Annual Report 2017-18



HKUST

HKUST'S 5 CORE VALUES

Excellence, Integrity, and Academic Freedom

Global Vision and Local Commitment

Can-do Spirit

Inclusiveness, Diversity, and Respect

1-HKUST

THE MISSION OF THE UNIVERSITY

- (a) To advance learning and knowledge through teaching and research, particularly
 - i. in science, technology, engineering, management and business studies; and
 - ii. at the postgraduate level; and
- (b) To assist in the economic and social development of Hong Kong.

(The Laws of Hong Kong: Chapter 1141)

STATEMENT OF VISION

To be a leading University with significant international impact and strong local commitment.

Global

To be a world-class university at the cutting edge internationally in all targeted fields of pursuit.

National

To contribute to the economic and social development of the nation as a leading university in China.

Local

To play a key role, in partnership with government, business, and industry, in the development of Hong Kong as a knowledge-based society.

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Chairman's Foreword

The growing demand for 21st-century skills in the workplace in response to fast-moving technological innovation and globalization, is creating a fresh urgency for higher education to meet the needs of our changing economic and social landscape, both locally and worldwide. As industrial revolution 4.0 advances and the era of artificial intelligence, big data and internet of things starts to make its presence felt in a rising number of fields, universities must increasingly prepare their students for emerging sectors, unfolding technology discoveries and developments, and new ways of working.

Such thinking is embedded throughout HKUST's recent Strategic Plan, which entered its second year in 2017-18 and is enabling the University to add to its graduates' capabilities to initiate, foster, and capture the openings arising from our transformative times. It is doing so by creating the framework for insightful educational advancement, inspiring knowledge discovery, and deeper contribution to knowledge transfer and social and economic development. HKUST's rise to the No.1 position in the world in the Times Higher Education Young University Rankings in 2018 offered reinforcement of this positioning and HKUST's on-going adaptation to the fast-evolving global environment.

The eminent local and international faculty that HKUST attracts, and keenly endeavors to retain, are essential in such institutional achievement, ensuring the University maintains its ability to deliver top education and research to today's young people in Hong Kong and from many different locations around the world. Over the year, these academics' individual excellence was further acknowledged by numerous honors, including a State Natural Science Award (First Class) – only the second awarded to a Hong Kong scholar since the city started to participate in the awards in 1989 – and an induction into the US National Inventors Hall of Fame.

However, as the world heads deeper into this disruptive century, it is becoming clear that a leading education must not only encompass novel digital pedagogies and interdisciplinary programs but look beyond campus days to assist graduates in their transition to the working world. In line with this development, HKUST is placing greater emphasis on internal and external internship opportunities, with hundreds of students benefiting in 2017-18. The University's constant search to unlock individual potential and passion, and build all-round knowledge and skills helped to put HKUST graduates in the top 20 worldwide and No.1 in Greater China for the fifth consecutive year in the Global Employability University Ranking 2017. Meanwhile, numerous entrepreneurship talks and workshops during the year drew thousands of students, generating enthusiasm and impetus on the start-up economy front.

To keep the institution itself efficient, flexible and responsive to external change, the Council continued to augment governance and oversight through the Task Force on the Review of Council Effectiveness and related working groups. Over 2017-18, the Council approved a University accountability agreement, which outlines HKUST's roles and responsibilities, and serves as the basis of the formal agreement to be signed by the University and the University Grants Committee; and a new governance process related to large capital works to ensure effective oversight of forthcoming capital projects. In addition, a clearly defined policy and guidelines on donations will enable the University to adhere to more stringent governance requirements for all fundraising activities and naming arrangements. The development of risk management policies and procedures enhanced institutional preparedness while the University Retreat saw Council members' advice actively sought and given on the formation of key performance indicators to assess management's progress on Strategic Plan objectives. Council members also provided support for the University's exploration of opportunities in significant large-scale



endeavors such as the Greater Bay Area plan and Belt and Road Initiative.

Regarding institutional leadership, the past 12 months brought a rigorous global search and the appointment of Prof. Wei SHYY, Executive Vice President and Provost, as HKUST's fourth President, effective from September 1, 2018. Prof. Shyy is a leading aerospace engineering researcher and educator and a highly experienced international university administrator. In his eight years at HKUST, he has already shown his dedication to excellence, inclusiveness, and diversity, along with a visionary leadership approach that combines foresight, drive, and a willingness to engage with all stakeholders. With Prof. Shyy's passion for all aspects of flying, I am

certain that the University will rise further and attain new heights of achievement under his watch.

On behalf of the Council, faculty and students, we are grateful to President Tony CHAN for his committed service. Since his appointment in 2009, he has inspired others with his vision, strategic planning and fundraising efforts as well as his achievements in improving student life and campus infrastructure. During his tenure, HKUST has risen in global rankings and is now regarded as one of the best universities in the world.

I extend my appreciation to Council Members, Administration of the University, donors, alumni, and students for their input and efforts, and express my sincere gratitude to the Hong Kong SAR Government in particular the University Grants Committee for contributing to the continued development of HKUST over 2017-18. The world may be on the move in myriad ways. Yet, as the year has indicated, HKUST's dynamic outlook, strategic direction, and well-prepared graduates are ready and able to not only advance with it but actively contribute to shaping the future. It is an exciting prospect that fills me with confidence and hope for the times ahead.

Chairman, University Council MR. ANDREW LIAO CHEUNG-SING GBS, JP

President's Report



DRAWING TALENTS, LEADING THE WAY

The creation of three new divisions and departments, the realignment of three more, and the approval of five new bachelor programs propelled to the forefront an array of rising and interdisciplinary high-impact areas, namely, ocean science, sustainability, decision analytics, public policy, biological engineering, and integrative systems. All will answer the increasing local and global demand for graduates equipped to drive forward the data-rich "smart" communities, workplaces, and ways of life in the decades ahead and enable the University to retain its leading edge by attracting top young minds and academics to these significant fields.

Novel pedagogies to foster the skills and dynamic mindset required to thrive in the forthcoming era included the adoption of a pioneering team-based project approach for our new Integrative Systems and Design bachelor program and the signing of a unique partnership with the Minerva Project, an elite higher education provider, that will draw out students' creative and critical thinking and boost future teaching innovation at HKUST.

On the research front, the University's world-class researchers secured around \$474 million from funding organizations in Hong Kong and outside the city. Hong Kong's Research Grants Council and the Innovation and Technology Fund provided support for 222 and 36 new projects respectively, including one Theme-based Research Scheme Project that received \$50 million, including matching, to produce eco-friendly rechargeable electron-fuels and a new type of energy storage system.

The setting-up of four research centers brought the total number to 44 at the Clear Water Bay campus and Mainland platforms. The new hubs are focused on artificial intelligence, smart city technologies and policy facilitation, integrated circuit design, and epigenomics, and will encourage interdisciplinary exploration in these key areas of the future by drawing together established and early career researchers from different fields to share insights and initiate collaborations. In addition, four more joint laboratories with leading industry partners were initiated to study artificial intelligence in mobile computing and augmented reality, big data finance, environmental health technologies, and to share high-end facilities for research on the environment. It was indicative of our long-term vision that HKUST also became the first institution in Asia to join the Partnership on AI to Benefit People and Society, a not-for-profit consortium set up by major global technology platforms, including Amazon and Google, to promote ethical development of artificial intelligence.

In 2017-18, the University continued to successfully implement its Strategic Plan, with pace-setting moves in the five key objectives: recruitment and development of leading talents; trendsetting in education and research; championing knowledge transfer, innovation and entrepreneurship among the University community and beyond; diversity and integration to foster collaboration and inclusiveness; and best-in-class exemplar in standards, practices, and operations.



PROPELLING DISCOVERY AND START-UPS

During 2017-18, the University added to its scientific and technology breakthroughs, with major discoveries including Alzheimer's disease genetic risk factors in the Chinese population, identification of the cause of bacterial resistance to peptide antibiotics, and a synthetic pathway to produce chiral molecules. A fusion-based "smart" location sensing technology for indoor navigation and other applications, an HIV protein finding that could potentially lead to a vaccine, and a novel energy storage system incorporating electrically rechargeable liquid fuels were among many other original contributions.

Looking to support next-generation enterprise and Hona Kona economic development, preparations took place for a HKUST Entrepreneurship Fund to be launched in the coming year to provide capital investment to University technology start-ups with high potential. This will join the up-and-running Proof-of-Concept Fund and HKUST Entrepreneurship Program, which since establishment in 1999 has spun-off over 30 active companies. In external funding, 11 applications to the Innovation and Technology Commission's Technology Start-up Support Scheme for Universities (TSSSU) Program were recommended for funding, bringing total

HKUST-related TSSSU start-ups to 40. Some 70% of these endeavors leverage HKUST technology.

I was happy and grateful to see recognition of our work from the community through the generous donations that enabled us to confer named professorships on 15 more faculty members in recognition of their outstanding work, as well as gifts that will facilitate frontier work in life science, healthcare, and other areas of research. I would also like to highlight the contribution of our alumni, who are assisting current students through scholarships and start-up grants from the Alumni Endowment Fund, and enhancing the University's reputation through their own award-winning technology and community contributions and achievements in Hong Kong and around the world.

INTEGRATION AND SUSTAINABILITY

To foster concern for others and a shared sense of belonging and tolerance, the year brought the introduction of a residence hall initiative whereby 500 first-year students had the opportunity to stay in hall for one year, easing the transition from school to higher education and encourage integration between local and non-local students. On a wider scale, a distinctive partnership with the International Committee of the Red Cross (ICRC) will extend HKUST's humanitarian insights through joint research with the ICRC as well as a traineeship at the organization's Geneva headquarters.

Meanwhile, the HKUST 2020 Sustainability Challenge, which is working toward "green" leadership across the University's education, research, operations, and community, led to year-on-year reductions of greenhouse gas emissions (-7.2%), waste (-2.6%), and electricity (-1.6%), along with the withdrawal of plastic water bottles under one liter from sale on campus.

A MEMORABLE JOURNEY

With my term as President ending on August 31, 2018, I wish to add here my deep and heartfelt thanks to all the colleagues, students, alumni, Council and Court members, community supporters, academic partners, and industry collaborators, who have contributed to driving forward HKUST to the next level of achievement during my nine-year tenure.

It has been an inspiring and memorable partnership and to my great delight has resulted in many impactful research breakthroughs and academic accolades at the highest levels for both eminent and young faculty; and a more diverse, participatory, and entrepreneurial student body, welcomed into elite academic institutions and significant jobs worldwide. HKUST and its achievements within a short and amazing 27-year history are also much more well-known in a broader mix of locations, ranging from different cities in Mainland China to regions around the world, a development that has encouraged wider academic exchange and collaboration, and a greater cultural mix on campus.

I am especially proud of contributing to the overall strengthening of HKUST as an institution, through strategic planning, overseeing the articulation of the University's core values, fund-raising to enable the University to undertake farsighted and otherwise unaffordable initiatives, and the 1-HKUST drive to really imbue a spirit of integration and togetherness on campus. I wish all at HKUST and my successor Prof. Wei Shyy the very best in the years ahead. I am confident that the University will continue to create "miracles".

President PROF. TONY F. CHAN, JP University Management



From top left

Prof. Tony F. CHAN President

Mr. Mark HODGSON Vice-President for Administration and Business **Prof. Wei SHYY** Executive Vice-President and Provost

Prof. Nancy Y. IP Vice-President for Research and Development **Prof. Sabrina LIN** Vice-President for Institutional Advancement

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Education Development

HKUST deepened its highperformance, all-round student experience through multi-faceted teaching and learning innovation



It has been a dynamic year of change across the University's educational landscape, with the introduction of new and revamped divisions, departments, and degrees that answer changing needs in the era of big data and cross-disciplinary approaches; pace-setting collaborative, internationalized, and personal development endeavors; and entrepreneurial accomplishments.

Several Schools and offices redrew field boundaries in 2017-18. The restructuring generated three more Divisions/ Departments (Division of Integrative Systems and Design, School of Engineering; Department of Ocean Science, School of Science; and Division of Public Policy, Interdisciplinary Programs Office) and saw three other Divisions/Departments (Division of Environment and Sustainability, Interdisciplinary Programs Office; Department of Chemical and Biological Engineering and Department of Industrial Engineering; and Decision Analytics, School of Engineering) established after existing units were realigned and renamed.

UNDERGRADUATE EDUCATION

Keeping at the Forefront

In line with such moves, the Senate approved six new majors over the year. Four have started in Fall 2018 (BSc in Integrative Systems and Design, BSc in Data Science and Technology, BEng in Decision Analytics, BEng in Sustainable Energy Engineering) and two in Fall 2019 (BSc in Ocean Science and Technology, BEng in Bioengineering). Faculty have adopted a "real world" problem-based project learning approach as the key pedagogy for the pioneering Integrative Systems and Design program. The program will have an annual cohort of around 30 students whose study paths will be determined by their technical inclinations and capstone project requirements.

In other exciting initiatives, the University signed a first-of-its kind partnership agreement with the Minerva Project to launch the HKUST-Minerva Scholars Program in Fall 2018. Minerva is a provider of unique higher education offerings that bring together rigorous active learning methodologies and advanced information technology to equip students to think critically and creatively, and communicate and interact effectively. Several HKUST faculty members will use Minerva's Active Learning Forum technology platform to deliver the organization's cornerstone competency-building courses to HKUST students while students at Minerva Schools at Keck Graduate Institute in the US can opt to spend time in their fourth year of study at HKUST. The partnership, administered by the Center for Education Innovation, is expected to lead to further advances in the University's curriculum design and pedagogical development. Around 35 students will be recruited to join the program.

On the e-learning front, HKUST joined eight other top universities worldwide in a Global Virtual Exchange Agreement, giving students the option to take online courses and gain credits using the edX platform. The virtual exchange provides students with a wider range of courses and expertise, and makes learning more flexible by allowing them to study across borders. This will be of particular benefit to those unable to travel to another institution as part of a regular exchange. HKUST signed the agreement in December 2017, becoming the first institution in Asia to participate. Over the year, HKUST also added to its host of Massive Open Online Courses (MOOCs) with the launch of a fintech specialization on the Coursera platform in April 2018.



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Over 1,750 undergraduates received

2,200 scholarships, totaling \$70.1 million

The accelerated engineering and law dual degree program, offered by HKUST School of Engineering and the University of Exeter in the UK, started with the launch of Contract Law module in Summer 2017. Students earn a BEng degree at HKUST and one of two law degrees (Juris Doctor or Master of Laws) at Exeter in five years, completing their studies a year earlier than normal.





Nurturing Diversity and Global Vision

In 2017-18, over 1,000 students benefited from the University's signature exchange program, studying at exchange partner institutions around the world. Creditbearing study abroad summer programs, offered together with partner universities, brought additional opportunities to experience other cultural and social environments. Almost 300 students participated in programs held at London School of Economics and Political Science, Oxford University, Cambridge University, Princeton University, Stanford University, University of California, Los Angeles, and University of California, Berkeley. Locations for other summer programs included Brunei, Czech Republic, Estonia, Mainland China, Poland, Taiwan and Singapore.

On campus HKUST has worked hard to achieve the most diverse group of non-local undergraduates (16.2%) among University Grants Committee-funded institutions. In 2017-18, 44.73% of non-local students came from Mainland China, 49.58% from other places in Asia and 5.69% from the rest of the world. To continue broadening the non-local student mix, the Undergraduate Recruitment and Admissions Office (URAO) organized a counselor fly-in program in Spring 2018. The visit brought 32 high school counsellors from Turkey, Kazakhstan, and the Middle East to HKUST to learn more about the University's undergraduate programs, campus facilities, and education opportunities for their students.

In addition, URAO established regional scholarships for both Mainland and international students. For the 2018 intake, the Office provided up to 12 full/half renewable scholarships for outstanding students from five Mainland provinces. Scholarships for international students are due to commence in the next admission cycle.

High Achievers Recognized

Many other scholarships are available to support leading academic and nonacademic talents and foster excellence. In 2017-18, over 1,750 undergraduates received 2,200 awards, totaling \$70.1 million, with around 25% granted more than one scholarship. Three HKUST high flyers received Belt and Road Scholarships for students from Malaysia, out of a total of 10 such honors funded by the Hong Kong government and other donors. Two top student athletes, who excel in taekwondo and archery respectively, secured Alumni Endowment Fund Sports Scholarships.

Internship Insights

Internships provide a great opportunity for students to explore career interests, gain work experience, and enhance their competitiveness before graduation. Overall, in 2017-18, around 24 HKUST departments/offices hired around 400 students, while 85 students participated in overseas internships in 19 countries across five continents, and some 200 students joined Mainland internship programs in various cities.

Fresh initiatives saw 22 students take up winter and summer internships at Hong Kong Economic and Trade Offices in Shanghai, Chengdu, Wuhan, Tianjin, Guangxi, Guangzhou and Shenzhen. Twenty-three participants joined a 14-day Japan Career Exploration Program, visiting 17 well-known companies in Tokyo during the winter break and making business presentations to senior executives. Some 50 students secured summer internships under the Pilot Scheme on Corporate Summer Internship on the Mainland and Overseas, spearheaded by the Hong Kong government's Home Affairs Bureau.

Employability Boost

A record 361 companies joined Career Mosaic to recruit interns and fill graduate positions. Career Mosaic is a bi-annual University-wide job fair organized by the Career Center. Reinforcing the University's competitive edge in the graduate job market, HKUST moved to 12th place worldwide and No.1 in Greater China in the 2017 Global Employability University Ranking, conducted by Emerging, a human resources consultancy and Trendence, a leading research institute. The University's graduates have been among the world's top 20 most employable and the most employable in Greater China for five years in a row.

Strengthening Heart to Serve

The HKUST Connect community engagement program, under the Student Affairs Office, collaborated with 80 partners to open up different service opportunities and engaged 2,253 students in 173 service projects in 2017-18. Activities included one local workcamp and 12 service learning trips to Mainland China, Cambodia, Indonesia, Nepal, the US, and a pilot study trip to Seoul to explore positive innovation. HKUST Service Learning Day recruited over 900 students, faculty members, staff and alumni to serve in 57 service projects in April 2018.

Through HKUST Connect, the University forged a distinctive research and traineeship partnership with the International Committee of the Red Cross (ICRC) to encourage humanitarian work and global vision among the University community. Under the arrangement, HKUST faculty and students will work with ICRC on a project to quantify the economic impact of humanitarian intervention in developing countries. A trainee position will also be designated exclusively for HKUST students at ICRC's Geneva headquarters for the first time.



Realizing the Potential to Lead

The University encouraged student-initiated activities via a range of schemes, such as the President's 1-HKUST Student Life Award (82 projects) and Student Enrichment Activities Fund (68 projects).

In 2017-18, the Redbird Leadership Community, which trains student leaders, recruited 120 members and 10 student leaders to serve the University and local community. Three members and alumni gained financial sponsorship from the Redbird Overseas Learning Program to participate in young leader events in Australia, Thailand, and Malaysia. A total of 7 silver awards, 55 bronze awards, and 15 certificates of completion recognized students' dedication.

Nurturing Well-being

The University launched the pilot First-Year Experience @ Residence Program in 2017-18 to enhance students' campus life and ease the transition from school to university. The scheme enabled around 500 first-year students, including non-local undergraduates, to enjoy one full year in a residential hall. Senior undergraduate mentors, who received training in mental health awareness, leadership, and personal development skills, provided additional support.

Over 2,000 HKUST students and staff completed a 12-hour Mental Health First Aid (MHFA) training program organized by the Counseling and Wellness Center. Such training equips participants to give initial support to people with mental health problems or experiencing a mental health crisis.

POSTGRADUATE EDUCATION

The number of postgraduates reached a record 5,098 as at December 31, 2017, marking an increase of around 5% compared with the previous year. The student body hailed from over 60 countries and regions, with 2,000 postgraduates enrolled in 53 research programs and 3,098 students studying on 37 taught programs.

Increased Scope

In line with HKUST's strategic focus on data science research, the University introduced an MSc in Business Analytics and an enriched Scientific Computation Concentration for MPhil and PhD students in nine disciplines in science and engineering. Planning took place for a two-year professional Master of Public Policy program and the dual-degree HKUST-SKOLKOVO Executive MBA Program for Eurasia. The latter is jointly organized with the Moscow School of

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Management SKOLKOVO in Russia and focuses on innovation, leadership, and the Belt and Road Initiative. Both programs will start in 2018-19.

The University also entered into agreements with HEC Paris, Shenzhen University, Université de Montpellier, University of Southern California, University of Toronto, and Yale University to offer dual degree or joint supervision postgraduate programs. Such arrangements create more openings



5,098-

for postgraduate students to engage in international collaboration and widen training and research options.

Extending Horizons

Over 350 scholarships were awarded to 310 postgraduates totaling \$12.54 million in 2017-18. This brought the total amount of scholarships granted to undergraduate and postgraduate students to \$82.64 million, a 10% increase compared with 2016-17. HKUST recruited the largest number of Hong Kong PhD Fellowship Scheme participants, attracting 54 out of 231 (23% of the total) awardees for 2018-19 admission. Fellowship students come from 19 countries and regions, adding considerably to the internationalization of the University's research student community.

The Professional Development Course, introduced in 2013-14 to cultivate all-round capabilities among postgraduates, became a uniform requirement for all research postgraduates admitted from 2017-18 onward. The course comprises a mandatory component on professional conduct and a choice of activities and workshops on communication skills, research competency, entrepreneurship, self-management, and career development.

STUDENT ENTREPRENEURSHIP

A diverse range of activities are available through the Entrepreneurship Center and across the University to encourage students to gain experience in transforming knowledge into businesses and services and to set up their own companies.

In 2017-18, the science and technology section of the Common Core program

introduced the experiential

"Entrepreneurship 1001: Building Your Own Future" course in which students unpack the start-up process via setting up an online shop and a field trip to Shenzhen.

The Entrepreneurship minor program expanded in both enrolment and content, bringing the total number of students enrolled in entrepreneurship courses to 130. Over 45 entrepreneurship seminars (+21%), workshops, and talks took place over the year and more than 2,800 students (+110%) attended the events.

Inspiring Support

The new Leapfrog initiative generated further experiential opportunities and cultural exchange with overseas students and entrepreneurs. The first international learning tour took place in January 2018 where students explored e-commerce and the start-up ecosystem in Seoul. A further trip to Sydney was scheduled for July 2018. In the national arena, HKUST students attended Fudan University's Bauhinia Valley Program in December 2017 and May 2018 to engage in entrepreneurship activities. In total over 40 students participated in the Leapfrog program over the year.

The HKUST U*STAR Program usefully assisted students in developing business propositions and strengthening investor fund-raising capabilities. Since launch in 2016-17, the program has received 27 applications from more than 10 departments and programs. Several entrepreneurship-related funds are also now available to kickstart early-stage ideas and start-up activities. In 2017-18, the Yeung Wing Yee Entrepreneurs Fund supported 13 HKUST start-ups, the Entrepreneurship Acceleration Fund assisted 38 innovative projects while Alumni Endowment Fund (AEF) Student Start-up Grants supported 8 projects. On the development front, the Entrepreneurship Center assisted several start-ups to join the Cyberport Incubation Programme and Cyberport University Partnership Programme.

Competitive Edge

Demonstrating the strong potential of many HKUST start-ups, students and alumni teams won several prestigious awards over the year. Achievements included the Grand Award and Gold Award in the Student Innovation category at the Hong Kong ICT Awards and the top prize in the "GCL Cup" International College Student Green Energy Science and Technology Innovation & Entrepreneurship Competition, beating 70 teams. Four HKUST technology start-ups received the Analyst's Choice Award at the Startup Launchpad 2018 – Consumer Electronics trade show. Only 20 start-ups out of 200 participating fledgling companies were selected for the award.

The renowned HKUST One Million Dollar Entrepreneurship Competition expanded to include Foshan and Zhongshan in 2018, bringing the total number of cities holding the competition to seven. In the Hong Kong regional competition, the event attracted 101 teams, encompassing HKUST students, alumni, faculty, and researchers, as well as a title sponsor for the first time. The award ceremony in June 2018 was broadcast via Facebook Live to enable more people to share the occasion. The winner was Sinocore Biotechnology Ltd, which received the President Award, Innovation Award and The Mills Sustainability Prize for a refined version of flocculant, which can separate sewage water into sludge and water and also catalyze sludge fermentation. The Entrepreneurship Center served as coordinator for all the regional competitions.

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Research Development

HKUST researchers continued to uncover knowledge and transfer breakthroughs into practical applications



ADVANCING DISCOVERY

HKUST continued to make strenuous efforts to secure grants from funding bodies, locally and from outside Hong Kong, in 2017-18 to sustain its state-of-the-art research amid fierce competition. During the year, the University received approval for over 840 proposals, resulting in combined funding of more than \$474.3 million.

The main source of support was Hong Kong's Research Grants Council (RGC), which awarded \$191.6 million for 222 new projects to HKUST researchers in 2017-18. A Theme-based Research Scheme project to deliver rechargeable electron-fuels for stationary power supplies and electric vehicles attracted \$50 million (including matching). Four group research and two major equipment proposals received a total of \$36.7 million from the Collaborative Research Fund. The group grants will support studies into immune cells, neurohistology, quantum physics, and aggregation-induced emission systems. The equipment funding will enable the University to acquire a modular drum centrifuge and advanced 3D robot to form a world-leading centrifuge cluster in hazard prevention, offshore resource engineering, and environmental protection; and make atomic-scale characterizations for twodimensional materials available.

In non-RGC funding, the University submitted 109 research proposals to the Hong Kong government's Innovation and Technology Fund and received \$115.5 million for 36 new projects. Two HKUST-MIT Research Alliance Consortium projects secured just over \$10 million each to develop autonomous robotic manipulation and integrated networked control for internet-of-things devices respectively. Two projects under the similar HKUST Berkeley Research Collaboration received funding: control of exoskeletons using multi-modal human machine interfaces; and an automated robotic glass inspection system to check for smartphone display defects.

Stephen Kam-chuen Cheong Professor of Science and Chair Professor of Chemistry TANG Benzhong received the State Natural Science Award (First Class) 2017, China's highest award for natural science researchers and only the second Hong Kong academic to receive the honor since the start of the city's participation in the awards in 1989. He was honored for his outstanding work on aggregation-induced emission (AIE) and the discovery's contribution to medicine, applied science and life science. Two of the University's young faculty members received Croucher Innovation Awards, each worth \$5 million for research. Prof. Tuan Anh NGUYEN (Life Science) will seek to investigate miRNA production and virus amplification. Prof. PAN Ding (Physics and Chemistry) will investigate carbon in the deep Earth.

WIDER MAINLAND OPPORTUNITIES

In May 2018, the Chinese government announced the opening up of applications from higher education institutions and research institutions in Hong Kong for funding from the Ministry of Science and Technology and Ministry of Finance. To better prepare faculty members to bid for state funding, the Research Office undertook an internal review on procedures and eligibility of applicants. The central government move is expected to foster more research opportunities and collaboration between HKUST faculty and Mainland peers and institutions.



18 Research Development



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institution in Asia to join the Partnership on AI to Benefit People and Society

Joint laboratories with industry were boosted by the launch of the HKUST-NAVER/ LINE AI Lab, HKUST Value Partners Big Data Finance Research Lab, HKUST-CIL Joint Laboratory of Environmental Health Technologies, with Chiaphua Industries Ltd., and the HKUST ENVF-INA/LMA Joint Laboratory on Environment, which will share state-of-the-art, high-end equipment and facilities for environmental research.

The University's nine Central Research Facilities continued to provide vital access to top equipment and resources to support faculty and students' research across disciplines and schools, and to researchers outside the University. HKUST was the first institution in Hong Kong to adopt the centralized facilities model which forms an essential part of the University's research enterprise. In 2017-18, the on-going periodic review of the facilities completed its appraisal of the Advanced Engineering Materials Facility and Design Manufacturing Services Facility.

FAR-SIGHTED PARTNERSHIPS

The University recognizes the value of national and international collaborations with leading global institutions to foster research opportunities and insights. In 2017-18, HKUST formed a partnership with leading Chinese mobile transportation platform Didi Chuxing to collaborate on research and development in smart transportation systems. The HKUST-University of Manchester Seed Fund was also set up to deepen research links in areas of mutual interest and strength. Under this arrangement, three projects got underway, looking at achieving United Nations Sustainable Development Goals through economics research collaboration, 2D materials, and improved understanding of airborne biological particles.

In recognition of the University's capabilities and standing, Harvard Business Publishing Corporation and the School of Business and Management's Thompson Center for Business Case Studies entered an agreement to carry and distribute HKUST's EMBA case studies. In addition, HKUST became the first institution in Asia to join the Partnership on Al to Benefit People and Society, an international not-for-profit consortium to promote the development of ethical artificial intelligence. The University will seek to ensure safety, security, privacy, transparency and fairness in such technology in the Asian region. The consortium was founded by global technology platforms, including Amazon, Facebook, Google, and Microsoft.

MOVING KNOWLEDGE BEYOND THE CAMPUS

In 2017-18, 153 inventions were disclosed at both the Clear Water Bay and the Mainland platforms, and 244 new patent applications filed to protect the University's intellectual property. With the granting of 143 newly granted patents, the number of active patents and patent applications in HKUST's IP portfolio now stands at 1,390. HKUST R and D Corporation (RDC), the University's business arm, explored channels and opportunities for IP licensing to industry, managing a total of 103 active patent and software licensing agreements, with an additional four active licenses managed by Mainland platforms. Together with licensing income generated from Massive Open Online Courses (MOOCs), overall licensing income in 2017-18 came to \$6.7 million.

HKUST



HKUST also enters into partnership with the private sector in a wide range of technological areas. In 2017-18, RDC provided services for 188 contract research cases worth \$72 million in total. University researchers carried out 11 consultancy projects totaling \$2.4 million. Meanwhile, 333 equipment and facilities service agreements have been made with companies in Hong Kong and beyond related to use of the University's major equipment and facilities, bringing in an additional \$2.5 million. The total income generated over the year through contract research, consultancy and testing services, including Mainland platforms, reached HK\$96.5 million.

GENERATING START-UPS

The established Proof-of-Concept Fund provided internal support, with 14 applications received over 2017-18 and 9 projects recommended by a vetting committee comprising industrial experts and venture capitalists. In addition, plans for the launch of HKUST Entrepreneurship Fund to benefit promising University technology start-ups moved forward. The Fund is intended to provide capital investment solely to HKUST start-ups to help bridge the financing gap before young companies can secure sufficient external funding to grow or expand. The goal is for the fund to become operational next year. The HKUST Entrepreneurship Program continued to support the University community's start-up vision and incubation of spin-offs. Three companies graduated from the program in 2017-18, bringing the total active spin-off companies to 34. Renovation of incubation space at the main campus is expected to be completed by 2018-19, creating more room to accommodate start-ups. University incubation programs at Shenzhen Research Institute (SRI) and Guangzhou HKUST Fok Ying Tung Research Institute (FYTRI) in Nansha hosted a total of 60 start-ups.

Externally, the Technology Start-up Support Scheme for Universities (TSSSU) Program, launched in 2014 by the Innovation and Technology Commission, attracted 47 HKUST applications, bringing total University-related TSSSU applications for the past five years to 176. Eleven of the 2017-18 applications were recommended for funding, taking the total number of HKUST-affiliated TSSSU start-ups to 40. Over 70% of these fledgling companies utilize HKUST technology and 40% have entered incubation programs organized by Hong Kong Science and Technology Parks and Cyberport. Further assistance became available with the launch of the Walter Kwok Technology Start-up Fund. This scheme provides \$4 million annual funding to HKUST TSSSU awardees through

interest-free bridging loans to ease earlystage cash flow issues and allow founders to spend more time on technology development. In addition, mentorship and business network opportunities will be provided to start-ups under the fund.

COMMUNITY IMPACT

HKUST knowledge transfer activities in the community involved 669 public lectures, workshops, and seminars, and 99 performances and exhibitions of creative works over the year. The University's Institute for Public Policy published the first report on integrative development of innovation and technology in the Greater Bay Area, highlighting the risks that Hong Kong faces if it does not speed up such development, and providing recommendations to the Hong Kong government. The Institute also organized three seminars, covering topics from environmental issues to Guangdong-Hong Kong-Macao Bay Area development and the demographic challenges facing China and North-East Asia. Two distinguished lectures hosted by the Leadership and Public Policy Executive Education team, discussed US President Donald Trump's policies in his first year in office and the importance of demography in Hong Kong.

Research Highlights



Breakthroughs in and across science, engineering, business and management, and humanities and social science added to global knowledge and catalyzed change

CHINESE RISK GENES INDICATE IMMUNE SYSTEM'S ROLE IN AD

A research team led by Prof. Nancy IP (Life Science) identified Alzheimer's disease genetic risk factors in the Chinese population through the first whole-genome sequencing study in a Chinese Alzheimer's disease cohort, comprising thousands of participants. The team identified variants of well-studied genetic marker APOE as well as two novel risk genes, GCH1 and KCNJ15 associated with the disease. They also discovered that these risk factors were associated with the alteration of immune pathways, specifically changes in immune biomarkers in the brain and blood. The findings provided critical new evidence of the immune system's role in Alzheimer's disease pathology. The study was published in Proceedings of the National Academy of Sciences.

SYNTHETIC ROUTE TO CHIRAL MOLECULES

Over half of the approved drugs now in use worldwide are chiral, treating conditions including cardiovascular, respiratory and gastrointestinal diseases. But production is complex, costly, and generally requires rare and expensive raw materials. Researchers led by Prof. SUN Jianwei (Chemistry) uncovered a synthetic way to produce chiral molecules, discovering that chiral allenes can be produced through organic catalysis using racemic propargylic alcohols, which are inexpensive and readily available. The catalyst is also recyclable, reusable, and does not create metal wastes. The research, which may lead to safer and more affordable medicines, appeared in Nature Communications.

INSIGHTS INTO LIFE AT SUB-CELLULAR LEVEL

Prof. DU Shengwang, Prof. Michael LOY Ming-Tak (both Physics), and their students invented a Line-Bessel sheet microscope. The new microscope is 1,000 times less photo-toxic and 1,000 times faster in taking a high-resolution 3D smooth live-cell video than existing confocal microscopes, providing an avenue for life scientists to unlock the dynamics of life at the subcellular level. The technology has been transferred to Light Innovation Technology (LiT) Limited, a start-up co-founded by Prof. Du and his team.



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LOW-RANK MATRIX RECOVERY FRAMEWORK

Prof. CAI Jianfeng (Mathematics) proposed a framework for provable non-convex algorithms for low-rank matrix recovery, facilitating the reconstruction of a low-rank matrix from incomplete measurements. The algorithms were successfully applied to nuclear magnetic resonance (NMR) spectroscopy to design effective sampling schemes and recovery algorithms to save data acquisition time and cost. The results have potential applications in a range of real-world problems in big data, artificial intelligence, imaging science, signal processing, and computer vision.

CAUSE OF ANTIBIOTIC RESISTANCE IDENTIFIED

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ANNUAL REPORT 2017-18

A research team led Prof. QIAN Peiyuan (Ocean Science) identified the cause of broad-spectrum bacterial resistance to peptide antibiotics for the first time, paving the way for new designs for drugs tackling superbugs. Peptide antibiotics are widely perceived as the last defense against antibiotic-resistant bacteria. The team also discovered that the DRP enzyme identified as the cause of bacteria resistance was found in many strains of bacteria, providing a further alert in relation to the on-going improper use of antibiotics. The findings appeared in *Nature Chemical Biology*.

22 Research Highlights



STEERING AHEAD IN INDOOR NAVIGATION

Prof. Gary CHAN (Computer Science and Engineering) and his research team invented a fusion-based technology that markedly improves accuracy of positioning inside buildings, enabling smart locationbased applications such as indoor navigation, location-based personalized recommendation, crowd analysis, and people flow control. The location sensing technology comprises a software suite fusing Wi-Fi with other signals on mobile platforms. It can reduce positioning error to less than 2.5 meters in general environments, three times more accurate than traditional approaches.

ON-OFF MECHANISM FOR NEURONAL ACTIVITIES

An interdisciplinary team of scientists discovered how human brains turn on and off neuronal activities, providing an important foundation to understand neurologic conditions such as epilepsy, Parkinson's disease, and ataxiatelangiectasia diseases. The team, led by Prof. Karl HERRUP (Life Science), found the brain balances excitation and inhibition through regulating the levels of large kinase enzymes ATM and ATR. The team further discovered ATM only regulates excitatory synaptic vesicles while ATR is only responsible for inhibitory ones. The research was published in Proceedings of the National Academy of Science.

DESIGN AND PRICING OF PRODUCTS AND SERVICES

The design and pricing of products and services are increasingly important due to technological changes, new offers from competitors, and changes in consumer tastes. A research project led by Prof. Guillermo GALLEGO (Industrial Engineering and Decision Analytics) addresses this problem by optimally selecting the attributes to be included in a product, the quality level of each included attribute, and the product's price. The work is done in the context of consumer choice models. They have shown that their design is win-win for the multinomial logit model, the most commonly used choice model, in the sense that it simultaneously maximizes the firm's profit and the expected consumer surplus. His group is extending the results to other choice models and working with companies on the design and pricing of services in the knowledge economy, including cloud computing and airline fares.



E-FUELING THE FUTURE

A novel energy storage system that incorporates electrically rechargeable liquid fuels, known as e-fuels, is set to address the challenges preventing widespread use of renewable energy. The project, led by Prof. ZHAO Tianshou (Mechanical and Aerospace Engineering), includes design of an e-fuel charger that electrochemically converts electricity into e-fuel, which in turn can be converted back into electricity using an e-fuel cell for end use. The charger can convert intermittent wind and solar power into e-fuels, which can be stored indefinitely without quality degradation and transported to wherever needed. The project was awarded HK\$50 million under the Hong Kong Research Grants Council's Theme-based Research Scheme.

FITNESS LANDSCAPE OF HIV ENVELOPE PROTEIN

An international multidisciplinary research team, led by Prof. Matthew McKAY and Prof. Raymond LOUIE (both Electronic and Computer Engineering), employed a computational framework and big data analysis to map out the "fitness" landscape of the crucial polyprotein gp160 in the human immunodeficiency virus (HIV) for the first time. Fitness refers to the ability of the virus to properly assemble, replicate, and propagate infection. The research processed 815 residues and 20,043 sequences from 1,918 HIV-infected individuals. The findings open up potential for rational design of a vaccine that may force the deadly virus to mutate into forms that destroy it. The framework could also be useful for mapping fitness landscapes for proteins of other highly mutable viruses, such as Hepatitis C.





HKUST

SIMPLIFYING COMPLEX INVENTORY SYSTEMS

Research by Prof. Rachel ZHANG and Prof. ZHANG Jiheng (both Industrial Engineering and Decision Analytics) is tackling inventory problems with higher dimensional state spaces. Such challenges arise when it is necessary to track a series of events to make optimal decisions regarding inventory. Using the fresh angle of asymptotic behavior, preliminary results have suggested that the approach may lead to simpler management procedures for highly complex inventory systems than current heuristic policies.

PRIVACY, PERSONAL INFORMATION AND ONLINE PEER DISCLOSURE

Prof. HUI Kai-Lung, Prof. XU Hong, and former PhD student CAO Zike (Information Systems, Business Statistics and Operations Management) tackled the novel privacy problem of peer disclosure of sensitive personal information in online social communities. The researchers used a stylized economic model to show that regulation of peer disclosure was necessary. However, they also found regulation that uniformly controls the disclosure of sensitive and non-sensitive information will not serve the triple objectives of reducing privacy harm, increasing social welfare, and increasing information contribution. They then derived a necessary condition for solutions that could fulfill these three objectives. The work has been published in Information Systems Research.

MULTICULTURAL EXPERIENCE AND TOLERANCE OF DIVERSITY

Earlier research has shown that multicultural exposure can lead to better intercultural understanding and more positive attitude toward diversity. However, the metacognitive conditions that facilitate this positive effect have yet to be understood. Prof. Melody CHAO (Management) and her coauthors revealed that multicultural experiences would lead to more positive attitudes toward different others only when individuals felt that they had sufficient mental resources. Individuals who felt mentally exhausted became more closed-minded and less tolerant toward diversity, regardless of their multicultural experiences. The study is in press in the Journal of Personality and Social Psychology.







ENERGY EFFICIENCY BOOST FOR LIQUID CRYSTAL DISPLAY

A research team from HKUST State Key Laboratory of Advanced Displays and Optoelectronics Technologies, led by Prof. KWOK Hoi-Sing (Electronic and Computer Engineering), achieved a display technology breakthrough by developing a liquid-crystal display known as active matrix ferroelectric liquid crystal display. In comparison with conventional display, the HKUST technology increases energy efficiency by three to five times while image resolution was enhanced by three times. The higher performance was also achieved at a lower cost given that color filters, which usually comprise 30% of a display's manufacturing cost, are no longer necessary with the new approach.

WHY BEING BUSY MATTERS TO US

An increasing number of people in recent times have reported feeling busier than ever. Prof. Christine KIM (Marketing) and her coauthors investigated how the subjective perception of busyness – that is, viewing the self as busy – impacts on individuals' decision-making. Key findings showed that when people viewed themselves as busy, they felt important and that their lives mattered. This bolstered sense of self, in turn helping them make better decisions more in line with their long-term goals. The research has been published in *Harvard Business Review* and is forthcoming in the *Journal of Consumer Research*.

ORIGINAL PERSPECTIVES ON PAST AND PRESENT

Prof. David Cheng CHANG (Humanities) completed The Hijacked War: The Story of Chinese POWs in the Korean War (Stanford University Press, March 2019). The armistice talks took two years because 14,000 Chinese prisoners of war (POWs) refused to return to Mainland China. The book portrays the POWs' experiences and explains how they thwarted the designs of world leaders at a pivotal moment in Cold War history. Prof. Stuart GIETEL-BASTEN (Social Science) finished his book on The Population Problem (Oxford University Press, Summer 2019). Low fertility and population aging are often perceived to be an existential threat to the 21st century being the "Asign century". Drawing on evidence from across Pacific Asia, the work looks at these issues in a multi-dimensional way, considering why fertility is so low and has caused such concern.

HKUST

Faculty Development

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The University appointed its fourth President



NEW APPOINTMENTS

Prof. Wei SHYY was appointed HKUST's fourth President with effect from September 1, 2018, after an intense global search process. A scholar of international stature and an established academic leader, Prof. Shyy joined HKUST as Provost in 2010 from the University of Michigan, Ann Arbor, and during 2017-18 served as Acting President and Executive Vice-President and Provost, concurrent with his appointment as Chair Professor of Mechanical and Aerospace Engineering. He has consistently advocated the broadening of educational scope and approach, endeavored to advance research and knowledge transfer, and led efforts to foster a diverse and inclusive campus culture.

Prof. Kellee TSAI was appointed Dean of Humanities and Social Science, concurrent with her appointment as Chair Professor in the Division of Social Science. Prof. Tsai joined HKUST as Head of the Division of Social Science in 2013 from Johns Hopkins University. A scholar of contemporary Chinese politics and economic development, she also has a wealth of experience in academic administration.

Other senior faculty appointments:

Prof. WANG Xiaoping Head of Department of Mathematics

Prof. Christian DANIELS Head of Division of Humanities

Prof. HSING I-Ming Head of Department of Chemical and Biological Engineering

Prof. Kevin CHEN Head of Department of Accounting

Prof. ZHENG Shaohui Head of Department of Information Systems, Business Statistics & Operations Management

Prof. GONG Yaping Head of Department of Management **Prof. WU Xun** Head of Division of Public Policy

Prof. CHANG Chih-Chen Director of Center for Education Innovation

Dr. TONG Sai-Tao Director of Center for Language Education

Prof. CHAN Che-Ting Director of Research Office

The following faculty members were granted the title of Professor Emeritus on their retirement or departure from University service:

Prof. NG Ka-Ming Department of Chemical and Biological Engineering

Prof. Joseph LEE Hun-Wei Department of Civil and Environmental Engineering

Prof. XUE Hong Division of Life Science

Prof. DING Xueliang Division of Social Science

Prof. James KUNG Kai-Sing Division of Social Science

EYE-OPENING PEDAGOGY

In 2017-18, nine faculty-initiated projects – three focused on experiential learning – received teaching development grant funding to support improvement, updating, and introducing novel teaching approaches into existing courses. Faculty members also established two Community of Practice (CoP) groups to share experiences of practical education practices in sustainability education and sharing, building and embedding entrepreneurship education.



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organized and hosted a full-day teaching and learning symposium on "Unlocking Innovative Learning: Discovering New Teaching Approaches in Higher Education" at HKUST in May 2018. Morning sessions explored how current active learning practices can equip students with the necessary skills and advance the role of higher education in the next two decades. The afternoon sessions looked at more unconventional programs that could inspire future models. Experimental examples included the HKUST-Minerva Scholar program and Global Virtual Exchange Program.

BOOSTING DIVERSITY

During the year, the Committee on Faculty Diversity and Early Career Support carried out research on faculty gender composition for its second annual report covering a three-year period (2016-2018). Findings showed that gender diversity had improved across all ranks of substantiation-track faculty, in particular Associate and Assistant Professors, and the female faculty ratio had increased across all Schools. The results indicated that both lower turnover rates and greater recruitment efforts had contributed to the recent improvement in gender balance.

In addition, following sharing sessions with the Committee, the School of Science and School of Engineering incorporated a new voluntary diversity survey into their recruitment process. The survey is designed to raise applicants' awareness of the University's commitment to inclusiveness and diversity, and facilitate the Committee's on-going assessment of recruitment efforts.

OUTSTANDING FACULTY HONORED

The University held its fourth inauguration ceremony of named professorships, with 15 faculty members and the donors associated with their professorial titles receiving recognition. The expertise celebrated encompassed a spectrum of fields from geo-environmental engineering to astrophysics and cosmology and historical cartography. The number of named professorships now stands at close to 40 up from less than 10 in 2009.

Among many external recognitions for HKUST faculty over the year, Prof. Nancy IP, Vice President for Research and Graduate Studies, was awarded a 2017 Bronze Bauhinia Star from the Hong Kong government for her advancement of science and education, and commitment to academia. Prof. TANG Ching W., IAS Bank of East Asia Professor and Chair Professor of Electronic and Computer Engineering, Chemistry and Physics, was inducted into the US National Inventors Hall of Fame for his pioneering research into organic lightemitting diodes (OLEDs). Prof. TANG Benzhong, Stephen Kam Chuen Cheong Professor of Science and Chair Professor of Chemistry and Chemical and Biological Engineering, received the First-class State Natural Science Award 2017. Prof. ZHANG Mingjie, Kerry Holdings Professor of Science and Chair Professor of Life Science, received the Croucher Senior Research Fellowship Award for 2018-19.

Internally, the Michael G. Gale Medal for Distinguished Teaching was presented to Prof. David ROSSITER (Computer Science and Engineering). The award is a University-wide honor given annually to one exceptional academic who serves as a role model as an educator. Prof. Rossiter is an advocate of IT in teaching, a front-running proponent of active learning, and a multiple teaching award-winner over 20 years at the University. The recipient of the Common Core Teaching Excellence Award was Prof. WANG Jing (Information Systems, Business Statistics and Operations Management) for her interactive and motivational approach to teaching and learning in the Chronicle of Internet Commerce course.

HKUST

Community Engagement

The University connected up with schools, local organizations, and the public while donors widened future opportunities and alumni deepened HKUST's presence worldwide



SPURRING ON YOUNG TALENTS

The School of Science took the lead in organizing the Hong Kong Joint School Biology Olympiad, with support from seven other tertiary institutions and a dozen secondary schools. The competition involved over 500 secondary students from more than 80 secondary schools in three rounds of selection tests on biology and applications, as well as a full-day practical assessment. Other activities included lectures and exercises on various campuses ahead of selection of the final winners. HKUST, the Gifted Education Council, Croucher Foundation, and Roche Ltd served as sponsors. The event paved the way for setting-up the first International Biology Olympiad-Hong Kong Contest in 2019, coordinated by the Hong Kong government's Education Bureau.

The School also contributed to secondary school student training for the Asian Physics Olympiad 2018 in Hanoi and International Physics Olympiad 2018 in Portugal. The Pan Pearl River Delta Physics Olympiad was held in Shenzhen, Hong Kong, and Macao in February 2018, with participants from each of the three locations taking part.

On the eco-friendly front, the School launched an environmental education and community action project in July 2017 to promote ecological significance and native biodiversity of intertidal mudflats in Hong Kong. Students served as environmental ambassadors to raise public awareness on protection of mudflats and organisms, and the threats to marine environment posed by human activities, such as clam digging and razor shell fishing using salt. A second project was co-organized with the Hong Kong government's Environmental Campaign Committee during the Lunar New Year Fair in Yuen Long. Students gained hands-on experience in environmental education and community work through promoting green concepts to stall operators to reduce waste and upcycling to the general public. The government's Environment and Conservation Fund sponsored both projects.

The School of Engineering, global unmanned aerial vehicle manufacturer DJI, and Hong Kong Science and Technology Parks Corporation (HKSTP) co-organized the first RoboMaster Training Camp in Hong Kong to bring advanced robotics education to secondary school students. The RoboMaster competition is an annual contest organized by DJI challenging teams of aspiring engineers to design and build next-generation robots to compete in a robotics showdown. At the training camp, held over 11 days at HKSTP from February to April 2018, close to 50 students from 28 local secondary schools learned through hands-on experience and applied robotic technology. Student teams succeeded in building sophisticated robots to compete at the final tournament held in a shopping mall in April 2018.

The Academy for Bright Future Young Engineers, established under the School of Engineering, provides high school students with engineering experiences and greater knowledge of the world of engineering. Project WeCan is a business-in-the-

community initiative launched by Wharf in 2011 to empower local secondary school students from disadvantaged backgrounds through learning opportunities. Over the year, the Academy and Project WeCan co-organized a nine-month joint-school science, technology, engineering, arts, and mathematics (STEAM) competition. The contest involved 120 students from 28 secondary schools. Those taking part worked in teams and applied engineering knowledge to build their own STEAM prototypes, which later went on public display at a shopping center.

The School's Center for Global & Community Engagement hosted its annual Underwater Robot Competition under the HSBC/HKUST Robotics for Youths Programme, serving students from diverse backgrounds. The activity aims to boost students' confidence and encourage inclusion and STEAM between young people. Over 350 teachers and students from 54 different primary and secondary schools signed up for the fourday event.



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BROADENING UNDERSTANDING

The School of Business and Management continued to share its knowledge and expertise with the wider community through various BizInsight@HKUST talks. In an event held with the Moscow School of Management SKOLKOVO in July 2017, speakers discussed the impact of the Belt and Road Initiative on Central Asia. A forum on the "Shaping the Future of Chinese Family Businesses" in September 2017 featured academics in the field and a group of next-generation leaders. The discussion, led by the School's Tanoto Center for Asian Family Business and Entrepreneurship Studies, attracted more than 160 business leaders and guests. In addition, four thought-provoking lunchtime seminars, with direct relevance to today's business environment, gave participants the chance to hear the latest research findings from the School's faculty in Spring 2018. Topics comprised the online labor market, diversity and inclusion, creativity and collaboration in the workplace, and how different factors affect financial behavior and portfolio management.

The Executive MBA for Chinese Executives held its first open classroom lecture in November 2017. At the event, Prof. BA Shusong, Chief China Economist at Hong Kong Exchanges and Clearing Limited and Chief Economist of China Banking Association, discussed Hong Kong's role in facilitating renminbi-denominated asset allocation and renminbi internationalization.

To reach a broader audience and provide understanding on the many rapid developments impacting the business world the School revamped its *Biz@HKUST* magazine. In each edition, the publication now examines a different topical issue, such as FinTech and the Belt and Road Initiative.

The Division of Humanities held 16 public lectures at the Hong Kong Museum of History throughout the year. Topics ranged from Tang dynasty poetry and the mysteries of human language to Cantonese pop song lyrics.

LOOKING TO THE FUTURE

The University's frontier research was the focus of several generous donations over the year to move researchers ahead in their quest for discoveries on how diseases operate, potential preventative measures, and improved therapeutic care through both western and traditional Chinese medicine pathways.

A mega gift was received from the Lo Kwee Seong Foundation to support research and education in life science including the acquisition of a Cryo-electron microscopy facility while a gift from the Lo Ka Chung Charitable Foundation assisted the Hong Kong Epigenomics Project, led by HKUST. Nan Fung Life Sciences Limited supported research into the mechanisms that cause Alzheimer's disease while Chow Tai Fook Charity Foundation Limited provided funding for development of a comprehensive Alzheimer's disease database for Han Chinese in Hong Kong.



Dr. LAU Wah-Sum supported traditional Chinese medicine research, and in recognition of this generosity, the take-abreak area in the University's Lee Shau Kee Library has been named the Dr. Lau Wah Sum Refreshment Zone.

Sino Group took on sponsorship of the University's highly successful annual One Million Dollar Entrepreneurship Competition while Hongkong Bank Foundation provided support to the Robotics for Youths Program. Crown Foundation Limited renewed its support for the Center for Business Case Studies.

The University's named professorships link outstanding academics with individual donors. During 2017-18, two new Named Professorships were established following donations, namely, Lifestyle International Professorship in Business and Cheng Professorship in Science. In October 2017, the University also held its fourth inauguration ceremony of named professors, with 15 top academics and their donors recognized.

Meanwhile, scholarships were set up for School of Engineering students by Mr. & Mrs. Poon Kuen Seng Memorial Fund and Luen Fung Commercial Holdings Limited. The Tin Ka Ping Foundation enhanced peer and family support for gifted learners while Dr. KO Pui-Shuen provided support for the University Library's Special Collections Project.

FLOURISHING ALUMNI TIES

The HKUST alumni population reached almost 68,000 in 2017-18 and now encompasses a much wider range of non-local graduates, enfolding members from countries such as Latvia and Saudi Arabia as well as more traditional locations in Asia, Europe, and North America. With our alumni groups and chapters in full swing, HKUST graduates across the world can also remain in closer contact with each other, and the University, through reunions, social, and career-related events. Alumni sports groups in particular flourished during the year, with the Alumni Golf Club and Alumni Dragon Boat Club holding training sessions and participating in competitions.

The Class of 1997 and Class of 2007 held homecoming reunions to celebrate their 20th and 10th graduation anniversaries respectively. Both occasions provided a great opportunity for old friends to reminisce with former classmates and catch up with all the developments on campus.

Alumni entrepreneurs provided support to the University by offering internship opportunities to students through the HeadStart@HKUST program. This scheme gives undergraduate students a "head start" in the increasingly competitive employment market through early workplace immersion and career development opportunities.

Meanwhile, the HKUST Convocation, chaired by Chairman Alvin LAM, continued to actively engage in the University's advancement as well as build strong ties between alumni, the University, and the community through its standing committee and sub-committees on academic affairs, student affairs, University development, and entrepreneurship. HKUST

ANNUAL REPORT 2017-18

The HKUST Alumni Association, under the leadership of President Dicky YUEN, proceeded with its "Alumni Inspire Alumni" mission to strengthen cohesion and introduce further membership benefits and privileges to members. Collaborations with alumni associations at overseas universities were also boosted to align with the University's international focus.

During the year, many alumni received accolades in recognition of their contributions and achievements. They included: Prof. XIAO Jianxiong (one of 35 Innovators Under 35, MIT Technology Review, 2017), Mr. Thomas SHIK (top three, China Category, Best Economic Forecaster Awards, Focus Economics Analyst Forecast Awards 2017), Mr. Tony NGAI (Professional Achievement Award, Hong Kong Society of Cinematographers), Ms. Lydia LEUNG (Award of the Year, ICT Startup Grand Award, and Smart Living Grand Award, Hong Kong ICT Awards 2018), Mr. Eric PONG (ICT Smart Mobility (Smart Tourism) Gold Award, Hong Kong ICT Awards 2018), Mr. AU Chun-Ming and Mr. Benjamin LAI Chi-Kin (Student Innovation Grand Award and Gold Award, Hong Kong ICT Awards 2018) and Mr. Eric YUNG (Innovation and Creativity Award, Hong Kong Awards for Industries 2017).

International and Mainland Strategy

National and overseas bonds were strengthened as a result of alliances, collaborations, and cultural exchanges

GLOBAL ENGAGEMENT

The University continued to extend its ties with leading institutions and countries around the world to foster academic and research exchanges and collaborations. HKUST currently has agreements with more than 250 partners globally.





Active Partners Worldwide Partnership Power

During 2017-18, internationalization endeavors sought to enhance existing partnerships by identifying further areas for joint activities. The University of Waterloo became HKUST's tenth strategic partner, marking the start of deeper ties in diverse areas between the two institutions. The University launched the Hong Kong University of Science and TechnologyUniversity of Manchester Seed Fund, providing openings for HKUST faculty to extend research links with their peers in Manchester. Opportunities with École Polytechnique, Australian National University, Singapore University of Technology and Design, and Tokyo Institute of Technology were also explored, adding to the array of student exchanges available at HKUST.

International Presence

Raising HKUST's national and global profile is integral to the University's strategy. The University hosted around 100 visits from high-level international delegations including senior government officials keen to learn more about HKUST student life, faculty members, and breakthroughs, enabling the University to showcase its education and research achievements and exchange views in areas of common interest. Overseas links were boosted through the University's annual Consuls General Reception. Around 30 Consuls General and their representatives attended the event. The France-HKUST Innovation Hub, established by the University and Consulate General of France in Hong Kong and Macao, continued to serve as an incubator for ideas and a one-stop platform to enhance partnerships and strengthen links between France and Hong Kong in education, science and technology. The University successfully engaged with new French industry partners such as VINCI Construction, Dragages Hong Kong Limited, and Orange Fab France, among others. The collaboration also helped foster novel ways for faculty and students to innovate.

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MAINLAND OPPORTUNITIES

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Building Academic Links

HKUST and Peking University jointly initiated the Beijing-Hong Kong Universities Alliance. The Alliance was launched at a ceremony in April 2018. Over 80 guests attended, including Minister CHEN Baosheng, Ministry of Education, Prof. TAN Tieniu, Deputy Director of the Liaison Office of the Central People's Government in the HKSAR, Dr. LIU Yuhui, Director-General of Beijing Municipal Education Commission, and Mr. Kevin YEUNG, Secretary for Education of the HKSAR, together with members of the alliance.

The Vice President for Institutional Advancement was invited to attend the Boao Forum for Asia Annual Conference 2018 cum Asian Universities Alliance Summit 2018 in Hainan. In addition, HKUST students participated in workshops and summer programs hosted by Nazarbayev University and University of Malaya, Chulalongkorn University, Universitas Indonesia, and Seoul National University.

HKUST, the National Natural Science Foundation of China, and Beijing-Hong Kong Academic Exchange Center jointly organized their annual forum and workshops to foster sharing of experience and research collaboration between Mainland and Hong Kong scientists. The "2017 International Symposium on Genomics and Regenerative Medicine" was held at HKUST by the Department of Life Science. The symposium covered genomics, stem cells, and regeneration, among other topics. Over 100 faculty and students joined the event, during which they discussed their research findings and insights with Mainland and local scholars.



Nearly 600 faculty and students took part in cultural exchanges, community service, and academic programs through a collaborative scheme administered by the Ministry of Education. With the support of the Mingxi Charity Foundation and Hong Kong Beijing Association, 20 students from Tsinghua University visited HKUST for a six-day program as part of the on-going strengthening of cultural links between the two cities.

The University hosted nearly 140 high-level Mainland delegations in 2017-18, involving more than 1,200 delegates from industry, government and academia. Among those visiting were: Prof. HUANG Wei, Vice Minister of Science and Technology; Mr. HUANG Liuquan, Deputy Director of the Hong Kong and Macao Affairs Office of the State Council; Prof. ZHONG Zhihua, President of Tongji University, Prof. ZHONG Denghua, President of Tianjin University, Prof. ZHANG Jie, Party Secretary, University of the Chinese Academy of Sciences, Prof. LIN Jinhua, President of Peking University, and Prof. LIN Zhongqin, President of Shanghai Jiao Tong University. The delegations shared the latest developments in higher education in the Mainland and explored further collaboration with HKUST.

Senior management and faculty were also invited to discuss how the University could contribute to the development of the Guangdong-Hong Kong-Macao Greater Bay Area and Lok Ma Chau Loop Innovation and Technology.

Industry Interaction

HKUST extended its interaction with major Mainland enterprises through the development of research collaborations, job placements, student internships, and executive training opportunities. Two joint research laboratories on artificial intelligence and computer vision, and smart transportation systems, were established in December 2017 and April 2018 with Face++ and Didi Chuxing respectively. The University also entered discussions with Cisco on collaboration and various projects in Mainland China.

Organization and Resources

Senior administrative appointments, additional moves toward best-inclass operations, and Campus Master Plan advances took place



Following a rigorous global search, the University announced the appointment of Dr. Sabrina LIN as Vice-President for Institutional Advancement with effect from November 1, 2017. Before joining the University, Dr. Lin was a senior executive with extensive work experience across global technology companies, universities, entrepreneurial businesses, and different regions of the world. She was also an Adjunct Associate Professor at HKUST from 2010-16.

In other senior administrative appointments: Ms. Terrenz WONG became Director of the Court, Council and Senate Secretariat; Dr. Simon LAW took up the post of Director of the Technology Transfer Center; and Ms. LEE Yong-Yong joined the University as Director of Internal Audit.

FOSTERING FIRST-RATE ADMINISTRATIVE SUPPORT

HKUST seeks a performance-based culture to build the University into the employer of choice for leading talents and to achieve best-in-class operations as an effective organization. To this end, the on-going Non-Academic Staffing Review led to the launch of the Performance and Development Review (PDR) during the year and approval of the Merit Salary Adjustment Framework for eligible nonacademic staff, which will come into effect on April 1, 2019. To support implementation of the PDR, a series of performance management training seminars and workshops took place to familiarize staff members with the new system and equip them with relevant skills. The University will also implement a new grading and salary structure for non-academic staff and introduce appointments under open-end contracts to make its employment terms more flexible and competitive.

A records management seminar in November 2017 by senior officials from the Hong Kong government's Government Records Service shared best practices and the latest tools for document management and archives in the public sector with University academic and administrative heads. Good records management is essential for the University to preserve its history and maintain effective operations in the long term.

STRENGTHENING DIVERSITY

The DiversAbility Team was renamed the Special Educational Needs (SEN) & DiversAbility Team to reinforce its objectives and services, which cover diversity, diverseability, integration, and equal opportunities. Administrative, teaching staff and students participated in training and activities on disability awareness in 2017-18. To raise further awareness and foster a disabilityinclusive campus, a diversAbility festival took place in Fall 2017, with follow-up pop-up events in Spring 2018. "Empowerment through diversAbility" workshops on hearing impairment, mobility challenges and braille, celebrated people with different abilities while a meeting network of peers (MNOP) for students with special educational needs, was established.

HONORING COMMITMENT

As at June 30, 2018, there were a total of 3,620 full-time University staff in post. Four non-teaching staff members received the President's Outstanding Service Award in December 2017 in recognition of their exceptional service and continued endeavors to improve the University. Another 25 faculty and staff members with 20 years' service were presented with Long Service Awards to honor their loyalty and contribution to HKUST.



HEALTHY OUTLOOK

The University continued to organize new staff orientation programs to facilitate settling in. To promote equal opportunities and a clean campus, seminars on antidiscrimination ordinances and the Prevention of Bribery Ordinance were arranged. The Wellness Program of health seminars, which seeks to enhance work-life balance, received their usual warm reception from staff.

CAMPUS DEVELOPMENT SAILS FORWARD

Implementation of the Campus Master Plan over 2017-18 brought the Indoor Sports Center close to completion. The facility is expected to open for students' use in September 2018. Construction is proceeding on the Boat House project.

A review of the new Shaw Auditorium and its functions saw design alterations made to accommodate the University's changing needs. In addition, the University conducted a feasibility study on the planned Innovation Building to identify potential sites and block sizes. On the campus accommodation front, foundation work for the Hong Kong Jockey Club Global Graduate Tower got underway, with 2020-21 as the target time frame for the building to be finished. The Hong Kong government's Hostel Development Fund confirmed a funding allowance for HKUST to provide 1,415 student bed spaces. An initial feasibility study identified locations and potential block sizes. The year also saw the completion of a major renovation of Towers A and B student accommodation. The University has been very active renovating catering outlets. It is more than half way through a 4-year programme to renovate all outlets. In 2017-18, key refurbishments included the student canteen on LG1 in the academic building as well as two on-campus restaurants.

晉 港科技大學賽馬會 The Hong Kong University of Jockey Club Hall

Space management of existing academic buildings continued and a new software system was installed to support data related to space usage changes and updates. The University continued to be successful in applications for project funding through the UGC's Additions, Alterations, Repairs and Improvements Program which, together with internal funds, has provided for renovation of offices, teaching spaces, laboratories and amenity areas.





A new focus on ocean science, advanced pedagogies, and wider global perspectives extended the School's front-running approach



Department of Ocean Science established in February 2018

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A highlight of the year was the establishment of the Department of Ocean Science in February 2018. The Department covers foundation knowledge and applications in marine conservation, global climate change, management of marine resources, socio-economy, and sustainable development. It offers full programs at undergraduate and postgraduate levels to provide fresh opportunities to explore marine-related issues and technologies, and nurture talents in these areas.

The 2017-18 intake also saw nine Olympiad Medalists admitted to the School's International Research Enrichment track and Science programs.

School of Science

PACE-SETTING EDUCATION

The School initiated an undergraduate program in data science in partnership with the School of Engineering. The BSc in Data Science and Technology will be jointly offered by both schools from 2018-19. The program will provide students with a strong foundation in mathematical and computational knowledge and hands-on skills training.

A specially developed augmented reality (AR) mobile application was introduced into the Marine Biology Laboratory course in January 2018 to foster learning. The app integrates AR simulation aids with multimodal learning resources to facilitate students' experiential experience and engagement. Other School courses expanded their experiential components over the year. The signing of a collaboration agreement with Ying Ding Education Technology Co., Ltd. will also see the setting up of a lab to support research and development of blended learning programs. The lab will use cutting-edge artificial intelligence and big data technologies to better evaluate students' learning experience and their challenges as well as to develop novel teaching tools and techniques.

The School's holistic development approach led to fresh enrichment endeavors, such as the Dialogue with Executives Series and HKUST Science X UBS Mentorship Program, which offered insights into a range of industries and personal career advice from experienced leaders in various fields. To enhance understanding of the diversified job market for School graduates, a student-led SCI/ PATH YouTube Channel was launched, featuring interviews with science alumni from different sectors.

The second cohort on the International Research Enrichment track actively participated in internships, with most students receiving offers from renowned institutions, including CERN in Switzerland. Such internships broaden students' horizons and serve as a springboard to PhD studies. In addition, two collaborative summer research programs with industrial internship components provided senior undergraduates with research experience. A nine-week summer program, organized together with the Institute of Pure and Applied Mathematics at the University of California, Los Angeles, focused on research in industrial projects, while a seven-week program, arranged with Seoul National University, tackled industrial and applied mathematics. Participants worked on real-world research projects proposed by an industry sponsor under the guidance of an academic mentor.

To help students cope with their transition from secondary school to undergraduate studies, the School ran a series of mindfulness-related activities throughout the year, including Zentangle, forest therapy, low-carbon mindful diet, and a stress management workshop. Other strategies used students' interests as a motivator to increase engagement. These included forming a School band and a five-day furniture-making project for the HKUST community using recycled materials.

Outreach activities for prospective students drew 164 high school students from 43 target schools to science laboratory workshops on Science, Technology, Engineering, and Mathematics (STEM) education in 2018. Over 140 local high students participated in the 2017 Science Summer Camp.

At the postgraduate level, the addition of strategic partnerships with Vietnam National University and the University of Sussex strengthened the School's international ties while outreach recruitment trips and a one-week summer camp for potential students took place. Other than Hong Kong, Mainland China, Taiwan, and Macao, the School's postgraduate population now comprises over 20 nationalities, including Australia, France, Germany, Indonesia, Korea, Poland, the US and Vietnam. The School also established a Postgraduate Research Excellence Award to recognize outstanding research achievements. Fourteen students were selected for this prestigious award in 2017-18.

ADVANCING THE WIDER VIEW

To develop students' global perspectives, the School runs exchange programs with over 90 overseas partner institutions covering the Americas, Asia, Europe and Oceania. Partnerships established in 2017-18 included Australian National University and University of New South Wales (Australia), University of Toronto (Canada), École Polytechnique (France), University of Zurich (Switzerland), Newcastle University and University of Manchester (UK), and University of Notre Dame (US).

A Sri Lanka Cultural Exploration and Service Trip in June 2018 raised further international and social awareness. The 20 participants took part in voluntary teaching, organic farming, and elephant conservation, while visits to UNESCO heritage sites and local farmers' homes enabled students to understand Sri Lanka from different perspectives.

Short-term exchange tours to Mainland China helped students learn more about the culture, history, and social aspects of different parts of the country. In 2017-18, trips were arranged in collaboration with Sichuan University, South China Agricultural University, and Sun Yat-Sen University. HKUST

School of Engineering

2017-18 was a productive year, with restructuring of departments and multiple programs introduced

The School achieved high rankings again in different global league tables. In the *Times Higher Education* World University Rankings 2018 by Subject: Engineering and Technology, HKUST ranked No.18 worldwide and No.1 in Hong Kong. In the QS World University Rankings by Subject 2018: Engineering and Technology, the University was placed No.17 globally and No.1 in Hong Kong.

TRANSFORMATIVE EDUCATION ERA

Kicking off a series of key departmental infrastructure changes, the School established the Department of Chemical and Biological Engineering in July 2017 through the integration of the Division of Biomedical Engineering and the Department of Chemical and Biomolecular Engineering. In November 2017, the Division of Integrative Systems and Design was launched to nurture next-generation innovators through programs that develop students' technical competency, design thinking, understanding of complex and multidisciplinary systems, and entrepreneurial spirit. The Department of Industrial Engineering and Logistics Management was renamed the Department of Industrial Engineering and Decision Analytics in January 2018 to reflect its growing portfolio of teaching and research in the rising domain of decision analytics.

In line with these changes, the year saw a series of innovative undergraduate programs approved: the cross-disciplinary

BEng in Sustainable Energy Engineering, involving four engineering departments; BEng in Decision Analytics; BEng in Bioengineering; BSc in Data Science and Technology in collaboration with Department of Mathematics, School of Science; and BSc in Integrative Systems and Design. All programs will be launched in Fall 2018 except Bioengineering, which will be launched in Fall 2019.

ACTIVATING LEARNING

The School's Center for Engineering Education Innovation (E²I) began a threeyear project exploring ways to nurture an innovative mindset in a MakerSpace environment. The experiential learning study received \$8 million funding support from the University Grants Committee. The student-managed MakerSpace attracted over 400 active users in its peak period during the year. A CNC cutting machine and 3D scanning and modeling machine were added to equipment available in the multi-purpose area, which serves as a design and prototyping studio, training center, co-op shop and demonstration area.

Showcasing the strength of experiential learning, diverse talents, and team spirit, the University's student Robotics Team won nine awards in 2017. The prizes included the world championship at the Marine Advanced Technology Education (MATE) International Remotely Operated Vehicle (ROV) Competition in California by members of its ROV sub-team. The achievement marked the first time an Asian team had gained the honor since the contest began in 2002. The ROV sub-team comprised 15 students from 10 different locations.

POSTGRADUATE GLOBAL DIMENSIONS

Agreements with national and overseas institutions extended options for postgraduates, including dual PhDs with Zhejiang University, joint placements and supervision for doctoral students with the University of Toronto's Faculty of Applied Science and Engineering, and cooperative activities through internship with graduate schools in various engineering fields at Hokkaido University. In addition, an agreement with Huawei Technologies Co Ltd is set to create a Huawei PhD Fellowship Program. Program participants will receive support and can work as interns at the world-leading information and communications technology company while earning a PhD from HKUST.

The School continued its sterling track record of drawing the largest number of Hong Kong PhD Fellowship Scheme awardees among all engineering schools in Hong Kong, with 36 of the top global awardees starting their doctoral studies at HKUST in Fall 2018. This was the ninth consecutive year that the School had set the pace in the Research Grants Council endeavor to attract the world's brightest doctoral students to study at universities in Hong Kong.

NURTURING LEADING RESEARCH

Cutting-edge research facilities expanded to support the demand for more knowledge in emerging areas and significant fields. The University officially established the HKUST-CIL Joint Laboratory of Innovative Environmental Health Technologies, together with Chiaphua Industries Limited (CIL). During the year, the HKUST Big Data Institute became NAVER/LINE's first university partner worldwide to jointly set up an artificial intelligence (AI) laboratory. A joint lab on Al and computer vision was also set up with Face++. The interdisciplinary GREAT Smart Cities Center got underway with an international symposium including academics and professionals from Hong Kong, Mainland China, Japan, Korea, Singapore and the US. The Center focuses



on advancing science and technology, smart tools, and facilitating the formation of policy in relation to future cities.

Development of an 870g-ton, 250g, 2.2m diameter drum centrifuge facility is underway with the support of the Research Grants Council's Collaborative Research Fund. The \$11 million facility will complement the existing beam centrifuge facility and assist civil and environmental engineering research.

IMPROVING LIVES

Three computer science and engineering students developed a mobile app that can transform Chinese sentences into sign language. The final-year project translates Chinese sentences keyed into a mobile app into video sequences illustrating how to sign the words. The app brings communication with hearing-impaired people to a new level, and particularly benefits sign language learners who need to familiarize themselves with sign language syntax. Separately, three industrial engineering and decision analytics PhD students demonstrated their audio technology research, which enables parents with normal hearing to experience what their hearing-impaired children experience every day.

The HKUST Energy Institute held its first Energy Day in April 2018, focused on clean energy of the future. Some 250 academics, government representatives and industry practitioners took part. Earlier in October 2017 the HKUST Robotics Institute held its inaugural Robotics Day, exploring the impact of robotics and automated technologies on industries and daily life.

No.1

in Hong Kong, Times Higher Education & QS World University Rankings (Engineering and Technology)



HKUST

ANNUAL REPORT 2017-18

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School of Business and Management



EQUIS re-accreditation, high rankings, and leading education evolution kept the School at the forefront

LEADERSHIP IN ACTION

The School's uncompromising drive for excellence in all dimensions of its activities brought re-accreditation from the European Quality Improvement System (EQUIS), which assesses institutions on their academic quality and close interaction with the corporate world. The School was one of the first business schools in Asia accredited by both the European-based EQUIS and US-based Association to Advance Collegiate Schools of Business (AACSB International).

Rankings indicated the School's outstanding achievements. In separate Financial Times' annual global tables, the Kellogg-HKUST Executive MBA was ranked No.1 for the eighth time while the HKUST MBA was ranked No.14, marking the ninth consecutive year that the program has earned a place in the top 15.

EMBA ranked world's No.1

for the 8th time by Financial Times

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In Times Higher Education subject rankings, HKUST Business School ranked No.1 in Asia and No.14 globally in Business and Economics while QS World University Rankings by Subject 2018 ranked the School at No.16 for both Accounting and Finance and Business and Management Studies.

After seven years' dedicated service, Dr. William FUNG Kwok-Lun, Group Chairman of Li & Fung Ltd, retired as Chairman of the School Advisory Council. Under Dr. Fung's leadership, the Council played an increasingly important role in advising the School on how to achieve its vision and strengthen connections with the business community. He will continue to provide informed guidance to the School on its future development. Dr. Hans Michael JEBSEN, Chairman of Jebsen & Co Ltd, succeeded Dr. Fung as Chair in September 2017.

READY FOR THE FUTURE

In 2017-18, the School made steady strides in preparing students for unfolding opportunities, in particular in emerging markets and the digital arena. Driven by the changing business environment, the School identified FinTech, business analytics, innovation and entrepreneurship, and emerging markets among areas for growth. Alongside InvestHK's Hong Kong FinTech Week, the School organized its first FinTech Week in October 2017. A series of activities took place on campus related to the burgeoning financial technology sector, including career and company talks, and an alumni panel. The week-long event concluded with a FinTech hackathon to develop an app or product to disrupt the finance industry, attracting 24 student teams from across the University.

The strategic partnership with the Moscow School of Management SKOLKOVO entered its second year, with solid progress made in the emerging markets' sector. The two schools jointly developed the dual degree HKUST-SKOLKOVO Executive MBA for Eurasia. With its first cohort to start in November 2018, the program will help participants capitalize on opportunities opening up across Eurasia as a result of China's Belt and Road Initiative and other developments. Meanwhile, SKOLKOVO Institute for Emerging Market Studies experts visited Hong Kong to explain the key geo-economics of the Eurasian heartland.

FOSTERING GLOBAL BUSINESS EDUCATION

Two major international academic conferences were held, demonstrating the School's advocacy of top business education in Asia and beyond. The Association of Asia-Pacific Business Schools (AAPBS), an academic alliance serving more than 100 member organizations, conducted its major conference and workshop at HKUST in May 2018. Over 100 deans, directors, and senior administrators gathered for the event, which focused on "The Impact of Technology on the Future of Work". Corporate leaders and specialists shared their insights on the subject. The School hosted the Global Network for Advanced Management Deans and Directors Meeting in December 2017 to discuss and promote collaboration among the 30 top business schools in the network. A Fall 2017 partnership with Yale School of Management and HEC Paris to launch a portfolio of dual degree master's programs in international management and global operations was the result of membership of the network.

Fifteen more Executive Education open enrolment programs (including two consortium programs), addressing general management and leading topics such as FinTech and family business, and 21 customized programs attracted over 1,600 senior executives in total. They represented more than 180 companies, organizations, and HKSAR government offices from over 40 industries around the globe.

CAREER DEVELOPMENT, CORPORATE OUTREACH

The School has dedicated offices to coordinate and expand student career development and corporate initiatives through leveraging existing industry links and developing new partnerships to source internships and job opportunities, corporate and capstone projects, case competitions and engagement activities. Other endeavors include co-hosting sustainability and green finance conferences with the University's Institute for the Environment and expanding alumni engagement.

Among these dedicated offices, the MBA career team continued to provide personalized support for graduate placement and internship opportunities. In 2017-18, more than 10 MBA graduates advanced their careers in multinational corporations across different industries including financial services, insurance, and methanol.

The School also offered faculty development support. Orientation and mentoring assisted new faculty while an observational program brought together young faculty and star teachers to learn from each other. Faculty members were encouraged to attend external research or teaching workshops, such as the AAPBS Case Research Workshop, designed for researchers, and the Babson Entrepreneurial Leadership and Innovation Program, which helps teachers become leaders. HKUST

School of Humanities and Social Science

The School accelerated forward with a new bachelor program, distinctive global interaction, and creative local engagement

ADVANCING THE NEXT GENERATION

The Division of Social Science, with support from the Department of Mathematics, launched an undergraduate program in Quantitative Social Analysis, enrolling a founding cohort of 30 local and seven non-local students in Fall 2017.

The School extended the curricular choices for students on the BSc in Global China Studies, with the Division of Social Science adding a Social Science track to complement the Integrated Humanities and Social Science track originally launched in 2011. BSc in Global China Studies graduates continued to do well in both job placement and further studies. Recent graduates secured employment with the Hong Kong government, banks, and trade organizations. They also gained admission to graduate/dual degree programs at Oxford University, Waseda University, and Chinese University of Hong Kong.

The School's postgraduate community saw doctoral graduates accept professorial track faculty positions at Jilin University (philosophy), Peking University (sociology), and the University of Bonn (economics). Master of Philosophy and taught postgraduate students went on to further studies with fully funded PhD and MPhil fellowships respectively at overseas institutions such as Columbia University, Johns Hopkins University, Max Planck Institute for Demographic Research, New York University, Northwestern University, University of California-Davis, University of California-Los Angeles, University of Georgia, and Washington University St. Louis. Locally, they were selected for places at HKUST, Chinese University of Hong Kong, University of Hong Kong, and Hong Kong Baptist University.

EMPOWERING A GLOBAL OUTLOOK

The School is committed to creating non-local study opportunities conducive to students' holistic growth, given the transformative role that such experiences can play in global competency. International and Mainland China activities encompass regular term exchange, summer or winter programs, and an on-campus quasi-exchange experience through the School-sponsored Summer Global Seminars. This past year, about 150 students enjoyed non-local study exposure in Euro-America (70%), Greater China (23%), and the rest of Asia (6%), with a choice of over 60 exchange destinations, split between School and University-level partners.

Pioneering joint educational endeavors include three novel dual degree genres: accelerated, asymmetrical, and reciprocal. These programs enable the School to propel forward the frontiers of student experience with like-minded partners in Mainland China (13), Greater China (2) and Asia, and the US (1). Such initiatives typically start from explorative exchanges, moving on to summer programs, then joint student training programs and, eventually, integrated educational collaborations folded into the School's Global China Studies online curriculum, as well as faculty teaching and research cooperation.

EMINENT MINDS

In the Division of Humanities, Prof. Christian DANIELS took up the post of Division Head on July 1, 2017, while Prof. Billy SO was appointed an IAS Senior Fellow from February 1, 2018, concurrent with his post of Chair Professor in the Division. Prof. Daisy DU spent the year at Harvard-Yenching Institute as a visiting scholar, helping to raise the Division and School's profile in the US. She started her stay in August 2017 and will remain there until September 2018. Prof. Jenny SMITH, previously at Georgia Institute of Technology, received an Andrew Carnegie Fellowship for 2017-2019.

In the Division of Social Science, economist Prof. HE Guojun was invited to join the World Economic Forum's Young Scientists Community and represent the University at its Summer Davos Institute. Prof. He was also awarded the Gregory Chow Best Paper Award from the Chinese Economists Society at its 2018 North America Annual Conference. Sociologist Prof. WU Xiaogang was appointed the inaugural president of the International Chinese Sociological Association (formerly North American Chinese Sociologists Association).

Prof. Erik BAARK (science and technology studies), Prof. DING Xueliang (sociology), and Prof. James KUNG (social science) became Professors Emeriti.

IMPACTFUL INITIATIVES

Arts events took place throughout the year. Prof. LIU Jianmei, a specialist in contemporary Chinese literature and gender studies, organized original creative writing and film events, including a twoday conference in May 2018 on "Science Fiction and Its Variations in the Sinophone World", drawing a combined attendance of around 800. New Undergraduate Program in

Quantitative Social Analysis launched in Fall 2017

The annual Intimacy of Creativity workshops and performances once again brought together young composers and established musicians to discuss and revise new compositions, which were later performed. The 2018 festival featured quest composer Robert BEASER and quest artists Gilad HOCHMAN, Yael MANOR, and Pius CHEUNG. Close to 3,500 people engaged in open discussions and lunchtime lectures. Audiences of around 1,500 in total attended concerts on HKUST campus and in downtown Hong Kong. The event was founded and is led by renowned composer and musician Prof. Bright SHENG, IAS Helmut & Anna Pao Sohmen Professor-at-Large. In addition, the School's music faculty took part in the HKUST Music Alive concert series, copresented by HKUST Jockey Club Institute for Advanced Study and the Hong Kong government's Leisure and Cultural Services Department, in November 2017, and many other music-related activities.

Prof. CHEUNG Siu-Woo participated in the Yim Tin Tsai village migrants oral history project in the UK, and docent training and heritage services program in Yim Tin Tsai village, Sai Kung, Ngau Tau Kok's community barrier-free access project, and an oral history project for Sai Wan District revitalization program.

Over the past year, local, regional, and international media outlets have cited, quoted or interviewed more than one-third





of Division of Social Science faculty. The media organizations included Apple Daily, Bloomberg, the BBC, *China Daily*, China News Network, Channel News Asia, *Caixin Express, Daily Mail, Deutsche Welle, Ecobusiness.com, Forbes, Financial Times*, Fox News, *Hong Kong Economic Journal, Sina*, and *The Globe and Mail*, among others.

Prof. Naubahar SHARIF was appointed to the Hong Kong government's Advisory Committee on Mental Health. HKUST

Interdisciplinary Programs Office

IPO explored original approaches to education, entrepreneurship, and research that embrace multiple perspectives





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ACROSS BORDERS AND BOUNDARIES

The Interdisciplinary Programs Office (IPO) is always keen to break traditional boundaries to broaden students' perspectives and opportunities. This enterprising outlook led to the signing of an exchange agreement with Leuphana University of Lüneburg, Germany, the first European university to develop a program similar to IPO's Individualized Interdisciplinary Major, in which selected students together with faculty advisors can design their own degree curricula. Working with Leuphana University of Lüneburg, Germany and Rochester Institute of Technology, US, IPO is now planning to establish a tripartite program for students keen to create their own major across borders.

The Division of Public Policy, established the previous year, launched the first interdisciplinary two-year full-time Master of Public Policy program in Hong Kong, using real-world cases to provide professional training in the development, analysis, and evaluation of public policy interventions on a range of social issues. The Division of Environment and Sustainability took the lead in establishing the Sustainability Education Advisory Group under the HKUST 2020 Sustainability Challenge to evaluate coverage of sustainability education across all curricula and advise on strategies to bring sustainability ideas into students' learning, including the launch of a School-Sponsored Common Core Course, "Introduction to Sustainability", in Fall 2018.

IPO's undergraduate programs sought to provide more pragmatic knowledge in addition to theory-based lectures. The Risk Management and Business Intelligence program invited a senior partner from a private investment firm to deliver a course involving case studies and practical issues in risk management to equip students with up-to-date industry knowledge and the latest market developments. The Dual Degree Program in Technology and Management provided a case study analysis course to develop students' problem-solving skills and design thinking methodology to improve product design concepts.

The summer program "How to Change the World", was jointly organized with University College London. Students from the UK institution formed multidisciplinary teams with local students to offer a creative, technically robust solution to a specific societal challenge.

ENTREPRENEURIAL EXCELLENCE

A Year 3 Environmental Management and Technology student founded a start-up focused on sensor networks, logistics blockchain, and organic agriculture to alleviate poverty in rural China, together with engineering and business students. The start-up signed an advisory contract with a Stanford alumni fund investor from Silicon Valley, US. A Year 4 Risk Management and Business Intelligence student won the Exhibition and Student Team awards at the HKUST-Sino One Million Dollar Entrepreneurship Competition 2018. The project proposed a self-help app based on meditation, hypnosis, and psychotherapy to release stress, improve quality of sleep, boost concentration, and improve mental health.

RESEARCH IMPACT ON DAILY LIFE

Walkability is now a policy priority in Hong Kong and a core element for smart city development. An expert multidisciplinary team, led by Prof. LO Hong-Kam, Civil and Environmental Engineering, in collaboration with Prof. Alexis LAU Kai-Hon, Division of Environment and Sustainability, Prof. WU Xun, Division of Public Policy, and other professors from the fields of environment, infrastructure and transportation, is developing an integrated building information modeling-3D geographic information system (BIM-3DGIS) platform for network walkability analysis and 3D visualization. The project has received funding from the Strategic Public Policy Research Funding Scheme. In addition, the Division of Environment and Sustainability worked with the University of Manchester on a collaborative framework for improved detection and impact quantification of airborne biological particles. The study seeks to advance primary biological aerosol characterization in complex urban areas and foster knowledge exchange on wider aerosol research capabilities at both universities.



The School propelled forward the University's technology transfer and entrepreneurship through its Mainland platforms

The School's mission is to integrate and coordinate various endeavors of HKUST in the Greater Bay Area, including Guangzhou, Shenzhen, Foshan and Zhongshan. The School has been devoting substantial efforts to entrepreneurship, technology transfer, and commercialization activities.

FACILITATING RESEARCH

A Memorandum of Understanding signed between Guangzhou Municipality and the University in 2011 enabled the joint research of Guangzhou Enterprises and the University with funding support from the "Guangzhou Municipality External Technology Collaboration Program External Research and Development Collaboration Scheme". By June 2018, this initiative had launched 44 projects, supported by a total of RMB39.96 million, including 23 projects in 2017-18, which received RMB26.08 million.

Guangzhou HKUST Fok Ying Tung Research Institute (FYTRI) hosts the Nansha Sub-Centre of the Guangzhou National Supercomputer Center and provides services to Tianhe-2 supercomputer users from universities, government, NGOs, and the commercial sector in Hong Kong and countries along the Belt and Road. Users of the Supercomputer Service Platform increased fourfold between October 2017 and June 2018, coming from HKUST and other Hong Kong institutions, including Hong Kong Polytechnic University, Hong Kong Baptist University, City University of Hong Kong, and Hong Kong Science Park as well as those from overseas. To further promote and expand supercomputer usage, information sessions were organized at higher education institutions in Hong Kong in April 2018. As of latest statistics available, over 209 researchers/teams had signed up for the service.

The International Smart Manufacturing Platform (ISMP) is an open platform that drives technical innovation and commercialization in the Greater Bay Area by linking international manufacturing talents and teams with local companies in Guangzhou. The Industrial Big Data Workshop in March 2018 featured Prof. Jay LEE from the University of Cincinnati and our faculty member Prof. Fugee TSUNG, who spoke on industrial big data concepts, applications and their value in shaping the new industrial revolution. The 2nd Nansha Forum on Intelligent Molding Technology was held in April 2018 to discuss the latest technological development in the industry.

In addition, HKUST and the Nanhai Government signed an agreement to establish the HKUST Nanhai Innovation Center. Nanhai-HKUST Project has been set up to support research and development conducted by HKUST and its Mainland platforms with local Nanhai enterprises and for companies incubating under HKUST Entrepreneurship Program or TSSSU interested in exploring development in the Nanhai District of Foshan.

TECHNOLOGY ADVANCEMENT AND COMMERCIALIZATION

FYTRI is one of the important Mainland platforms of the University for knowledge transfer and advancement, engaging in innovative research, product, and process development, training, entrepreneurship, and commercialization. As at December 31, 2017, FYTRI had filed a total of 276 patents, with 119 granted as invention patents. In 2017, FYTRI secured 42 government projects totaling over RMB92.2 million and 26 commercial projects supported by more than RMB9.7 million.

The HKUST Shenzhen Research Institute (SRI) is contributing to while closely linked with the development needs of the Greater Bay Area, the technology and the industry. The Institute works at the forefront of scientific research while also building collaboration between universities and the business community. As of June 2018, SRI had filed a total of 45 patents, with 6 granted. In 2017-18, it continued to pursue research collaborations, cultivate external relationships, and engage stakeholders, securing a total of 28 government projects funded by more than RMB28 million and five commercial projects supported by over RMB6 million.

The HKUST LED-FPD Technology R&D Center at Foshan (FSC) actively carries out technology development-related activities, such as technical services, exhibitions, and training. As of June 2018, FSC had filed 23 patents, two trademarks, and one software copyright. FSC delivered over 500 technical services, organized training for more than 1,000 participants, participated in nine large-scale conventions and exhibitions, and hosted more than 20 industrial seminars and training events. It managed a total of 14 new and emerging industrial projects funded by Guangdong Province and participated in the formulation of three industry testing standards.

ALUMNI NETWORKING

To strengthen connections with Mainland alumni and help them broaden their network, SRI organized two get-togethers, in November 2017 and March 2018 respectively, attracting over 200 participants in total. Senior management and distinguished guests were invited and mini-forums were arranged to discuss Shenzhen and the Greater Bay Area related development issues. Alumni entrepreneurs were also invited to join the sharing sessions on finance, tax policies, and government funding to encourage entrepreneurship.

A visit to Qianhai, co-organized by the HKUST R and D Corporation (Shenzhen) Limited's Blue Bay Incubator, Development and Alumni Office and other alumni associations, had given HKUST alumni another chance to learn about the entrepreneurship environment in Mainland China, especially in Qianhai Shenzhen-Hong Kong Modern Service Industry Cooperation Zone. Alumni entrepreneurs also shared with participants about their experiences.



HKUST Jockey Club Institute for Advanced Study



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The Institute deepened its frontier research associations with the HKUST community and international counterparts while its eminent faculty received further global recognition



CREATIVE VISION

The Institute strives to bring together renowned researchers and scholars from institutions worldwide to interact, exchange, and develop research ideas at HKUST. IAS Helmut & Anna Pao Sohmen Professor-at-Large Bright SHENG and IAS Sin Wai Kin Professor-at-Large of Chinese Culture YAN Lianke were appointed to the Institute in 2017-18, enabling it to expand support for music and Chinese literary activities alongside its frontier work in science, engineering, and technology.

IAS faculty and their outstanding research contributions were honored locally and globally. IAS Bank of East Asia Professor Ching W. TANG was awarded a Doctor of Science honoris causa from the University of Hong Kong for his notable invention of Organic Light Emitting Diode (OLED) technology. In May 2018, Prof. Tang was also inducted into the US National Inventors Hall of Fame. IAS Si Yuan Professor Gunther UHLMANN received the Solomon Lefschetz Medal from the Mathematical Congress of the Americas "for his universally recognized leadership of the rich and difficult field of inverse problems".

IAS Director and Lam Woo Foundation Professor Andrew G. COHEN, IAS Helmut & Anna Pao Sohmen Professor-at-Large Sir Christopher PISSARIDES, IAS TT & WF Chao Foundation Professor George SMOOT and IAS Professor Henry TYE continued to share their scientific knowledge and ideas with members of the University, local community, and international researchers through lectures, participation in conferences and seminars, and scholarly events. Fourteen HKUST faculty members are now IAS Senior Fellows, sparking fresh research avenues and links. Younger scholars are also encouraged to become part of the IAS family. There were 31 Junior Fellows and 23 Postdoctoral Fellows affiliated with the Institute in 2017-18. To foster synergy globally, leading academics from institutions around the world are appointed as IAS Senior Visiting Fellows, Visiting Professors and Visiting Fellows. Over the year, 16 Senior Visiting Fellows, 14 Visiting Professors and 5 Visiting Fellows came to HKUST, adding to the innovative environment on campus.

IDEAS HUB

The Institute held around 150 academic events, including 40 distinguished lectures and 36 joint school lectures in 2017-18, drawing more than 7,000 participants in total.

Topical programs on specialized subjects fostered the formation of new research groups while conferences, workshops, seminars, and short courses provided deeper understanding of the most recent breakthroughs.

Eight Gordon Research Conferences took place at the Institute in Summer 2017. The conferences, which draw world-renowned international scholars to the campus, focused on life science, engineering, and physical sciences. Four were chaired/ vice-chaired by HKUST faculty. The Institute also hosted four affiliated Gordon Research Seminars for young researchers. ANNUAL REPORT 2017-18

Sustainability



The campaign to create a sustainable campus community at HKUST made encouraging headway in 2017-18



The HKUST 2020 Sustainability Challenge is to reduce waste going to landfill by 50% and electricity consumption by 10% compared with the 2014-15 baseline. The Sustainability Challenge continued to drive initiatives across departments and units, with performance targets in sustainable operations, sustainable communities, sustainability research and demonstration, and sustainability education. In line with the Challenge's goal to be a sustainability leader in each of these areas – aligned with a vision to transform the campus into a "living lab" for learning and experimentation – the University community stepped up and made great progress.

PERFORMANCE OF SUSTAINABLE OPERATIONS







SUSTAINABLE OPERATIONS

The Sustainable Operations Executive Committee, led by the Vice President for Administration and Business, developed a performance scorecard to steer 13 energy and waste reduction projects over the year. Under the guidance of the Committee, each initiative advanced, with the projects collectively responsible for keeping energy roughly level – even though the campus grew by around 6,500 m² since the 2014-15 baseline year. Aggressive measures in waste management resulted in reducing landfill waste by 13.2% during that same period. Schemes during this past year included changing more than 10,000 fluorescent lights for energy-efficient LED lights and sensors, recommissioning the building management systems in the Enterprise Center, and replacing equipment. Waste reduction ventures included recycling and recovery of electronic waste, expanded polystyrene foam, wood products, and landscape waste. The food waste recycling program also widened to student hostels and staff quarters.

SUSTAINABLE COMMUNITIES

Campus groups are actively building a vibrant and collaborative sustainability community at HKUST. The Green Team, a volunteer community of students and staff, organized beach clean-up activities and launched a Meal Boxes Go Green campaign in Fall 2017. Both activities engaged hundreds of staff and students, with the latter reducing use of disposable boxes by 2,500 pieces over a three-month period. A separate student group organized a Takeaway Box Circular Program, which signed up 400 individuals committed to reusable lunch boxes instead of takeaway disposables. In addition, the new Boar's Paradise community garden brought together volunteers to experience and find out more about gardening.

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The 30 designated representatives from Schools, offices, and departments that form the Sustainability Network met regularly to address sustainability and office operations, share good practices, and discuss effective solutions. Over the year, Network members helped introduce food waste collection in office pantries, assisted colleagues in transitioning to rechargeable batteries, and facilitated the elimination of plastic water bottles at the office level.

The Shanghai Commercial Bank-HKUST Sustainable Campus Leadership Program, on-going since 2014, provided training and hands-on opportunities for green campus projects. Over the year, the groups launched projects to better utilize outdoor spaces, reduce one-time use bottles and containers, create compost and experiment with ways to build nutrient-rich soil, and design a campus aquaponics project combining fish and agriculture.

SUSTAINABILITY DEMONSTRATION

On World Water Day on March 22, 2018, HKUST officially announced plastic water bottles under one liter would no longer be sold on campus. The move was the culmination of a year of planning, comprising a series of focus groups and campus surveys, water taste tests, and community engagement. The plan included physical infrastructure changes as well as the installation of 17 new water fountains in high-traffic areas. As part of the engagement strategy, reusable water bottles were distributed to all new students, and a start-up program initiated to support offices as they made the transition away from disposables. The announcement was celebrated with an event in the Atrium, where supporters, NGOs, and the Department of Ocean Science organized booths advocating the reduction of plastic disposables. A whale skeleton sculpture made out of hundreds of recycled plastic bottles from the HKUST campus was created by a local designer to remind the University community of the impact of consumption choices.

Other activities included the annual Green Products Fair, and green events during the student societies' promotional period and Orientation camp. In addition, the first No Straw Week was organized in March 2018 by the eight University Grants Committeesupported institutions, reinforcing HKUST's commitment to decrease plastic disposable waste.

SUSTAINABILITY EDUCATION

The University continued to evolve its educational and research framework to ensure that all students gain solid understanding of sustainability concepts and graduate with the capacity and commitment to solve problems locally and globally. During the year, the Division of Environment was renamed the Division of Environment and Sustainability. The Division will now take the lead in promoting broader development of sustainability education in partnership with Schools. In line with this, a cross-School Sustainability Education Advisory Group was formed and undertook a review of the undergraduate curriculum to identify gaps and opportunities in existing provision. The review identified nearly 50 courses that address specific sustainability ideas, principles, or content, and approximately 50% of the undergraduate population take at least one of these courses before they graduate. In the year ahead, the group will pursue strategies to engage the rest of the student population.

The Sustainability Education Community was also established. Over 50 faculty and staff joined the community. A launch brainstorming event and follow-up sustainability education workshop provided opportunities to discuss how best to draw students to this issue. Through the group's efforts, HKUST also became the first in Asia and one of 14 universities globally to be designated a Center for Teaching Sustainability Across the Curriculum by the Association for the Advancement of Sustainability in Higher Education. HKUST

Governance

The Council, Court, and Senate are the University's major governing bodies overseeing its diverse activities

The Council

As the supreme governing body, the Council steers the University's strategic direction and guides it to the highest standards of governance. During the year, the Council continued to enhance its governance role through the Task Force on the Review of Council Effectiveness and related working groups. Through Members' review, the recommendations of the University Grants Committee (UGC)'s Report on "Governance in UGC-funded Higher Education Institutions in Hong Kong" ("the Newby Report") had been appropriately addressed.

To fulfil their fiduciary responsibilities on university governance in a wider sense of long-term sustainability on educational, financial and cultural development, Council Members had been involved in the strategic planning process through participating in the University Retreat and other opportunities, primarily to give advice to the senior management in setting the University's strategic objectives and respective key performance indicators.

Working towards a more coherent approach to induction and orientation and to facilitate Members' understanding of the wider context of higher education, Council had rendered active support to the Sectorwide briefing sessions organized by UGC. As an ongoing developmental process, Council Members had also been given the opportunities to participate in different projects championed by respective Council Committees based on their skills and interests.

Amidst a fast-moving world of higher education, Council has taken on a proactive role in appraising and monitoring the potential risks of the University. Since 2016-17, the Council has employed a more systematic methodology to review annually, the University's risks and the related risk mitigation measures, through a risk register.

At its eight meetings held during the year, Council had been providing advice to various Offices in steering their operations, from budgeting framework to investment policy statement; from mission and vision statements on knowledge transfer to donation policy; from campus infrastructure to student accommodation and facilities; on top of other external collaboration opportunities, to ensure accountability and good governance.

The Court

The Court, the supreme advisory body, met twice during the year to receive reports from the University administration and Council respectively. In December 2017, Members were apprised the University's latest achievement and development in education and research, along with a number of proposed key issues to be covered in the forthcoming Strategic Plan. At the meeting in May 2018, Members made some valuable suggestions to the senior management on the overall direction of the University's international and Mainland outreach strategies, riding on some of the existing collaboration initiatives. Those collaborative projects, such as the entrepreneurship and start-up activities under the existing HKUST LED-FPD Technology R&D Center at Foshan, and the proposed research initiatives between the Huizhou Government and HKUST's Chemical and Biological Engineering Department of the School of Engineering in Daya Bay District, are expected to bring synergy to and promote economic growth of Hong Kong and the Mainland through innovation, technology, and knowledge transfer.





The Senate

The Senate, the supreme academic body, had considered during the review year some proposed refinement to the existing Programs to cater for students' and societal needs. A number of new Program proposals, covering the disciplines of data science and technology, sustainable energy engineering, decision analytics, and integrative system and design, etc. had also been approved by the Senate.

17 months, is designed to help forwardlooking business leaders capitalize on new markets and opportunities emerging across that extensive region, partly as a result of the country's Belt and Road Initiative.

During the review year, the Division of Integrative Systems and Design, as well as Department of Ocean Science, were established while there was a change of names of certain academic departments, such as the Department of Industrial Engineering and Decision Analytics from the then Department of Industrial Engineering and Logistics Management, to better reflect their positioning and latest development of the academic world.

Awards and Recognitions

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Faculty members and students have received numerous honors and accolades over the year. The following list is not exhaustive.







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FACULTY

- Prof. Nancy IP, The Morningside Professor of Life Science, Division of Life Science, was elected a Hong Kong deputy to the 13th National People's Congress.
- 2 Prof. TANG Benzhong (middle), Stephen K.C. Cheong Professor of Science, Department of Chemistry, received a State Natural Science Award, First Class, from the State Council for his research on aggregation-induced emission.
- 3 **Prof. Ching W. TANG**, IAS Bank of East Asia Professor, Department of Chemistry, Department of Electronic and Computer Engineering and Department of Physics, was inducted into the US National Inventors Hall of Fame for his ground-breaking research on organic light-emitting diodes.

- 4 **Prof. Tuan Anh NGUYEN**, Division of Life Science, and **Prof. PAN Ding**, Department of Physics, were selected for 2018 Croucher Innovation Awards by the Croucher Foundation.
- 5 **Prof. BAO Zhigang**, Department of Mathematics, received an Early Career Scheme Award from the Research Grants Council.
- 6 Prof. CHAN Mansun (right), Department of Electronic and Computer Engineering, was honored with the 2017 IEEE Electron Devices Society Education Award.
- 7 **Prof. Pascale FUNG**, Department of Electronic and Computer Engineering, was awarded the 7th Outstanding Women Professionals Award from the Hong Kong Women Professionals and Entrepreneurs Association.

- Prof. Charles W.W. NG (*left*) and Prof. Clarence Edward CHOI (*second left*), Department of Civil and Environmental Engineering, received the 2017 Telford Premium Award from the Institution of Civil Engineers, UK.
- 9 Prof. YEUNG King-Lun (third left), Interdisciplinary Programs Office, was awarded a Gold Medal at the 46th International Exhibition of Inventions Geneva.
- 10 Prof. WU Xiaogang, Division of Social Science, was elected inaugural President of the International Chinese Sociological Association.



FELLOWS & BOARD MEMBERSHIPS

- **11 Prof. WANG Wenxiong**, Department of Ocean Science, was elected a Fellow of the Society of Environmental Toxicology and Chemistry.
- 12 Prof. HUI Pan, Department of Computer Science and Engineering, was elected a Fellow of the Institute of Electrical and Electronics Engineers.
- **13 Prof. JING Bing-Yi**, Department of Mathematics, was elected a Fellow of the American Statistical Association and the Institute of Mathematical Statistics.

- 14 **Prof. YANG Qiang**, Department of Computer Science and Engineering, was elected a Fellow of the Association for Computing Machinery.
- **15 Prof. LI Yingying**, Department of Information Systems, Statistics and Operations Management, was elected a Fellow of the Society for Financial Econometrics.
- **16 Prof. Anirban MUKHOPADHYAY**, Department of Marketing, was elected a Scholar of the Marketing Science Institute.
- 17 Prof. Daisy DU, Division of Humanities, was selected as a Harvard-Yenching Institute Visiting Scholar for 2017-18.
- 18 Prof. Jenny SMITH, Division of Humanities, was selected to be a Andrew Carnegie Fellow for 2017-19.

STUDENTS AND RESEARCHERS

The HKUST Robotics Team, comprising 75 students from different departments, gained many awards over the year.

Robocon Team

19 Champion, Robocon 2018 Hong Kong Contest.

Remotely Operated Vehicle (ROV) Team

- 20 Champion, Explorer Class, 13th Hong Kong Regional MATE International ROV Competition.
- 21 Third runner-up, Explorer Class, MATE International ROV Competition 2017.

Smart Car Teams

22 Second Class Award for the Camera Group, and Third Class Awards for the Balance and Chasing Groups, 12th NXP Cup Intelligent Car Racing Competition, South China Region.



HKUST



Others

- 23 A Chemistry undergraduate team, comprising Olivia LEE Seungyeon, Jacqueline Cheryl SABRINA and Matthew WONG Ting-Hei, won the 29th Hong Kong Chemistry Olympiad 2018 Championship.
- 24 Physics undergraduate David REN Dawei (fifth right) received the American Physical Society Undergraduate Research Award.
- 25 IAS Junior Fellow and Research Assistant Professor Dr. Kim CHOW
 Hei-Man (right), Division of Life Science, was elected to the Future
 Female Scientists program, becoming the first person from Hong Kong to receive this nationwide honor.
- 26 MPhil students AU Chun-Ming and LAI Chi-Kin, Computer Science and Engineering and Electronic and Computer Engineering, won the Student Innovation Grand Award and Gold Award at the Hong Kong ICT Awards 2018.

- A Civil and Environmental Engineering postgraduate team, comprising PhD students Michele DE FILIPPO, Bence KATÓ, Srinivas MOGILI, and MPhil student YUNG Hoi-Yin gained three awards, including the championship, in the Introducing and Demonstrating Earthquake Engineering Research in Schools competition in Taiwan.
- 28 Undergraduate Kevin HALIM (middle), Department of Industrial Engineering and Decision Analytics, won the Institution of Engineering and Technology IET Prize 2017.
- 29 MPhil student JEONG Shin-Young (middle) received the Best Student Paper Award at the 4th International Conference on Building Energy & Environment.
- 30 MPhil student Nayeon LEE, Department of Electronic and Computer Engineering, was selected as a Google Women Techmakers Scholar 2017 in the Asia-Pacific region.

- 31 MBA students Michael PELOSI, ZHANG Jiaying, Aman ARORA, Harsh MODY and Sonia IM won the Client Prompt & Championship at the USC Marshall Global Consulting Challenge in the US.
- An undergraduate team from the School of Business and Management, comprising Richard HUANG, Jessica YANG, Kathrine LAUW, and Gary MA, received the Champion title in the HSBC/HKU Business Case Competition.
- **33** Interdisciplinary Programs Office undergraduate **TONG Ruochen** was named Outstanding Delegate of the Beijing International Model United Nations, hosted by China Foreign Affairs University.



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HONORARY DOCTORATES AND HONORARY FELLOWS

33

Honorary Doctorates

38 Prof. Emmanuelle CHARPENTIER, Director of the Department of Infection Biology, Max Planck Institute for Infection Biology

> **Mr. Ian FOK Chun-Wan,** Chief Executive Officer, Fok Ying Tung Group

Prof. Dipak JAIN, Former Director of Sasin Graduate Institute of Business Administration, Chulalongkorn University, Thailand

Prof. YAN Lianke, Sin Wai Kin Visiting Professor in Chinese Culture

Honorary Fellows

39 Dr. Aron H. HARILELA, Chairman and CEO of Harilela Hotels Limited

> **Ms. Catherine LEUNG,** Co-founder of venture capital firm MizMaa Ventures

Prof. Francis T. LUI, Professor Emeritus and Adjunct Professor, HKUST

Mr. Michael WU Wei-Kuo, Chairman and Managing Director of Maxims Caterers Limited



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39



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HKUST MEDALS

- 34 A student team comprising Budi RYAN, Computer Engineering Program, Jeffry WICAKSANA and Christian PRANATA, Electronic and Computer Engineering, won the HKUST President's Cup.
- 35 Prof. David ROSSITER, Associate Professor of Engineering Education, Department of Computer Science and Engineering, received the Michael G Gale Medal for Distinguished Teaching.
- 36 Adrian WU Tsz-Hin (second left), Professional Accounting and Information Systems and Chairperson of the Students' Union Council in 2015-16, was awarded the Stephen Cheong Kam-chuen Medal for Distinguished Service to the Student Body.
- **37 Prof. WANG Jing**, Department of Information Systems, Business Statistics and Operations Management, received the HKUST Common Core Teaching Excellence Award 2017 for her course, "Chronicle of Internet Commerce".

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HKUST

Calendar of Events

60

AUG

2017

HKUST and National Taipei University co-organized a Global Citizenship Program to promote sustainable development education and prepare students to address different cities' sustainability challenges.

JUL

HKUST launched its First-Year Experience @ Residence Program to help freshmen adapt to university life and promote a culture of inclusiveness.



HKUST Robotics Institute held its first Robotics Day to exchange ideas on how robotics and other automated technologies are impacting industry and our daily lives.

OCT





Over 900 teams participated in the seventh annual One Million Dollar Entrepreneurship Competition. The contest, which attracted students, startups and professionals, was organized by HKUST in five cities.

JUL

The School of Business and

Management hosted a BizInsight@HKUST Luncheon Forum, featuring scholars who specialize in family business studies and a dynamic group of nextgeneration leaders. The discussion focused on the future of Chinese family businesses.

SEP



The Kellogg-HKUST Executive MBA (EMBA) Program was ranked first in the world in the *Financial Times* Global Executive MBA ranking survey for the eighth time.

OCT

HKUST

HKUST hosted the Hong Kong Joint School Biology Olympiad, the city's first biology competition for senior secondary students.

NOV





Prof. LAW Kam-Tuen, Department of Physics, co-chaired a major seven-day conference on Topological Phases and Topological Quantum Computation. Local and international academic and industry researchers attended.

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Topological Phases and Topological Phases and Topological Quantum Computation

d IAS C

18-19 Dec 2017

DEC





The Global University Fintech Education Forum, co-organized by HKUST Big Data Institute, Financial Data Technologies Ltd, and Microsoft Research Asia, gathered together local and international financial technology leaders and academic experts to discuss future trends in fintech and artificial intelligence. NOV

The University's 25th Congregation conferred honorary doctorates on four distinguished academics and community leaders.

HKUST received a donation from Dr. Lau Wah-Sum to support Chinese medicine research that seeks to overcome antibiotics abuse in fish and livestock feed.

DEC

NOV

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2018

The School of Business and Management and Financial



MAR

MAR

The Department of Chemistry hosted the 25th Symposium on Chemistry Postgraduate Research in Hong Kong.

APR

organized a "Three-Dimensional Reading of Dream of the Red Chamber", featuring contemporary Chinese literature critic and scholar Prof. LIU Zaifu.

FEB

intelligence in the current era.



HKUST scholars talked about the late Prof. Stephen Hawking's life as a scientist and shared anecdotes of personal encounters in the "Memories of Stephen Hawking" seminar.

MAR

The University hosted

HKUST

The University conferred Honorary Fellowships on four distinguished leaders.

NN

HKUST Energy Institute held its first Energy Day to discuss the future of clean energy and exchange ideas on how policy, innovation, and applied technology can foster green growth and sustainable development.

京港大學聯盟成立儀式 aunching Ceremony of the

APR

HKUST and Peking University steered the official launch of the Beijing-Hong Kong Universities Alliance.



MAY

HKUST announced a



Prestigious Gordon Research Conferences on solar energy and nasopharyngeal carcinoma were held at the HKUST Jockey Club Institute for Advanced Study.

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scholarships since 1998.

Hong Kong Jockey Club

including students from

HKUST, have benefited from HK\$400 million in

Scholarships celebrated their 20th anniversary. Some 500

young people,

APR

The annual Intimacy of Creativity 2018 festival drew nearly 3,500 music lovers to open discussions and lunchtime lectures and close to 1,500 people to concerts held at HKUST and in downtown Hong Kong.

The University's GREAT Smart Cities Center hosted its inaugural symposium, gathering experts from Hong Kong, Mainland China, and around the world to share information and ideas on smart city development.

EMSD 2

JUN

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MAY

MAY

Facts and Figures

STUDENTS

STUDENT ENROLMENT (as at Sep 30, 2018)

School/Arog	Undergraduate	Pos	ostgraduate	tgraduate	
School/Ared	Ondergruddate	MPhil	PhD	Taught	Total
Science	2,223	122	491	410	3,246
Engineering	3,356	301	959	996	5,612
Business and Management	3,396	39	80	1,533	5,048
Humanities and Social Science	228	34	29	216	507
Interdisciplinary Programs	448	25	45	140	658
Joint School	344	0	0	140	484
Total	9,995	521	1,604	3,435	15,555

NON-LOCAL STUDENT ENROLMENT (2017-18)

lana Cauntra	Lie de verre du erte	Postgraduate		
Home Country	Undergraduate	Research	Taught	Iotai
Mainland China	708	1,376	1,755	3,839
Other Places in Asia	781	217	224	1,222
Rest of the World	203	96	119	418
Total	1,692	1,689	2,098	5,479

UNDERGRADUATE EXCHANGES (2017-18)

Host/Destination Region	Exchange-in	%	Exchange-out	%
Mainland China	45	4	35	3.5
Asia	162	14.6	183	18.1
North America	454	40.8	303	29.9
Central and South America	0	0	0	0
Europe	438	39.4	478	47.2
Australia and New Zealand	13	1.2	14	1.4
Africa	0	0	0	0
Total	1,112	100	1,013	100

GRADUATE NUMBERS (2018)

School/Area	Postgradu	luate	Total	
School/Area	Ondergraduate	Research	Taught	Total
Science	409	130	255	794
Engineering	837	301	808	1,946
Business and Management	870	28	824	1,722
Humanities and Social Science	58	30	164	252
Interdisciplinary Programs	119	16	47	182
Joint School	24	1	126	150
Total	2,317	506	2,224	5,047

EMPLOYMENT (2017)

			Postgro	aduates	
	Undergraduates	PhD	MPhil	Taught Master (Except MBA)	MBA
Employment Situation	%	%	%	%	%
Employed	79.8	70.3	34.5	30.8	98
Further Studies	14.7	2.2	41.1	5.3	1
Returned to Home Country or Emigrated	2.4	26.7	22.3	63.2	0
Others	3.1	0.8	2	0.7	1
Employment Situation by Industry	%	%	%	%	%
Commerce and Business	57.8	7.9	18.2	49	89.7
Engineering and Industry	29	21.8	40	30.5	8
Education	6.5	68.5	34.5	16.2	0
Government and Related Organizations	3.6	1.8	7.3	1.1	0
Community and Social Services	3	0	0	3.1	2.3

Percentages may not add up to 100%, as they are rounded to the nearest percent

FACULTY FACULTY MEMBERS (as at Jun 30, 2018) (Full-time Equivalent)^

School/Area	Regular	Visiting	Total
Science	151	19	170
Engineering	198	8	206
Business and Management	136	7	143
Humanities and Social Science*	147	5	152
Interdisciplinary Programs	15	1	16
Total	647	40	687

^ The above faculty numbers are reported in Full-time Equivalent (FTE) basis to reflect faculty's service distribution to each school.

* The teaching staff of the Centre for Language Education are included following its merger with SHSS on July 1, 2012.

RESEARCH NO. OF NEW RESEARCH PROJECTS AND FUNDING (2017-18)

	Number	Funding (in HK\$M)
UGC	413	82.8
RGC	211	193.3
Others	444	380.9
Total	1,038*	657**

 $^{\ast}\,$ No. of projects does not add up due to projects with multiple sponsors.

**Includes R&D projects administrated by R and D Corporation and Mainland platforms.

NO. OF PATENTS (2017-18)

Filed	244
Granted	143

INTERNATIONAL RANKINGS

HKUST	No. 1 in the world (World's Top 250 Young Universities, Times Higher Education Young University Rankings 2018)
	No. 2 in the world (World's Top 150 Universities Under 50, QS Top 50 Under 50 2019)
	No. 7 in Asia (Asia's Top 500 Universities, QS Asia University Rankings 2019)
	No. 37 in the world (World's Top 1000 Universities, QS World University Rankings 2019)
	No. 41 in the world World's Top 1000 Universities, Times Higher Education World University Rankings 2019)
	No. 16 in the world (Global University Employability Ranking 2018, Emerging)
School of Science	No. 1 in Hong Kong, No. 23 in the world (World's Top 500 Universities in Chemistry, QS World University Rankings by Subject 2018)
	No. 1 in Hong Kong, No. 22 in the world (World's Top 300 Universities in Materials Sciences, QS World University Rankings by Subject 2018)
	No. 2 in Hong Kong, No. 48 in the world (World's Top 500 Universities in Natural Sciences, QS World University Rankings by Subject 2018)
	No. 58 in the world (World's top 500 Universities in Physical Sciences, Times Higher Education World University Rankings 2019)
	No. 89 in the world (World's top 500 Universities in Life Sciences, Times Higher Education World University Rankings 2019)
School of Engineering	No. 2 in Greater China, No. 17 in the world (World's Top 500 Universities in Engineering and Technology, QS World University Rankings by Subject 2018)
	No. 1 in Hong Kong, No. 23 in the world (World's Top 800 Universities in Engineering and Technology, Times Higher Education World University Rankings 2018)
	No. 1 in Greater China, No. 14 in the world (World's Top 500 Universities in Computer Science and Information Systems, QS World University Rankings by Subject 2018)
	No. 1 in Hong Kong, No. 23 in the world (World's Top 400 Universities in Electrical and Electronic Engineering, QS World University Rankings by Subject 2018)
	No. 1 in Hong Kong, No. 24 in the world (World's Top 400 Universities in Mechanical, Aeronautical and Manufacturing Engineering, QS World University Rankings by Subject 2018)
	No. 24 in the world (World's Top 200 Universities in Civil and Structural Engineering, QS World University Rankings by Subject 2018)
	No. 2 in Greater China, No. 28 in the world (World's Top 600 Universities in Computer Science, Times Higher Education World University Rankings 2018)
	No. 2 in Greater China, No. 30 in the world (World's Top 300 Universities in Chemical Engineering, QS World University Rankings by Subject 2018)
	No. 1 in Hong Kong, No. 14 in the world (World's Top 100 Universities in Transportation Science & Technology, Global Ranking of Academic Subjects, Academic Ranking of World Universities 2018)
	No. 1 in Hong Kong, No. 16 in the world (World's Top 200 Universities in Telecommunication Engineering, Global Ranking of Academic Subjects, Academic Ranking of World Universities 2018)

School of Business and Management	Kellogg-HKUST EMBA Program: No. 1 in the world (Global EMBA Rankings, Financial Times 2018)
	Kellogg-HKUST EMBA Program: No. 2 in the world (QS Global Joint EMBA Rankings 2018)
	Full-Time MBA Program: No. 14 in the world (Global MBA Rankings, Financial Times 2018)
	No. 2 in Asia, No. 16 in the world (World's Top 300 Universities in Business and Management Studies, QS World University Rankings by Subject 2018)
	No. 2 in Greater China, No. 26 in the world (World's Top 200 Universities in Statistics and Operational Research, QS World University Rankings by Subject 2018)
	No. 1 in Asia, No. 16 in the world (World's Top 200 Universities in Accounting and Finance, QS World University Rankings by Subject 2018)
	No. 2 in Asia, No. 28 in the world (World's Top 400 Universities in Economics and Econometrics, QS World University Rankings by Subject 2018)
	No. 1 in Asia, No. 25 in the world (University of Texas at Dallas (UTD) Top 100 Business School Research Rankings 2018, based on research contributions in 2013-2017)
	No. 2 in Greater China, No. 22 in the world (World's Top 500 Universities in Business & Economics, Times Higher Education World University Rankings 2019)
	No. 2 in Greater China, No. 24 in the world (World's Top 500 Universities in Social Sciences and Management, QS World University Rankings 2018)
	No. 21 in the world (World's Top 500 Universities in Management, Global Ranking of Academic Subjects, Academic Ranking of World Universities 2018)
	No. 33 in the world (World's Top 200 Universities in Finance, Global Ranking of Academic Subjects, Academic Ranking of World Universities 2018)
	No. 1 in Asia, No. 37 in the world (World's Top 400 Universities in Business Administration, Global Ranking of Academic Subjects, Academic Ranking of World Universities 2018)
School of Humanities and Social Science	No. 2 in Greater China, No. 24 in the world (World's Top 500 Universities in Social Sciences and Management, QS World University Rankings by Subject 2018)
	No. 61 in the world (World's Top 600 Universities in Social Sciences, Times Higher Education World University Rankings 2019)

Appendices

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APPENDIX 1 COURT, COUNCIL AND SENATE As at June 30, 2018

COURT MEMBERSHIP

	Dr. John C C Chan GBS, JP	
	Chairman & Honorary Chairman	
	Dr. the Hon Sir Sze-Yuen Chung GBM, JP Honorary Chairman	Dr. the Hon Vincent H S Lo GBM, GBS, JP Honorary Chairman
Ex-Officio Members	Mr. Andrew Liao Cheung-Sing GBS, SC, JP Chairman of the Council	Prof. Wei Shyy Executive Vice-President & Provost
	Prof. John Chai Yat-Chiu JP Vice-Chairman of the Council	(Vacant) President of the Students' Union
	Mr. Patrick Yeung Kai-Cheung Treasurer of the University	Mr. Dicky Yuen President of the Alumni Association
	Prof. Tony F Chan JP President of the University	Mr. Donny K M Siu
Honorary Members	The Hon Sir David Akers-Jones GBM, JP Dr. Charles S C Chan BBS, JP Dr. Robin Y H Chan GBS, JP The Hon Ronnie C Chan GBM Dr. Thomas T T Chen Dr. Christopher Cheng GBS, OBE, JP Dr. the Hon Henry Cheng GBM, GBS Dr. Cheng Hon-Kwan GBS, OBE, JP Mr. Paul M F Cheng JP Mr. Linus W L Cheung JP Dr. Raymond K F Ch'ien GBS, JP Dr. Alice Chiu BBS, JP Dr. Alice Chiu BBS, JP Dr. Paul M Y Chow GBS, JP Dr. Paul M Y Chow GBS, JP Dr. Chow Yei Ching GBS Dr. Kenneth H Fang GBS, JP Mr. Tim Freshwater Dr. William K Fung SBS, JP Dr. Aron H Harilela JP Mr. John B Harrison The Hon Hu Fa-Kuang GBM, GBS, CBE, JP	Mr. Lester G Huang JP Dr. Simon S O Ip GBS, JP Prof. Roger King Mr. Walter P S Kwok JP Dr. Lau Wah-Sum GBS, JP Dr. the Hon Charles Y K Lee GBM, GBS, JP Dr. the Hon Charles Y K Lee GBM Dr. the Hon Lee Shau-Kee GBM Dr. the Hon Andrew K N Li GBM Ms. Kai-Yin Lo SBS Mr. Winston Yau-Lai Lo SBS Dr. the Hon Lui Che-Woo GBM, GBS, MBE, JP Mr. Tim Lui Tim-Leung SBS, JP Dr. Michael H H Mak SBS, JP Dr. Anthony Neoh SC, JP Mr. David Teng Pong Mr. Sin Chung-Kai SBS, JP Mr. Kenneth Ting Woo-Shou SBS, JP Mrs. Christine Wong SBS Dr. Lawrence T Wong Dr. Wilfred Y W Wong GBS, JP
Appointed Members	Mr. Herman S M Hu SBS, JP Mr. Bernard Auyang	Dr. Larry C K Yung The Hon Starry Lee Wai-King SBS, JP
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OVERVIEW

The financial year 2017/18 recorded a surplus of \$568 million (\$581 million for 2016/17). The marginally lower surplus for 2017/18 was mainly attributable to a lower investment return, partly offset by increased contribution from Self-Financing Continuing Professional Education Programs ("CPEP").

CONSOLIDATED INCOME AND EXPENDITURE

The consolidated income increased by \$184 million to \$5,061 million in 2017/18 (\$4,877 million in 2016/17), contributed by a growth in auxiliary services and other income for \$52 million, a reduction in interest and investment income of \$92 million, with the remaining increase mainly due to the usual additional University Grants Committee ("UGC") supplementary grants for General Pay Adjustment ("GPA") on salaries, and an increase in tuition fee income.

The consolidated expenditure increased by \$192 million to \$4,496 million (\$4,304 million in 2016/17) which was mainly attributable to higher salary costs arising from General Pay Adjustment, general increases in teaching and research activities, growth in student expenses on scholarships, as well as higher repair and maintenance costs for campus buildings.

SEGMENT RESULTS

Commentary on the operating segments, analysed by UGC-Funded Activities and non-UGC Funded Activities, is as follows:

UGC-Funded Activities

UGC-Funded Activities showed a surplus of \$76 million (\$186 million for 2016/17). The lower surplus for 2017/18 was mainly due to decrease in investment income and increase in operating expenses. The University has continued to build up the UGC reserves which stood at \$2,617 million (\$2,541 million in 2016/17).

Non-UGC Funded Activities

Self-Financing Continuing Professional Education Programs, Research and Other Activities

Self-financing CPEP activities contributed a surplus of \$171 million (\$103 million for 2016/17) mainly driven by higher student enrollment and higher tuition fees. Non-UGC funded research contributed a surplus of \$12 million (\$14 million for 2016/17), mainly from completed commercial research projects and government subsidies. The operating surplus from other non-UGC funded activities, excluding donations achieved \$193 million (\$156 million for 2016/17). In aggregate, the overall surplus of these operating segments amounted to \$376 million (\$273 million for 2016/17).

Donations Activities

Donations totalling \$60 million were recorded as income for 2017/18 (\$66 million for 2016/17). Overall the segment showed a surplus of \$116 million (\$122 million for 2016/17). The University has successfully secured \$275 million new pledges in 2017/18 (\$181 million in 2016/17).

Non-UGC Reserves

Non-UGC reserve balances stood at \$5,733 million at the end of 2017/18 (\$5,236 million for 2016/17). The growth in the reserve balance was mainly attributable to the aforestated self-financing activities.

CAPITAL EXPENDITURE

A number of construction projects are underway to enhance the University's facilities to cater for accommodation and amenity needs of students, as well as infrastructure for academic and research activities. They include a multi-purpose auditorium, new student residences, indoor sports centre, waterfront facilities, animal care facility and the Innovation Building.

As at 30 June 2018, total commitments for approved construction projects and other capital items amounted to \$4,010 million: \$2,397 million of which is from existing University's Funds, \$1,011 million by approved but yet to be received UGC grants, \$533 million by pledged donations, and \$69 million will be funded by deferred income on hand.

OUTLOOK

The University's financial position continues to strengthen which provides a good foundation to pursue the University's academic mission. Considering large capital commitments which will consume some of its preexisting reserves, the University plans to rebuild its financial resources to ensure that it will continue to have sufficient funds to meet future demands.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEAR ENDED 30 JUNE 2018

	Notes	2018 \$ million	2017 \$ million
Income			
Government Subventions and Grants	3.1	2,550	2,456
Tuition, Programs and Other Fees		1,246	1,099
Interest and Investment Income	3.2	554	646
Donations and Benefactions		60	66
Auxiliary Services and Other Income	3.3	416	364
Transfers from Deferred Capital Funds	15/23.13	235	246
		5,061	4,877
Expenditure	3.4		
Teaching, Learning and Research			
Teaching and Research		2,836	2,710
Library		113	111
Central Computing Facilities		126	131
Other Academic Services		98	86
		3,173	3,038
Institutional Support			
Management and General		333	313
Premises and Related Expenses		663	628
Student and General Education Services		293	275
Other Activities		34	50
		1,323	1,266
		4,496	4,304
Surplus from operation for the year		565	573
Share of Result of an Associate	9	5	8
Surplus for the year before taxation		570	581
Taxation	5	(2)	0
Surplus for the year after taxation		568	581
Other comprehensive income for the year			
Items that may be reclassified subsequently to income and expenditure:			
Unrealised gain on Available-for-Sale Financial Assets	23.6(d)	2	403
Gain previously in Other Funds released on sale of Available-for-Sale Financial Assets		(2)	0
Exchange differences arising from translation	23.17(b)	5	(2)
		5	401
Total comprehensive income for the year		573	982
Transfers to:			
UGC Funds		76	186
Restricted Funds		55	19
Other Funds		442	777
		573	982

CONSOLIDATED BALANCE SHEET

AS AT 30 JUNE 2018

	Notes	2018 \$ million	2017 \$ million
Non-Current Assets			
Property, Plant and Equipment	6	5,157	5,078
Intangible Assets	7	11	6
Held-to-Maturity Financial Assets	8	65	69
Available-for-Sale Financial Assets	8	421	421
Financial Assets at Fair Value through Profit or Loss	8	6,354	5,865
Interest in an Associate	9	83	78
		12,091	11,517
Current Assets			
Held-to-Maturity Financial Assets	8	4	2
Inventories		1	1
Accounts Receivable and Prepayments	10	255	205
Bank Deposits with Original Maturity over Three Months		1,412	807
Cash and Cash Equivalents	11	257	798
		1,929	1,813
Current Liabilities			
Accounts Payable and Accruals	12	793	731
Provision for Staff Benefits	13	180	176
Deferred Income	14	719	725
Tax Payable		1	0
		1,693	1,632
Net Current Assets		236	181
Total Assets Less Current Liabilities		12,327	11,698
Non-Current Liabilities			
Provision for Staff Benefits	13	27	31
Deferred Capital Funds	15	3,950	3,890
		3,977	3,921
NET ASSETS	-	8,350	7,777
UGC Funds	16	2,617	2,541
Restricted Funds	16	1,253	1,197
Other Funds	16	4,480	4,039
TOTAL FUNDS		8,350	7,777

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APPENDIX 4 INTERNAL CONTROL AND RISK MANAGEMENT

SUMMARY OF INTERNAL CONTROL AND MEASURES

The University has developed a system of internal control based on a framework issued by the Committee of Sponsoring Organizations of Treadway Commission (COSO). The five components of COSO Framework, namely Control Environment, Risk Assessment, Control Activities, Information and Communication, and Monitoring, are adopted by the University in ensuring the effectiveness of University governance.

In order to provide assurance about the effectiveness of internal controls to the Council and Senior Management of the University, the following arrangements are in place:

- (a) In 2018, the process champions of key processes have started an exercise to identify risks at the process level and document key controls designed to mitigate the risks identified for their responsible processes. This exercise would help to cultivate risk culture among the key leaders of the units/departments within the University. When the process documentation has been completed, a control self-assessment exercise by the process champions would be rolled out to assess operating effectiveness of the internal controls for their responsible processes. The internal audit team will help to consolidate and report the results of control self-assessment to management for follow-up actions.
- (b) Whistleblowing Policy is in place and operating to provide a safe and protective means by which staff, students and other stakeholders of the University are enabled to raise concerns with the appropriate University authorities against any malpractice within the University.
- (c) During the financial year ended 30 June 2018, a consulting firm was appointed as the University's internal auditors to perform risk based independent reviews on the adequacy and effectiveness of the University's system of internal control and recommend areas for continuous improvement. In January 2018, an in-house internal audit function has also been re-established. The in-house internal audit function will be responsible to draft the risk-based audit plans for the coming three years and perform independent reviews to assess adequacy of the design and operating effectiveness of the control as well as providing recommendations to streamline processes for efficiency increase.
- (d) In addition to the statutory annual audit of the University's financial statements, the external auditors also carry out an independent assurance engagement on the University's compliance with the guidelines, terms and conditions imposed by the Government's University Grants Committee.
- (e) The Audit Committee of the University approves the annual audit plan, supervises the scope of work performed by the internal audit team, reviews the internal audit reports or concerns on internal controls raised by the internal and/or external auditors. Furthermore, the Audit Committee has an oversight role on the appointment and performance of both internal and external audit team to ensure independence of the reporting line for the auditors and objectivity of the work performed by the auditors.

RISK MANAGEMENT

Council has approved a new Principal Risk Management Process ("The Process") to manage major or principal institutional risk, comprising a Statement of Risk Appetite, Risk Policy and Risk Process. The Process complies with the recommendation on management of major institutional risk included in the Newby Report on Governance in UGC-funded Higher Education Institutions in Hong Kong, published on 30 March 2016. Management utilized the Process and presented its 2017-18 Assessment of Principal Risk to Council in October 2018. The following summary is derived from this report.

Overall Conclusion

The University faces a number of principal risks and these are classified under three headings according to Policy: Financial Risks, Reputational Risks and Risks to Operations. In general, the Principal Risks identified have appropriate mitigation and the University has reliable sources of assurance that the mitigation is effective. In most areas, Management believes it can strengthen risk mitigation and has identified new actions to be taken. Resource will be focused on implementing these new actions in the coming years.

The University recognizes that new Principal Risks may emerge at any time. Implementation of The Process shall ensure the timely assessment and mitigation of new Principal Risks as they emerge.

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Financial Risks

The University is dependent on funding from the Government and is therefore exposed to a substantial one off reduction in funding or sustained reduction of a significant part of its funding. The University also derives significant income from non-Government sources, such as its self-financed teaching courses where it is dependent on the competiveness of its offering both locally and internationally. The key mitigations for funding risks are maintaining a high academic reputation in both teaching and research, having sufficient cash reserve and pledges for future donations. The University is also exposed to financial risks, mainly market risks on its investments. Investment risk is mitigated by a diversified investment strategy with acceptable risk and return objectives approved by Council and the employment of external advisors and investment managers. The Financial Statements contain further information about financial risks and their mitigation.

Reputational Risks

The University strives to be a leader in education and research and it is essential it maintains an excellent reputation in these areas and is able to attract and retain the best global talents including students, faculty and staff. The University has broad and robust risk mitigation and assurance in academic areas including the quality of its faculty and UGC's direct review and assessment. In particular, the University undergoes periodic exercises such as Planning Exercise Proposal (PEP), Research Assessment Exercise (RAE) and Quality Assurance Council (QAC) audits, each containing a broad range of topics including SWOT analysis. Some of the academic endeavors, such as research and growing parts of knowledge transfer, services and education, are also open to international benchmarking and peer review.

The University places high importance on full compliance with all relevant regulatory requirements, whether academic, operational, accounting, legal, tax, privacy, environmental, building code or the specific requirements of funders. It would not knowingly breach any requirements. The key mitigations are the employment of seasoned and qualified staff to ensure compliance, use of professional advisers whenever required, internal control procedures and independent audit.

It is essential that the University upholds the standards expected of a publicly funded institution. The University has a comprehensive code of conduct policy that all its members must comply with. Student welfare, on and off campus, is paramount and the University has implemented various measures to identify and manage any concerns of students. These include confidential access to team of professionally trained counselors if required.

Risks to Operations

The University has set itself high academic and non-academic standards, consistent with those of a world-class institution. It strives to ensure its facilities and infrastructure are meeting the expected standard and available at all times. Inevitably there are occasions when the availability or quality of facilities and infrastructure is below the expected standard but this is mitigated by a comprehensive programme of preventative maintenance and in-built infrastructure resilience. Despite all planning and risk management, the University is vulnerable to a disaster whether naturally occurring or deliberately instigated. The University has a business continuity framework in place including tested emergency response procedures and restoration of back-up IT systems if necessary.

The University is a complex campus where staff and students, live, work and study with continuous activity to maintain and expand campus facilities. The University has an on-campus medical facility, able to respond to any situations. All contractors on site must comply with Hong Kong Healthy and Safety standards. University sports facilities are suitably supervised with users receiving appropriate training if necessary.

Some University operations require the use of hazardous materials, which can cause serious injury or death if not managed correctly. The University has a comprehensive Environmental Health & Safety (EHS) management program designed to manage this risk.

As an open community, the University is vulnerable to unauthorized penetration of its IT networks, applications and data with potentially serious consequence. The University has a comprehensive cyber security policy and has implemented a variety of security measures including a dedicated team monitoring compliance with policy and any incidents. The University uses external service providers to perform IT security audits periodically.

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