ng Chak-ming, a second-year student of Bachelor of Science in Actuarial Science, was the local contact for a group that dined with a fireman and his family. "The best part was the friends I made, I still see one of them regularly to just chat or play squash," he said. That friend is Vincent Antonozzi, a second-vear BEcon&Fin student who came to HKU from France. "We had a great dinner and there was good communication between all of us, which made this experiment enriching for everyone," he said. CEDARS also organises peer language tutoring and other programmes to help students connect with each other.



Common Core Kudos

The interdisciplinary, integrated education pioneered through the Common Core was extended to other universities in Hong Kong and Mainland China in 2018–19 and has earned honours for its achievements.



(From left) Mr Mathew Pryor, Professor Gina Marchetti, Professor Gray Kochhar-Lindgren, Dr Hu Xiao and Dr Julian Tanner.

Transdisciplinary Team Honoured

HKU's Common Core team won the prestigious UGC [University Grants Committee] Teaching Award (Team) in 2019 in recognition of their success at breaking down boundaries and exposing students to new and challenging learning experiences.

The Common Core@HKU: Transdisciplinarity-in-Action Team, as it is formally called, includes Professor Gray Kochhar-Lindgren, the Director of the Common Core, as well as Dr Hu Xiao from the Faculty of Education, Professor Gina Marchetti

from the Faculty of Arts, Mr Mathew Pryor from the Faculty of Architecture and Dr Julian Tanner from the Li Ka Shing Faculty of Medicine.

Their achievements include creating multiple learning formats through the Common Core, such as flipped classrooms, summer school courses, experiential learning classes and Common Core Global Experiences; establishing partnerships with community organisations in Hong Kong; and launching GLADE, the Global Liberal Arts Design Experiments, to collaborate with partner research-intensive universities around the world to deepen integrative learning for undergraduates.

They also launched the Transdisciplinary Team Project in which small groups of students from different disciplines take on a joint research project, exemplified by Dr Tanner's initial course on research and community awareness around hepatitis C.

"We prefer to say 'trans-' rather than interdisciplinary because we don't want to presume pre-established disciplines that are merely complementing one another," Professor Kochhar-Lindgren said. "Transdisciplinarity enhances our capacity to pose new questions, invent research methods across disciplines, and learn together how to better co-create scalable responses in the context of our most difficult and fascinating challenges." The team will next focus on developing undergraduate research projects related to the United Nations' Sustainable Development Goals of gender equality, sustainable cities and communities, and good health and well-being that will involve students both from HKU and from partner UGC-funded universities.

CLASS Experiments

The Common Core crossed borders in 2019 with a pilot programme offering courses with partner institutions in Mainland China.

The China Liberal Arts Summer Sessions (CLASS) offered five credit-bearing courses over an intensive three weeks with students spending two of the weeks at either Nanjing University, Shanghai Jiao Tong University or Zhejiang University with Mainland students, then one week at HKU. The courses covered scientific revolutions, gender and health, Hong Kong cinema, globalisation and architecture, and the



The China Liberal Arts Summer Sessions (CLASS) offered five Common Core courses with Nanjing University, Shanghai Jiao Tong University and Zhejiang University in the summer, with students spending two weeks on the Mainland and one week in Hong Kong.

development and social implications of stem cells.

Professor Sham Mai-har of the School of Biomedical Sciences taught the stem cell course and welcomed the built-in exchange component. "The Hong Kong students loved our course because we were able to spend a lot of time with them. The Zhejiang University students loved us even more! Their normal teaching modes are quite conventional and use traditional didactic methods and they had not experienced our open approach to teaching and learning before. The teachers there who sat in our course were also impressed with this," she said.

Professor Quentin Parker of the Department of Physics co-taught the course on scientific revolutions with Dr George Akom of the Faculty of Science and welcomed the opportunity to take the Common Core in a new direction. "I am a huge fan of the Common Core and its importance for our students. The CLASS initiative helps expand the concept to the Mainland and provide opportunities for students from HKU and elite Mainland universities to interact, work together and build friendships and trust. Anything that breaks down barriers and widens opportunities and experiences for students has my support," said Professor Parker.

Sharing Our Resources

A programme to share Common Core and General Education courses across four institutions had a successful pilot run in 2018–19.

The programme, funded with \$15 million from the University Grants Committee, involved HKU, the Hong Kong Polytechnic University, the Hong Kong University of Science and Technology and the Chinese University of Hong Kong, who each offered at least one course open to all students from the four institutions. Of



Students at The Science of Crime Investigation class, the most popular of the ten courses in the Responsive4U project, which allows students from four local universities to take selected General Education and Common Core courses in the partner institutions.

the first 10 courses on offer, seven were HKU Common Core courses. Course times and delivery formats were adapted so students from other campuses could more easily attend, such as using online learning and flipped classrooms.

The most popular course was The Science of Crime Investigation led by Dr Philip Beh Swan-lip of the Department of Pathology, which is the only one of its kind in Hong Kong. Dr Beh was already revamping his course to include gamification, augmented reality, flipped classroom and other features, so it was not difficult to factor in learners from other institutions. "The students were required to work efficiently in groups towards a final project presentation and it was not noticeable which institution they were from." he said.

Professor Ricky Kwok Yu-kwong, Associate Vice-President (Teaching and Learning), oversaw the pilot from HKU and analysed the feedback from students, who reported enjoying the opportunity to study at other institutions and to take courses otherwise not available to them. "Some of them also said that they were not able to go on exchanges overseas, so they appreciated the opportunity to study outside their home institution," he said.

ON FERTILE GROUND

Opportunity came knocking in 2019 as vast new sources of research funding became available in Hong Kong. HKU scholars quickly seized the day to advance their research. The University also invested in attracting more young stellar talent from around the world to augment our foundations for future growth.

In collaboration with the University of California, Berkeley, Dr Kevin Tsia (far right) from the Department of Electrical and Electronic Engineering was awarded a funding of over US\$2 million from the BRAIN Initiative Fund of the US National Institutes of Health for a project to develop a high-speed optical imaging technology for recording fast neural activity throughout the living animal brain.



Research and Innovation



The 6th World Conference on Research Integrity was held at HKU in June 2019 with the participation of 700 delegates from around the world.

The 2018–19 academic year brought remarkably good news for scholars in Hong Kong. The Hong Kong government released a large new reservoir of research funding, while doors opened for Hong Kong scholars to apply for certain competitive research grants from Mainland China. HKU is well poised to take advantage of these opportunities, having applied ourselves rigorously in recent years to recruit stellar academics, encourage and provide opportunities for interdisciplinary research, forge collaborations with top-ranked universities around the world, and invest in upgrading our facilities.

In 2019, legislative approval was given to boost government funding for research to \$20 billion. Some of this will be used to launch InnoHK, which provides as much as \$500 million each for major cross-disciplinary research programmes. Although the results of InnoHK were not announced in time for The Review's deadline, HKU submitted strong proposals in health and artificial intelligence and robotics that have great promise of being approved. In addition, the University continued to be very successful in the standard competitive funding programmes of the Research Grants Council (RGC). In 2019 we were the top performer among all Hong Kong institutions in the General Research Fund, receiving \$162.521 million for 217 projects. HKU was also

a top performer in the Theme-based Research Scheme and the Humanities and Social Sciences Prestigious Fellowship Scheme, among others.

Easier access to research funds from Mainland China was also a highlight of the year. Hong Kong scholars can now apply to certain national funding programmes for research that will be conducted in Hong Kong. The first Hong Kong recipient was Professor William Lu Weijia from the Li Ka Shing Faculty of Medicine who received a RMB27.44 million grant from the National Key R&D Program run by the Ministry of Science and Technology (see page 22). HKU also did well in the prestigious Excellent Young Scientists Fund of the National Natural Science Foundation of China (NSFC), which recognised Hong Kong and Macau scientists for the first time in 2019. Seven HKU scientists were honoured, the most of any local institution. HKU scholars also succeeded in securing funding for 21 projects under the NSFC.

Access to research funding on the Mainland is not confined to the national level. Guangdong and Shenzhen both signalled that Hong Kong scholars could apply to their funding programmes, too, and five HKU projects received grants under the Shenzhen Science, Technology and Innovation Commission. HKU is also playing an active role in the new

Guangdong-Hong Kong-Macao Centre for Interdisciplinary Sciences, which will be a powerful science and technology hub in southern China

The foundation of our success in these endeavours is our strong talent pool. The University has been strategically recruiting promising and outstanding



the Strategically Oriented Research Themes (SORTs) focuses on our new generation of academics whose works are inspirational and promising, providing indicative highlights of our emerging talents and illustrating the rich dimensions of the SORTs. The brochure can be viewed at www.rss. hku.hk/sort/sort-2019/.

scholars, including those with an interdisciplinary focus. (Interdisciplinarity is also encouraged through our Strategically Oriented Research Themes [SORTs], which were launched in 2017-18 to provide seed funding for developing projects.) We made a major commitment in 2019 to invest in young talent with the launch of our Presidential PhD Scholarships and Post-doctoral Fellowships. Our aim is to attract the best young scholars in the world and provide them with funds to support their research at HKU, in addition to funds provided by the Hong Kong government. About 100 scholars will be recruited in each category over three years. To further sharpen our focus on grooming young talent, the deanship of the Graduate School has been turned into a full-time position and an associate dean has been charged with the portfolio of promoting innovation and internship and providing graduate students with alternative career development paths.

Achieving impact from research is a central aim of our work and of growing significance in academia, reflected in the RGC's coming Research Assessment Exercise (RAE). This is the first time the RGC will assess impact and the University has provided extensive support to help scholars prepare, including providing funds for gathering evidence and bringing experts in to give advice and organising a series of impact-related workshops. The RAE

results will not be out for at least another year, but the exercise has contributed to the momentum within the University community to deepen our research impact.

Another forward-looking development in 2018–19 was the announcement of the Tech Landmark, which will be built at 2 University Drive on the Main Campus. This will significantly upgrade and expand our facilities for scientific and technological research. The Tech Landmark will have four buildings dedicated to 10 strategic research areas that have a strong interdisciplinary focus. The first institute to be established will be the Institute of the Mind, which received a \$150 million donation from Dr Lee Shau-kee.

Underpinning all these activities is our leadership in research integrity. In June 2019, HKU hosted and co-chaired the 6th World Conference on Research Integrity. Some 700 delegates came from around the world to discuss integrity issues related to innovation and commercialisation, and assessment of research. The latter led to the formation of the Hong Kong Principles for Assessing Researchers: Fostering Research Integrity, which is a blueprint for scholars around the world on responsible research conduct. HKU's excellence, coupled with its commitment to research that is ethical and reproducible, mark us out as a global leader



Jointly organised by the Graduate School, Graduate House and Postgraduate Student Association and aiming to promote interdisciplinary research amongst postgraduate students, the Interdisciplinary Research Competition (IRC) was held for the third time in April 2019.

2,670

ongoing research collaborations

in 2018–19 with partners on all five continents

• 3

Highly Cited Researchers

ranked by Clarivate Analytics in 2019, based on producing multiple highly-cited research papers.

Excellent Young Scientists

named by the Mainland government, honouring for the first time the exceptional talent of Hong Kong and Macau scholars. HKU had the largest share (7 out of 25 awarded) in the region.

\$373.7м

funding from UGC and RGC

+

130

funding from other sources

for new research grant projects. HKU's cumulative funding from the RGC includes \$162.521 million (excluding on-costs) in General Research Fund grants, for which it has been the top recipient in 16 of the last 17 rounds. Two of the five Theme-based Research Scheme projects awarded in 2019 were led by HKU scholars, who were awarded a total of \$105.56 million (including on-costs). Other funding sources include the government, industry, non-government organisations and other local and non-local sources. New contract research projects for the government and industry amounted to \$146.8 million in 2018–19.

Talent Finder

HKU's research success has been built on recruiting and nurturing talented scholars at all stages of their careers. Their excellence continued to be recognised by their peers in 2019.

World-leading Researchers

Thirteen HKU academics were identified as being among the top 1% in their field in Clarivate Analytics' list of 'Highly Cited Researchers 2019'. Inclusion in the list is based on producing multiple highly-cited papers that rank in the top 1% by citations in their field during the year, and thus have significant impact in their respective fields of study. The cross-field category is to acknowledge researchers who are recognised as leaders in more than one field.



Professor Nagendra Shah School of Biological Sciences





Professor Luk Kam-biu

Physicist Wins China's 'Nobel Prize'

Hung Hing Ying Distinguished Visiting Professor in Science and Technology and alumnus of HKU's Department of Physics, Professor Luk Kam-biu, has been named a laureate of China's 2019 Future Science Prize. The Future Science Prize is considered China's 'Nobel Prize' and is awarded jointly by groups of scientists and entrepreneurs. Professor Luk, who is also a Professor at the University of California at Berkeley and a Senior Faculty Scientist at the Lawrence Berkeley National Laboratory, won the prize in physical sciences jointly with Professor Wang Yifang, Director of the Institute of High Energy Physics under the Chinese Academy of Sciences.

The pair have led the Daya Bay Reactor Neutrino Experiment and contributed to the discovery of a new type of neutrino oscillation, which opens the door for new advances in physics. HKU is a co-leader of the Daya Bay project with 41 other universities and research institutions and Professor Luk praised the teamwork involved, singling out HKU. "HKU has played a special role in this endeavour. It was through the first meeting held in the Physics Department at HKU that the Daya Bay project was launched. The generous support of the HKU administration during the early stage of the initiative undoubtedly seeded the success of the experiment," he said.

Professor Luk previously won the 2016 Breakthrough Prize in Fundamental Physics and used part of the fund to

establish the Luk Kam-Biu Prize in Experimental Physics in HKU's Department of Physics to encourage students to specialise in experimental physics. He is also mentoring Assistant Professor Dr Jenny Lee in the Department of Physics in nuclear physics.

Local Honours

HKU scholars performed well in local award schemes that recognise quality, impactful research in both humanities and the sciences.

Four of the nine recipients of the Humanities and Social Sciences Prestigious Fellowship Scheme of the University Grants Committee (UGC) came from HKU, the most of any local institution. They included Professor Brendan Weekes of the Faculty of Education for a study on intervention and prevention of neurodegenerative disease in the Greater Bay Area; Professor Kendall Johnson of the School of English for a study of early American missionary printing in China; Professor Johannes Chan Man-mun of the Faculty of Law for a study of the role of the judiciary and judicial independence





(20)



Professor Johannes Chan Man-mun



Professor Sydney Tang Chi-wai, awarded the Croucher Senior Medical Research Fellowship 2019.

under Hong Kong's 'One Country, Two Systems' arrangement; and Professor Frank He Xin, also Faculty of Law, for a study of gendered divorce litigation in China.

Professor Sydney Tang Chi-wai in the Department of Medicine was awarded the Croucher Senior Medical Research Fellowship for his work to deepen understanding of the cellular and molecular mechanisms of chronic progressive kidney disease.





Professor Frank He Xin

Attracting Support

For years, our researchers have had great success in competitive funding exercises and 2019 was no exception. We performed strongly in both Hong Kong-based schemes and those from Mainland China.



Professor William Lu Weijia (right) and Dr Kelvin Yeung Wai-kwok (left) from the Department of Orthopaedics and Traumatology.

National Key R&D Recipients

Scholars from Hong Kong and Macau are now allowed to apply directly to the National Key R&D Program of the Ministry of Science and Technology (MOST) for funds that will be used for research conducted here. This scheme offers substantial funding for key and strategic research technologies. Two rounds of applicants were awarded during the year and HKU scientists were winners in both rounds.

Organ reconstruction using 3D printing is the focus of Professor William Lu Weijia, Ng Chun-Man

Professor in Orthopaedic Bioengineering in the Department of Orthopaedics and Traumatology, who was the first scientist in Hong Kong and Macau to be awarded under the MOST scheme outright. He and his team have invented high precision 3D bio-printing technology and new 'bio-inks', and they received RMB27.44 million to apply their technology to rebuilding complex tissue structures according to their natural physiological tissue microenvironment.

"Tissue damage and organ failure caused by ageing, disease and accidents may potentially lead to increased morbidity and mortality in patients. Although

recent advances in tissue engineering and biomaterials have regenerated injured tissues and organs, the clinical outcome, especially for the functional recovery, has not been satisfactory due to the complexity of human tissues. We propose to address that clinical challenge by focusing on the tissue microenvironment," Professor Lu said.

He is leading a multidisciplinary team from five institutions in Mainland China and Hong Kong, as well as an industrial partner. They will fabricate functional 3D bio-printed scaffolds for tissue and organ regeneration and aim to print 12 different tissues and organs, such as full-thickness skin, cornea, bone, cartilage and large blood vessels, to test in pre-clinical animal models. Positive results will mean they can proceed to clinical trials and ultimately benefit hundreds of thousands of patients each vear

Developing new alloys is the focus of a project that awarded RMB11.07 million in the second round of the MOST scheme open for Hong Kong and Macau to Professor Huang Mingxin of the Department of Mechanical Engineering. Professor Huang has both industrial and academic experience in working with metal and alloys, and he will lead his team in developing new nanostructured high entropy alloys that have the potential for application in extremely low temperatures or in nuclear power plants.

"We have always been actively looking for funding opportunities beyond Hong Kong. When we saw this call for proposals, we felt that our research expertise fitted very well with the programme. Through this project, we want to demonstrate that HKU's expertise can make important contributions to national R&D projects," Professor Huang said.

His team includes researchers from HKU, the Chinese Academy of Sciences, Dalian University of Technology and

Xi'an Jiaotong University, covering expertise in such areas as metallurgy, mechanics, nuclear technology and ab-initio calculation.

TRS Scholars Offer Paths to Better Health

HKU professors from the Li Ka Shing Faculty of Medicine are leading two of the five Theme-based Research Scheme (TRS) projects awarded in 2019, while other HKU scholars are members of two other projects.

Control of influenza is the focus of a \$50 million TRS project coordinated by Professor Benjamin Cowling in the School of Public Health. The project will build on HKU's world-leading influenza research programme to address important questions about influenza virus immunity and transmission.

Professor Cowling and his multidisciplinary, multi-institutional team will be identifying signs that an individual has protection against influenza infection or severe disease and looking at which of these are induced by prior natural infection or vaccination. They will also consider the factors that make populations more susceptible to influenza, how to best deploy new



Professor Huang Mingxin from the Department of Mechanical Engineering.

and existing influenza vaccines to reduce the impact of epidemics and pandemics, and other immunological mechanisms that are relevant to the development and evaluation of new influenza vaccines

"Our overall aim is to improve options for the control of pandemic and seasonal influenza through a greater scientific understanding of the mechanisms underlying individual and population immunity. This includes complementary research on virology, immunology, epidemiology, and vaccinology," he said. "It's really important that we have these large collaborative thematic research projects because by working together, we can have much greater potential impact through the synergy between our disciplines."

Liver tissue repair, particularly after transplantation, is the focus of a \$45 million TRS project by Professor Lo Chung-mau. The prevalence of hepatitis B virus (HBV) infection and liver cancer incidence and the shortage of deceased organ donors is a great burden on individuals and the healthcare system.

Professor Lo, who is Chair of Hepatobiliary Surgery, Chin Lan-Hong Professor in Hepatobiliary and Pancreatic Surgery,



and Chief Executive of the University of Hong Kong-Shenzhen Hospital, will be building on HKU's world-leading expertise in liver transplantation, particularly living donor liver transplants using a graft of the right liver lobe. He and his team will focus on the persistent problems of recurrent disease and liver graft injury post-transplantation by exploring the underlying mechanisms of cancer recurrence and HBV reactivation, identifying biomarkers and developing potential treatments.

They also hope to promote liver tissue repair and regeneration, which would help get around the problem of a shortage of organ donors. Professor Lo and his team will be working with a biobank of about 50,000 tissue and liquid biopsies from patients. "Using this biobank, we will establish a system that integrates high-throughput sequencing data and biology and immunology parameters that will enable us to predict disease recurrence and prognoses and offer therapeutic guidance," he said. New drug targets and therapeutic strategies are expected to result.

Professor Lo Chung-mau (right) from the Department of Surgery.

Focused on Impact

HKU's combination of talent and funding, and a willingness to be innovative, were recognised in the 2018–19 Research Impact Fund when seven HKU-led projects received a total of more than \$45 million. A select sample of our impact in academia and beyond is presented here.



Professor Douglas Arner's research focuses on the application of financial technology to transform financial systems.

FinTech as an Inclusion Solution

Some 1.7 billion people in the world still lack access to the banking system. Research by Professor Douglas Arner in the Faculty of Law and his collaborators outlined how financial technology could be applied to maximise financial inclusion and potentially transform financial systems. Their report formed the basis of a strategy adopted by the Alliance for Financial Inclusion (AFI) in autumn 2018. The AFI comprises more than 90 central banks and financial regulatory authorities from around the world.

"Rather than focusing on those people who were excluded, we analysed the factors that led to more than 1.2 billion people coming into the formal financial system for the first time between 2010 and 2018 by acquiring a bank or mobile money account. From that, we proposed a strategy that is based on four pillars: digital identification, electronic payments, government-to-person digital strategies, and digital financial infrastructure," Professor Arner said.

As well as being adopted by AFI, the strategy influenced the content of the Sochi Accord: FinTech for Financial Inclusion, which was agreed by AFI's full membership in September 2018 and by the Intergovernmental Group of Twenty-Four on International Monetary Affairs and Development (G-24) in October 2018. The strategy has also been presented by AFI at various regional meetings of bankers over the past year.

Understanding Cause and Effect at the Quantum Level

Cause-effect relations are identified by formulating different hypotheses and testing them against each other - for example, testing a new drug against a placebo in patients. Classical approaches to this problem, however, have proven



Research by Professor Giulio Chiribella shows that quantum algorithms offer powerful advantages over all classical algorithms when it comes to discovering cause-effect relations

inadequate when it comes to quantum phenomena, where responses to interventions can differ strikingly from those of classical random variables. Professor Giulio Chiribella of the Department of Computer Science and his student Daniel Ebler showed a way around this limitation by designing new quantum algorithms to discover cause-effect relations.

Professor Chiribella and Mr Ebler showed that because quantum particles can travel along many paths at the same time, they can be arranged to simultaneously explore multiple experimental setups and test them in new ways. This reduces the probability of errors exponentially compared with classical setups and means that cause-effect relations can be determined more quickly than before. The research is expected to have broad application, such as the design of intelligent quantum machines and future communication networks that can speedily identify the presence of communication links.

Language Project Brings **Unexpected Benefits**

Dr Cathryn Donohue in the Department of Linguistics has been working to preserve an endangered Tibeto-Burman language called Nubri. In addition to research papers, she has developed descriptive materials for vocabulary and grammar and a growing archive of audio and video recordings of Nubri, documenting the language and the culture. But the lifestyle of the Nubri people posed a challenge to developing a writing system that would further help preserve the language.

Any successful writing system requires community involvement and consensus, but the 2,000 or so Nubri speakers are



clinics in Nubri Valley.

largely subsistence farmers spread out across Nepal's remote Nubri Valley, which is about a week's walk from the nearest road and four days' walk from one end of the valley to the other. Younger generations have been moving away for schooling that is largely taught in Nepali. Dr Donohue needed to find a way to entice the Nubri speakers to congregate and give input to her project.

Her innovative solution was to focus on healthcare, particularly eye care, which the community was in dire need of. She organised eve clinics that flew in doctors to screen 499 valley residents, who then set up a surgical clinic to treat patients with cataracts. The project not only restored the patients' vision and independence, it benefited Dr Donohue's research and the wider Nubri community. "The clinics were a necessary catalyst to bring the community together to discuss orthographic options. It was also an opportunity to record traditional medicinal practices as well as interview many of the villagers, establishing more clearly the vitality of the language," she said. "The longer-term impact of preserving this language is incalculable and a small victory in a world losing its linguistic diversity at an alarming rate of an estimated one language every fortnight."

A photo exhibition by Dr Cathryn Donohue showing the awe-inspiring people and scenery encountered during the knowledge exchange project involving the eye

PRIMED FOR IMPACT

HKU has led the way in Hong Kong in recognising and promoting knowledge exchange as a part of our core academic mission. In 2019, we continued to record strong results in technology transfer, the incubation of ideas and community engagement. We also welcomed greater government support for our ongoing and expanding efforts to open new pathways to impact.



Innovators at the DreamCatchers MedTech Hackathon 2019 developed potential solutions based on the theme 'Innovation for Crowded Hospitals'.

Knowledge Exchange and Technology Transfer



The first HKU-Industry Forum on Display Technologies was held in January 2019. The forum served as a platform for exchanging ideas and fostering deeper connections between HKU and the industry.

Over the past decade, the University has embraced knowledge exchange (KE), including technology transfer, as a core academic activity. We reward KE in staff performance appraisals, provide funding support and honours for KE activities, and foster entrepreneurship and innovation through the Technology Transfer Office (TTO). Other local universities have followed our lead and the government has also been taking note. In 2018–19, it announced that funding for KE will rise by 9% from 2019–20, and funding for technology transfer will double to \$8 million for the TTO and \$8 million for start-ups (the latter awarded through the Technology Start-up Support Scheme for Universities at HKU, TSSSU@HKU). This welcome injection of more funds will no doubt contribute to our ability to achieve impact.

The TTO has been a stalwart participant in helping our researchers bring their discoveries beyond academia to industry and other users, through patent filing and licence applications, outreach, and capacity-building. In 2018–19, HKU filed 208 patent applications, 72 of which were granted – bringing our global total of patents since 1998 to 796 (281 in the US). For outreach, we brought HKU inventions to a number of local, regional and international competitions, such as the 47th International Exhibition of Inventions of Geneva in 2019 where our scholars received 10 medals (see page 30). We also organised gatherings such as the first HKU-Industry Forum on Display Technologies held in January, and we worked closely with local collaborators such as Cyberport and Hong Kong Science Park to provide space and networks for inventors. TTO is also actively engaging with partners in Mainland China.

Another place where the University promotes innovation and entrepreneurship is iDendron, HKU's innovation and entrepreneurship hub, which opened in 2017 to provide collaborative space and support for start-ups and spin-offs by students, staff and alumni. iDendron has been the launch pad for 53 companies to date and has hosted more than 80 educational and networking events for 6,000 participants. Its signature programme is DreamCatchers, which includes a seed fund competition, hackathons and an Entrepreneurship Academy that attracted more than 300 participants to its 10-week programme in 2019. To take things to the next stage, we launched the iDendron Incubation Programme in July 2019 and selected 12 high-potential HKU teams for six months of intensive mentor engagement, market intelligence, support from industry specialists and investors, and more. The success of iDendron has



The Faculty of Science has launched a new Entrepreneurship Seminar Series for students, staff and alumni from all faculties to provide extra-curricular training to further equip students and alumni for their business ventures.



The research led by Professor Lusina Ho (left) and Ms Rebecca Lee (right) in the Faculty of Law has directly led to the setting up of a Special Needs Trust in Hong Kong.

encouraged HKU to develop a strategic plan to further advance innovation, as evidenced by the creation of the new post of Chief Innovation Officer. Individual faculties are also fostering a start-up culture on campus, with the Faculty of Science launching a new minor in entrepreneurship that is co-taught with the Faculty of Business and Economics and other faculties.

KE activities are also encouraged and supported across all faculties in the University, not just those involving science and technology. Our KE Impact Project Funding Scheme supported 74 proposals from across the University in 2018–19. We also launched a new round of the Interdisciplinary KE Project Fund in 2019 to encourage collaboration between scholars in different faculties, which awarded \$2 million in total to 16 proposals. Interdisciplinarity is also the focus of a new initiative, the Quick Talks series, which bring together academics from different disciplines for public talks on challenging issues and launched in February with a forum on open data.

Open data and access to information are primary goals of the University's KE strategy. We have a moral responsibility to engage the public in what we are doing and to use that knowledge to inform public debate. The HKU Scholars Hub provides access to our

scholarly output and received more than seven million view counts from outside HKU in 2018–19. The University also organised more than 1,000 public events, such as lectures, workshops, exhibitions and performances. We are trying to instil values of openness and transparency in research postgraduate students, too, by asking them to deposit their new datasets for inspection and by encouraging them to hone their communication skills through the Three Minute Thesis and the Visualise Your Thesis competitions, the latter of which was formally launched in 2019, following a pilot in 2018. The emphasis on open access has also been embraced, at our urging, by the Research Grants Council, which has agreed that in the coming Research Assessment Exercise (RAE), submitted impact cases will be in the public domain.

The RAE is expected to confirm the high quality of many of our KE activities, such as the Special Needs Trust for parents or caregivers of individuals with cognitive impairment that was adopted by the Hong Kong government following a proposal by HKU law academics. Changes like this demonstrate how academic research can address unmet needs, be transformative and benefit society. They are inspiring HKU's staff and students to reach out and make positive changes in the community. They are also inspiring community organisations to seek out our expertise and support us. The examples on the following pages demonstrate our commitment to community impact across all of our disciplines.



Interdisciplinary Quick Talks aim to promote engagement between disciplines and share evidence-based knowledge on challenging issues from multiple perspectives with the community.

72

patents

granted in 2018–19, bringing the total since 1998 to 796.



start-ups

launched through iDendron since it opened in 2017.

74

KE projects

supported by the KE Impact Project Funding Scheme in 2018–19. Another 16 proposals were supported through the Interdisciplinary KE Project Fund.



Spotlight on Innovators

New inventions and deep technological expertise are in high demand in the community, where HKU scholars have had increasing success by applying and sharing their outputs.



HKU won five gold and five silver medals at the 47th International Exhibition of Inventions of Geneva in 2019.

Problem-solving Inventions

HKU scientists performed strongly at the 47th International Exhibition of Inventions of Geneva in 2019, one of the most prestigious events of its kind, earning 10 medals in total, including one gold medal with the congratulations of the jury, four gold medals and five silver medals.

Flectrode Ltd, an HKU spin-off company founded by Dr Wendi Li and Dr Tony Feng in the Department of Mechanical Engineering, was awarded the gold medal with the congratulations of the jury for the transparent conducting film that the scholars developed, which has application for emerging electronics such as displays and solar batteries. The film can produce 100 times better conductivity than existing technology and improve photovoltaic efficiency in solar cells so more electricity is produced from light, including artificial light. The invention has been licensed exclusively to Flectrode Ltd and will start mass production at its Xiamen production facility by the end of 2019.

Another HKU winner was a water filter membrane that is compact enough to fit into a pocket, can filter various contaminants including both heavy metals and bacteria, and does not require electricity for use. The gold award-winning nanofibrous membrane, developed by a research team led by Professor Tang Chuyang in the Department of Civil Engineering, has been patented in the US and China. The membrane was initially developed as a solution for providing clean, drinkable water in the aftermath of disasters such as earthquakes and tsunamis, but it can also be used for household water and portable water filtration. The device is expected to be 30-50% cheaper than carbon filters on the market and deliver safe drinkable water in less than one minute



iCLASS Goes to Market

An electronic learning platform developed by Dr Wilton Fok and his team in the Department of Electrical and Electronic Engineering has been picked up by the Hailiang Group, a large education group that is publicly listed in the US, which also plans to collaborate with HKU on new areas of online learning and information technology in education, such as artificial intelligence, educational big data and an intelligent question bank.

The iClass Learning Management System, which is a mobile interactive learning platform, was developed by HKU's e-Learning Development Laboratory in the wake of the 2008 Sichuan earthquake to provide reconstructed schools with e-learning resources. It has been refined over the years to include functions such as multimedia, big data and intelligent assessment, and to allow easy interactivity between students and teachers. iClass has also been adopted by many schools in Hong Kong, Mainland China and overseas. HKU's wholly owned technology transfer arm, Versitech Ltd, signed the agreement with Hailiang, which plans to expand the reach of the iClass platform.

Dr Fok is also involved in the development of Artificial Intelligence (AI) technology. His team in the Sport AI Lab (SAIL) was awarded \$3.9 million from the Innovation and Technology Bureau's Innovation and Technology Fund for Better Living for the project 'Artificial Intelligence for Swimmer Safety and Performance Analysis System'. This technology will be able to detect drowning and send out an alert alarm, as well as help coaches analyse their swimmers' techniques. The system will be deployed in Munsang College and Fung Kai No.1 Primary School in Hong Kong in 2020.

A Better Way to Build

The construction industry faces major challenges due to an ageing workforce,



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labour shortage, and safety and other concerns. But there is a solution in the form of Modular Integrated Construction (MiC), which uses new technology and off-site pre-assembly to reduce the cost, wastage and time involved in building construction and is also safer than conventional methods.

Dr Pan Wei, Executive Director of the Centre for Innovation in Construction and Infrastructure Development, has been a leader in investigating MiC's applicability in Hong Kong and his work formed the basis of an MiC strategy paper published in 2019 that was supported by the Development Bureau. The Hong Kong government has already started piloting MiC in several public projects, including the Disciplined Services Quarters for the Fire Services Department in Pak Shing Kok. HKU is also using it in the construction of a new student residence in Wong Chuk Hang to accommodate more than 1,200 students and staff. Dr Pan estimates MiC can reduce local construction costs by up to 20% and shorten construction time by up to 50%.

"I believe MiC is the future of construction technology because it is capable of dealing with various problems, such as labour shortages, land use limitations and severe weather challenges," he said – all of which are present in Hong Kong.

Community Care

HKU scholars have applied their expertise in the community to help organisations develop better services and new approaches and deepen public understanding about social and personal issues of concern.



connection of the community with the medical care system and offering one more option for end-of-life care in Hong Kong.

Improving Life at the End

A project to improve end-of-life care has provided services to thousands of patients and healthcare workers and led to significant drops in hospitalisation and emergency services usage by terminal patients.

The three-year Jockey Club End-of-Life Community Care Project, led by Dr Amy Chow Yin-man of the Department of Social Work and Social Administration, was launched in 2016 to provide practical and psycho-social support to patients and their families. Capacity enhancement training has been provided to more than 10,000 healthcare professionals and 586 volunteers, and services to more than 5,000 elderly living

at home with terminal illnesses and those living in 36 residential homes for the elderly.

The project reported that by 2018, patients living at home who received the services reported 18% less discomfort from their illness and worried 55% less about family matters. Their hospital stays were 12.5% shorter during the last six months of their lives than similar terminal cases from 2015, before the project was launched, and their use of emergency services was 11.6% lower. Similarly, service recipients in residential homes for the elderly reported 45.8% shorter hospital stays and 18.4% reduced use of emergency services during the last three months of their lives when compared to 2015.

The project also carried out public education to help break the taboo of talking about death and raise awareness of the need to discuss end-of-life matters. Two surveys found that public understanding about end-of-life care increased from 30% in 2016 to 39% in 2018 and more than two-thirds of respondents said quality of life would be more important than extension of life should they have a terminal illness. The success of the project has prompted the Jockey Club to extend funding to 2022.

SMART Approach to **Family Services**

The University's School of Public Health (SPH) and the Technology-Enriched Learning Initiative (TELI) are joining



The Jockey Club SMART Family-Link Project was set out to help family service centres enhance the quality and efficiency of their services by making effective use of information and communications technology and data analytics.

forces to advance the use of information and communications technology (ICT) and develop ICT-related capabilities in family service centres operated by 12 non-government organisations (NGOs), which will enhance their services and promote family well-being in the community.

The Jockey Club SMART Family-Link Project involves creating a new computerised service management system (iConnect) for 26 integrated family service centres and integrated service centres that mostly still use a paper-based system. iConnect will reduce administrative work and release more resources for preventive programmes, improve access, broaden reach, reduce stigmatisation, and facilitate identification of at-risk families for early support and remedial services. To develop the system, the SPH and TELI have been working and co-learning with hundreds of staff from the NGO partners. Design and development started in 2018 in preparation for a soft launch at the end of 2019 involving six of the NGOs. The SPH, with TELI, will also apply big data analysis to help policymakers, NGOs and social workers better plan services, identify trends, predict needs and evaluate effectiveness

SPH and TELI are also developing and co-creating an e-platform with NGO partners, which will be the first of its kind in Hong Kong to provide frontline workers with easy access to online training (using mini-modules with mini-certificates), learning resources and experience-sharing opportunities.

The SMART Family-Link Project is expected to directly benefit about 75,000 individuals and about 1,000 social workers and hopefully serve as a model for other social services in Hong Kong. Public education activities and knowledge transfer, using Facebook and Family Portal, are also being carried out to raise awareness and knowledge on the themes of Smart Communication. Smart Parenting, Smart Emotion, Smart Coping and Smart Living Habits and will reach over 170,000 people.

Animal-assisted Projects to Promote Socio-emotional Health

Dr Paul Wong Wai-ching of the Department of Social Work and Social Administration has been leading the way in the region in studying and applying animal-assisted therapy to help children and young people achieve better well-being.

Initially, Dr Wong and his team worked with the Chinese Evangelical Zion



health among children.

Church Social Service Division to reach Hong Kong's 'hidden youth' by offering sessions with trained therapy dogs. The programme helped entice the youths out of their rooms to get support from social workers. "The prospect of interacting with the animals was appealing to those who were otherwise reluctant to ask for help," said Dr Wong, who estimates there are 20,000 to 40,000 socially withdrawn youths in Hong Kong.

More recently, Dr Wong has been working with primary schools, teachers, and animal welfare groups to bring trained dogs into 11 schools to promote empathy and social and emotional health among children as a way to prevent youth suicide. Over six-to-ten weeks, students learn about animal behaviours and get opportunities to read to and pet the reading dogs. The three-year project started in 2018 and its efficacy is being evaluated through focus groups, questionnaires and observations. "Animal-assisted therapy is rather new in this region and we are trying to demonstrate its benefits and raise the awareness of animal welfare," he said. He is also planning to introduce a course in the Faculty of Social Sciences to teach students about using animals and other emerging therapies to help people deal with the pressures of modern living.



CARing Kids was officially launched in 2019 to promote social and emotional

Students Engaged

Students increasingly are participating in impactful KE projects, either through their own initiative or through faculty- and University-based programmes.



A multidisciplinary team of undergraduate students got together to develop the baited remote underwater video surveillance system – an underwater camera and stand that is now being used for monitoring the movements, behaviour and population numbers of manta rays.

Taking the Plunge

An underwater camera and stand developed by a multidisciplinary team of undergraduate students is being used by scientists in the Philippines to monitor marine life off a remote coral reef.

The students developed the baited remote underwater video (BRUV) surveillance system – a camera that uses far less battery time than conventional cameras because it takes photos every few seconds rather than filming continuously. Team leader Saumya Gupta, a second-year BSc student majoring in Ecology and Biodiversity, pitched the device through emails to organisations around the region and

received positive feedback from National Geographic Explorer Dr Alessandro Ponzo and the Large Marine Vertebrates Research Institute Philippines. After communicating with them about their needs, the students also devised a stationary stand for the camera that now sits unobtrusively in the water monitoring the movements, behaviour and population numbers of manta rays.

This was an entirely student-led project and Saumya also recruited the other student members of her team, who come from the Science, Engineering, Architecture and Social Sciences faculties and who have all helped create and test the technology and organise a trip to test and deliver it in

the Philippines. The students received funding support from the Gallant Ho Experiential Learning Fund and now hope to interest other parties in their device. "I had wanted to do something related to sustainability that was interdisciplinary. This project has given me a greater appreciation of the biodiversity in Southeast Asia and the important role that technology can play in the scientific study of nature," Saumya said.

Healing Hands

A team of Chinese medicine students who developed a social enterprise that trains visually impaired people to provide massage treatments to athletes and other



A team of Chinese medicine students were named Champions of the Hong Kong Social Enterprise Challenge 2018–19 with their social enterprise which trains visually impaired people to provide massage treatments to athletes and other groups in the community.

groups in the community, were named Champions in the Hong Kong Social Enterprise Challenge (HKSEC) 2018-19.

Their enterprise, called Heightened Senses, has trained more than a dozen visually impaired masseurs who have treated athletes from Hong Kong sports teams and workers in companies such as WeWork, New World Development and Capgemini.

Chan Ka-lung, a sixth-year BChinMed student, set up the enterprise with classmate Ryan Chiang, fourth-year BSocSc student Tong Woon and other partners from outside HKU. He was inspired by his own experience as a triathlete. "When I am injured, I always go to Chinese medicine practitioners for treatment and I feel assured that my injuries are well tended to. That's the reason I chose to study Chinese medicine at HKU. I would like to incorporate sports science and Chinese medicine in healing, and with this enterprise we can also provide training opportunities for the blind," he said.

The HKSEC prize has boosted the team's confidence that they are on the right track and they will use the winnings to also help provide sports training to the visually impaired. "We hope to spread the notion of 'disabled but not unable' to the community," Chan added

and postgraduate students from and spent two weeks developing innovative solutions for the park's operational needs

The Champion team, called OP Rescuers, proposed a story-telling app for families with children aged 6–11 that unlocks a new story each time they visit Ocean Park. Each story focuses on



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Partnering with Ocean Park

The first Ocean Park x HKU Hackathon, held in 2019, drew 24 HKU undergraduate different disciplines who formed teams

a dilemma faced by one of the park's mascots and families have to visit certain sites and use their detective skills to solve the problem. The stories also highlight environmental and conservation issues. Fourth-vear BA&LLB student Sharon Yuen Kit-yee led the project with fourth-year BEng student Sam Suen, second-year BA(Conservation) student Jason Wan and MEd student Pony Ip. "As visitors, we are rarely able to see the thought process that goes behind the design of the park, so this change of perspective was a much-treasured opportunity," Sharon said.

Other prize-winning entries included a one-stop app to provide real-time information and allow users to purchase priority passes, an 'edutainment' experience that lets users learn about the park's animals through virtual reality and gamification, and a night-time escape game that highlights challenges facing the environment.

HKU was also a co-organiser of the First Ocean Park International STEAM Education Conference held in June, featuring STEAM experts from around the world who spoke to more than 800 principals, teachers and other education professionals from Guangdong, Hong Kong and Macau.



The Honourable Edward Yau Tang-wah (third from right), GBS, JP, Secretary for Commerce and Economic Development, and Professor Andy Hor (third from left), HKU's Vice-President and Pro-Vice-Chancellor (Research), presenting members of the winning team of the Ocean Park x HKU Hackathon with their award.

The University Profile

Students*

Student Admission (New Intakes)

Academic Level	Male		Female		А	u	% International (Based on Nationality)		
	2018-19	2017-18	2018-19	2017-18	2018-19	2017-18	2018-19	2017-18	
Undergraduate	1,918	1,960	2,411	2,389	4,329	4,349	25.3%	24.4%	
Taught Postgraduate	2,212	2,061	3,583	3,166	5,795	5,795 5,227		47.1%	
Research Postgraduate	402	381	389	337	791	791 718		79.4%	
All New Intakes	4,532	4,402	6,383	5,892	10,915	10,294	42.4%	39.8%	

Enrollment of Students on All Programmes

Faculty	Underg	raduate	Taught Po	Taught Postgraduate		ostgraduate	All Levels		
raculty	2018-19	2017-18	2018-19	2017-18	2018-19	2017-18	2018-19	2017–18	
Architecture	723	747	673	662	103	110	1,499	1,519	
Arts	1,933	1,925	673	509	208	216	2,814	2,650	
Business and Economics	3,031	2,990	1,391	1,333	96	86	4,518	4,409	
Dentistry	375	352	52	39	73	71	500	462	
Education	1,011	1,004	1,534	1,516	202	205	2,747	2,725	
Engineering	2,551	2,493	1,731	1,702	608	596	4,890	4,791	
Law	559	565	1,093	1,111	67	66	1,719	1,742	
Medicine	3,053	3,097	834	733	750	717	4,637	4,547	
Science	2,355	2,331	444	346	530	521	3,329	3,198	
Social Sciences	1,515	1,503	1,388	1,310	235	243	3,138	3,056	
All Faculties	17,106	17,007	9,813	9,813 9,261		2,831	29,791	29,099	
In % Distribution	57.4%	58.4%	32.9%	31.8%	9.6%	9.7%	100%	100%	

* All student statistics shown above include students on UGC-funded, self-funded as well as outreach programmes. Exchange-in and visiting students are excluded.

Enrollment of International Students (Based on Nationality)

	Underg	raduate	Taught Po	stgraduate	Research P	ostgraduate	All L	evels		
Region	2018-19	2017-18	2018-19	2017-18	2018-19	2017-18	2018-19	2017-18		
	Headcount									
Mainland China	1,785	1,785 1,615		2,706	1,835	1,757	6,779	6,078		
Other Asian Countries	1,515	1,349	378	362	186	174	2,079	1,885		
Australia and New Zealand	108	142	75	80	21	22	204	244		
European Countries	293	312	251	305	113	119	657	736		
North American Countries	207	253	230	244	64	71	501	568		
Others (e.g. Central and South America, African Countries)	12	11	40	24	24	22	76	57		
All Regions	3,920	3,682	4,133	3,721	2,243	2,165	10,296	9,568		
				9	/o					
Mainland China	45.5%	43.9%	76.4%	72.7%	81.8%	81.2%	65.8%	63.5%		
Other Asian Countries	38.6%	36.6%	9.1%	9.7%	8.3%	8.0%	20.2%	19.7%		
Australia and New Zealand	2.8%	3.9%	1.8%	2.1%	0.9%	1.0%	2.0%	2.6%		
European Countries	7.5%	8.5%	6.1%	8.2%	5.0%	5.5%	6.4%	7.7%		
North American Countries	5.3%	6.9%	5.6%	6.6%	2.9%	3.3%	4.9%	5.9%		
Others (e.g. Central and South America, African Countries)	0.3%	0.3%	1.0%	0.6%	1.1%	1.0%	0.7%	0.6%		
All Regions	100%	100%	100%	100%	100%	100%	100%	100%		

* All student statistics shown above include students on UGC-funded, self-funded as well as outreach programmes. Exchange-in and visiting students are excluded.

HKU School of Professional and Continuing Education (HKU SPACE)

Enrollment of Students in Local Programmes Run by HKU SPACE in 2018–19: 93,030





Graduates*

Cumulative Number of Alumni as of August 2019

233,230

Graduates of All Programmes

Academic Level	Male		Female		A	u	% International (Based on Nationality)		
	2018–19	2017–18	2018-19	2017-18	2018-19	2017-18	2018–19	2017-18	
Undergraduate	1,801	1,785	2,188	2,209	3,989	3,994	19.3%	19.7%	
Taught Postgraduate	2,071	2,036	3,394	3,045	5,465	5,465 5,081		48.4%	
Research Postgraduate	312	369	282	335	594	594 704		71.7%	
All Graduates	4,184	4,190	5,864	5,589	10,048 9,779		40.5%	38.3%	

Distribution of International Graduates (Based on Nationality)

	Undergr	aduate	Taught Postgraduate		Research Postgraduate		All Levels			
Region	2018-19	2017-18	2018-19	2017-18	2018-19	2017-18	2018-19	2017-18		
	Headcount									
Mainland China	313	335	2,261	1,907	382	401	2,956	2,643		
Other Asian Countries	263	232	223	204	39	46	525	482		
Australia and New Zealand	42	45	39	42	4	2	85	89		
European Countries	79	84	154	170	19	30	252	284		
North American Countries	69	85	131	127	11	19	211	231		
Others (e.g. Central and South America, African Countries)	2	4	30	10	8	7	40	21		
All Regions	768	785	2,838	2,460	463	505	4,069	3,750		
				Q	/o					
Mainland China	40.8%	42.7%	79.7%	77.5%	82.5%	79.4%	72.6%	70.5%		
Other Asian Countries	34.2%	29.6%	7.9%	8.3%	8.4%	9.1%	12.9%	12.9%		
Australia and New Zealand	5.5%	5.7%	1.4%	1.7%	0.9%	0.4%	2.1%	2.4%		
European Countries	10.3%	10.7%	5.4%	6.9%	4.1%	5.9%	6.2%	7.6%		
North American Countries	9.0%	10.8%	4.6%	5.2%	2.4%	3.8%	5.2%	6.2%		
Others (e.g. Central and South America, African Countries)	0.3%	0.5%	1.1%	0.4%	1.7%	1.4%	1.0%	0.6%		
All Regions	100%	100%	100%	100%	100%	100%	100%	100%		

* All graduate statistics shown above include graduates on UGC-funded, self-funded as well as outreach programmes.

Number of Programmes[#]



The number of programmes listed above include where applicable, programmes offered in the full-time and part-time modes which are counted as separate programmes. The counting of research postgraduate programmes is based on the academic departments with research postgraduate students enrolled in the year under reference.

Staff⁺

Number of Staff in Headcount

Cohomoun of Shaff	Ма	ale	Ferr	nale	All		
Category of Staff	2018-19	2017-18	2018–19	2017-18	2018–19	2017-18	
Professoriate	786	790	298	297	1,084	1,087	
Research and Non-Professoriate Teaching	1,284	1,247	1,487	1,417	2,771	2,664	
Other Academic	42	43	18	14	60	57	
Administrative and Support	704	680	2,156	2,107	2,860	2,787	
Technical	733	756	470	444	1,203	1,200	
All Staff	3,549	3,516	4,429	4,279	7,978	7,795	

Distribution of International Professoriate Staff (Based on Nationality)

Pogion	Head	count	%		
region	2018–19	2017-18	2018–19	2017-18	
Mainland China	254	239	37.5%	36.3%	
Other Asian Countries	100	98	14.7%	14.9%	
Australia and New Zealand	52	52	7.7%	7.9%	
European Countries	125	126	18.4%	19.1%	
North American Countries	144	140	21.2%	21.2%	
Others (e.g. Central and South America, African Countries)	3	4	0.4%	0.6%	
All Regions	678	659	100%	100%	

⁺ All staff statistics shown above include UGC-funded and self-funded staff, honorary and visiting staff are excluded.



The University Profile

Research

Research Funding

Fund Source	HK\$ (in	Million)	%		
	2018-19	2017-18	2018-19	2017-18	
Block Grant from University Grants Committee	2,350.0	2,261.3	65.0%	64.3%	
Research Grants Council / University Grants Committee	366.8	273.8	10.1%	7.8%	
Other External Sources*	769.0	737.1	21.3%	20.9%	
Income from Research-related Endowment Funds	131.0	246.6	3.6%	7.0%	
Total Research Funding	3,616.9	3,518.9	100%	100%	

* Includes the following fund sources: government, private, industry and HKU Foundation.

Research Projects (Ongoing and New)

Broad	Research Grants Projects			cts	Research Contract Projects All							
Disciplinary	No. of Projects		Value (in HK\$ M)		No. of Projects		Value (in HK\$ M)		No. of Projects		Value (in HK\$ M)	
Area	2018–19	2017–18	2018–19	2017–18	2018–19	2017–18	2018–19	2017–18	2018–19	2017–18	2018–19	2017-18
Biology and Medicine	3,097	3,036	5,839.4	5,318.3	284	275	1,199.9	1,061.0	3,380	3,311	7,039.3	6,379.3
Engineering	709	677	770.2	683.3	114	106	143.2	124.0	823	783	913.5	807.4
Humanities, Social Sciences and Business Studies	1,290	1,254	1,531.2	1,324.6	187	185	477.0	459.9	1,478	1,439	2,008.1	1,784.6
Physical Sciences	473	434	654.8	594.3	26	20	50.5	44.2	499	454	705.2	638.5
All Disciplines	5,569	5,401	8,795.5	7,920.6	611	586	1,870.6	1,689.2	6,180	5,987	10,666.1	9,609.8

Cumulative Number of Patents Granted (since 1998 and up to June 2018): 608



Multiple types refer to the patent granted which covers more than 1 of those types specified.

Library Resources

Number of Bound Volumes in Main and Specialist Libraries: 3,107,298



Total Number of Registered Library Users

Student Learning Support Resources / Services

Туре
Total Library Seats
Group Discussion Rooms
Single Study Carrels / Rooms for Postgraduate Students
Main Library
Law Library
Medical Library
24 Hours Library Seats for All
Computer Workstations
Wireless Network Access Points
Postgraduate Library Workshops
Information and Referral Service

E-resources

Number
3,190
54
60
38
35
262
480
189
185
58,435 Reference Transactions

Giving to HKU

Donation Facts 2018–19

Total Number of Gifts Received	6,853
Total Amount of Donations	HK\$445M
Total Number of Donors	4,939
Number of First-time Donors	3,888
Ratio of Alumni vs Non-Alumni Donors	66:34

Distribution of Donations 2018–19



Finance

An Analysis of Consolidated Income and Expenditure for the Year Ending June 30, 2019

Revenue	HK\$'000	%	Expenditure	HK\$'000	%
Government Subventions	5,304,526	49.7%	Teaching, Learning and Research	7,503,859	73.0%
Tuition, Programmes and Other Fees	3,116,399	29.2%	Teaching and Research	6,635,832	64.6%
Donations and Benefactions	442,324	4.1%	Library	259,753	2.5%
Auxiliary Services	423,033	4.0%	Central Computing Facilities	227,261	2.2%
Interest and Investment Gain	520,235	4.9%	Other Academic Services	381,013	3.7%
Other Income	863,818	8.1%	Institutional Support	2,775,476	27.0%
Total Revenue	10,670,335	100%	Management and General	585,219	5.7%
			Premises and Related Expenses	1,282,797	12.5%
		Student and General Education Services	574,103	5.6%	
			Other Activities	333,357	3.2%

Total Expenditure

10,279,335

100%

Computing and Network Resources

Type of Resources	Number
Number of Wired Network Access Points	53,938
Number of Wireless Network Access Points	5,769
Total Bandwidth for Direct Connection to the Internet and Research / Education Networks	23.1 (in Gbps)
Aggregated Central Computing Power for Teaching and Research Purposes (Theoretical Peak Computing Speed)	126.5 (in TFLOPS)

Space

Distribution of Space by Categories Based on Total Gross Covered Floor Area (as of June 2019)

Category	Cross Covered Floor Area (in sq. m.)	%
Academic Space	309,252	43.7%
Central Libraries	44,733	6.3%
Central Administration and Maintenance	27,838	3.9%
Student and Staff Amenities	29,865	4.2%
Sports Facilities	14,441	2.0%
Student Halls of Residence and Staff Quarters	275,627	38.9%
Others (Including HKU Museum and HKU Press)	6,554	0.9%
All Categories	708,310	100%

HKU SPACE Gross Covered Floor Area (as of June 2019)

Land Holdings

Site	Lot Area (in Hectares)
Hong Kong Island	
Main Campus	17.7
Medical Campus	4.2
Other Sites on Pokfulam	23.2
New Territories	
Kadoorie Centre	9.6
All	54.7

41,342 sq. m.

Halls and Student Residences

Number of Places	Number
Existing	6,500
Planned	2,450

The University Profile

An Extract from the University's Annual Accounts 2018–19

Sustainability

1. No Poverty

4. Quality Education

⊪•₽÷

The total amount of donations for scholarships, bursaries, prizes and loans is \$52 million

52% of HKU students are the

first in their families to attend



2. Zero Hungei Over 700 students and staff

participated in the Edible Spaces initiative which promotes innovative and sustainable farming on campus and supports local farmers and agriculture

5. Gender Equality

through various activities.



areas 54%; STEM 32%; Medicine 62%; Arts and Humanities / Social Sciences 66%. The proportion of women in senior academic positions is 21%.

In 2018-19, iDendron,

HKU's innovation and

entrepreneurship hub

supported 52 start-up

8. Decent Work and Economic Growth

projects and companies. Projects related

11. Sustainable Cities and Communities

The Smart Living, Smart

Generation initiative in the

III, which accommodates

Jockey Club Student Village

to Sustainable Development Goals

include Chinese Medicine in Sports.

EmployMe, Clearbot and Pola Mola.

1,800 students, has resulted in a 14%

reduction in energy consumption and

7. Affordable and Clean Energy

university



The amount of renewable energy generated on campus increased by 5.3%.

10. Reduced inequalities

The percentage of international first-degree students from developing nations to all international

students starting their first degree is 16%.

16. Peace. Justice and Strong Institutions

force has begun the

strategy based on the Sustainable

Development Goals identified by the

United Nations with an effective and

accountable governance structure.

A cross-disciplinary task

groundwork for developing

a campus-wide sustainability

13. Climate Action



Total greenhouse gas emissions dropped by 1.1%.

14. Life below Water Since the policies on

savings of \$458k.



an estimated 1 million water bottles and 1 million straws per year. The Disposable Plastic Free Campus Policy will be implemented in September 2020.

17. Partnerships for the Goals



The Hong Kong Sustainable Campus Consortium was convened by HKU in 2019 to strategically promote

sustainability leadership through collaborations with other local universities on target-setting, curriculum design and awareness campaigns.

3. Good Health and Well-being



graduated in health professions including graduates of all academic

6. Clean Water and Sanitation

Potable water consumption increased by 2.6%.

9. Industry, Innovation and Infrastructure



benefit society. 208 patent applications related to discoveries at HKU have been filed in the past year.

12. Responsible Consumption and Production



municipal solid waste disposal has reduced by 12.3%, and diversion from



public's awareness on nature and biodiversity, with 400 people attending and 156 species found.

These 17 Sustainable Development

Overview

The financial year 2018–19 was the final year of the 2016–19 triennium. The Group has demonstrated its commitment to provide world-class education and research and delivered the impact through internationalisation, innovation and interdisciplinarity. A surplus of \$677 million was recorded in the Group's consolidated financial results, primarily driven by increase in tuition fee and gain from disposal of assets.

In preparing the consolidated financial statements, the Group has adopted certain new / revised Hong Kong Financial Reporting Standards (HKFRS) issued by the Hong Kong Institute of Certified Public Accountants which are relevant and applicable to the Group's operation and comply with the Statement of Recommended Practice for the University Grants Committee (UGC)-Funded Institutions.

Results for the Year

The Group's consolidated results for the year ended June 30, 2019 are summarised as follows:

	2019 \$ million	2018 \$ million
Income	10,670	10,846
Expenditure	(10,279)	(9,455)
Surplus from Operations	391	1,391
Share of Surplus of Joint Ventures and Associates	11	11
Gain on Disposal of Asset Held for Sale	282	-
Surplus for the Year	684	1,402
Other Comprehensive (Loss) / Income	(7)	7
Total Comprehensive Income	677	1,409

The consolidated income for the year 2018–19 was \$10,670 million, a decrease of \$176 million from last year. This was impacted by a decrease in investment income along with less donations and benefactions received during the year.

The consolidated expenditure increased by 9% to \$10,279 million (2017-18) \$9,455 million), of which \$7,504 million (2017-18: \$6,891 million) was expended on the Group's teaching, learning and research activities.

In 2019, the Lung Fu Shan **Environmental Education** Centre organised the HKU BioBlitz to enhance the

Goals (SDGs) were identified by the United Nations as the blueprint to achieve a better and more sustainable future by 2030. To learn more about HKU's sustainability initiatives, please visit www.sustainability.hku.hk. Any correspondence or feedback should be emailed to sustainability@hku.hk.



Financial Outlook

The financial year 2018–19 concluded the triennium of 2016-19 with a solid financial performance and remarkable achievement in all aspects of teaching, learning, research and knowledge exchange.

Looking ahead, the University is very excited to embark on a new arena with a number of capital projects including the science and engineering hub, the expansion of the Medical Campus, the student hostel projects and other major projects to provide state-of-the-art teaching and research facilities.

The University is prepared to make substantial and long-term investments in human resources, infrastructure and technology upgrades for the pursuit of the education mission. The achievement of these missions would rely on philanthropy support. Two Government Matching Grant Schemes have been launched in July 2019 and August 2019, respectively, and these are good opportunities to help the University secure additional funding for its work.

Amidst all the challenging opportunities, the University shall maintain a conservative, yet creative and flexible profile in the financial management, that can continue to build on our success and bring the University to the next level of accommodating our commitments to be the Asia's leading global university.

The University's Annual Accounts can be found at www.feo.hku.hk/finance/. Any correspondence or feedback on this extract or the accounts should be emailed to finance-mail@hku.hk.

The University of Hong Kong Consolidated Statement of Comprehensive Income

For the year ended June 30, 2019

(Expressed in thousands of Hong Kong dollars)	2019	2018
Revenue		
Government Subventions	5,304,526	5,188,694
Tuition, Programmes and Other Fees	3,116,399	2,808,193
Donations and Benefactions	442,324	640,724
Auxiliary Services	423,033	413,435
Interest and Investment Gain	520,235	930,390
Other Income	863,818	864,534
	10,670,335	10,845,970
Expenditure		
Teaching, Learning and Research		
Teaching and Research	6,635,832	6,092,495
Library	259,753	240,600
Central Computing Facilities	227,261	209,654
Other Academic Services	381,013	348,657
Management and General	585,219	570.891
Premises and Related Expenses	1,282,797	1,199,083
Student and General Education Services	574,103	498,623
Other Activities	333,357	295,388
	10,279,335	9,455,391
Surplus for the Year before Share of Joint Ventures and Associates	391,000	1,390,579
Share of Surplus of Joint Ventures	8,856	9,827
Share of Surplus of Associates	1,772	1,204
Gain on Disposal of Asset Held for Sale	282,325	-
Surplus for the Year	683,953	1,401,610
Other Comprehensive (Loss) / Income		
Items that may be recognised in the Consolidated Statement of Comprehensive Income		
Exchange Differences	(5,794)	3,439
Share of Other Comprehensive (Loss) / Income of a Joint Venture	(187)	1,215
Changes in Fair Value of an Available-for-Sale Financial Asset	-	(2,103)
Items that will not be recognised subsequently in the Consolidated Statement of Comprehensive Income		
Re-measurement of Defined Benefit Retirement Scheme Assets	(1,216)	4.339
	(7,197)	6,890
Total Comprehensive Income for the Year	676,756	1,408,500
Attributable to:		
LIGC Funds	10.026	400 700
Destricted Funds	10,026	409,/88
Other Funds	(207,220)	33,352
	<u> </u>	905,300
	6/6,/56	1,408,500

The University of Hong Kong Consolidated Statement of Financial Position

As at June 30, 2019

(Expressed in thousands of Hong Kong dollars)	2019	2018
Accets		
Non-Current Assets		
Property Plant and Fouriement	8 356 580	8 497 315
Intangible Assets	2,136	10 786
Interests in Associates	6.661	4 889
Interests in Joint Ventures	247.462	238 793
Available-for-Sale Financial Assets	-	57.226
Held-to-Maturity Investments		1.722.070
Financial Investments at Amortised Cost	1.698.477	_,,
Financial Assets at Fair Value through Profit or Loss	11.477.921	11.288.688
Loans Receivable	3,695	4,540
Accounts Receivable, Prepayments and Deposits	1,048,129	628,120
Defined Benefit Retirement Scheme Assets	11,463	13,013
Bank Deposits with Original Maturity over Three Months	100,000	-
	22,952,524	22,465,440
Current Assets		
Assets Classified as Held for Sale	1,512	39,756
Held-to-Maturity Investments	-	187,193
Financial Investments at Amortised Cost	541,704	-
Financial Assets at Fair Value through Profit or Loss	309,724	304,094
Loans Receivable	150,116	152,897
Inventories	4,394	5,760
Accounts Receivable, Prepayments and Deposits	906,264	875,816
Amount Due from a Joint Venture	1,871	2,396
Bank Deposits with Original Maturity over Three Months	9,517,464	6,272,579
Cash and Cash Equivalents	1,181,763	2,760,086
	12,614,812	10,600,577
Total Assets	35,567,336	33,066,017
Funds		
UGC Funds	1.624.231	2,374,892
Restricted Funds	9,096,529	8,669,323
Other Funds	15,373,615	14,373,404
Total Funds	26,094,375	25,417,619
Liphilition		
Non-Current Liabilities		
Accounts Pavable and Accruals	7 464	1 002
Employee Benefit Accruals	61 029	79.867
Loans and Borrowings	95.008	111 484
Deferred Capital Funds	2.988.545	3 032 627
	3.152.046	3.228.880
Current Liabilities		0,220,000
Accounts Payable and Accruals	2,935,002	2,756,743
Amount Due to a Joint Venture	2,080	2,185
Employee Benefit Accruals	807,461	710,700
Loans and Borrowings	105,516	207,496
Deferred Income	2,470,856	742,394
	6,320,915	4,419,518
Total Liabilities	9,472,961	7,648,398
Total Funds and Liabilities	35,567,336	33,066,017
Net Current Assets	6,293,897	6,181,059
Total Assets Less Current Liabilities	29,246,421	28,646,499

Officers of the University

As at November 15, 2019

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The Court

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As at November 15, 2019

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3. Members of the Council

- (a) Chairman
 Six persons, not being students or employees of the appointed by the Chancellor
- (b) Six persons, not being students or employees of the appointed by the Council
- (c) Two persons, not being students or employees of the elected by the Court
- (d) President and Vice-Chancellor

(e) Treasurer

- (f) Four full-time teachers elected in accordance with
- (g) One full-time employee of the University, not being elected in accordance with regulations
- One full-time undergraduate student elected in acc with regulations
- (i) One full-time postgraduate student elected in accordance with regulations

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g a teacher,	Mr E.T.M. Cheung
cordance	
ordance	Mr Wang Yuchen

The Court

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	Professor H. Cai (Business and Economics)		
	Professor T.F. Flemmig (Dentistry)	(i) Dean of the Graduate School	Professor F.K.S. Leung
	Professor A.L. Goodwin (Education)	(j) Librarian	Mr P.E. Sidorko
	Professor Y.H.C. Chao (Engineering)	(k) Dean of Student Affairs	Dr E.Y.S. Leung
	Professor H. Fu (Law) Professor G.M. Leung (Medicine) Professor M.R. Evans (Science) Professor W.G. Hayward (Social Sciences)	(I) Three elected full-time students (at least one undergraduate and one postgraduate)	Dr J. Chen Mr O.H.L. Leung Mr D.A. Wan
(e) Chairman of each Board of the Faculty	Professor K.W. Chau (Architecture)	5. Registrar	Mr H.W.K. Wai
	Professor X.N. Huang (Arts)	6. Chairman of Convocation	Dr Patrick S.C. Poon
	Professor K.P. Wong (Business and Economics)	Deputy Chairman of Convocation	Mr Ernest Y.K. Wong
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	Professor L.L.N. Wong (Education) Professor C.M. Kao (Engineering) Professor A.H.Y. Chen (Law) Professor W.C.S. Lau (Medicine) Professor K.C. Yuen (Science) Professor K.A. Laidler (Social Sciences)	7. Five persons elected by the Members of the Legislative Council from among their own number	······································
(f) Twelve elected Professors	Professor D.W. Arner Professor K.S.E. Cheah Professor J.C.S. Chim Professor E.Y.M. Lam Professor W.C.S. Lau Professor G.C.S. Lin Professor G.C.S. Lin Professor Q.A. Parker Professor L.M.L. Poon Professor Z. Tao Professor G. Xu Professor G. Xu Professor A.G.O. Yeh	 Twelve members elected from among its number by the Standing Committee of Convocation 	Dr Alex W.S. Chan Ms Allison S.W. Chan Mr King K.K. Chan Ms Gloria W.K. Chang Mr Cheung Ka Lun Dr Bonnie N.K. Choy Dr Fu King Wa Mr Keith W.F. Kiu Mr Alex C.H. Lai Mr Dantes W.C. Leung Dr Liu Chun Wah Mr Mak Tung Wing

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The Court

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11.	Three members elected by the Hong Kong Subsidised Secondary Schools Council	Ms Lee Yi Ying Dr Halina S.H. Poon Mr Tam Kim Hung
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