

# 2011-2012 ANNUAL REPORT



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# OBJECTS

(The Laws of Hong Kong: Chapter 1141)

The objects 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.





# 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



In its book *The Road to Academic Excellence*, published in 2011, the World Bank devotes a full chapter to our University under the heading of “The Rise of Research Universities: The Hong Kong University of Science and Technology”. In it, they attempt to answer their own question: “How do you build a world-class research university from scratch?” It cites this University as an exemplary case in which “talent, resources and governance are adequately aligned from the beginning”. As the University heads into its third decade, this robust alignment process continues, under the arc of our five-year strategic plan (2011-16). The University has never been more purposefully aligned and strategically focused.

There is a confluence of factors which make strategic planning crucial for our development as an international university. Hong Kong is undergoing a root-and-branch education reform. More than just a structural reform, it is a total rethink of the education design, process and outcome. It is a new order rich with possibilities. At stake is how we train the talents for a global city. The new four-year undergraduate program gives us the room to explore the pedagogic possibilities in educating students who will be creative, critical and entrepreneurial for a global era. By shunning early specialization, our new broad-based curriculum is designed to turn out graduates who are unafraid to challenge or change the status quo.



Meanwhile, China has unrolled her blueprint for a technological future. Our Mainland strategy is to harness the collaborative opportunities this vision provides. With our higher international profile, we are attracting top Mainland students by the thousands and sealing partnerships with more Mainland enterprises and institutions. As the most international university in China, we are well-positioned to be a bridge between the East and the West.

We are humbled by the repeat honor of being Asia's number one university, an honor we do not chase but will cherish for the validation and encouragement it offers to the fulfillment of our mission. We are thankful for the strong support from our stakeholders and a broad cross-section of our community. At just 21 years old, HKUST now has another source of support: a generation of alumni who are making their mark in society and now giving back to their alma mater. In March of this year, our Alumni Endowment Fund was launched. This is a milestone development in the history of the University. Education is a long-term investment, but at HKUST we are already seeing its early returns.

The University is going full throttle in preparing for the advent of the 334 system. The Library Extension named after our benefactor Dr Chow Yei Ching has opened its doors, to the delight of students and staff. The Lee Shau Kee Business Building and the building for the Institute for Advanced Study will be ready for occupancy. Halls VIII and IX will take in students in early 2013. The groundbreaking ceremony for the future head-turning Cheng Yu Tung Building is the first step towards giving us a state-of-the-art edifice fit for the 21st century.

The key to our claim as a global research university is the quality of our faculty. In this respect, the HKUST Named Professorship Program has been given a big boost by many generous donors. As if to validate their faith in our faculty, this year our innovative professors have won five

coveted State Science and Technology Awards, the largest number handed out by the State Council to any local sister institution.

I also want to thank our Council Members for championing the cause of the University, including sponsoring an innovative idea called "Science-for-Lunch" in which a series of lectures was presented over a gourmet lunch by star HKUST professors who speak to a small, select group of business leaders on their innovative research, leaving both salivating over collaborative possibilities.

Overall, according to the Key Performance Indicators in our Annual Operation Plan, we are on target this year to achieving the goals we have set for ourselves. The credit goes to our leaders, faculty, staff and students to whom I wish to express my heartfelt gratitude. It is team work that did it.

The University thrives on the idea of continuous progress. We have been relentless in our search for excellence and partners in excellence. I thank the President for leading a separate delegation to Europe and North America to extend the range of our international interests. As I review our plan and performance, I am optimistic that the years to come will be even more productive and glorious. 🇺🇸

*Chairman, University Council*

**Dr the Hon Marvin K T Cheung, GBS, JP**



# PRESIDENT'S REPORT

2012 is the first year in our third decade. Even as the sounds of the 20th anniversary celebrations fade away, our people are already busy making inroads in many areas in research, teaching, partnership and reputation building.

Speaking of reputation, we are in the news again. For a second year in succession, QS has ranked HKUST Asia's number one university. Although I have said on more than one occasion that we are not in the business of pursuing rankings, they are nevertheless an international affirmation of how far we have come. It is a fact of life that the higher we rank, the greater the interest in our university, as evidenced by the constant stream of national, regional and international visitors to our campus.

But we are not waiting idly for potential partners to come to us. In pursuit of our global strategy, I made an eight-day visit to leading universities and institutions, including CERN and WEF in Western Europe last October. In February, with the deans forming a larger delegation, we went calling at some of the top-ranked universities on the Canadian and US west coast on a five-day, seven-university whirlwind visit, which included calling on the Executive Chairman of Google. These and similar outreach efforts are now bearing fruit, resulting, for example, in a summer research exchange program with MIT, and visiting student agreements with Oxford and Harvard, following my visits there in May and October 2011 respectively. This year alone, HKUST has entered into no fewer than 42 university-level and school-level agreements with top-tier universities worldwide. We are pursuing strategic partnerships with several leading global





universities where our collaborations are deeper, in research, in student and faculty exchanges, in internship arrangements and in other areas of common interest.

We have made a parallel push on ties with the Mainland, the center of the world's attention. The University has received a multitude of visitors from the Mainland, receiving over 90 delegations with 1,300 delegates from senior government officials and universities in the past 12 months, a hefty increase of 55% over the previous year, thus further enlarging our visibility and our reach. Partnerships flourish, and bases are consolidated. During the past year, our beachheads on the Mainland are gaining in dimensionality: our new Shenzhen IER Building was opened for business; the topping-out ceremony for the HKUST Fok Ying Tung Graduate School Building in Nansha also took place; and the HKUST LED-FPD Technology R&D Center was officially opened on 30 March 2012, thanks to the generous support of the Nanhai government which has donated land and money for its establishment. On the education front, memoranda of agreements have been signed with leading Mainland universities and bodies covering joint training and research in humanities, social science and engineering, as well as the training for middle-management officials in government. These included an umbrella agreement signed with the municipal government of Guangzhou on education and research. The Mainland media have also paid us much flattering attention, covering our success story in depth and with zest. Reaching out to red-chip companies has also opened up more opportunities for internship, service learning and training for our students.





## PRESIDENT'S REPORT

Being globally visible is helpful in drawing a greater number of international, regional and Mainland students. A record number of 6,900 high-caliber Mainland students applied and 172 were admitted this year. Meanwhile, overseas students now account for half of our non-local student intake which, at 20% of our undergraduate admissions, makes us the most international among local universities.



A sign of our coming of age is our growing army of alumni — now surpassing 40,000, scattered across four corners of the earth. In my visits to Europe, North America and the Mainland, meeting our alumni has been a special joy known only to those who share the same identity. I am proud to learn that many of them are leaders in their own fields and contributors to our own cause. Finally, this young university is old enough to have its first generation of alumni supporters.

For this year, our first order of business is preparing for the advent of the 334 reform. The *yin* and *yang* of our new educational design is the broad-based curriculum and the interdisciplinary approach we adopt, in which students learn by doing and daring. Our Undergraduate Research Opportunities Program (UROP) has been such a stellar success that it has now spawned the new International Research Opportunities Program (IROP), whereby our undergraduates will be able to conduct faculty-led research in overseas universities, of which MIT is one.

Research is the cornerstone of our success as a university of science and technology. Our professors continue to make significant social impact and win recognition with their research. Our scientific score sheet for 2011-12 is impressive. This year six HKUST professors were elected IEEE Fellows, the most among Asian universities. Three of our professors were elected members of the prestigious Chinese Academy of Sciences, the highest academic title conferred by the Chinese government for research achievement in science and technology. Our Dean of Science, Prof Nancy Ip was awarded the Knight of l'Ordre National du Mérite by



the French government. Five of our professors in three separate projects have won the Ministry of Education's annual Awards for Research Excellence in Natural Sciences. The State Council has also handed out five coveted State Science and Technology Awards to our faculty members. Little wonder then that, despite our modest size, we have attracted more applicants under the Hong Kong PhD Fellowship Scheme than any other local university.

This year, for higher education, Hong Kong has a clean slate in its top leadership. Not only do we have a new Chief Executive, we also have a new UGC Chair and a new Secretary for Education. We welcome the privilege of working with our leaders to turn Hong Kong into a smart society where talent is the calling card and where science and technology will be a vital part of the new economy. 🇭🇰

*President*

Prof Tony F Chan, JP





(From left):  
Dr Eden Y Woon, Vice-President for Institutional Advancement;  
Prof Wei Shyy, Provost;  
Prof Tony F Chan, President;  
Prof Joseph Hun-wei Lee, Vice-President for Research and Graduate Studies;  
Prof Yuk-Shan Wong, Vice-President for Administration and Business









# EDUCATION DEVELOPMENT

**Delivering high-quality education is HKUST's core mission. Among the University's goals this year are successfully implementing the transition to the four-year undergraduate program, pioneering a holistic approach to student education, greater internationalization, and enhancing personal development opportunities. All should broaden students' perspectives and prepare them to become dynamic, contributing citizens.**



## UNDERGRADUATE EDUCATION

In 2011-12, the University continued to make HKUST a special place for undergraduates and prepare for the double cohort.

### READY FOR THE NEW ERA

Hong Kong's education reforms will bring a double cohort of more than 4,000 freshmen to campus in September 2012, including the final cohort of three-year degree students and first cohort of four-year degree students. To set the double cohort on the right path for their academic studies and new life on campus, during the year HKUST completed arrangements for a carefully planned orientation and academic induction.

The University also finalized plans for its four-year degree. The new degree program takes advantage of the additional year to build in a broader foundation, exposure to a wide range of disciplines, greater flexibility, and opportunities for a richer learning experience out-of-class.

## UNDERGRADUATE RESEARCH EXPERIENCE

Strengthening the linkage of research to undergraduate education is an important way to engage students in the University's research culture. The flagship Undergraduate Research Opportunities Program successfully recruited 93 supervisors who oversaw 244 projects, involving 295 students from 18 departments in 2011-12.

The International Research Opportunities Program was established and saw the launch of the first MIT-HKUST Undergraduate Research Exchange Program. The program enables HKUST and MIT students to conduct research at each other's university. In addition, HKUST and the renowned European Organization for Nuclear Research began linked activities, with HKUST undergraduates joining the CERN Summer Student program.

## EMBRACING HOLISTIC EDUCATION

To foster holistic education and student development, the University leveraged the opportunity presented by the four-year undergraduate reform to enhance internship, mentoring, residential and campus life.



More than 180 existing General Education courses were approved for the Common Core, and 80 more Common Core courses added. They cover a huge range of areas including arts, literature, the environment, philosophy and architecture. Significant progress was also made in developing courses for the Arts Common Core Area. A Common Core Course Excellence Award was established to honor course instructors who have contributed to these courses.

## POSTGRADUATE EDUCATION

HKUST has become well known internationally for its top-quality taught and research postgraduate programs. The University's EMBA program has achieved top rank in the world and its MBA program is ranked among the world's top programs.

### BROADENING RESEARCH POSTGRADUATE PROGRAMS

A determined effort was made to provide research students with increased opportunities to broaden their skill set involving partnerships between the University's Center for the Enhancement of Learning and Teaching, the Student Affairs Office, the Center for Language Education, the Library, and the Schools and Interdisciplinary Programs Office. Ethical issues, career-building courses, and communication skills were among the areas being addressed.

Providing postgraduates with international experience is a priority. Funding for the Research Travel Grant program was therefore increased. The Overseas Research Attachment Scheme for PhD students continued to provide selected students with valuable experience in leading laboratories in top-class institutions worldwide.

The percentage of international students among the research postgraduate population rose to 7 per cent during the past year, compared with 3.4 per cent two years ago. HKUST has been highly successful in the Hong Kong PhD Fellowship Scheme, which brings students to the city from around the world. The University secured 41 awards out of a total of 165 awards, representing 24.8 per cent of the awards offered by the Research Grants Council for 2012-13. Further efforts were also made to encourage good students to take up postgraduate study at the University.

New programs have seen HKUST build on its expertise. One example was the MPhil and PhD in Environmental Science, Policy and Management to be launched by the Interdisciplinary Programs Office's Division of Environment. During the year, the Fok Ying Tung Graduate School also started recruitment for a self-financed MPhil in Innovative Technologies Leadership to be launched in the 2012 academic year.

### TAUGHT POSTGRADUATE PROGRAMS EXPAND

The range of HKUST's taught postgraduate programs continued to grow as new programs were introduced. Student numbers also increased to 2,398.

Among the programs under development was a new MSc program in Environmental Health and Safety offered by the School of Science. During the year, the School of Business and Management offered the company-sponsored MSc in Global Management. The Business School was also preparing for the launch of an MSc in Global Operations and an MSc in International Management in collaboration with CEMS, a global alliance in management education in 2013.





## EDUCATION DEVELOPMENT

### BUILDING AN INTERNATIONAL CAMPUS

HKUST is committed to building a vibrant and international campus life, which is crucial to holistic education.

#### A GLOBAL OUTLOOK AND A STRONG LOCAL FOOTING

HKUST seeks to create a dynamic, international student culture on campus, and student recruitment continues to extend to new regions of the world. In 2011-12, HKUST welcomed 344 new non-local undergraduate students from 32 countries and Mainland China, representing about 18 per cent of the local intake.

#### Non-local undergraduate student applications

	2011 intake	2012 intake	% change
Mainland China	4,530	6,940	53% increase
Overseas	1,317	2,046	55% increase
<b>Total</b>	<b>5,847</b>	<b>8,986</b>	<b>54% increase</b>

In 2011-12, the local undergraduate recruitment team took part in more than 100 events, giving admission talks to 54 local secondary schools to reach over 10,000 prospective students and parents. The team also participated in 24 fairs and admission talks to reach over 2,500 prospective students holding international qualifications.

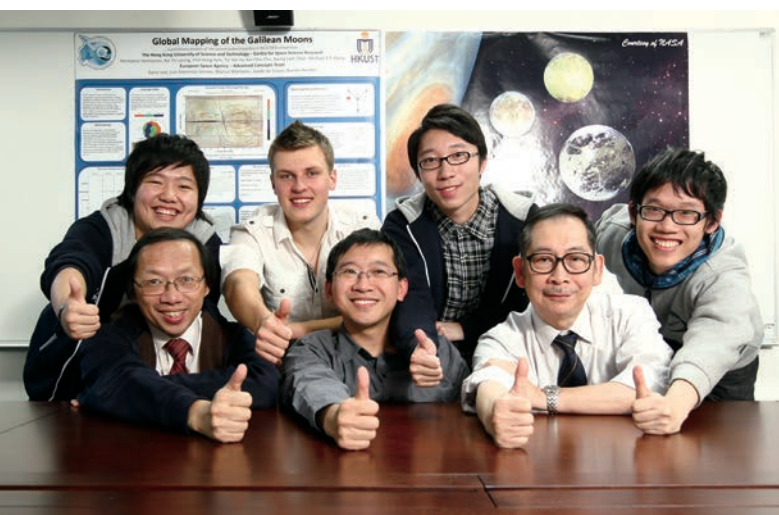
The University participated in nine overseas education fairs and held information sessions at 102 high schools in 40 cities across 11 countries, speaking to 14,000 students, parents and teachers from around the world about what HKUST offers. In addition, the President led two overseas trips and was interviewed by international media, enhancing the understanding of the University especially among prospective students.

Partnerships with global universities added further international opportunities for HKUST students. In 2011-12, financial support has been provided to outbound exchange students with financial needs in the forms of sponsorships, scholarships and other support. Undergraduate exchange partners grew from over 150 to 177 across 31 countries, an increase of 18 per cent. During the year, 686 HKUST students traveled abroad to study and 707 non-local students came to HKUST, a 27 per cent rise compared with 558 students the year before. Incoming students also increased through the 2012 launch of the HKUST International Summer Program.

#### Number of undergraduate inbound exchange students coming to HKUST in 2011-12

North, Central and South America	<b>252</b>
Europe	<b>256</b>
Asia (excluding Mainland China)	<b>161</b>
Mainland China	<b>38</b>
<b>Total</b>	<b>707</b>

To encourage integration between local and non-local students, the Global Student Office provided a first-year peer mentoring program and other services. The host family program brought first-year non-local students together with staff and faculty hosts for friendship and support during their initial year. In 2011, the University rolled out the Global Learning Expo to celebrate cultural





diversity on campus and promote the many international opportunities available to students.

## STUDENT DEVELOPMENT

The President's 1-HKUST Life Award and the Student Enrichment Activities Fund are two major ways that the University encourages student-led initiatives to boost HKUST's active campus atmosphere and wider community engagement. During 2011-12, the two endeavors sponsored a total of 37 projects. One example was TEDxHKUST led by Year 1 Civil and Environmental Engineering student Avni Jain, winner of the President's 1-HKUST Student Life Award. This marked the first time that TEDx had been organized by a university in Hong Kong.

Other programs included:

- **First Year Success @ HKUST:** this helped new students to adjust to campus life. The program got underway with orientation and the New Student Convocation. Seminars, personal development workshops and student-organized activities were also organized throughout the academic year.
- **Living Learning Communities:** the initiative was extended to UG Hall IV during the year, with 100 more students joining the program. A total of 157 activities were offered to 3,500 residents and non-LLC participants, including freshmen.
- **The Healthy Living Festival:** this helped to raise students' awareness of psychological health. A series of talks, workshops, exhibitions and sharing sessions were organized under the themes of "Love, Live, Learn Well" and "Offer My Gratitude", attracting over 600 students and other members of the University.
- **The HKUST-Hang Seng Green Ambassador Program:** the environmental group continued to promote eco-friendly activities and extend students' horizons on issues related to sustainability.

In addition, the Graduate Student Life Fund was piloted to encourage research postgraduate students to become more engaged in campus life and to promote a balanced graduate experience.

The Students' Union and other student societies gained a new 2,100 sq m home following the completion of



the LG5 Extension, making organization of events more efficient. LG5 is conveniently located for indoor/outdoor sports, catering and library facilities.

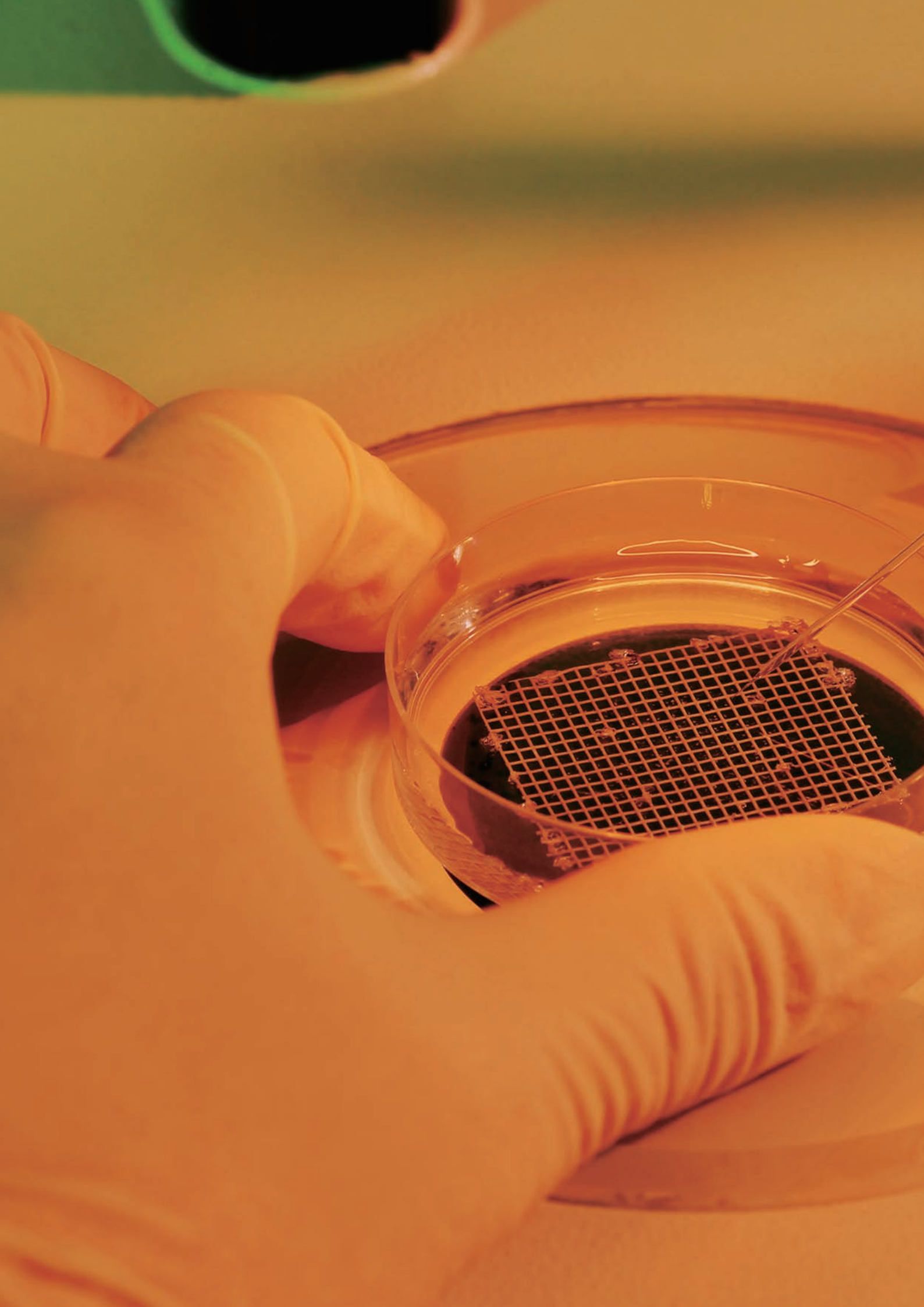
## ARTS AND SPORTS

The HKUST Center for the Arts organized the HKUST Arts Festival with the theme "Contemporary Culture and me" and a series of workshops, field trips, exhibitions, film screenings and performances. Over 100 students, staff and alumni also took part in the Center's annual summer musical, performing the Broadway hit show *Guys and Dolls*. In sports activities, HKUST took part in intervarsity, local and international sports competitions. The Sports and Wellness team worked with the Sports Association to organize intramural sports competitions.

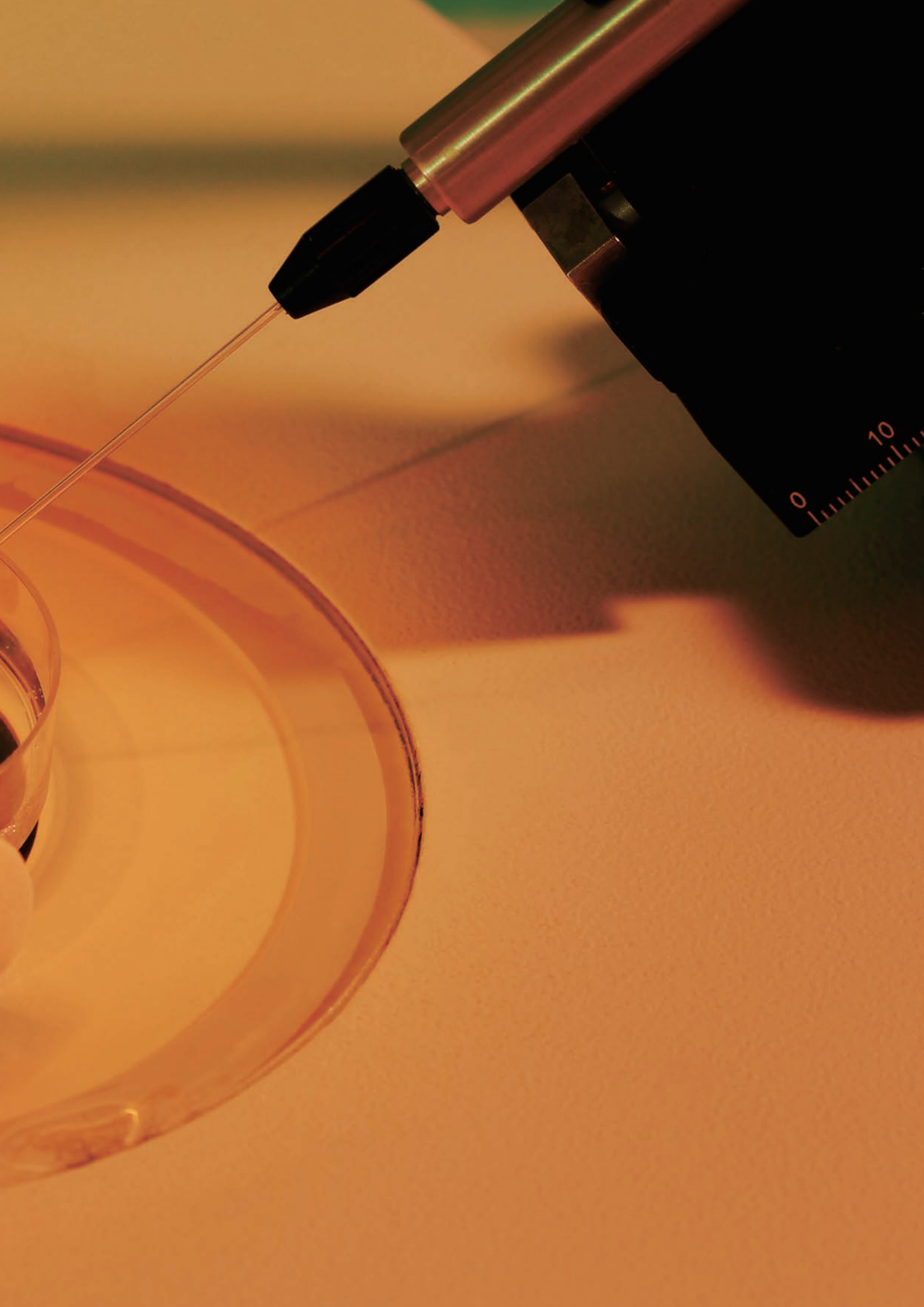
## CAREER BUILDING

To assist students in planning their post-graduation future, the Career Center organized 147 career development programs involving over 4,500 participants. Close to 200 recruitment talks were conducted by 180 companies and attended by over 14,000 students. The Career Center arranged two biannual job fairs, with 68 participating companies. The Internship Learning Scheme continued to offer pre-internship training and coaching and summer internship placements in Hong Kong, Mainland China and the US, with 250 undergraduates taking part. Career Building courses and a Career Accelerator Program were offered by the Student Affairs Office. 🏆



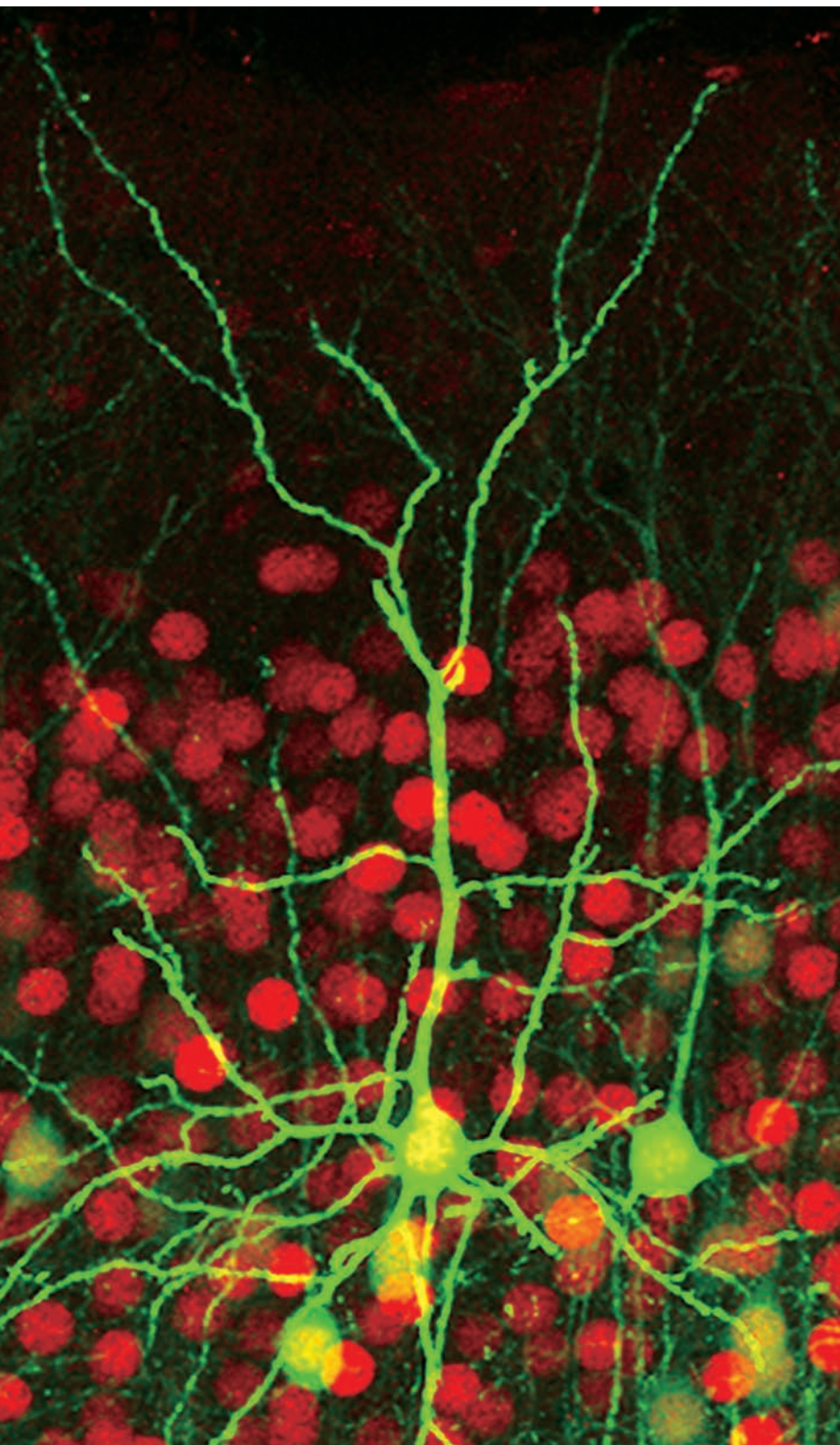








# RESEARCH DEVELOPMENT



**HKUST has a clear positioning as a focused elite research and education institution with an international outlook, emphasizing interdisciplinary studies, entrepreneurial spirit and innovation. The University's achievements in research and innovation encompass world-class knowledge breakthroughs, as well as business, industry and government partnerships which facilitate the transformation of discoveries into novel technologies and solutions.**

## **FOSTERING RESEARCH EXCELLENCE AND CULTURE**

In the year under review, the University continued to support research excellence via a number of internal funding initiatives which included the reorganized Special Research Funding Initiative and Research Project Competition to support group and interdisciplinary research. Thematic group projects were developed in areas ranging from novel wave functional materials, structural biology, multi-scale and multi-field mechanics, to visual computing. The HKUST Research Forum Series was launched where internationally renowned scholars and HKUST academics share their vision.

Energy and environment are major driving forces of technology development in the 21st century; most new engineering projects will need to take into consideration carbon reduction and energy conservation, new materials, micro-climate and impact on environment and health. The Energy Institute was formally established to promote interdisciplinary collaboration and provide



an umbrella framework for developing large scale research projects in two broad areas: Sustainable Energy Production & Storage and Smart Green Building.

## FUNDING SUCCESS

The excellence of fundamental research at HKUST is reflected by the competitive research funding from both government and industry.

In 2011-12, the University secured a total research funding of HK\$442.5 million from various sources, the largest share of which was from the Research Grants Council (RGC). A total of 279 new research projects were awarded by RGC, with total project value of HK\$158 million. HKUST researchers also achieved the highest success rate (44 per cent) in the competitive 2012 General Research Fund exercise. Under the Early Career Scheme, which supports outstanding newly recruited junior faculty members, 22 HKUST applications received funding, with again the highest overall success rate (46 per cent). In addition, both of HKUST's applications for the new Prestigious HSS Fellowship Scheme were funded.

HKUST researchers have been awarded a total of HK\$91.4 million for two RGC Theme-based Research Scheme projects after a most rigorous competition. The project "Stem cell strategy for nervous system disorders" led by Prof Nancy Ip will study molecular mechanisms and signaling pathways that control the generation and differentiation of neural stem cells for developing new therapies to combat the devastating effects of neurodegenerative and neuropsychiatric diseases. A team of electrical engineers and material scientists led by Prof Kei May Lau has embarked on a project that will help accelerate the adoption of solid state lighting systems for a more sustainable environment. The team will utilize silicon IC technologies to develop innovative device design, fabrication and packaging systems for a revolutionary "Cost-effective and eco-friendly LED System-on-a-chip (SoC)".



The University's Mainland research bases in the Pearl River Delta are increasingly serving as platforms to develop interdisciplinary research and industrial partnerships. In 2011-12, 50 new research grants and commercial projects were secured by the Fok Ying Tung Graduate School in Nansha, Guangzhou. HKUST's scholars have been successful in bidding for approximately RMB 50 million of Mainland research funding from prestigious grants including those under the Shenzhen Peacock Program and the National 973 Program.

A new e-newsletter, *GrantWise*, was rolled out to inform the research community at HKUST the latest funding opportunities around the world.

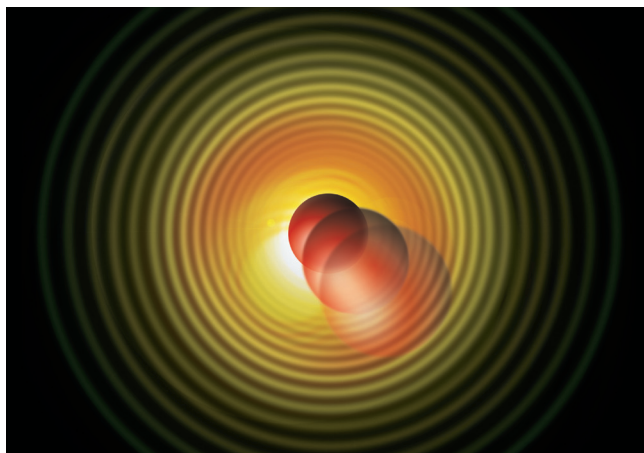
## ADVANCING THE WORLD

The University has made research breakthroughs in many fields during the year. The following presents just some highlights:

### 'TRACTOR BEAM' ERA MOVES CLOSER

When light illuminates an object, part of it reflects back and the recoil pushes the object away. Physics textbooks teach us light can push but never pull. Prof Che Ting Chan (Physics) and Dr Jack Ng (Physics) showed that light

## RESEARCH DEVELOPMENT



can actually pull an object toward a light source under some special circumstances and the “tractor beam” in *Star Trek* is not against the laws of Nature. This discovery opens the door to new possibilities in optical micro-manipulation. The results were highlighted in a cover story in *Nature Photonics*.

### DETECTING DANGER, AVERTING DISASTER

Prof Benzhong Tang (Chemistry) and his team have developed a new material with aggregation-induced emission characteristics that makes a promising fluorescent chemosensor for supersensitive detection of explosives. In addition, the polymer can serve as an optical limiter. Together with high thermal stability and good processability, this gives the material good potential for hi-tech applications. The research was detailed in *Polymer Chemistry*.

### ADVANCING UNDERSTANDING OF NEUROLOGICAL DISORDERS

Breakthrough discoveries in Life Sciences are unraveling the molecular mechanisms that govern brain development and functioning of neural circuit, offering fresh hope for treatment of neurological disorders such as autism and epilepsy. Prof Nancy Ip (Life Science) and her group have demonstrated that disrupting the function of a key protein  $\alpha 2$ -chimaerin arrests neuronal migration, resulting in aberrant wiring of the neural circuit and subsequently epileptic seizures. The findings provide a new avenue for understanding the disease mechanisms and developing therapies for neuropsychiatric diseases. The discoveries were published in *Nature Neuroscience*.

### STEM CELL INSIGHT

Prof Mingjie Zhang (Life Science) and his lab have made a series of discoveries in proteins regulating neuronal stem cell development. They elucidated the molecular mechanism of LGN, a key protein controlling asymmetric cell divisions during neurogenesis, in interfacing cell polarity and mitotic spindle orientation. They further discovered that DLG, a critical scaffold protein required for the polarity establishment of neuronal stem cells, interacts with LGN in a phosphorylation dependent manner. Their work was published in prestigious journals including *Molecular Cell*, *Proceedings of the National Academy of Science, USA* and *EMBO Journal*.

### GREEN SLOPES FOR SUSTAINABLE URBAN INFRASTRUCTURE

A research team led by Prof Charles W W Ng (Civil and Environmental Engineering) is engaged in an interdisciplinary group project exploring green slope engineering for advancing sustainable urban infrastructure. A prime objective is to investigate and develop a fundamental understanding of root-soil-water interactions as a basis for an innovative reliability-based design framework for an “integrated bioengineered live slope cover” for shallow soil slopes in Hong Kong.

### MAKING WAVES IN REGIONAL CLIMATE

Understanding of regional climate patterns has advanced through a study by Prof Jianping Gan (Environment and Mathematics). Based on field measurements carried out jointly with Xiamen University, his team has identified a three-dimensional eddy structure in the South China



Sea and also provided a new forcing theory for the ocean circulation off Guangdong. The spatial-temporal characteristics of the eddy were previously unknown but could have significant impact on the regional climate. The characteristics and controlling mechanisms of the seasonal and diurnal variation of CO<sub>2</sub> in the South China Sea — crucial to understanding the carbon cycle — are clarified.

### FUELING THE NEXT GENERATION

Finding efficient, clean, energy-conversion technologies that operate without the use of fossil fuels is one of the grand challenges of this century. Prof Tianshou Zhao (Mechanical Engineering) is working on a project with RGC Collaborative Research Fund to understand the coupling of mass-transport and electrochemical reactions in nanostructured fuel cell electrodes. Prof Zhao and his research team are pioneering development of direct alcohol fuel cells (DAFCs) which can convert the chemical energy of liquid methanol or ethanol directly into electricity. His group holds the world record for power density of direct ethanol fuel cells.

### HUMAN FACE OF CONSERVATION

Environmental activists often represent nature in a human-like manner. Does this practice have any conservation implications? Yes, according to a study on the effects of anthropomorphism on conservation behavior, conducted by Prof Kim-Pong Tam (Social Science) and his team. His research revealed that individuals who consider Nature to be human-like, compared to those who do not, are more protective towards the environment. This finding has important implications for environmental promotion.

### NEW HORIZONS FOR OCEAN CONTAINER TRANSPORT LOGISTICS

Logistics is a pillar industry of Hong Kong. Prof Chung-Yee Lee (Industrial Engineering and Logistics Management) is undertaking a major Theme-based Research Scheme project focused on the transformation of Hong Kong's ocean container transport logistics network. It explores how Hong Kong can upgrade its global ocean logistics and leverage the huge productivity of the Pearl River Delta region to develop new services. Bringing together researchers from Asia and Europe, the team will also develop decision support systems for Hong Kong's ocean container supply chain network.



## RESEARCH DEVELOPMENT

### TO SHARE OR NOT TO SHARE SUPPLY CHAIN INFORMATION

Novel insights that could allow managers to improve the performance of supply chains in many industries have resulted from research by Prof Albert Ha and Prof Hongtao Zhang (Information Systems, Business Statistics and Operations Management). They developed a new theory that explains how firms share information in competing supply chains with production diseconomies. The findings were published in *Management Science*.

### CYBER-PHYSICAL PIONEER

Emerging cyber-physical societies and internet of things environments are set to shape future lifestyles. The HKUST-NIE Social Media Lab, established by Prof James She (Electronic and Computer Engineering), is a next-generation facility that aims to collect data to help business and advertising and develop technology for “digital life”. The lab’s unconventional focus concentrates on the research and design of next-generation social media systems, networks and applications. It is Asia’s first lab of its kind.

### IMPACT OF REGIONAL CLUSTERS ON INNOVATION

Regional clusters of industry and their effect on innovation are the focus of a study by Prof Wouter Stam (Management). Combining agent-based simulation modeling with an empirical investigation of firms in the US nanotechnology industry, the research reveals how networking and learning activities of firms co-located in the same region influence a cluster’s innovativeness over time, and how government policy can enhance

the innovative capacity of regional clusters by creating particular opportunities and incentives for network formation and knowledge sharing.

### THE WIKIPEDIA EFFECT

Online encyclopedia Wikipedia and its contributors form the basis for research conducted by Prof Michael Zhang (Information Systems, Business Statistics and Operations Management). The project has assembled a Wikipedia dataset over one terabyte (1,000 GB) in size. The largest table has about 600 million records with information on Wikipedia contributions and contributors. He has used this dataset to study questions related to information systems, social networking, accounting, and economics, resulting in publications in top journals such as *MIS Quarterly* and *American Economic Review*. The research offers powerful tools to derive rigorous empirical results and has implications for policy-makers and the design of social media systems.

### EXPLORING THE GLOBAL MINDSET

With globalization a central influence in today’s world, Prof Melody Manchi Chao (Management) is investigating “Sojourner Adjustment: A Lay Theory Perspective (2010-2012)”. Her study looks at how individuals’ beliefs about themselves and the others facilitate or hinder cultural adjustment. In addition, it investigates the ameliorative effects that multicultural experience has on intergroup bias.

### EYE ON EVOLVING HONG KONG

Prof Xiaogang Wu (Social Science) is tracking social and economic changes in Hong Kong and their impact on people’s lives through the systematic collection of longitudinal data. In the first wave of fieldwork, over 3,214 households and 7,218 adults aged 15 or above, and 958 children (under age 15) were interviewed. This project of the HKUST Center for Applied Social and Economic Research, funded by the CPU-RGC Hong Kong Strategic Public Policy Scheme, will provide an important source of reference for quantitative social science research in Hong Kong and Chinese societies.







## SOCIAL CHANGE EAST AND WEST

Enterprising books that explore east and west continued to be published by the Division of Humanities. Two examples are *Mao's New World: Political Culture in the Early People's Republic* by Prof Chang-tai Hung and *From Charisma to Canonization: Max Weber in Germany and the United States* by Prof Joshua Derman. Prof Hung provides a sweeping portrait of the political culture of the early People's Republic of China and mines newly available archival sources to reconstruct how the Chinese Communist Party tightened its rule after taking power in 1949. Prof Derman looks at how reclusive German scholar Weber managed to make such a profound impact on 20th century thought and provides the first comprehensive account of the thinker's transatlantic reception.

## TRANSFERRING KNOWLEDGE TO INDUSTRY

HKUST has laid down a solid foundation for establishing a strong knowledge transfer (KT) culture. In 2011-12, HKUST has entered into 187 collaborative / contract research projects and 87 consultancies with leading local and international industry partners. The following are just a few examples of how research can shape a better world.

### THERAPEUTIC QUEST

Prof Nancy Ip (Life Science) and her team have partnered with GlaxoSmithKline R&D China to secure funding from the Innovation and Technology Commission to undertake collaborative research towards the development of novel therapies for the treatment of neurodegenerative diseases.

Success in the projects will boost local drug development capabilities as well as establish Hong Kong as a major center for cutting-edge Traditional Chinese Medicine (TCM) research and development. Other key industrial collaborators to develop innovative tools and drug leads for neurological disorders include the Morningside Life Science Limited and the Roche R&D Center (China) Limited.

### MITIGATING HEPATITIS E

Prof Yong Xie (Life Science) and his research team have developed a new vaccine candidate for the prevention of Hepatitis E. The team achieved a worldwide first by using insect cell technology — an innovative moth cell expression system whose protein folding structure approaches that of the natural hepatitis E virus — to develop the vaccine candidate for this virus. With 6.5 million cases in South and East Asia alone and one-third of the world's population affected by Hepatitis E, the breakthrough has widespread impact. The project led to the signing of a co-operation agreement between Beijing Luzhu Biopharmaceutical Co Ltd and HKUST's R & D Corporation Ltd.

### ECO-FRIENDLY SEWAGE TREATMENT

A research team led by Prof Guanghao Chen (Civil and Environmental Engineering) has invented an eco-friendly sewage treatment process. The sulphate reduction, autotrophic denitrification and nitrification integrated process, known as SANI, can eliminate 90 per cent of sewage sludge production, and minimize energy consumption, odor and greenhouse-gas emissions. It also reduces treatment cost and space by 50 per cent. Prof Chen's work is highly recognized by the International

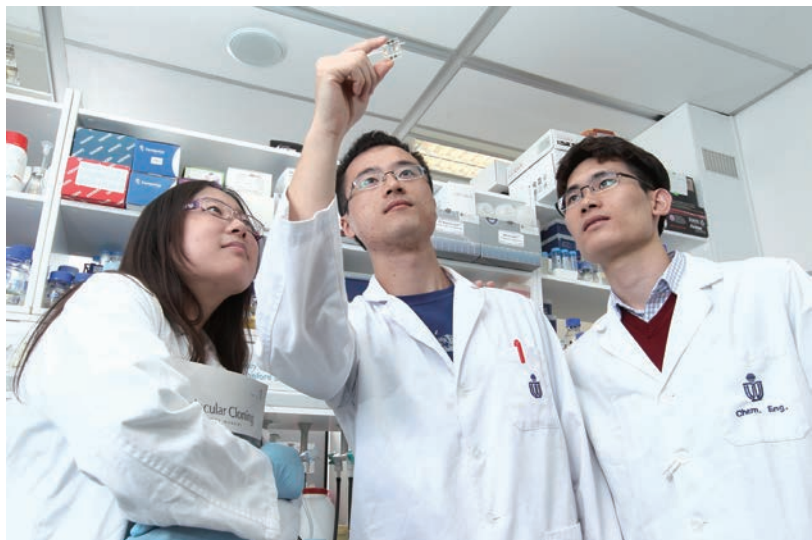
## RESEARCH DEVELOPMENT

Water Association; his team collaborates with Delft University of Technology, University of Cape Town, Hong Kong Airport Authority and government departments.

### WI-FI DATA ACCESS BOOST

A multi-hop wireless mesh network developed by Prof Gary Chan (Computer Science and Engineering) and his team has greatly improved Wi-fi data access performance even in the most challenging network environments such as container terminals, airports, indoor complexes, and cities. The software developed — known as LAViNET — implements innovative channel selection and routing algorithms to effectively eliminate blind spots, avoid traffic congestion and reduce signal interference. The research has been

successfully transferred to industry. Project sponsors included Boeing Company, Hong Kong Aircraft Engineering Company, Modern Terminals Ltd, OpenPlatform Technology, Ruckus Wireless and Altai Technologies.



### ENGINEERING THE FUTURE

In addition to the Huawei-HKUST Innovation Laboratory, jointly set up by HKUST and global telecommunication giant Huawei Technologies Co Ltd, a joint research laboratory with Xilinx Inc, the global leader in all programmable technologies and devices, was officially opened in June 2012. The facility includes Xilinx's advanced technologies to support cross-platform and cross-disciplinary research.

### KNOWLEDGE TRANSFER AT A GLANCE (2011-12)

Invention Disclosures	Invention Disclosures (Cumulative)	New Patent Applications Filed	New Patents Granted
<b>78</b>	<b>788</b>	<b>142</b>	<b>33</b>
New Patents & Patent Applications (Cumulative)	Active Patents & Patent Applications Managed	Patent Grant Success Rate	Inventors
<b>1695</b>	<b>633</b>	<b>76%</b>	<b>139</b> (515 faculty members)
Patent Review (Faculty) Engaged	Collaboration Exploration (by organization)	Project PI Involvement Frequency	Funds from Industry through KT('000)
<b>308</b> Man-times	<b>256</b> Contacts	<b>133</b> Man-times	<b>HK\$46700</b> (128 collaboration and services)

As a measure of innovation capacity, HKUST has filed 788 invention disclosures (since 1991) and the total number of new patents and patent applications (cumulative) stands at 1,695. In 2011-12, 33 new patents were granted and a total of 142 new patents application were filed.



The University has built up and strengthened a suite of IT systems for its knowledge transfer enterprise. These systems have facilitated the identification of areas of research excellence, management of university-owned intellectual properties (IP), and sharing HKUST research knowhow with the outside world via a powerful open innovation platform — the *Open Research, Innovation and Collaboration Network (ORION)*.

A leading university in science and technology has the responsibility to promote awareness in S&T policy in the society which she serves. On 1-2 December 2011, as the finale of HKUST's 20th Anniversary celebrations, a HKUST Science and Technology Forum was held in Hong Kong and Nansha respectively to deliberate a future strategy for S&T developments in Hong Kong and the Pearl River Delta. The Forum was organized by HKUST in collaboration with the Hong Kong Academy of Engineering Sciences and the Hong Kong Institution of Science. It was attended by renowned academics and society leaders including the Hon Leung Chun-ying, former Convenor of the Non-official Members of the Executive Council and currently Chief Executive of the Hong Kong SAR Government; Ir Dr the Hon Raymond Ho Chung-tai, former Member of the Legislative Council; Prof France A Córdova, President of Purdue University and National Science Board, USA. Experts exchanged thoughts on the development of science and technology policies and explored ways to

further Hong Kong-Guangdong cooperation under the 12th National Five-Year Plan. The forum was an excellent example of HKUST influencing S&T policy and extending its sphere of innovation beyond Hong Kong.

## DRIVING FORWARD ENTREPRENEURSHIP

Through the Technology Transfer Centre (TTC) and the HKUST R&D Corporation (RDC), HKUST has continued to offer catalytic support to promote and foster innovation, entrepreneurship and commercialization. The University's Entrepreneurship Center focuses on three areas — entrepreneurship education and training, business outreach, and start-up incubation. The "Be Your Own Boss" lecture series had been well attended by the University community and incorporated into an IT entrepreneurship course. The 2012 HKUST One Million Dollar Entrepreneurship Competition received a total of 89 applications. The first prize went to Neoid Limited, a company that develops high performance RFID tagging solutions. The Proof-of-Concept Fund has funded six projects with technologies emerging from the University's research for pre-commercialization development. In its second year of operation, the PCF had been recognized by faculty members as an excellent means to turn their research outputs into something that would truly benefit the local economy and beyond, thereby enhancing the KT culture among faculty members. 🏆







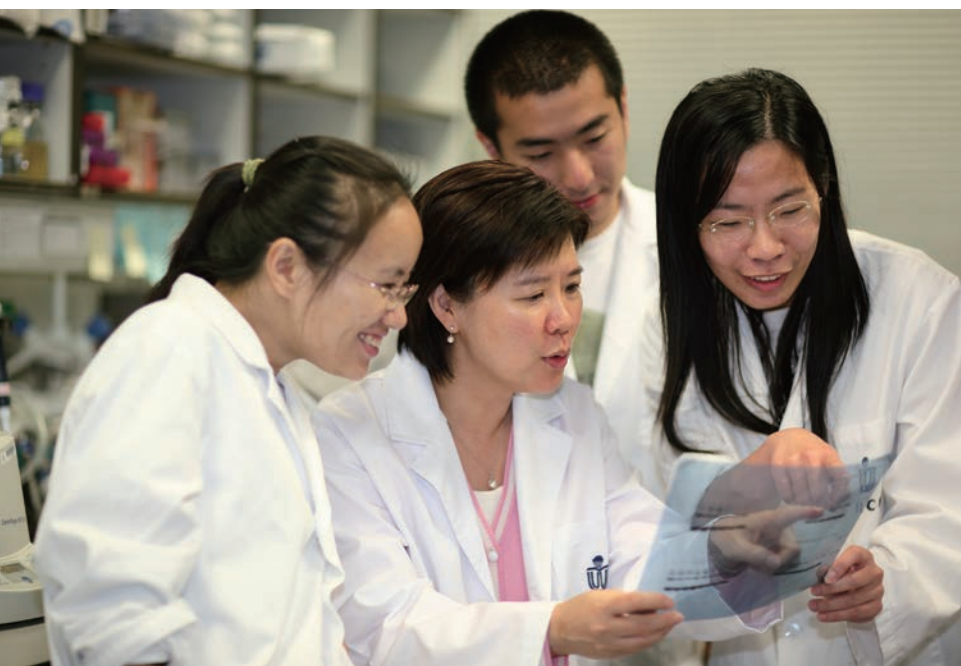




# SCHOOLS AND INSTITUTES

## SCHOOL OF SCIENCE

**The School of Science strives to provide a balanced undergraduate education, an exceptional postgraduate education, and strong research programs. This is evident as HKUST was ranked 9th in Natural Science and 14th in the World's Top 100 Asian Universities in Life Science and Medicine in the 2012 QS Asian University Rankings. The Chemistry Department was also ranked the top 11 in the 2012 QS World University Rankings for Chemistry.**



### CAPTURING THE 334 CHALLENGE

Final preparations have been undertaken for the launch of a new School-based undergraduate curriculum for the four-year cohort. It offers students greater flexibility in the choice of major, and includes new thematic programs which address various important and interesting areas in science. Among the new programs include the first School-based Bachelor in Environmental Science, with a special focus on critical thinking of current environmental problems and solutions. The newly formed division, the Division of Life Science has also developed three new majors — Biochemistry and Cell Biology, Biological Sciences, and Biotechnology.

In line with the spirit of the university's Common Core Program theme, the School piloted three School-sponsored courses, namely "*Great Ideas in Science*", "*Chemistry and Life*", and "*Space, Time and Motion*". These courses enable students from different disciplines to appreciate the nature and impact of science, which will broaden their horizons beyond their major areas of study.

To ensure a smooth orientation for students, the School has established the Office of Academic Advising and Support to provide advice on course and major selection, as well as information on university life and co-curricular activities. Faculty members are heavily engaged in this endeavor with many assuming the role of pre-major academic advisors. In addition, the School has launched a peer mentoring program known as MAGNET to engage senior student volunteers in student advising and support programs.

### BROADENING THE POSTGRADUATE EXPERIENCE

This year the School has pioneered the development of professional development programs to broaden and enhance the learning experience of its research postgraduate students. Apart from a tailor-made language course for science students which aims to strengthen students' skills in research management and communication, a *Professional Development in Science* course is also in development. The course covers a wide range of topics including teaching skills, research publication, professional conduct, presentation skills, and career development.



A two-day workshop on “Communication of Research Results” was organized to provide students with the necessary training on effective communication of their research findings in peer-review publications and scientific meetings.

## HIGH-VISIBILITY R&D

During the year, the School of Science has made several substantial moves to enhance research development.

The School is committed to undertaking quality research with particular emphasis on multidisciplinary and strategically focused research areas. To further enhance its unique and strong research strengths, two leading-edge research centers, namely the Center of Systems Biology and Human Health and the Center for Metamaterials Research, were established. The School has also led the establishment of a new Center of Statistical Science in collaboration with other Schools and the Institute for Advanced Study to provide a platform for interdisciplinary research and education in statistics.


Faculty members continued to receive recognition for their contributions to scientific advancement, including election to membership of the Chinese Academy of Sciences, State Natural Science Awards, and Awards for Research Excellence in Natural Sciences presented by the Ministry of Education. Furthermore, faculty members continued to make significant breakthroughs in their respective fields,

with findings being published in top journals, such as *Cell*, *Science*, *Cell: Stem Cell*, *Applied Physics Letters*, *Physical Review Letters*, *Proceedings of the National Academy of Science, USA*, and *Publications Mathématiques de l'IHÉS*.

Collaborative ventures with GlaxoSmithKline R&D China, Beijing Luzhu Biopharmaceutical Co, Guangzhou Pharmaceutical Holdings Limited, Morningside Life Science Ltd, and Roche R&D Center (China) Ltd were established.

## BUILDING TALENT AND CONTRIBUTING TO SOCIETY

The Center for the Development of the Gifted and Talented under the School offers specialized academic and enrichment programs in mathematics and science to nurture potential students and broaden horizons of gifted learners. Programs include the university credit-bearing “HKUST Dual Program”, an “Enrichment Program for Gifted Learners”, and training for team members representing Hong Kong at the International Physics Olympiad.

The School also embraces students’ personal growth through a wide range of enrichment programs including service learning trips to Mainland China and Cambodia. A new collaboration with BASF was initiated this year. The BASF Kids’ Lab was run during the summer, with HKUST students involved in nurturing young kids’ interest in chemistry through simple and safe experiments. 



## SCHOOL OF ENGINEERING

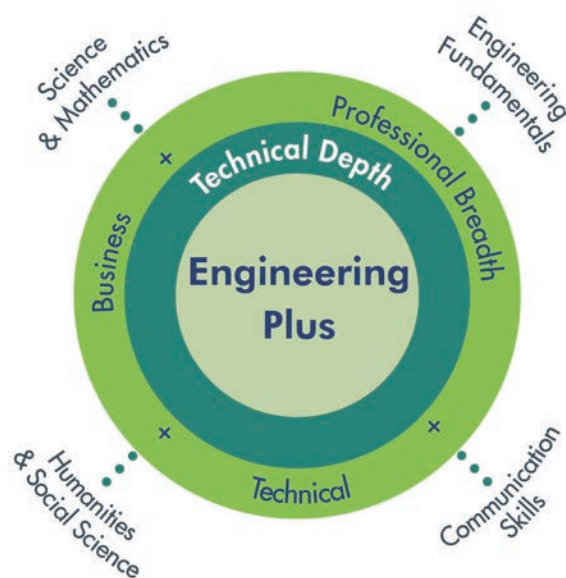
The School of Engineering develops 21st-century engineers who can drive solutions to the complex challenges facing the world; and its international reputation continues to grow. According to the 2012 *QS World University Rankings by Subject*, the School was placed within the top 20, including Computer Science (13th), Electrical Engineering (17th), Civil Engineering (18th), Mechanical Engineering (19th) and Chemical Engineering (20th). It was ranked first in Greater China and 28th globally in the *Times Higher Education World University Ranking's* Top 50 Engineering and Technology Universities.

### TEACHING AND LEARNING ADVANCES

The reinvention of the School's undergraduate curriculum in preparation for the four-year degree system continued. The resulting "Engineering PLUS" education set out to **P**repare **L**eaders for **U**ltimate **S**uccesses through a student-centric, holistic experience. This encompassed transferable skills, engineering fundamentals, effective capability in a chosen specialty, love of self-learning and problem-solving skills.

Other developments included optional programs, a new minor in Aeronautical Engineering, and enhanced industry ties to increase internship participation.

The School's pioneering Center for Engineering Education Innovation (E<sup>2</sup>I) served as a one-stop shop in advising first-year students admitted under the School-based Admission Scheme. A peer mentoring program following E<sup>2</sup>I's "Learning to Teach, Teaching to Learn" philosophy continued to provide support and transformative learning experiences to incoming students. E<sup>2</sup>I was also involved in scaling up the system of academic advising in readiness for the School's four-year degree students through engagement from faculty and professional advisors, peer mentors and students. Its outcome-based education activities improved students' overall learning experience, whose outcomes would be evaluated by an assessment plan developed by the School.





## EXPANDING THE POSTGRADUATE EXPERIENCE

Overseas recruitment helped to boost international research postgraduate numbers as enrolment rose by 80 per cent from 2010-11 to 2011-12. In 2011, the School received the largest number of candidates among engineering faculties from the Hong Kong PhD Fellowship Scheme for the second consecutive year and continued to draw a large number of first-rate research students from Mainland China.

Boosting internationalization, research ties with top universities were strengthened through partnerships. These included Memoranda of Understanding on academic, scientific and technological exchange and cooperation with Moscow State University, Russia, École Nationale Supérieure des Mines de Saint-Étienne, France, and Kobe University, Japan. There were agreements on joint PhD programs with Pohang University of Science and Technology, Korea, and Sharif University of Technology, Iran. A summer internship program with Tsinghua University and a co-supervision agreement with Zhejiang University were put in place. A student-designed research postgraduate professional development program was launched to focus on communication skills, career development and leadership.

## CUTTING-EDGE RESEARCH LABORATORIES

A joint research laboratory with Xilinx Inc, the global leader in All Programmable technologies and devices, was officially opened to support cross-platform and cross-disciplinary research and promote internationalization and interdisciplinary research.

The Department of Electronic and Computer Engineering launched the HKUST-NIE Social Media Lab, Asia's first research laboratory specializing in the study of social media culture and technologies and a next-generation facility to collect data which helps business and advertising and to develop technology for digital life.

## GLOBAL AND COMMUNITY REACH

Along with its exchange program with over 90 partners, the School widened the diversity of its undergraduate population to 30 nationalities through international recruitment. This helped international undergraduate applications to grow from 384 for the 2010 intake to 597 for the 2011 intake, a leap of 55 per cent. Among them were two of Malaysia's top students who were among eight students out of 53,000 candidates to gain five A grades in Malaysia's nationwide pre-university STPM examination.

The School launched the co-curricular Global and Community Engagement Program in 2011 to encourage all-round student development through international and local engagement in competitions, conferences and professional events. It also provided a platform for students to contribute their engineering knowledge to the community. The HKUST Robotics Team, part of the Program, was restructured in 2011 into four student sub-teams which received nine awards in local, regional and international competitions. Team membership increased to over 70 from the School's six departments. 🏆



## SCHOOL OF BUSINESS AND MANAGEMENT

At the HKUST Business School, 2011-12 has been another year of positive progress and achievement, with the School's education programs and research continuing to be ranked among the best in the world by international media and academic institutions.



### EXCELLENCE IN TEACHING AND RESEARCH

The Kellogg-HKUST Executive MBA (EMBA) program was ranked first in the world by the *Financial Times* 2011 EMBA global rankings for the third year in a row while the School's MBA program was placed among the world's top 10 by the *Financial Times* Global MBA Rankings 2012, despite changes in rankings criteria. The MBA program has now attained a three-year average of 8th in the world.

In research, the *Financial Times* ranked the School's performance

first in Asia and 19th in the world. This was echoed in the *University of Texas at Dallas Top 100 World Rankings of Business Schools Based on Research Contribution*, which placed the School top in Asia and 17th in the world. These attainments derive from the solid work of the School's world-class faculty. In 2011-12, more than 40 articles were published by the School's academics in top journals, as identified by the *Financial Times*.

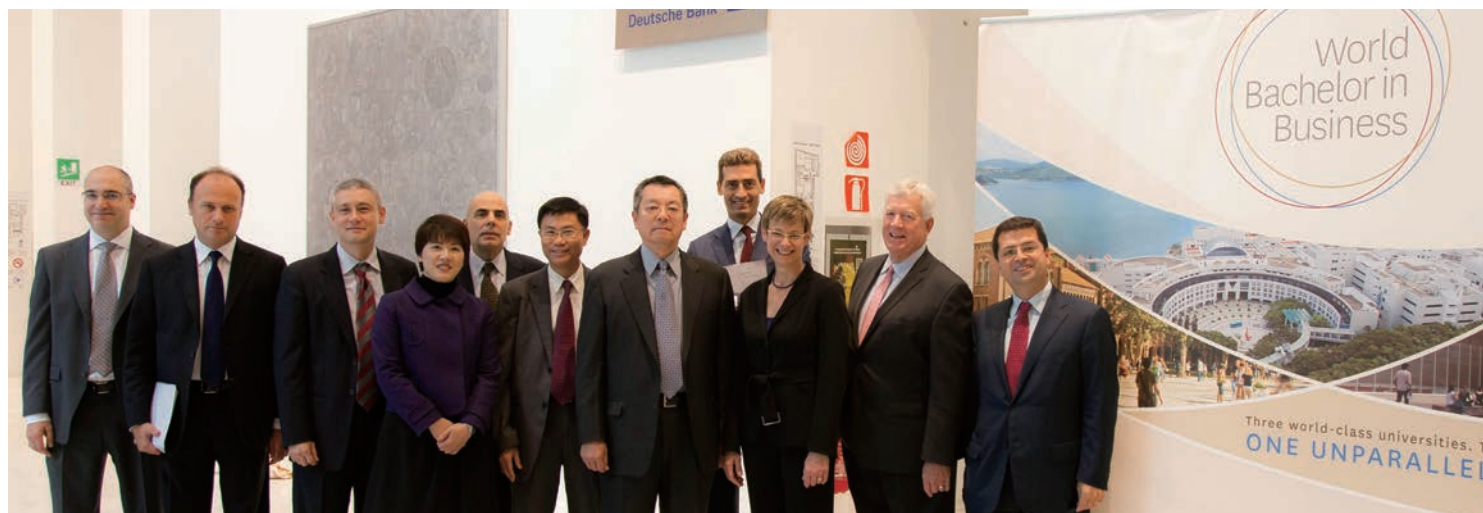
The School's faculty members were honored for their research excellence. Prof James Thong (Information Systems, Business Statistics and Operations Management) won the Information Systems Research's ISR Best Associate Editor Award. Prof Jing Zhu (Management) received the Scholarly Achievement Award from the Academy of Management (HR division). Prof Jun Kim (Marketing) received the Frank M Bass Dissertation Paper Award from the Institute for Operations Research and the Management Sciences.

Student achievements were also impressive. Mr Lo Sze Ping, a student on the HKUST EMBA for Chinese Executive Program, was named a Young Global Leader for 2012 by the World Economic Forum, in recognition of his outstanding leadership and commitment to society. Undergraduates had won a number of competitions including the 5th Annual Henkel Innovation Challenge held in Poland; Facing Disaster in the 21st Century organized by global youth think-tank Challenge: Future; the 2012 HSBC/McKinsey Business Case Competition in Hong Kong; and the AIESEC — Boston Consulting Group Social Enterprise Case Competition 2012.

### PIONEERING GLOBAL EDUCATION

Exciting arrangements made over the year saw the School partner with the University of Southern California in the United States and Bocconi University in Italy for the launch of the pioneering World Bachelor in Business in Fall 2013. The undergraduate program aims to nurture future global business leaders by providing an unparalleled multi-campus, cross-continental learning experience. New postgraduate programs prepared during





the year will also be launched in 2013 — an MSc in Global Operations and an MSc in International Management in collaboration with CEMS, a global alliance in management education. These programs will help to broaden the School's portfolio and reach different people and regions.

## CONNECTING WITH ALUMNI AND THE COMMUNITY

As of June 2012, the School had about 17,900 alumni. They comprise more than 30 different nationalities, many of them internationally mobile industry professionals. Ties with alumni were strengthened with the launch of "alumination". The platform was established first in Hong Kong and later extended to Singapore and Mainland

China. Along with greater bonding, the School intends to harness its alumni to make a positive impact on society.

The School strives to make a positive impact on business and society, with faculty and research teams proactively exploring ways to advance global business knowledge and lead regional and international business research agendas. Faculty members' research has been consistently honored by their peers for excellence and covered by news media. The School also places a high value on knowledge transfer and sharing. In 2011-12, the School organized 238 research seminars and various forums and conferences. In addition, faculty members shared their research with the community through the latest Business Insights Presentation Series of monthly talks, as well as their articles published in local media. 



## SCHOOL OF HUMANITIES AND SOCIAL SCIENCE

**The School of Humanities and Social Science has enjoyed a dynamic year, strengthening its expertise and receiving worldwide recognition for its achievements. In the 2012 *QS Asian University Rankings* — Asia's Top 50 Universities in Social Sciences and Management, HKUST was ranked 10th in Social Sciences and 29th in the World's Top 100 Asian Universities in Humanities.**

HKUST has been consistently placed among the best universities in Greater China, according to the *Academic Ranking of World Universities* by Shanghai Jiao Tong University. In the 2011 *ARWU* rankings, the Division of Social Science was ranked the best social science department in Asia and 43rd in the world in the 2011 *QS World University Rankings*.

In a further accolade, Dean of Humanities and Social Science Prof James Lee received the Japanese Population Association's Best Book in Population Studies Award, a biennial prize for the co-authored book *Prudence and Pressure: Reproduction and Human Agency in Europe and Asia, 1700-1900*.

Faculty members continued to publish in highly competitive journals in China studies, psychology, economics, political science and other disciplines, just to name a few. A number of authored books were also published, which included Prof Wenkai He's *Paths toward the Modern Fiscal State: England (1642-1752), Japan (1868-1895), and China (1851-1911)*, Harvard University Press; Prof Chang-tai Hung's *Landmarks: Politics of Space in Beijing*, Oxford University Press; Prof Zongli Lu's *Rumors in Han Dynasties*, Zhejiang University Press; Prof Jianhua Chen's *Refined Cage and Fire Bird*, Fudan University Press; and Prof Billy So's *Prosperity, Region, and Institutions in Maritime China*, Zhejiang University Press.



### INNOVATIVE EDUCATION

The School covers the following disciplines: literature, linguistics, history and anthropology, philosophy and religion as well as music and art history under the Division of Humanities; and economics, geography, political science, psychology, science, technology and society, and sociology under the Division of Social Science. During the year under review, the Center for Language Education (formerly the Language Center) also joined the School.

In Fall 2011, the School inaugurated the BSc in Global China Studies. This elite program had an initial intake of 40 students and employs a global comparative perspective to study China, building a unique portfolio of knowledge.





Over the past year, students benefited from one-to-one faculty mentoring, overseas exchange, the Summer Sojourn Program in Beijing, and internship opportunities.

In another enterprising move, the School offered its first collaborative combined degree programs with strategic partners in Mainland China. These accelerated programs provide the exciting opportunity to study a “bachelor’s + taught master’s” or “taught master’s + research master’s” degree programs. They are open to high-caliber undergraduates and postgraduates respectively.

## DYNAMIC INTERNATIONAL PARTNERSHIPS

Over 2011-12, the School continued to attract international attention and world-renowned university partners. Among its many creative initiatives, the School moved forward on plans to launch a faculty exchange program with California Institute of Technology, to hold Jefferson Global Seminars with the University of Virginia on HKUST campus, and to offer collaborative PhD training in economic and social history with Utrecht University in the Netherlands.

## FRESH INSIGHT INTO CREATIVITY

The second season of the annual “Intimacy of Creativity” program was successfully held in Spring 2012, led by artistic director and internationally renowned composer, conductor and pianist Bright Sheng. The program gathered together established composers, selected emerging composers and world-renowned performers at HKUST to engage in an innovative dialogue. Over two weeks, the composers presented and revised chamber music compositions following in-depth discussions with the musicians during open workshop sessions. The world premiere of the revised works took place at Hong Kong City Hall. 🇭🇰



## INTERDISCIPLINARY PROGRAMS OFFICE

**The Interdisciplinary Programs Office is committed to innovation and endeavor, and serves as an effective platform for furthering HKUST's collaborative interdisciplinary education and research. The IPO offers a series of high-powered programs under the Division of Environment and the Division of Biomedical Engineering.**



### RESEARCH EDUCATION INITIATIVES

A new research program (MPhil and PhD) in Environmental Science, Policy and Management was organized under the Division of Environment to be launched in 2012-13. The program aims to facilitate interdisciplinary research on cutting-edge environmental issues, ranging from scientific understanding and engineering solutions to policy and management.

The IPO Best Research Award was established to recognize research postgraduate students who make outstanding contributions through their studies. The Office also worked together with the School of Engineering to launch a series of enrichment seminars and workshops for research postgraduate students. Topics included journal publishing and research ethics.

### ENRICHING THE UNDERGRADUATE EXPERIENCE

The Office strongly believes that undergraduate education means more than classroom training. It has been the Office's ambition to provide exposure and enrichment programs to encourage students to become responsible, contributing and caring members of society.

During 2011-12, a number of students raised awareness of sustainable development through creating and participating in different community programs. One example was the Eco-Business Innovation Award set up by the Interdisciplinary Programs Students' Union and the Environmental Students' Society. Over 100 HKUST students enrolled in the competition.



## ENHANCING GLOBAL CONNECTIONS

During the year, the Division of Biomedical Engineering signed agreements with Chiba University, Japan, to establish an academic and research partnership. The Division collaborated with the University of Tokyo and co-organized a joint university workshop in Biomedical Engineering in January 2012. The event attracted participants from the two universities, MIT and sister institutions.

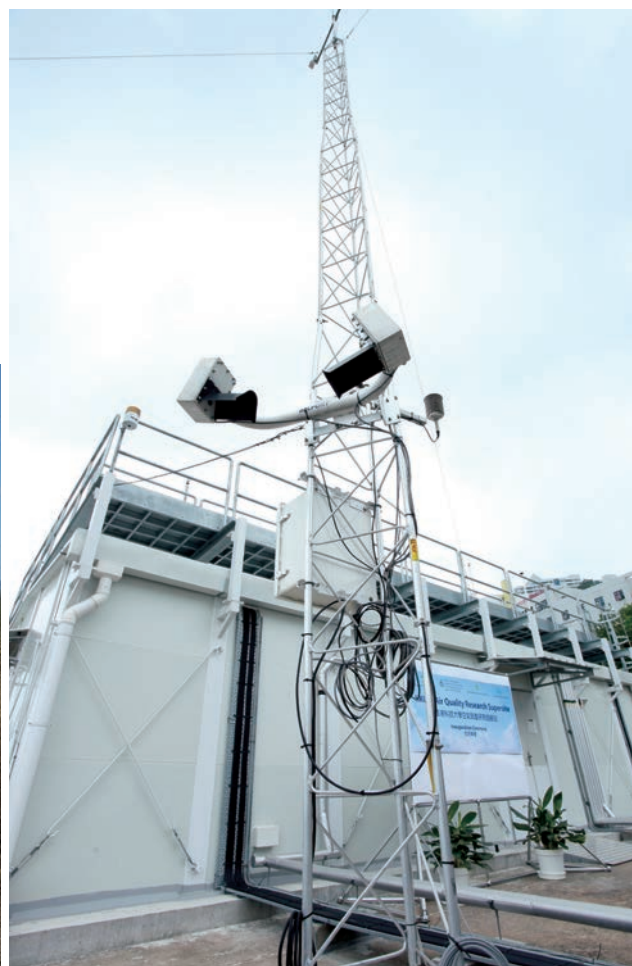
The Division of Environment established joint research laboratories with Xiamen University and South China University of Technology and actively collaborated with Mainland research institutes in environmental research and education.

To further promote research opportunities, the Office's divisions organized a number of forums, distinguished lectures, and seminars. The Environmental Forum on Climate Change Adaptations featured speakers from the University of Illinois in the US and Academic Sinica in Taiwan. The Division of Environment co-sponsored a Distinguished Lecture with the HKUST Institute for Advanced Study on "Pollen, Mold and Aeroallergens" by Prof Richard Flagan of California Institute of Technology. The Division of Biomedical Engineering also co-sponsored

IAS Distinguished Lectures on "How to Hit HIV Where It Hurts" by Prof Arup Chakraborty, MIT, and "Perspectives in Biomedical Engineering" by Prof Shu Chien, University of California, San Diego.

## GROUND-BREAKING ENVIRONMENTAL INITIATIVE

The first Air Quality Research Supersite, launched by the Division of Environment, continued to enhance air quality research and to tackle air pollution problems in Hong Kong and the Pearl River Delta. The research facility, funded by the UGC Special Equipment Fund and the Environment and Conservation Fund, is equipped with state-of-art instrumentation for real-time characterization of particulate pollutants. 🇭🇰



## HKUST FOK YING TUNG GRADUATE SCHOOL

**HKUST Fok Ying Tung Graduate School, situated in Nansha, Guangzhou, continued to deepen its research and interdisciplinary postgraduate education and to strengthen the University's relationships within Mainland China. As a platform in the Mainland for HKUST, its four research divisions focus on internet of things, advanced manufacturing and automation, advanced engineering materials, and environment and sustainable development. It secured 50 projects during the year, bringing the total number of projects to 131. The School also registered eight patents and copyrights.**



Progress was made on the construction of the HKUST Fok Ying Tung Graduate School Building at Nansha IT Park. Located on a 36,000 sq m site, the five-storey building provides state-of-the-art laboratories, central research and teaching facilities. A topping-out ceremony for the building was held in November 2011.

### FOSTERING MAINLAND-HONG KONG PARTNERSHIPS

In December 2011, the second part of a major HKUST Science and Technology Forum entitled "Guangzhou's '12th Five-year Plan': Integration of Hong Kong and the Pearl River

Delta" was held at the School. As part of the Forum program, the School co-established the National Engineering Research Center for Industrial Automation (South China Branch) to support local industry upgrading. A smart green building initiative was launched in collaboration with ARUP, Gammon Construction Company Ltd, and James Law Cyberecture to harness the School's research center technologies in demonstrating the latest green building technologies.


### RESEARCH EXCELLENCE RECOGNIZED

Leading academics at the School received a number of prestigious Chinese honors in 2011-12. The School's Dean, Prof Lionel Ni, was awarded a State Natural Science Award, Second Class, by the Chinese Government and was also among the first batch of Hong Kong scholars to be selected to join the Ministry of Science and Technology Expert Database. Former Dean Prof Tongxi Yu received the Grand Prize in the First Nansha Outstanding Contribution Awards. Prof Qian Zhang, Director of the Division of Internet of Things, was the only recipient from Hong Kong to receive the coveted bi-annual award recognizing Chinese Youth in Science and Technology.

The School's Digital Life Research Center research program was selected for an outstanding achievement award from over 100 projects and more than 10 institutes and enterprises at the China National Computer Conference. Research included wireless sensor network applications, a remote healthcare monitoring system, and internet of things for medical services.

A joint lab with LED chip manufacturer APT Electronics Ltd was established and a cooperation agreement signed related to silica materials for LED packaging and commercialization of related products.

### INNOVATIVE POSTGRADUATE STUDIES

During 2011-12, the School started recruitment for a self-financed MPhil in Innovative Technologies Leadership. Students will spend their first year at HKUST's Clear Water Bay campus and the second year primarily at the School's Nansha research centers. 



## INSTITUTE FOR ADVANCED STUDY

The HKUST Institute for Advanced Study seeks to bring together the most brilliant minds from around the world to drive cutting-edge discovery and scholarship in Asia and globally. Chaired by Prof Chen-Ning Yang, the Institute's eminent International Advisory Committee comprises 18 members, including 12 Nobel Laureates and one Fields Medal winner.



*Some of the distinguished speakers during the year*

### AN INTELLECTUAL HUB

Committed to drawing leading thinkers, the Institute has attracted 29 Visiting Professors from diverse disciplines. Two are Nobel Laureates and most are members of national academies or of equivalent stature. In the year under review, 17 IAS Visiting Professors, two IAS Senior Visiting Fellows and two IAS Affiliate Members made trips to HKUST.

Forward moves saw the Institute successfully recruit a world-class scholar to take up the first IAS endowed chair and the launch of a fellowship program to attract star professors to HKUST and help to retain the University's top scholars. Fifteen HKUST professors have been appointed IAS Senior Fellows thus far. The University is also recruiting promising talents as Research Assistant Professors / IAS Junior Fellows.

### PLATFORM FOR SYNERGY AND CUTTING-EDGE RESEARCH

IAS provides a significant platform for international leaders and pioneers from a wide range of fields. In 2011-12,

the Institute organized some 60 events, including 50 distinguished lectures and two UC RUSAL President's Forums. The events were attended by more than 6,000 people in total.

A highlight of the year was a one-month topical research program on "Arithmetic Geometry and Representation Theory". Fourteen mathematicians from the US, Mainland China and Hong Kong attended, resulting in one participant gaining a breakthrough in a mathematics problem that has challenged scholars for more than 1,000 years. The gathering was the first of its kind in Hong Kong.

### INCUBATOR FOR THE NEXT GENERATION

The Institute embraces opportunities to inspire the wider community about science and technology, especially the young. One significant activity in this regard during 2011-12 was the Institute's sponsorship of the Secondary Schools-HKUST Dual Program for high school students, offered by HKUST's Center for the Development of the Gifted and Talented. 🏆

# FACULTY DEVELOPMENT



**The University's world-class faculty members lie at the heart of the HKUST success story. The University has proactively engaged in global recruitment and enhanced the compensation system during the past year to attract and retain quality faculty members. Schools have brought fresh recognition to their faculty's achievements while career development continues to grow.**

HKUST also seeks to build the professional academic skills of HKUST's teaching assistants. By doing so, the University deepens the overall education provision to current students and assists in the development of quality faculty members who will make a difference at HKUST and leading institutions worldwide.

## FACULTY RECRUITMENT

With the advent of the four-year undergraduate curriculum, the University has been strengthening the size and distinction of its faculty. At 30 June 2012, there were a total of 3,133 members of staff, including 514 faculty members, in post. Proactive efforts were made in global faculty recruitment, aiming at 100 new and replacement faculty members in five years, and regular and visiting faculty members both saw increases over the previous year. In line with these recruitment moves, the University implemented a new faculty compensation review system to enhance international competitiveness of faculty salaries and at the same time reward achievements and contributions.





## RECOGNITION OF ENDEAVOR

Acknowledgement is an important way of recognizing the hard work the faculty put in and fostering HKUST's dynamic campus environment.

HKUST faculty members' achievements have been widely recognized by an accolade of external recognitions. Faculty received five of the most prestigious awards in science and technology in China including the State Natural Science Awards and the State Scientific and Technological Progress Award — the largest number of such awards among tertiary institutions in Hong Kong in 2011. Three Hong Kong faculty members were elected to the Chinese Academy of Sciences, all of them HKUST faculty members. HKUST also received three Ministry of Education Awards for Research Excellence in Natural Sciences. Nine faculty members were among the first batch of Hong Kong scholars to be selected to join the National Science and Technology Programmes Expert Database. In further recognition of the excellence of HKUST academics, six faculty members were elected Fellows of the Institute of Electrical and Electronics Engineers, bringing the total at HKUST to 27. Prof Nancy Ip, Dean of Science, was bestowed Knight of l'Ordre National du Mérite by the French President. Prof James Lee, Dean of Humanities and Social Science, received the Japanese Population Association's Best Book in Population Studies Award, a biennial prize for the co-authored book *Prudence and Pressure: Reproduction and Human Agency in Europe and Asia, 1700-1900*. Faculty

members from the School of Business and Management have also won various awards including the Information Systems Research's "ISR Best Associate Editor Award", the Scholarly Achievement Award from the Academy of Management (HR division) and the Frank M Bass Dissertation Paper Award from the Institute for Operations Research and the Management Sciences.

The annual Michael G Gale Medal for Distinguished Teaching highlights one faculty member across the University for his or her outstanding teaching capabilities. In 2011-12, the Medal was awarded to Prof Amine Bermak, Department of Electronic and Computer Engineering. At the School level, there are long-standing teaching awards that recognize faculty members. And in an independent initiative, students vote annually for the Best Ten Lecturers.

In the year under review, engineering faculty members' outstanding research achievements were further recognized when the first School of Engineering Research Excellence Awards was presented in November 2011. The annual awards honor the local and global research achievements of four faculty members at different stages of their career. In addition to an existing award to recognize outstanding performance in teaching, the School of Science introduced a new Research Award during the year to show special appreciation of the research excellence of young faculty members at the rank of Assistant or Associate Professor.

## FACULTY DEVELOPMENT

Those who had successfully completed the University's induction program for teaching assistants (TAs) were awarded a Certificate of Achievement at a special presentation ceremony, when Best TA Coordinator Awards were also presented.

Appointments to senior academic positions during the year saw Prof Michael Altman become Head of the Department of Physics, Prof James Thong take on the role of Head of the Department of Information Systems, Business Statistics and Operations Management and Prof Guohua Chen become Head of the Department of Chemical and Biomolecular Engineering.



On retirement, the titles of Professor Emeritus were awarded to Prof Gordon McKay, Chemical and Biomolecular Engineering, Prof Xinyang Wang, Humanities and Prof George Ke Lun Wong, Physics. The title of Associate Professor Emeritus was awarded to Dr Neville Ka-Shek Lee, Industrial Engineering and Logistics Management.

### MOVING AHEAD IN PEDAGOGY

The University's Center for Enhanced Learning and Teaching continued to develop teaching capabilities and keep faculty up to date with the latest classroom technologies and pedagogical thinking.

The Center provides a range of services including new faculty orientation, evaluation of teaching through student feedback, teaching development grant projects, and innovative use of technology. A joint initiative was a series of workshops organized together with the School of Engineering's Center for Engineering Education Innovation (E<sup>2</sup>I). The workshops focused on "Preparing for an Academic Career" to identify the skill sets required to be a professional academic. A Leadership Training Camp for research postgraduates was organized together with the Student Affairs Office.

Separately, E<sup>2</sup>I played a significant role in advancing pedagogy within the School of Engineering and continued to offer its series of conversations on engineering learning and teaching for faculty members, covering topics such as academic advising and assessment. Orientation workshops for around 30 School-level faculty advisors were held.



Other Schools also made moves to deepen pedagogical awareness. The School of Business and Management provided more than 10 training programs for faculty members, covering areas such as using a tablet PC productively for research and teaching, maintaining a balance between research and teaching, case writing and teaching, engaging student interest and dealing with differences in the classroom. Meanwhile, the School of Science is set to involve all its faculty members in the academic advising process being established with the arrival of the four-year degree students, adding further insight into teaching and learning. A series of briefing sessions and workshops were conducted for all faculty academic advisors covering areas of major curriculum changes and key success elements for student advising. The School's Division of Life Science also organized a regular "Friday Seminar Series" to encourage exchanges among faculty members and facilitate cross-area research collaboration.

## TEACHING-TRACK FACULTY

With the introduction of the four-year curriculum accentuating the importance of teaching and student mentoring, the University formally established a series of teaching-track faculty grades during the year under review. The move provides the colleagues concerned with a clear career path, encourages their relevant professional development, and enables their full participation in the work of the University. 🏆



# COMMUNITY ENGAGEMENT

**Bringing HKUST discoveries, new knowledge and expertise into the community is part of the University's mission to assist the economic and social development of Hong Kong. In 2011-12, faculty, students and alumni contributed to society through sharing insights and knowledge, service programs and alumni development. The University was also grateful for support from donors, enabling HKUST to drive forward in its work.**



## KNOWLEDGE-SHARING WITH THE PUBLIC

Members of the public were brought face to face with the world of innovation through an exciting display of the School of Engineering's work at the Hong Kong Science Museum in October 2011. The *Bring Technology to Community* exhibition showcased the latest technology developed by faculty members, students and alumni that make an impact on people's lives. Items included an underwater robot, a mini smart car, and a digital photo frame designed to offer cognitive therapy for Alzheimer's patients.

In January 2012, the School of Business and Management launched a new round of the popular Business Insights Presentation Series. These monthly talks for the business community and general public enable faculty members to share and gain feedback on their research findings and topical issues of interest. HKUST faculty members also regularly contribute articles to the media. The Business School, for instance, published about 50 articles in local media between July 2011 and June 2012.



To preserve local culture, the South China Research Center has played a significant role in helping the Hong Kong government to survey and document Hong Kong's potential intangible cultural heritage following China's signing of UNESCO's Convention for the Safeguarding of the Intangible Cultural Heritage. During the year, the Center entered the final stage of drafting its recommendations, and Hong Kong will have established its list of intangible cultural heritage by the end of 2012. The Center also has a research station under the HKUST Fok Ying Tung Graduate School in Nansha to support its research.

In addition, the Division of Humanities set up a biweekly series of public humanities lectures, co-organized with the Hong Kong Museum of History. The talks covered Hong Kong poetry, forensic voice comparison, and Taoism, among others.

## ENGAGING THE YOUNGER GENERATION

HKUST is keen to use its expertise to nurture younger members of the community. For example, faculty members from the School of Science provide training for secondary students involved in the Hong Kong Physics Olympiad teams. At the 42nd International Physics Olympiad, the Hong Kong team received three gold and two silver medals. At the 13th Asian Physics Olympiad, the team won one gold medal, two bronze medals and three honorable mentions.

With the belief that "Train the Trainer" is an effective way to promote science knowledge among the younger generation, the School of Science has also collaborated with the Curriculum Development Institute under the Education Bureau, to offer training for secondary teachers through workshops and laboratory demonstrations.

Meanwhile, the University's Center for the Development of the Gifted and Talented under the School of Science, offered university credit-bearing courses and tailor-made summer program to provide the gifted youngsters with a fast-track to enrich their knowledge in mathematics and science.

HKUST also ran its first Summer Institute, giving secondary school students the chance to earn early credits for HKUST programs. Schools offered a total of 27 courses, each carrying one credit.

## FOSTERING COMMUNITY SPIRIT

At HKUST, voluntary activities and the spirit of giving all form part of the holistic development of contributing citizens.

In 2011-12, HKUST Connect enabled over 1,800 University participants to take part in 130 service projects and collaborated with 58 community partners. Thirteen service learning trips involving over 200 students were

arranged. Five were led and sustained by experienced student leaders under the guidance of HKUST Connect staff. Separately, 11 students chose to serve non-governmental organizations or on corporate social responsibility endeavors as Student Civic Fellows. HKUST Connect also offered a structured service learning project course and supported faculty in courses with service learning components with participation from 129 students.

The REDbird Award Program, sponsored by the Drs Richard Charles and Esther Yewpick Lee Charitable Foundation, saw 254 members and 30



## COMMUNITY ENGAGEMENT



student leaders involved in 101 service learning projects. Twenty students also received financial sponsorship from a fund supported by SAE Magnetics (HK) Ltd to participate in overseas service learning in Mainland China, India and Cambodia.

The well-established HKUST-Hang Seng Bank Green Ambassador Program continued to offer a series of green-related activities and programs. These included organizing HKUST campus “green” tours for secondary school students and teachers, taking in campus recycling zones and the organic farm.

### DONATIONS THAT FORGE THE FUTURE

An enduring link between the community and HKUST is the generous support the University receives through donations.

A major donation pledge was received from Dr Chow Yei Ching, and in recognition of his support, the Learning Commons located in the Library has been named the Chevalier Learning Commons.

Donors partnered with the University to recognize distinguished faculty through the HKUST Named Professorship program. During the year, program donors (in alphabetical order) included: Dr William Fung, Dr the Hon Hari N Harilela, Kerry Holdings Limited, Morningside Foundation, Shun Hing Education and Charity Fund, Wong Check She Charitable Foundation and the Yan Ai Foundation. Some of the donations received special matching under the President's 20th Anniversary Challenge. With these Professorships, the University can continue to attract the best scholars at an international level and honor distinguished faculty.

The University's innovative research also attracted significant support. Donations were received from Madam Chiu So Lan (medical device research), Empire Hotel (spinal cord injury research), Mr Kwok Siu Ming and Madam Eleanor Law Kwai Chun (medical device research), The S H Ho Foundation (Alzheimer's disease research and development), Mr Sukanto Tanoto (research at the Center for Asian Family Business and Entrepreneurship Studies) and Mr James E Thompson (research at the Center for Business Case Studies).

Bridging academia and business, University Council Member Mr Maximilian Ma initiated and sponsored Science-for-Lunch. Under this program, HKUST professors spoke to a selected group of business leaders and entrepreneurs every month about their innovative research. The initiative also created opportunities for R&D collaboration and investment.

In addition, the Ho & Ho Foundation established a scholarship program for Mainland students while the Victor and William Fung Foundation sponsored a service leadership initiative program to enrich the learning experience of students. Support for the University's academic development came from the Lau Chor Tak Foundation.

To commemorate the late Prof Wilson Tang and the late Prof Edmond Ko, family and friends established memorial funds for the outstanding academicians. The two funds will provide scholarships and bursaries for students and honor students who dedicate themselves to peer mentoring respectively.



## STRENGTHENING LINKS WITH ALUMNI

The University contributes to society through its alumni who, inspired by HKUST, go on to become the next generation of innovators, entrepreneurs, leaders and caring contributors in their respective spheres.

To enable alumni to support the new wave of talents and ensure HKUST's stature keeps growing, the University created the Alumni Endowment Fund in March 2012. The fund helps alumni to contribute to student education by supporting enrichment programs, scholarships and awards. A great initial boost was provided by alumni Dr Jack Lau and Mr Kent Hau who each pledged dollar-for-dollar personal matching up to HK\$2 million.

During the year, many HKUST alumni received awards in recognition of their contributions and achievements. Among those honored were: Dr Jack Lau, PhD (Electrical and Electronic Engineering) and Kellogg-HKUST EMBA (Directors of the Year Award 2011), Mr Eric Yung, BEng (Electronic Engineering), MPhil (Electrical and Electronic

Engineering) and MBA (Hong Kong ICT Awards 2012, Gold Award in the Best Lifestyle [Learning and Living] category), Mr Samuel Yung SBS, MH, JP, EMBA (Insurance Leader of the Year Award in China 2011), Mr Chan Yik Hei, BEng (Electronic Engineering) (Hong Kong ICT Awards 2012, Bronze Award in the Best Lifestyle [Green, Healthy and Creative Living] category, and Ms Carrie Tang, BBA (Accounting) (ATV Hong Kong Loving Hearts 2011), Dr Alan Wong, PhD (Biochemistry) (Croucher Fellowship 2012, Hong Kong Institution of Science Young Scientist Award in Life Science 2011).

Four more alumni groups were established: the Mainland Alumni Association, EMBA Alumni Association, EMBA Walkers' Club and Biochemistry Alumni Association. In addition, overseas visits by President Tony F Chan and Vice-President for Institutional Advancement Dr Eden Y Woon helped to bring alumni outside Hong Kong up to date with life at HKUST. Reunions took place in the US, Middle East, Europe, Asia and Mainland China, boosting alumni's sense of belonging to the University. 🇭🇰



# INTERNATIONAL AND MAINLAND STRATEGY

**HKUST fruitfully combines the University's national and global distinction with Hong Kong's unique position as an international city and a gateway to Mainland China. Major progress was made through strong strategic partnerships and well-received visits to institutions nationally and worldwide, as well as dialogues with leaders in first-rate international forums. The University's remarkable achievements were also recognized in significant global publications.**

## MAINLAND CONNECTIONS

### FOSTERING INDUSTRY, EDUCATION AND RESEARCH

HKUST's research platform in Nansha, the Fok Ying Tung Graduate School, has grown from strength to strength over the past 5 years, deepening its engagement in research and education in the Mainland. At the same time, Nansha has been earmarked in the nation's 12th Five-year Plan; it is therefore expected that the School will have a major role to play in the region's development and to foster more Hong Kong-Mainland collaborations.

Knowledge sharing was boosted with the opening of the HKUST Shenzhen Industry, Education and Research Building in September 2011. The 15,000 sq m facility provides space and equipment for scientific research, technology transfer and executive training. HKUST faculty, students and alumni launched close to 10 technology enterprises in the Building to foster Hong Kong-Mainland collaborations. HKUST Shenzhen MBA Program Office moved in and a HKUST Executive Education Office also opened.







The HKUST LED-FPD Technology R&D Center in Foshan was officially opened in March 2012. The Center was jointly established with the Nanhai Government to explore pioneering light-emitting diode and flat screen display research and characterization standards. The Nanhai Government provided start-up funding of RMB25 million and 1,800 sq m of space, complete with infrastructure and laboratory equipment.

In addition, the Hangzhou Internet of Things Intelligent Technology Center continued to take forward capabilities in this key industry at the Zhejiang Advanced Manufacturing Institute of HKUST in Hangzhou.

### EXTENDING TIES

The University hosted nearly 100 delegations and 1,300 delegates from Mainland China, an increase of 55 per cent on the previous year. Universities, enterprises and government officials visited HKUST. They included Mr Chen Jinyu, Director of the Counselors' Office of the State Council, Ms Chen Xiaoya, Vice Minister of the Ministry of Science and Technology, Mr Yang Xueshan, Vice Minister of the Ministry of Information and Technology, Mr Liu Qian, Vice Minister of the Ministry of Health and Mr Cao Weixing, Vice Governor of Jiangsu Province.

To develop partnerships, HKUST signed Memoranda of Understanding with the Guangzhou Municipal Government. The MoU was signed by Mr Wan Qingliang,



Party Secretary and Mayor of Guangzhou Municipality, and Professor Tony F Chan, HKUST President.

Leveraging HKUST's expertise on environmental studies, a partnership with Xian Jiaotong University in Shaanxi Province was formed through a Memorandum of Understanding to establish the XJTU-HKUST Joint School of Sustainable Development. The School of Humanities and Social Science also signed a Memorandum of Understanding with Sun Yat-Sen University to offer joint training and research programs with a global China focus.

### FORGING NEW RELATIONSHIPS

University management spoke at several leading Mainland universities, sharing the University's internationalization experiences and gaining wide media coverage. The University also increased connections with Mainland alumni in major cities.

HKUST forged relationships with Mainland businesses which provided students with opportunities to engage in internships, service learning, research and training. Vice-President for Institutional Advancement Dr Eden Y Woon was invited to speak at the China Entrepreneurs Forum for top enterprises. Five Memoranda of Understanding were signed to build relationships with governments, industries and the academia.

## INTERNATIONAL AND MAINLAND STRATEGY



### INTERNATIONAL VISION

The University was ranked Asia's no. 1 in the *QS Asian University Rankings* for two consecutive years in 2011 and 2012. During the year, HKUST continued to extend strategic partnerships with top universities overseas. Its exchange program comprising more than 200 partners worldwide is indicative of the reputation the University has established globally.

The University is pleased to see its rapid rise recognized in major global publications. *The Road to Academic Excellence: The Making of World-Class Research Universities*, featured HKUST as a case study of elite global universities and key institutions in 21st century knowledge economies. The University was further cited in the *New York Times* and received coverage from major international media, including the *BBC*, *University World News*, and *Times Higher Education* in the UK, and *AEF* in France.

### ENERGIZING STRATEGIC CONNECTIONS

The University enjoyed another productive year in its global outreach activities, substantially raising its profile internationally through overseas visits by senior management to forge closer ties and more strategic partnerships.

President Tony F Chan led two large-scale overseas trips that created valuable links to move internationalization forward, raised the University's profile, and built connections with overseas alumni. In Fall 2011, the President visited 10 leading universities and two institutions in Europe, accompanied by the Vice-President for Institutional Advancement. They included the University of Oxford, Imperial College London, École Polytechnique Fédérale de Lausanne, École Normale Supérieure, Leiden University, European Organization for

Nuclear Research and the World Economic Forum. In early 2012, the President, the VPiA and four School Deans visited the west coast of North America, going to Stanford University, California Institute of Technology, University of Southern California, University of British Columbia, University of Washington, and Google, among others. The team took part in over 20 media interviews. They also boosted worldwide faculty recruitment via 13 PhD student briefing sessions hosted by the President, with 700 participants from diverse fields attending.

HKUST entered into 42 agreements with top universities worldwide, including Harvard University, Massachusetts Institute of Technology, the University of Oxford, KTH Royal Institute of Technology and the University of British Columbia.

In addition, Presidents and Vice-Presidents from top universities around the world flew to Hong Kong to discuss strategic collaborations with HKUST. Among them were senior representatives from Massachusetts Institute of Technology, University of Southern California, University of Cambridge, Imperial College London, École Polytechnique Fédérale de Lausanne, Utrecht University, the University of Virginia, Paris Science et Lettres, and Skolkovo Institute of Science and Technology.

Two receptions were held for Consul Generals in Hong Kong from 21 countries. Guests were introduced to HKUST senior management and the University's strategic plan. Visits by the University's management to Consul Generals in Hong Kong provided updates on these countries.

HKUST continued to be the Chair University of the Association of East Asian Research Universities up to 31 December 2011, and to provide leadership in enhancing collaborations among top universities in the region. 🇭🇰







# ORGANIZATION AND RESOURCES

During 2011-12, the University boosted the 1-HKUST concept through a number of capital projects, administrative and support moves that foster campus integration. These initiatives have also increased efficiency and effectiveness, and strengthened HKUST's performance-based culture.





## BUILDING A WORLD-CLASS CAMPUS EXPERIENCE

Campus development has played an important part in fostering a first-rate campus conducive to intellectual pursuit and shared endeavor through top facilities. The student experience on campus has been greatly enhanced following the transformation of 1,800 sq m of Library space into the Learning Commons. With study and e-learning zones and areas for creative media and refreshment, the Learning Commons is an active place for ideas exchange, a center for accessing academic resources and services, and a hub of technology that supports learning tasks.

The School of Business and Management's move into its new 12,000 sq m facility is also greatly anticipated as the finishing touches are being put to the spectacular Lee Shau Kee Business Building, at the southern end of HKUST's scenic campus. The state-of-the-art stand-alone structure will provide advanced teaching and research accommodation and a cohesive environment for both undergraduates and postgraduates, as well as for executive education.

Under development nearby is the 4,500 sq m building for the Institute for Advanced Study, which will serve as Asia's premier interdisciplinary intellectual center. Fittingly located atop a hillside, the visionary Institute enjoys inspirational views.

The ground-breaking ceremony for the Cheng Yu Tung Building in April 2012 marked the start of another exciting venture to enhance research and academic studies at the University. The eight-storey facility will house multidisciplinary laboratories, assisting collaborations and discovery across fields, and provide an extensive range of teaching and research accommodation.



## ORGANIZATION AND RESOURCES



Halls VIII and IX will soon be completed, providing 700 on-campus places and enabling students to gain valuable experience of independent living and campus life by the sea.

### PROMOTING EFFICIENCY AND COMMUNICATION

To provide an overall framework for carrying out long-term strategic planning under the 1-HKUST concept, University-wide planning processes including annual operational planning have been brought in. In addition, major administrative branches and management units have now become more target-oriented with the introduction of key performance indicators.

Communication was strengthened to foster open dialogue within the University and to encourage engagement. The President held regular tea gatherings with students while University Forums brought the campus together to learn the latest information about readiness for the launch of the new four-year undergraduate degree and double cohort arrangements.

There was another boost to the University's communal spirit with the presentation of the HKUST President's Outstanding Service Awards to three non-teaching staff

members. The awards were given in recognition of exceptional service and dedication to the betterment of the University. Another 237 long-serving staff members were presented with the Long Service Award to honor 20 years of loyal service to the University.

Newcomers and their needs were recognized too, with the introduction of an online New Staff Orientation Guide. Orientation activities for newcomers were also organized to formally welcome recent arrivals, introduce University policies and resources, and provide opportunities to build connections with other colleagues.

### INTEGRATING INFORMATION

The University's information system has played a significant role in fostering integration. To support the many changes in academic structure and student-related functions entailed in Hong Kong's 334 education initiative, the University embarked on a major enterprise resources planning (ERP) project. The year under review saw the continued implementation and stabilization of the system.

The project, a major University-wide undertaking, stretches across teaching, student, and business activities. In addition to new curriculum structures and student-



related activities, it encompasses renewed functions in financial management, procurement and purchasing, human resources, payroll, student financials, and admissions. Other existing administrative systems / services not covered by the packaged solutions were modified to integrate effectively.

All system modules have now undergone a full annual cycle of operations, well in time for the immediate objective of supporting new 334 activities and operations. The University has started to extend the information system infrastructure to cover additional business / functional areas. It has also begun to explore using the information collected to build up a business intelligence data warehouse which will provide measurements and metrics to support management decisions and resource planning.

## GROWING GREEN AWARENESS

In line with the goal to move toward “A Greener UST”, the University continued to actively monitor and track campus carbon emissions by calculating its carbon footprint.

During the University’s Environment Week, sustainability-related posters and presentations were produced through the joint efforts of the participants of several semester courses. These included “FACES of Sustainability”, a look at how different members of the Hong Kong community view sustainability and “Say Something”, featuring students’ opinions on various local sustainability issues.

HKUST kept up its commitment to going green with a series of environmental measures on carbon reduction at the 19th Congregation. Measures included providing additional recycling bins, supplying biodegradable cutlery, composting used cups and plates, making use of recycled paper for printing the congregation program as well as encouraging public transport use. The total carbon dioxide emissions for the Congregation were thus substantially reduced. Students were further motivated into action by their peers in the Live Green! Learning Community. The group focused on organizing student sustainability awareness activities, including Beach Cleanup, No Air Conditioning Day, Vegetarian Day, and established a green rooftop on Hall VI.

HKUST’s Eco Park entered its second year of operation, providing opportunities for organic farming by students, staff and community groups, cultivation of a Chinese herbal garden, and green slope projects. Renewable energy set-ups are also in progress. Resources from the government’s Environment and Conservation Fund are being sought.

To share know-how, the Sustainability Unit piloted a program introducing and training primary and secondary school students in carbon auditing and footprinting. As part of the program, HKUST students gave presentations and delivered workshops to help each school to calculate its own carbon footprint. 🏡









# GOVERNANCE

**The University Ordinance and Statutes provide for a number of bodies to govern or advise the University. Three major bodies in the University's governance structure are the Court, Council and Senate.**

## THE COURT

Court Members held their annual meeting in December 2011. They met again in March 2012 to receive an early appraisal of the University's preparedness in meeting the formidable challenge of twice as many first-year students arriving in September 2012. This is due to the implementation of the four-year undergraduate degree alongside the final cohort of three-year degree students. Members' keen interest in the University's development and its future direction was exhibited through active exchanges of views at both meetings. In addition to meetings, some Court Members participated in the inauguration ceremony for the Shenzhen Industry, Education and Research Building in September 2011 and the HKUST Science and Technology Forum in December 2011.


During the review period, a total of eight new Members joined the Court, some having retreated from the Council.

## THE COUNCIL

The Council continued to work closely with management to steer the University in its strategic direction. Members participated in various committees under the purview of the Council, namely Campus Development, Human Resources, Institutional Advancement and Outreach, Audit, Finance, and the Standing Committee. From key performance indicators developed as part of the University's Operation Plan, the Council kept track of the progress of each strategic initiative and used the Annual Performance Review Report as the basis for future planning.

The Council initiated an annual review of the membership and terms of reference of all Council committees, starting from June 2012. Three new non-executive Members joined the Council during the year under review.

## THE SENATE

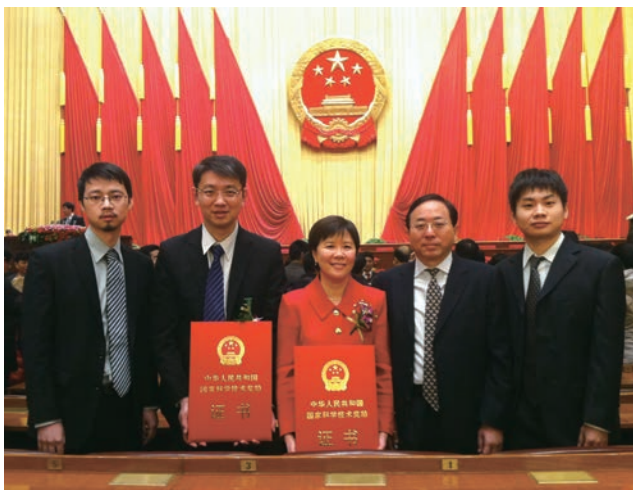
The Senate is the supreme academic body of the University. It is responsible for directing and regulating the teaching and research conducted at the University. During the year, a number of new programs, notably interdisciplinary programs, were introduced while modifications were made to certain programs to keep abreast of market and curriculum developments. The four-year undergraduate degree to be launched in September 2012 ushered in a series of changes. The merging of the Language Center into the School of Humanities and Social Science is a case in point. The move reflects the University's commitment to enhance students' capability in communicating ideas. 

# AWARDS AND RECOGNITIONS

## FACULTY AWARDS

Faculty members received five of the most prestigious awards in science and technology in China, including the State Natural Science Awards and the State Scientific and Technological Progress Award conferred by the State Council of the People's Republic of China, the largest number of such awards among tertiary institutions in Hong Kong in 2011:

### State Natural Science Awards, Second Class



- **Prof Nancy Ip**, Dean of Science, for "Receptor Tyrosine Kinase-dependent Signaling in Synapse Development and Plasticity"
- **Prof Yunhao Liu, Prof Lionel Ni, Dr Mo Li and Dr Zheng Yang**, Department of Computer Science and Engineering, for "Range-free Localization and Localizability for Wireless Network and IOT: Theory and Practice"



- **Prof Bo Li**, Department of Computer Science and Engineering, for "Stochastic Models and Performance Optimization for Resource Management in Computer Networks"



- **Prof Hai Yang**, Department of Civil and Environmental Engineering, for "Behavior-based Spatial-temporal Features of Urban Traffic Flow Distribution and Numerical Study"

### State Scientific and Technological Progress Award, Second Class



- **Prof Shing Chi Cheung**, Department of Computer Science and Engineering, for "Software Technology, Platforms, and Internetwork"

### Members of the Chinese Academy of Sciences



- **Prof Ping Cheng and Prof Tongyi Zhang**, Department of Mechanical Engineering, and **Prof Mingjie Zhang**, Division of Life Science, were elected to the Chinese Academy of Sciences. Membership in CAS is the highest academic title conferred by the Chinese government for achievements in science and technology research.

HKUST also received three Ministry of Education Awards for Research Excellence in Natural Sciences.

### Research Excellence in Natural Sciences, First Class



- **Prof Limin Zhang** and the late **Prof Wilson H Tang**, Department of Civil and Environmental Engineering, for "Reliability Analysis and Risk Control for Geotechnical Structures in Hydraulic Engineering"



## FACULTY AWARDS

### Research Excellence in Natural Sciences, Second Class



■ **Prof Karl Wah Keung Tsim** and **Dr Tingxia Dong**, Division of Life Science, for "Systematic Analysis of Traditional Chinese Medicine Formulas: the Application of Various Biological Models in Delineating Mechanistic Actions of *Danggui Buxue Tang*"



■ **Prof Qian Zhang**, Department of Computer Science and Engineering, for "The Basic Theory of OFDM-based Wireless Communications"



■ **Prof Nancy Ip**, Dean of Science, was made a Knight of l'Ordre National du Mérite. The honor is awarded by the French President and was presented by Mr Arnaud Barthélémy, Consul-General of France for Hong Kong and Macau.



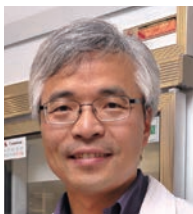
■ **Prof George Wong** and **Prof Zikang Tang**, Department of Physics, have their article "Room-temperature Ultraviolet Laser Emission From Self-assembled ZnO Microcrystallite Thin Films" in *Applied Physics Letters*, 72, 3270 (1998) recognized as one of the 50 most cited papers for the past 50 years in the journal, which is one of the top publications devoted to applied physics.



■ Nine faculty members were among the first batch of Hong Kong scholars to be selected to join the National Science and Technology Programmes Expert Database: **Prof Tony F Chan**, President; **Prof Nancy Ip**, Dean of Science; **Prof Joseph Hun Wei Lee**, Vice-President for Research and Graduate Studies; **Prof Lionel Ni**, Dean of HKUST Fok Ying Tung Graduate School; **Prof Wei Shyy**, Provost; **Prof Benzhong Tang**, Department of Chemistry; **Prof Henry Tye**, Director of the Institute for Advanced Study; **Prof Mingjie Zhang**, Division of Life Science, and **Prof Tongyi Zhang**, Department of Mechanical Engineering.

# AWARDS AND RECOGNITIONS

## FACULTY AWARDS



- **Prof Mingjie Zhang**, Division of Life Science, was the winner of the Ho Leung Ho Lee Foundation Science and Technology Advancement Award in 2011.



- **Prof Matthew McKay**, Department of Electronic and Computer Engineering, won the Stephen O Rice Prize, IEEE Communications Society.



- Six engineering professors were elected Fellows of the Institute of Electrical and Electronics Engineers, bringing the total at HKUST to 27. They were **Prof Oscar Au**, **Prof Roger Cheng**, **Prof Vincent Lau**, **Prof Johnny Sin** and **Prof Danny Tsang**, Department of Electronic and Computer Engineering, and **Prof Qian Zhang**, Department of Computer Science and Engineering.



- **Prof Charles Ng**, Department of Civil and Environmental Engineering, was appointed by the German Council of Science and Humanities to participate in the peer review process for the German Excellence Initiative.



- **Prof Dekai Wu**, Department of Computer Science and Engineering, became a Fellow of the Association for Computational Linguistics.



- **Prof Matthew Yuen**, Department of Mechanical Engineering, won the Philips Best Paper Award at the International Conference on Electronic Packaging Technology and High Density Packaging.



- **Prof Khaled Ben Letaief**, Dean of Engineering, received the Harold Sobol Award for Exemplary Service to Meetings and Conferences from the IEEE Communications Society.



- **Prof Limin Zhang**, Department of Civil and Environmental Engineering, was elected a Fellow of the American Society of Civil Engineers.



- **Prof Christopher Chao**, Department of Mechanical Engineering, was elected a Fellow of the American Society of Mechanical Engineers.



- **Prof Furong Gao**, Department of Chemical and Biomolecular Engineering, became a Fellow of the Society of Plastics Engineers.



## FACULTY AWARDS



■ **Prof Lambros Katafygiotis**, Department of Civil and Environmental Engineering, won the Senior Research Prize from the European Association for Structural Dynamics.



■ **Prof Sunghun Kim**, Department of Computer Science and Engineering, received the Software Engineering Innovation Foundation Award from Microsoft Research.



■ **Prof Ricky Lee**, Department of Mechanical Engineering, became President of the IEEE Components, Packaging and Manufacturing Technology Society.

■ **Prof Ricky Lee** and his students, Department of Mechanical Engineering, won the Best Paper Award of SMTA China South Technology Conference. They also received an Outstanding Paper Award from International Conference on Electronics Packaging.



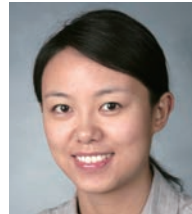
■ **Prof Riki Takeuchi**, Department of Management, was honored with the Allan N Nash Award for Distinguished Doctoral Graduate from the University of Maryland.



■ **Prof James Thong**, Department of Information Systems, Business Statistics and Operations Management, won the Information Systems Research's (ISR) ISR Best Associate Editor Award for 2011.



■ **Prof Christopher Leung**, Department of Civil and Environmental Engineering, was made a Fellow of the International Union of Laboratories and Experts in Construction Materials, Systems and Structures.



■ **Prof Jing Zhu**, Department of Management, received the Scholarly Achievement Award for 2011 from the Academy of Management (HR Division) for the co-authored paper "The Job-search Grind: Perceived Progress, Self Reactions, and Self-regulation of Search Effort".



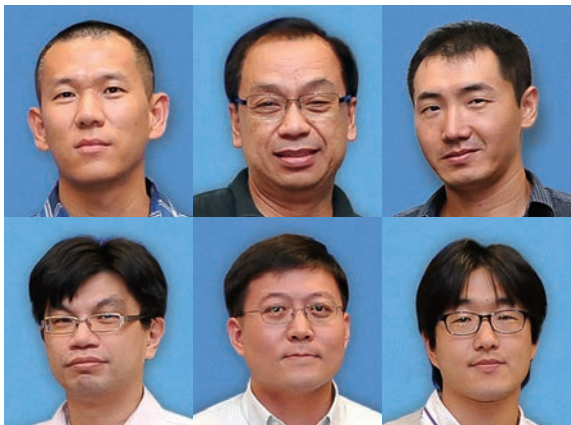
■ **Prof James Lee**, Dean of Humanities and Social Science, received the Japanese Population Association's Best Book in Population Studies Award. The biennial prize was awarded for the co-authored book *Prudence and Pressure: Reproduction and Human Agency in Europe and Asia, 1700-1900*.



■ **Prof Matthew Tommasini**, Division of Humanities, saw his composition *Awaken This Feeling*, featuring violinist Ara Gregorian, premiered at *The Intimacy of Creativity 2011*. The work won top prize in the Professional Division of the 6th Annual Robert Avalon International Competition for Composers 2012 and was selected as Finalist for the Ninth Edition of the International Composition Competition "Città di Udine" 2012 and the International Music Prize for Excellence in Composition 2011.

## AWARDS AND RECOGNITIONS

### FACULTY AWARDS



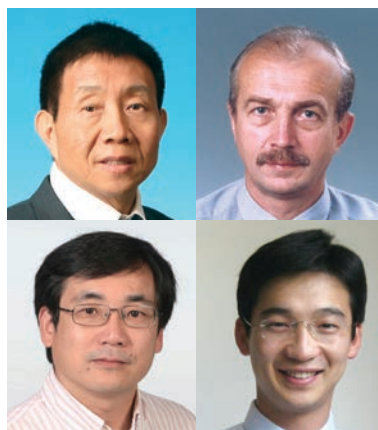
■ **Prof Allen Huang**, Department of Accounting, **Prof Joseph Salvacruz**, Department of Marketing, **Prof Jinyu He** and **Prof Ellick Wong**, Department of Management, **Prof Xinyu Hua** and **Prof Wooyoung Lim**, Department of Economics, were awarded the Franklin Prize for Excellence in Teaching. The Department of Management won the departmental prize.



■ **Prof Kevin Tam**, Division of Social Science and **Prof Simon Wong**, Division of Humanities, received the Best Teacher Awards from the School of Humanities and Social Sciences for the academic year 2011-12.



■ **Prof Milind Rao**, Department of Economics, was named Kellogg-HKUST EMBA Professor of the Year by students for the fourth time.



■ **Prof Tongyi Zhang**, Department of Mechanical Engineering, received the School of Engineering's Distinguished Research Excellence Award. **Prof Vladimir Chigrinov**, Department of Electronic and Computer Engineering, and **Prof Hai Yang**, Department of Civil and Environmental Engineering, received the School's Research Excellence Awards. **Prof Ke Yi**, Department of Computer Science and Engineering, won the Young Investigator Research Award.

### STUDENT ACCOMPLISHMENTS



■ PhD students **Ms Jiefei Chen**, Department of Physics, **Mr Alan Siu Lun Wong** and **Mr Lin Wu**, Division of Life Science, and **Mr Dong Li**, Department of Electronic and Computer Engineering, swept all the 2011 Young Scientist Awards under the three categories of Physical/Mathematical Science, Life Science and Engineering Science.



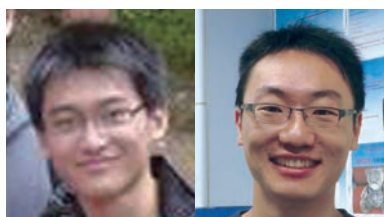
## STUDENT ACCOMPLISHMENTS



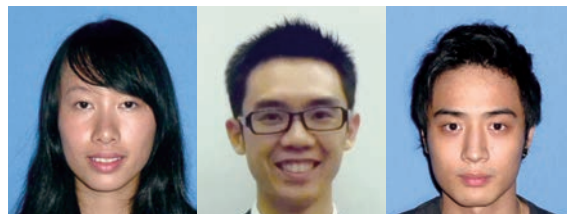
- **Mr Colin Tsang**, Division of Life Science, received the Grand Prize, Audience Choice Award and Voice Choice Award at FameLab Hong Kong. **Ms Emily Ming Wai Siu**, Division of Life Science, became first runner-up. HKUST was named Best Institution for sending the largest number of contestants to the competition.



- PhD candidate **Mr Siyuan Wang**, Department of Chemistry, was one of eight recipients of the 2012-13 RGC-Fulbright Hong Kong Junior Scholar Award. He will be affiliated with the Department of Chemistry and Biochemistry at the University of Colorado Boulder for 10 months to conduct PhD dissertation research.



- **Mr Kin Lam**, Department of Physics, won the Best Poster Award for "Information Processing by Dynamical Synapses in Continuous Attractor Neural Networks" at the 15th Annual Conference of the Physical Society of Hong Kong. He discovered a mechanism by which spiking neurons can enhance the resolution of the neural system. PhD student **Mr Ying Hoi Lai**, Nano Science and Technology Program of the School of Science, received the Best Student Presentation Award for his talk on "MgS Schottky Barrier Devices: a Candidate for Solar-blind UV Sensing" at the same conference. He successfully prepared novel materials and determined exceptional properties that are suitable for a number of civilian and military applications.



- **Ms Hiu Tung To**, **Mr Nelson Lik Ching Leung** and **Mr Jung Ho Park**, Department of Chemistry, were the second runner-up in the Hong Kong Chemistry Olympiad 2012.



- **Ms Yonnie Ying Kiu Fu**, Department of Physics, represented Hong Kong at the World Archery Youth Championship 2011 in Legnica, Poland.



- A **HKUST team** won the Best Presentation Award at the Asia Regional Jamboree of the International Genetically Engineered Machine Competition and was one of 18 teams to go to MIT for the final competition.



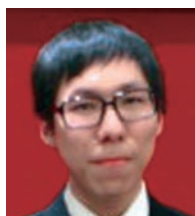
- PhD student **Mr Daniel Yiu Wing Mo**, Department of Industrial Engineering and Logistics Management, was awarded the Sir Edward Youde Memorial Fellowship 2010-11.

# AWARDS AND RECOGNITIONS

## STUDENT ACCOMPLISHMENTS



- PhD student **Mr Zhiliang Qian**, Department of Electronic and Computer Engineering, won a RGC-Fulbright Hong Kong Junior Scholar Award 2011-12.



- **Mr Ka Yeung Wong**, Department of Mechanical Engineering, received the Gold Award from the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Hong Kong Chapter.



- PhD student **Mr Hui Lu**, Department of Civil and Environmental Engineering, won second prize in the Huber Technology Prize 2012.



- MPhil student **Mr Chi Yan Tso**, Department of Civil and Environmental Engineering, received the Arup Research Prize 2012.



- PhD student **Ms Cai Hong**, Department of Electronic and Computer Engineering, gained the Best Student Paper Award (Champion) at the 12th IEEE Photonics Society Hong Kong Chapter Postgraduate Conference.

The **School of Engineering's HKUST Robotics Team**, comprising 70 students from six departments, won various awards:

### Remotely Operated Vehicle (ROV) Team



Photo credit: Innovation and Technology Commission

- Merit Award, 11th Asia Pacific ICT Awards, 2011
- First Class Award, 12th Challenge Cup, China, 2011
- Hong Kong New Force of Innovation and Technology Award, Innotech Month 2011, organized by the Innovation and Technology Commission

### Robocon Teams

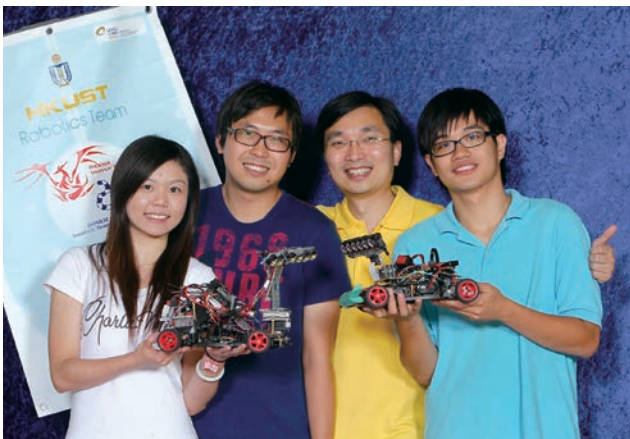


- Best Idea Award and Mabuchi Motor Award, 2011 ABU Asia-Pacific Robot Contest, Bangkok
- Third Class Award, 12th Challenge Cup, China, 2011
- Champion, First Runner-up, Best Engineering Award, Best Artistic Design Award, Robocon 2012 Hong Kong Contest



## STUDENT ACCOMPLISHMENTS

### Smart Car Teams



- Third Class Award and Merit Award in the Freescale Smart Car Competition (South China Region) in 2011



- **Mr Roy Ming Hin Chung**, Department of Computer Science and Engineering, was the winner of the Talent Meets Bertelsmann 2012 program, organized by global media leader Bertelsmann in Beijing.



- Undergraduate students **Mr Qifeng Chen**, **Mr Yuliang Li** and **Mr Tsz Yeung Ng**, Department of Computer Science and Engineering, won the Championship at the Association for Computing Machinery-Hong Kong (ACM-HK) Programming Contest 2011.



- PhD students **Mr Sung Hei Luk**, **Mr Wenqi Du**, **Ms Po Chi Suen** and **Mr Zhe Wang**, Department of Civil and Environmental Engineering, won the Best Presentation Award at the Introducing and Demonstrating Earthquake Engineering Research in Schools (IDEERS) 2011. The contest was held by the National Center for Research on Earthquake Engineering in Taipei.



- **Mr Alexander She**, Global Business and Information Systems Program, was one of the winners of the global competition, Facing Disaster in the 21st century, organized by Challenge: Future.

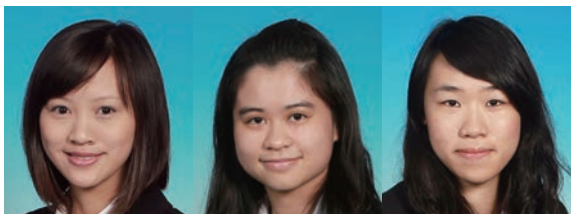
- Three students from the **School of Business and Management** received HSBC Overseas Scholarships, 12 were awarded Kerry Holdings Limited Scholarships, 19 gained Li & Fung Scholarships, three received Sir Edward Youde Memorial Scholarships, eight were awarded Hong Kong Jockey Club Scholarships, and 19 received Joseph Lau Luen Hung Charitable Trust Scholarships. In addition, two joined the Swire International Young Fellows Program.



- **Mr Sze Ping Lo**, HKUST EMBA for Chinese Executives, was named a Young Global Leader for 2012 by the World Economic Forum in recognition of his outstanding leadership and commitment to society.

# AWARDS AND RECOGNITIONS

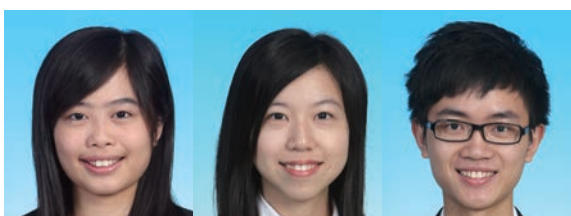
## STUDENT ACCOMPLISHMENTS



- **Ms Vivian Tam, Ms Florence Ng and Ms Teresa Chan**, Global Business Program, won the National Finals of L'Oréal Brandstorm and represented Hong Kong at the International Finals in Paris.



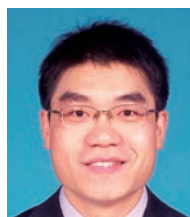
- **Ms Jessica Kwok, Mr Kenny Ng, Mr Philip Chan and Mr Rex Sin**, Global Business Program, won the 2012 HSBC / McKinsey Business Case Competition held in Hong Kong.



- **Ms Carol Tang, Ms Janet Wong and Mr Marco Chu**, Global Business Program, became the champions of the AIESEC - Boston Consulting Group Social Enterprise Case Competition 2012.



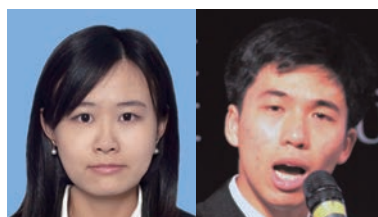
- **Mr Ho Chuen Yim and Mr Tsun Kit Pang**, both graduates from the Department of Accounting, were the Gold Medalist and the Silver Medalist respectively in the Qualification Program examinations, held by the Hong Kong Institute of Certified Public Accountants.



- PhD student **Mr Zhiming Sheng**, Division of Social Science, attended the Consortium on Qualitative Research Methods (CQRM) co-hosted by the Institute for Qualitative and Multi-Method Research at the Maxwell School of Citizenship and Public Affairs, Syracuse University.



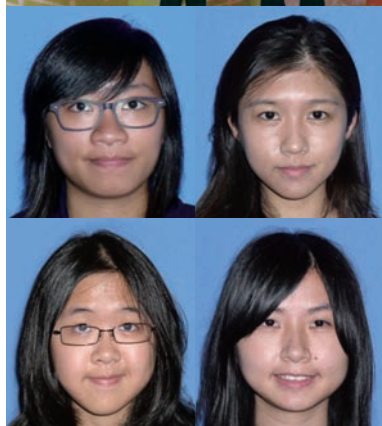
- MPhil students **Ms Gloria He, Mr Ying Bai and Mr Hao Dong**, Division of Social Science, received Hong Kong PhD Fellowships.



- **Ms Yi Sun**, Accounting and Management, and **Mr Marco Hoi Fai Cheung**, Dual Degree Program in Technology and Management, won the fifth annual Henkel Innovation Challenge run by German conglomerate Henkel. It was the first time a team from Asia had won the competition. Global Startup Fellow **Mr Marco Hoi Fai Cheung** also shared his entrepreneurial ideas with participants at the **MIT Global Startup Workshop in Istanbul, Turkey**.



## STUDENT ACCOMPLISHMENTS



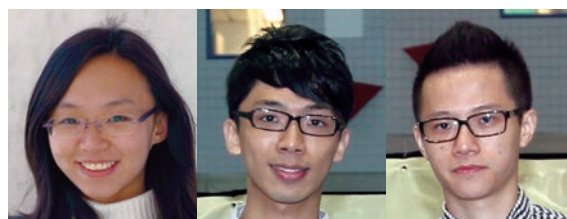
- **Ms Wing Yan Lam, Ms Man Ki Lee, Mr Ka Lee Lee and Ms Pik Kwan Leung**, Division of Environment, won the Silver Award at the Green Residential Development Design Competition, organized by the Business Environment Council. **Ms Wing Tung Fok, Ms Wan Sze Hung, Ms Wing Tsun Shu and Ms Joyce Woo**, Division of Environment, won the Innovation Award.



- PhD student **Mr Hua Ye**, Division of Social Science, won a HKUST Overseas Research Award, which enabled him to spend five months as a visiting research student at the Population Studies Center, University of Michigan.



- **Dr Weiping Wang**, Department of Chemical and Biomolecular Engineering, **Dr Huanfeng Duan**, Department of Civil and Environmental Engineering, and **Dr Yu Zhang**, Department of Computer Science and Engineering, won the first School of Engineering PhD Research Excellence Awards for doctoral students and recent graduates. **Dr Weiping Wang** also gained the Young Investigator Award at the 5th World Association for Chinese Biomedical Engineers (WACBE) World Congress on Bioengineering, Taiwan.



- **Ms Jin Bao**, Economics and Finance, **Mr Chun Chung Kwan**, Economics and Finance and **Mr Wai Shing Tsang**, Professional Accounting were presented the Dean's Service Awards at the HKUST Service Learning Day in recognition of their dedication to community service and leadership abilities in organizing community service projects.



- PhD student **Mr Rulong Liu**, Marine Environmental Science Program, received the Interdisciplinary Programs Office (IPO) Best Research Award 2011-12, which recognizes the outstanding achievements of a research postgraduate student.

# AWARDS AND RECOGNITIONS

## HONORARY DOCTORATES AND FELLOWS

### HONORARY DOCTORATES

- **Dr Simon Ip Sik-On, JP**  
Deputy Chairman of the Board of Stewards,  
The Hong Kong Jockey Club
- **Dr the Hon Elsie Leung Oi-Sie, GBM, JP**  
Former Secretary for Justice, HKSAR Government
- **Prof Tobin J Marks**  
Vladimir N Ipatieff Professor of Catalytic Chemistry  
and Professor of Materials Science and Engineering,  
Northwestern University
- **Prof Eli Yablonovitch**  
James & Katherine Lau Chair in Engineering and  
Professor of Electrical Engineering and Computer  
Sciences, UC Berkeley, and Director of the NSF  
Center for Energy Efficient Electronics Science



### HONORARY FELLOWS

- **Dr Andrew Chan Ka-Ching, BBS, JP**  
Deputy Chairman,  
Arup Group Limited
- **Mr Herbert S Cheng Jr**  
Chief Executive Officer,  
Chiaphua Industries Limited
- **Prof Laurence C Franklin**  
Adjunct Professor,  
School of Business and Management,  
HKUST





## HKUST MEDALS



■ **Prof Amine Bermak**, Department of Electronic and Computer Engineering won the Michael G Gale Medal for Distinguished Teaching.



■ **Mr Hin San Hung**, Department of Industrial Engineering and Logistics Management and Vice-President (Internal) of HKUST Students' Union 2010-2011, won the Stephen Cheong Kam-Chuen Medal for Distinguished Service to the Student Body.



■ **Mr Lang Xu**, BEng in Chemical Engineering, **Ms Fung Chu Li**, BEng in Chemical and Environmental Engineering, **Mr Bowen Sun**, Dual Degree Program (BEng in Chemical Engineering and BBA in General Business Management) and **Mr Hon Ting Wong**, BEng in Chemical and Environmental Engineering were the winners of the President's Cup.



■ **Mr Qifeng Chen**, Department of Computer Science and Engineering, was the champion of the Mr Armin and Mrs Lillian Kitchell Undergraduate Research Awards. **Mr Zhiwei Qiu**, Department of Mechanical Engineering, and **Ms Tong Zhang**, Department of Information Systems, Business Statistics and Operations Management, were the first runners-up. **Mr Yuliang Li**, Department of Computer Science and Engineering, and **Mr Zitao Wang**, Department of Physics, were the second runners-up.



■ **Ms Yuen Man Ip**, Department of Chemical and Biomolecular Engineering, won the Paul and May Chu Sportsman / Sportswoman of the Year Award.



■ **Mr Tze Kin Cheung**, Senior Technical Officer, Materials Characterization and Preparation Facility; **Mr Michael Choi**, Security Manager, Facilities Management Office; and **Ms Julie Shing**, Executive Assistant to the Vice-President for Research and Graduate Studies won the HKUST President's Outstanding Service Awards.

# CALENDAR OF EVENTS

## 2011



### JUL

- Prof Tai Kai Ng, Department of Physics, organized the **Advanced Program on Quantum Condensation (QC11) workshop** for condensed matter theorists to share their results and insights.
- Speakers from the Environmental Protection Department and Innovation and Technology Commission were invited to a **Forum on Interdisciplinary Environmental Research** to share their views on innovative interdisciplinary research related to environmental sustainability.
- A group of HKUST physicists led by Prof Shengwang Du reported direct observation of optical precursors of a single photon and proved that **single photons cannot travel faster than the speed of light in a vacuum**. The study, which reaffirmed Einstein's theory, was published in *Physical Review Letters*, one of the most prestigious scientific journals in physics.

### AUG

- HKUST's **first Summer Institute for Secondary School Students** offered 25 credit-bearing courses in science, engineering, business and management, humanities and social science, and attracted more than 670 participants from over 200 local and overseas schools.

- HKUST partnered with UCLA to host Hong Kong's **first Research in Industrial Projects for Students** initiative, a summer research plus industrial internship and international education exchange program.
- The University hosted a special visit by the **world's largest solar-powered catamaran, MS Türanor PlanetSolar**, to raise environmental consciousness.

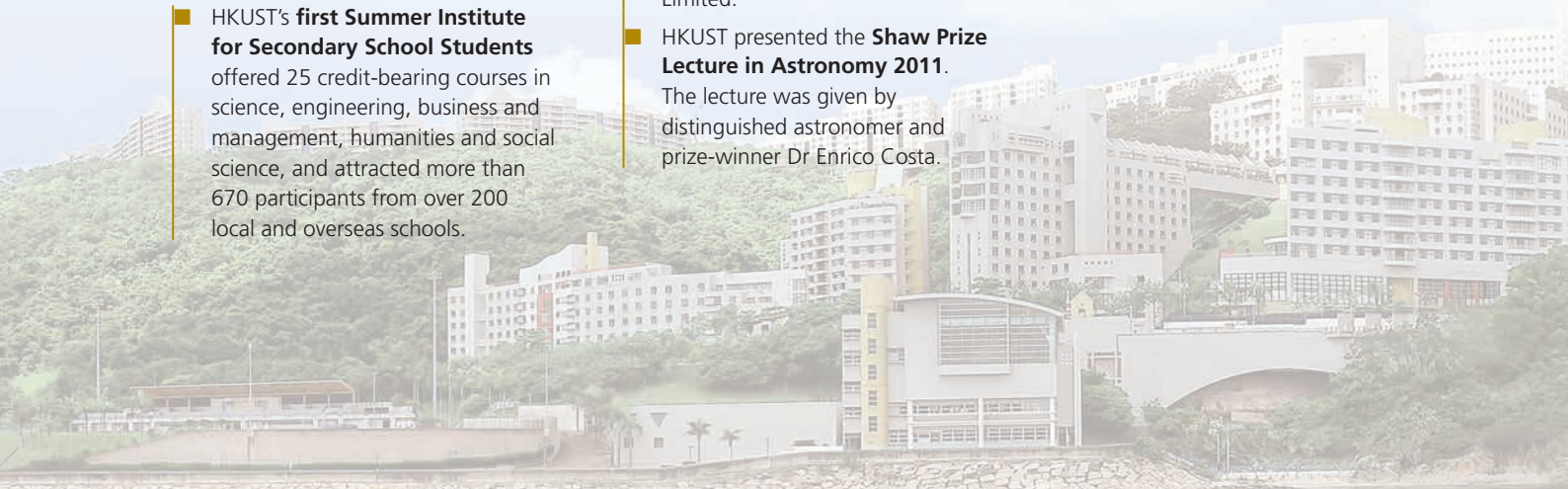
### SEP

- The **HKUST Shenzhen Industry, Education and Research Building** was officially opened to provide 15,000 sq m of space for research, technology transfer and executive training.
- School of Business and Management BBA in Global Business students launched a four-day **Global Business Conference**, the School's first large-scale international conference led by undergraduate students. The closing ceremony was officiated by Dr William Fung of Li & Fung Limited.
- HKUST presented the **Shaw Prize Lecture in Astronomy 2011**. The lecture was given by distinguished astronomer and prize-winner Dr Enrico Costa.

- The University joined hands with 21 secondary schools to launch a **pilot scheme for the first Secondary Schools-University Dual Program** in Hong Kong. The program seeks to nurture gifted students in science and mathematics.

### OCT

- The **UC RUSAL President's Forum** featured Dr Jim O'Neill, Chairman of Goldman Sachs Asset Management and creator of the Brazil, Russia, India, China acronym BRICs.
- The **Bring Technology to Community Exhibition** was organized by the School of Engineering. The display showcased the work of engineering faculty, students and alumni. It was held at the Hong Kong Science Museum.
- President Tony F Chan and Vice-President for Institutional Advancement Dr Eden Y Woon **visited 10 universities and two institutions in Europe**, including Oxford, CERN-European Organization for Nuclear Research and the World Economic Forum.







Two **receptions were held for Consul-Generals** from 21 countries to introduce HKUST's strategic plan and to forge closer relations.

The Kellogg-HKUST Executive MBA program was ranked the **world's No. 1 EMBA program** by the *Financial Times* 2011 EMBA global rankings. It was the third year in a row that the program occupied the top spot.

HKUST hosted the **first Asia Regional Jamboree for the International Genetically Engineered Machine Competition**, an undergraduate Synthetic Biology competition launched by MIT.

## NOV

The **topping-out ceremony for the HKUST Fok Ying Tung Graduate School Building** in Nansha was held. The building strengthens the University's education and research footprint in Mainland China.

A session of **International Poetry Nights in Hong Kong 2011** was held by the Division of Humanities at HKUST, featuring well-known poets from Asia, Europe, North and South America.

Speakers from Purdue University, Northwestern University, and Emerson Network Power took part in the **HKUST Research Forum**. The gathering helped to foster interdisciplinary collaboration.

Mr Jimmy Lai, founder of Giordano and Next Media, kicked off the **second annual HKUST MBA Entrepreneurs Conference**.

The University's **20th Anniversary Celebration Party** on campus was attended by Court and Council Members, faculty, staff, students and alumni.

The **Citi International Case Competition 2011**, sponsored by Citi Hong Kong and co-organized by the School of Business and Management, took place at the University.

## DEC

HKUST, the Hong Kong Academy of Engineering Sciences and the Hong Kong Institution of Science co-organized a high-powered **Science and Technology Forum** in Hong Kong and at HKUST Fok Ying Tung Graduate School in Nansha to discuss how to strengthen collaboration between Hong Kong and the Pearl River Delta.

HKUST signed a **memorandum of understanding with the Guangzhou municipal government** on education and research.

The Division of Life Science held the **Eleventh AEARU Workshop on Molecular Biology and Biotechnology**, enabling scientists to exchange insights on physical biology.

The **first International Symposium on Carbon Cycling in China Seas** took place at HKUST. It was jointly organized by the Division of Life Science and the State Key Laboratory of Marine Environmental Science, Xiamen University. The symposium received support from the Croucher Foundation and KC Wong Education Foundation.

HKUST Institute for Advanced Study pioneered a **one-month topical research program on Arithmetic Geometry and Representation Theory**, the first of its kind in Hong Kong.



# CALENDAR OF EVENTS

## 2012



### JAN

- The **HKUST President's Outstanding Service Awards** were presented to three non-teaching staff members in recognition of their exceptional service and dedication to the betterment of the University.
- A **Joint University Workshop on Biomedical Engineering** was organized by the Division of Biomedical Engineering and the University of Tokyo.
- The **Ocean Modeling Training Workshop** was held at HKUST, becoming the first workshop of its kind in South and East Asia to provide training in advanced numerical ocean modeling to scientists.
- A **Joint Workshop and Executive Forum on Intelligent Living** was held, focusing on the themes of smart buildings, internet infrastructure, mobile computing and biomedical systems. The forum, co-organized by HKUST and MIT, was sponsored by Hong Kong Innovation and Technology Commission.
- Prof Nancy Ip, Dean of Science, and her research team made **breakthrough discoveries in signaling mechanisms in brain development** with far-reaching implications for biomedicine. The findings were published in *Nature Neuroscience*.

### FEB

- A **running squad of HKUST alumni** made its debut at the Standard Chartered Hong Kong Marathon. Spearheaded by President Tony F Chan, the HKUST squad was powered by the 1-HKUST spirit.

- The **HKUST-NIE Social Media Laboratory**, established with a donation of HK\$2 million from Mr Bill Nie, was officially opened as Asia's first research laboratory specializing in the study of social media culture and technologies.
- The Business Council of APEC organized a **special session on Innovation and Technology Transfer** at HKUST. Prominent international speakers from the APEC Business Advisory Council and the Skolkovo Foundation participated.
- President Tony F Chan led a delegation of School Deans with Vice-President for Institutional Advancement Dr Eden Y Woon to **visit seven universities and one institution in North America** including Stanford, Caltech, UCLA, USC and Google.
- Prof Ching W Tang, the first Chinese Wolf Prize Laureate in Chemistry gave a HKUST Institute for Advanced Study **Distinguished Lecture on organic light emitting diodes (OLEDs) and organic solar cells**. Prof Tang is also referred to as the father of OLEDs.

### MAR

- The **Alumni Endowment Fund** was launched, and alumni Dr Jack Lau and Mr Kent Hau pledged dollar-for-dollar personal matching up to HK\$2 million each.
- The **Long Service Award** was presented to 237 staff members in recognition of their 20 years' loyal service to the University.

- The **4th Symposium on Risk Management and Business Intelligence** was held, featuring prominent speakers from Cathay Pacific Airways, CLP Power HK Ltd, JP Morgan, Datatrade Limited, IBM China/Hong Kong Ltd, BrainChild Inc and Gartner Inc.

- A **HKUST Environmental Forum on Climate Change Adaptations** drew keynote speakers from the University of Illinois, Academia Sinica and HKUST's Prof Joseph Lee, Vice-President for Research and Graduate Studies.

- The School of Humanities and Social Science signed a **Memorandum of Understanding with Sun Yat-sen University** to offer joint training and research programs with a global China focus.

- The **HKUST LED-FPD Technology R&D Center at Foshan**, jointly established by HKUST and Nanhai Government, was officially opened. The Nanhai Government provided start-up funding of RMB25 million and 1,800 sq m of space.

- The **HKUST Arts Festival 2012** was organized by the University's Center for the Arts. Workshops, field trips, seminars, talks, exhibitions, and various types of performances were included in the program.

- The **Hong Kong Physics Olympiad 2012** attracted over 1,100 high school students. The annual event is run by the Department of Physics to nurture talented youngsters.





## APR

- Dr Cheng Yu Tung officiated at the **groundbreaking ceremony for the Cheng Yu Tung Building**. A HK\$90 million donation was made by the Chow Tai Fook Cheng Yu Tung Foundation in support of the construction of the eight-storey, 10,000 sq m research and academic building, which will feature multidisciplinary laboratories.
- Prof Arup Chakraborty, the Robert T Haslam Professor of Chemical Engineering, Chemistry and Biological Engineering at MIT, gave a **Distinguished Lecture entitled "How to Hit HIV Where It Hurts"** at HKUST Institute for Advanced Study co-sponsored by the Division of Biomedical Engineering.
- Prof Alex Guenther and Prof Louisa Emmons from the National Center for Atmospheric Research, US, spoke at the **Workshop on Air Quality and Climate at the urban-rural interface**. They spoke on quantifying climate change due to secondary organic aerosol formation at the urban-rural interface through land processes and atmospheric processes respectively.
- The **HKUST Public Humanities Lectures** were co-organized by the Division of Humanities and Hong Kong Museum of History.
- The innovative annual **Intimacy of Creativity** program, involving composers, renowned musicians, and a series of concerts was held. It was hosted by the School of Humanities and Social Science and led by Prof Bright Sheng.

- HKUST and École Nationale Supérieure des Mines de Saint-Étienne in France signed a **Memorandum for Cooperation and an Academic, Scientific and Cultural Cooperation Agreement** to foster collaboration.
- Entrepreneur and artist Mr Nicholas Tse spoke at the **inaugural Asian Leadership Series** at HKUST.

## MAY

- HKUST **ranked first in Asia for the second consecutive year**, according to the *QS Asian University Rankings*.
- Ms Marjorie Yang, Chairman of Esquel Group and one of Fortune's Top 50 Most Powerful Women in Business, appeared at the **UC RUSAL President's Forum**.
- The University organized the second **One Million Dollar Entrepreneurship Competition** with participation from 89 faculty, staff, students and alumni teams. The international judging panel comprised over 50 leading executives, professional investors and entrepreneurial academics.

## JUN

- Prof Shu Chien, Director of the Institute of Engineering in Medicine, University of California, San Diego, gave a **Distinguished Lecture entitled "Perspectives in Biomedical Engineering"** at HKUST Institute for Advanced Study co-sponsored by the Division of Biomedical Engineering.

- HKUST signed a **Memorandum of Understanding with Xian Jiaotong University** to establish the XJTU-HKUST Joint School of Sustainable Development.
- Over 100 students, staff and alumni took part in the **Summer Musical 2012** organized by the Center for the Arts. The musical was the award-winning Broadway show *Guys and Dolls*.
- The Division of Life Science held the **2012 Hong Kong Inter-University Postgraduate Symposium**, together with the University of Hong Kong and the Chinese University of Hong Kong. The joint effort focused on postgraduate research in biochemistry, molecular biology, and other areas of life science.
- The University hosted the **2012 Gordon Research Conference on Molecular and Cellular Neurobiology**. The conference was co-organized by the Biotechnology Research Institute, Division of Life Science, Molecular Neuroscience Center and the State Key Laboratory of Molecular Neuroscience to promote interactions between US and Asia-based neuroscientists.
- A **Conference on Ret/Prospectives of Hong Kong and Delta Cities in Global Shadow** was organized by the Division of Humanities. The conference featured faculty members from universities in Hong Kong, Mainland China and the US.
- About **80 members from the Research Grants Council visited HKUST** to meet academic staff and research students and discuss the University's research activities, strategies and major achievements.

# FACTS AND FIGURES

## STUDENTS

### STUDENT ENROLMENT (AS OF 30 SEPT 2012)

School/ Area	Undergraduate	Postgraduate		Total
		Research	Taught	
Science	2077	421	116	2614
Engineering	3118	835	836	4789
Business and Management	3013	106	1155	4274
Humanities and Social Science	136	94	163	393
HKUST Fok Ying Tung Graduate School	0	61	0	61
Interdisciplinary Programs	355	48	62	465
<b>Total</b>	<b>8699</b>	<b>1565</b>	<b>2332</b>	<b>12596</b>

### NON-LOCAL STUDENT ENROLMENT (2011-12)

Home Country	Undergraduate	Postgraduate		Total
		Research	Taught	
Mainland China	474	1046	766	2286
Other Asian Countries	280	73	142	495
Rest of the World	62	26	140	228
<b>Total</b>	<b>816</b>	<b>1145</b>	<b>1048</b>	<b>3009</b>

### UNDERGRADUATE EXCHANGES (2011-12)

Host/ Destination Region	Exchange-in	%	Exchange-out	%
Mainland China	39	5.5	48	7.0
Asia	150	21.0	129	19.1
North America	255	35.8	238	35.2
Central and South America	2	0.3	8	1.2
Europe	262	36.8	245	36.2
Australia and New Zealand	4	0.6	9	1.3
Africa	0	0	0	0
<b>Total</b>	<b>712</b>	<b>100</b>	<b>677</b>	<b>100</b>



**GRADUATE NUMBERS (2011-12)**

School/ Area	Undergraduate	Postgraduate		Total
		Research	Taught	
Science	460	84	72	616
Engineering	770	179	567	1516
Business and Management	689	13	707	1409
Humanities and Social Science	–	37	132	169
HKUST Fok Ying Tung Graduate School	–	4	–	4
Interdisciplinary Programs	57	15	23	95
<b>Total</b>	<b>1976</b>	<b>332</b>	<b>1501</b>	<b>3809</b>

**EMPLOYMENT (2011)**

	Undergraduates	Postgraduates			
		PhD	MPhil	Taught Master (Except MBA)	MBA
<b>Employment Situation</b>	%	%	%	%	%
Employed	87.3	57.5	48.3	50.8	90.9
Further Studies	10.9	0.7	33.0	7.9	0.9
Returned to Home Country or Emigrated	0.4	41.8	17.8	29.7	0.0
Others	1.4	0.0	0.9	11.6	8.2
<b>Employment Situation by Industry</b>	%	%	%	%	%
Commerce and Business	60.3	2.8	39.6	54.0	79.3
Engineering and Industry	26.5	8.2	31.2	31.1	19.6
Education	8.3	89.0	25.0	11.5	1.1
Government and Related Organizations	2.9	0.0	4.2	1.7	0.0
Community and Social Services	2.0	0.0	0.0	1.7	0.0

## FACTS AND FIGURES

### FACULTY

#### FACULTY MEMBERS (AS OF 30 JUN 2012)

School / Area	Regular	Visiting	Total
Science	105	21	126
Engineering	151	22	173
Business and Management	131	20	151
Humanities and Social Science	58	10	68
Interdisciplinary Programs	8	2	10
<b>Total</b>	<b>453</b>	<b>75</b>	<b>528</b>

### RESEARCH

#### NO. OF NEW RESEARCH PROJECTS AND FUNDING (2011-12)

	Number	Funding (in HK\$M)
UGC	262	60
RGC	279	157
Others	263	226
<b>Total</b>	<b>783*</b>	<b>443</b>

\* No. of projects does not add up due to projects with multiple sponsors.

#### NO. OF PATENTS

Filed	142
Granted	33



## INTERNATIONAL RANKINGS

HKUST	<b>No. 33 in the world</b> (World's Top 700 Universities, QS World University Rankings 2012)
	<b>No. 65 in the world</b> (World's Top 400 Universities, Times Higher Education World University Rankings 2012/13)
	<b>No. 1 in Asia — two years in a row</b> (Asia's Top 300 Universities, QS Asian University Rankings 2012)
School of Science	<b>No. 11 in the world</b> (World's Top 200 Universities in Chemistry, QS World University Ranking by Subject 2012)
	<b>No. 2 in Hong Kong, No. 9 in Asia</b> (Asia's Top 100 Universities in Natural Sciences, QS Asian University Rankings 2012)
	<b>No. 14 in Asia (Life Sciences and Medicine)</b> (Asia's Top 100 Universities in Life Sciences and Medicine, QS Asian University Rankings 2012)
School of Engineering	<b>No. 1 in Hong Kong, No. 1 in Greater China, No. 23 in the world</b> (World's Top 50 Universities in Engineering and Technology, Times Higher Education World University Rankings 2012/13)
	<b>No. 1 in Hong Kong, No. 27 in the world</b> (World's Top 200 Universities in Engineering and Technology, QS World University Rankings 2012)
	<b>No. 1 in Greater China, No. 26 in the world</b> (World's Top 200 Universities in Computer Science, Academic Ranking of World Universities by Shanghai Jiao Tong University 2012)
	<b>No. 3 in Greater China, No. 38 in the world</b> (World's Top 200 Universities in Engineering/Technology and Computer Sciences, Academic Ranking of World Universities by Shanghai Jiao Tong University 2012)
School of Business and Management	Kellogg-HKUST EMBA Program: <b>No. 1 in the world — four years in a row</b> (Global EMBA Rankings, Financial Times 2012)
	Full-Time MBA Program: <b>No. 10 in the world and No. 19 in research ranking in the world</b> (Global MBA Rankings, Financial Times 2012)
	<b>No. 1 in Asia, No. 48 in the world</b> (World's Top 200 Universities in Economics / Business, Academic Ranking of World Universities by Shanghai Jiao Tong University 2012)
	<b>No. 1 in Asia, No. 17 in the world</b> (University of Texas at Dallas (UTD) Top 100 World Rankings of Business Schools, based on research contributions in 2007-2011)
	<b>No. 50 in the world</b> (World's Top 50 Universities in Social Sciences, Times Higher Education World University Rankings 2012/13)
School of Humanities and Social Science	<b>No. 1 in Greater China, No. 51-75 in the world</b> (World's Top 200 Universities in Social Science, Academic Ranking of World Universities by Shanghai Jiao Tong University 2012)
	<b>No. 50 in the world</b> (World's Top 50 Universities in Social Sciences, Times Higher Education World University Rankings 2012/13)

Note: The figures in Facts and Figures may differ from those in the main text due to slightly different review periods.

# APPENDICES

## APPENDIX I: COURT, COUNCIL AND SENATE

(As of 30 June 2012)

### COURT MEMBERSHIP

Ex-officio Members	Chairman	Dr John C C Chan, <i>GBS, JP</i>
	Honorary Chairmen	Dr the Hon Sir Sze-Yuen Chung, <i>GBM, JP</i> Dr Vincent H S Lo, <i>GBS, JP</i>
Honorary Members	Chairman of the Council	Dr the Hon Marvin K T Cheung, <i>GBS, JP</i>
	Vice-Chairman of the Council	Dr Michael H H Mak, <i>JP</i>
Appointed Members	Treasurer of the University	Mr John B Harrison
	President of the University	Prof Tony F Chan, <i>JP</i>
	Provost	Prof Wei Shyy
	President of the Students' Union	Mr Green Wing-Sum Lam
	President of the Alumni Association	Ms Laura Kar-Yuk Cozijnsen
	Chairman of the Staff Association	Dr Chi-Moon Li
	The Hon Sir David Akers-Jones, <i>GBM, JP</i>	Dr Robin Y H Chan, <i>GBS, JP</i>
	Dr Thomas T T Chen	Dr Christopher Cheng, <i>GBS, OBE, JP</i>
	Dr Henry Cheng, <i>GBS</i>	Dr Cheng Hon-Kwan, <i>GBS, OBE, JP</i>
	Mr Paul M F Cheng, <i>JP</i>	Mr Linus W L Cheung, <i>JP</i>
	Dr Raymond K F Ch'ien, <i>GBS, JP</i>	Dr Chow Yei-Ching, <i>GBS</i>
	Dr Kenneth H Fang, <i>GBS, JP</i>	Dr William K Fung, <i>SBS, JP</i>
	Dr the Hon Hari N Harilela, <i>GBM, GBS, OBE, JP</i>	Mr Hu Fa-Kuang, <i>GBS, CBE, JP</i>
	Mr Herman S M Hu, <i>BBS, JP</i>	Mr Lester G Huang, <i>JP</i>
	Dr Simon S O Ip, <i>JP</i>	Dr Roger King
	Mr Walter P S Kwok, <i>JP</i>	Dr Lau Wah-Sum, <i>GBS, JP</i>
	The Hon Lau Wong-Fat, <i>GBM, GBS, JP</i>	Dr the Hon Charles Y K Lee, <i>GBM, GBS, JP</i>
	Dr the Hon Lee Shau-Kee, <i>GBM</i>	Dr the Hon Andrew K N Li, <i>GBM, SC</i>
	Ms Kai-Yin Lo, <i>SBS</i>	Mr Winston Yau-Lai Lo, <i>SBS</i>
	Dr Christine Loh Kung-Wai, <i>JP</i>	Dr the Hon Lui Che-Woo, <i>GBM, GBS, MBE, JP</i>
	Mr Tim Lui Tim-Leung, <i>BBS, JP</i>	Dr Anthony Neoh, <i>SC, JP</i>
	Mr David Teng Pong	Mr Sin Chung-Kai, <i>SBS, JP</i>
	Dr Jack C Tang	Dr Lawrence T Wong
	Mr Wilfred Y W Wong, <i>SBS, JP</i>	The Hon Marjorie Yang, <i>JP</i>
	Dr Geoffrey M T Yeh, <i>SBS, JP</i>	Dr Larry C K Yung
	Mr Alexander S K Au	Dr Anissa Chan, <i>MH, JP</i>
	Dr Charles S C Chan, <i>BBS, JP</i>	Mr Ronnie C Chan
	Ms Ronna W Chao	Mr Chau How-Chen, <i>GBS, JP</i>
	Mr Donald Chia, <i>JP</i>	Dr Alice Chiu, <i>BBS, JP</i>
	Mr Oscar V T Chow	Dr Paul M Y Chow, <i>GBS, JP</i>
	Dr Stephen Chow, <i>SBS, JP</i>	Mrs Susan Chow
	Mr Ian C W Fok, <i>SBS, JP</i>	Mr David Fong Man-Hung, <i>BBS, JP</i>
	Dr Patrick Y B Fung, <i>JP</i>	Dr Aron H Harilela



**COURT MEMBERSHIP** *(continued)***Appointed Members**

Mr Victor Hui Chun-Fui, *GBS, JP*  
 Mr Keith Graham Kerr, *SBS, JP*  
 Mr Herbert S K Lee  
 Mr Winston Leong Kwok-Wai  
 Dr Raymond Leung Siu-Hong  
 Mr Michael S L Liu  
 Mrs Noelle Lu  
 Mr Francis Lui Yiu-Tung  
 Mr Kenneth Ting Woo-Shou, *SBS, JP*  
 Ms Christine Wong  
 Dr Rosanna Wong Yick-Ming, *DBE, JP*

Ms Katherine Hung Siu-Lin  
 Mr Quinn Y K Law, *JP*  
 Ms Margaret Lee Pui-Man  
 Mr Humphrey Leung Kwong-Wai  
 Mr Ted Ling  
 Mr Colin Lo Chor-Cheong  
 Dr Ronald Lu  
 The Hon Abraham Shek Lai-Him, *SBS, JP*  
 Mrs Christine Wong, *SBS*  
 Mr Peter T S Wong, *JP*  
 Mr Thomas J Wu

**Appointed Senate Representatives**

Prof Leonard K Cheng, *JP*  
 Prof Francis T Lui

Prof Nancy Y Ip, *MH*  
 Prof Charles W W Ng

**COUNCIL MEMBERSHIP**

**Chairman**  
**Vice-Chairman**  
**Treasurer of the University**  
**President of the University**  
**Provost**  
**Vice-President**

**Deans**

Dr the Hon Marvin K T Cheung, *GBS, JP*  
 Dr Michael H H Mak, *JP*  
 Mr John B Harrison  
 Prof Tony F Chan, *JP*  
 Prof Wei Shyy  
 Dr Eden Y Woon, *JP*,  
*Institutional Advancement*  
 Prof Nancy Y Ip, *MH*,  
*School of Science*  
 Prof Lionel M Ni,  
*HKUST Fok Ying Tung Graduate School*

**Academic Members of the Senate**

Prof Kalok Chan

Prof Peiyuan Qian

**Chairman of Convocation**

Mr Sean Lin

**Elected Staff Member**

Dr Lijing Zhu

**Elected Student Member**

Mr Pang Wai-Lam William

**Members Not Being Public Officers or Employees of the University**

Mr Anthony K K Chan, *SC*  
 Ms Lai-Yuen Chiang, *JP*  
 Mrs Yvette Yeh Fung  
 Mr Marcus C W Lee  
 Ms Catherine K C Leung  
 Mr Maximilian Y K Ma  
 Ms Woo Chun-En Jennifer

Mr Herbert S Cheng Jr  
 Ms Anita Fung Yuen-Mei  
 Mr Hans Michael Jebesen, *BBS*  
 The Hon Starry Lee Wai-King, *JP*  
 Mr Sing-Cheong Liu, *JP*  
 Mr Wong Tat-Sum Samuel  
 Mr Michael Wu Wei-Kuo

## APPENDICES

## APPENDIX I: COURT, COUNCIL AND SENATE (continued)

SENATE MEMBERSHIP			
	Chairman	Prof Tony F Chan, President	
	Provost	Prof Wei Shyy	
	Vice-Presidents	Prof Yuk-Shan Wong, <i>Administration and Business</i>	
		Dr Eden Y Woon, <i>Institutional Advancement</i>	
		Prof Joseph Hun-Wei Lee, <i>Research and Graduate Studies</i>	
School of Science	Prof Nancy Y Ip, <i>Dean</i> Prof Michael M Loy Prof Jiannong Wang	Prof Michael S Altman Prof Allen Moy Prof Michael K Y Wong	Prof Zhenyang Lin Prof Robert Z Qi Prof Zhenguo Wu
School of Engineering	Prof Khaled Ben Letaief, <i>Dean</i> Prof Mounir Hamdi Prof Ross D Murch Prof Matthew M F Yuen	Prof Guohua Chen Prof Christopher K Y Leung Prof Charles W W Ng Prof Tianshou Zhao	Prof Ravindra S Goonetilleke Prof Hong-Kam Lo Prof Fugee Tsung
School of Business and Management	Prof Leonard K Cheng, <i>Dean</i> Prof Siu-Fai Leung Prof Angela L P Ng Prof Guochang Zhang	Prof Kalok Chan Prof J T Li Prof Jaideep Sengupta	Prof Kevin C W Chen Prof Francis T Lui Prof James Y L Thong
School of Humanities and Social Science	Prof James Lee, <i>Dean</i> Prof Michelle Yik	Prof Albert Park	Prof Billy K L So
HKUST Fok Ying Tung Graduate School	Prof Lionel M Ni, <i>Dean</i>		
Dean of Students	Prof Kar-Yan Tam		
Interdisciplinary Programs Office	Prof Chi-Ming Chan, <i>Director</i>	Prof Chak-Keung Chan	Prof I-Ming Hsing
Elected Members of the Academic Staff	Prof Jimmy Chi-Hung Fung	Prof Andrew L Miller	Prof Jogesh K Muppala
Co-opted Members of the Academic Staff	Prof David K Banfield Prof Xiao-Yuan Li Prof Henry Tye	Prof Che-Ting Chan Prof Peiyuan Qian	Prof Mohamed S Ghidaoui Prof Karl W K Tsim
Directors	Dr Grace Au, <i>Student Affairs</i>	Mr Robert Brashear, <i>Academic Records and Registration</i>	Dr Samson C Soong, <i>Library</i>
Student Representative(s)	Mr Green Wing-Sum Lam, <i>President of Students' Union</i>		



## APPENDIX II: ATTENDANCE OF MEMBERS AT COUNCIL MEETINGS

Date of meeting	Total number of Council members	Number of members present	Percentage of members present
23 September 2011	27	17	63%
9 December 2011		22	81%
16 March 2012		20	74%
18 June 2012		21	78%

## APPENDIX III: ACADEMIC ADVISORY COMMITTEES

### SCHOOL OF SCIENCE ADVISORY COMMITTEE

**Prof Marvin Cohen**

University Professor, Department of Physics  
University of California, Berkeley  
USA

**Prof Roger E Howe**

Professor, Department of Mathematics  
Yale University  
USA

**Prof Roberto Kolter**

Professor, Department of Microbiology  
and Immunology  
Harvard Medical School  
USA

**Prof Jean-Marie Lehn**

Director of the Supramolecular Chemistry  
Laboratory  
Institut de Science et d'Ingénierie  
Supramoléculaires (ISIS)  
Université Louis Pasteur, Strasbourg  
France

**Prof Patrick Lee**

William & Emma Rogers Professor of Physics  
Division Head, Atomic, Biological  
Condensed Matter and Physics  
Massachusetts Institute of Technology  
USA

**Prof George Papanicolaou**

Robert Grimm Professor in Mathematics  
Department of Mathematics  
Stanford University  
USA

**Prof Randy Schekman**

Howard Hughes Investigator and Professor of  
Cell and Developmental Biology Department  
of Molecular and Cell Biology  
University of California, Berkeley  
USA

**Prof Xiaodong Wang**

Director and Investigator  
National Institute of Biological Sciences  
Beijing  
China

**Prof Weitao Yang**

Philip Handler Professor of Chemistry  
Department of Chemistry  
Duke University  
USA

**Prof King-Wai Yau**

Professor of Neuroscience  
The Solomon H Snyder Department of  
Neuroscience  
Johns Hopkins University  
USA

### SCHOOL OF ENGINEERING ADVISORY COMMITTEE

**Prof Eduardo D Glandt**

Dean  
School of Engineering and Applied Science  
Robert D Bent Professor of  
Chemical and Biomolecular Engineering  
University of Pennsylvania  
USA

**Prof Nicholas P Jones**

Dean  
Whiting School of Engineering  
Johns Hopkins University  
USA

**Prof M Tamer Özsu**

Professor and Director  
David R Cheriton School of Computer Science  
University of Waterloo  
Canada

**Prof Vincent Poor**

Dean  
School of Engineering and Applied Science  
Michael Henry Strater University Professor of  
Electrical Engineering  
Director, Princeton Center for Innovation in  
Electrical Engineering  
Princeton University  
USA

**Prof King-Ning Tu**

Professor  
Department of Materials Science and  
Engineering  
Henry Samueli School of Engineering and  
Applied Science  
University of California, Los Angeles  
USA

**Prof David Wu**

Iacocca Professor and Dean  
P C Rossin College of Engineering and  
Applied Science  
Lehigh University  
USA

## APPENDICES

APPENDIX III: ACADEMIC ADVISORY COMMITTEES *(continued)*

## SCHOOL OF BUSINESS AND MANAGEMENT ADVISORY COUNCIL

**Dr Fung Kwok Lun, William**

Group Chairman  
Li & Fung Limited

**Ms Umran Beba**

President, Asia Pacific Region  
PepsiCo

**Prof Sally Blount**

Dean  
Kellogg School of Management  
Northwestern University

**Mr Louis McDaniel Bowen**

Chairman and Chief Executive Officer  
Asia Capital Management Limited and China  
Advisors Limited

**Mr Cheah Cheng Hye**

Chairman and Co-Chief Investment Officer  
Value Partners Group Ltd

**Mr Philip Chen**

Managing Director  
Hang Lung Properties

**Mr Chow Man Yiu, Paul**

Chairman  
Hong Kong Cyberport Management Company  
Limited

**Mr David L Cunningham Jr**

President, Asia Pacific Division  
FedEx Express

**Dr Fu Yuning**

Chairman  
China Merchants Group

**Mr Hung Pi Cheng Benjamin**

Executive Director and Chief Executive Officer  
Standard Chartered Bank (Hong Kong) Limited

**Prof Dipak C Jain**

Dean  
INSEAD

**Mr Hans Michael Jebesen**

Chairman  
Jebesen & Co Ltd

**Mr Keith Kerr**

Chairman  
The Development Studio Ltd

**Dr Raymond Kwok Ping-Luen**

Chairman and Managing Director  
Sun Hung Kai Properties Ltd

**Prof Hau L Lee**

Thoma Professor of Operations  
Information and Technology  
Stanford Graduate School of Business

**Mrs Margaret Leung**

Former Vice-Chairman and Chief Executive  
Hang Seng Bank

**Mr Liu Sing-Cheong**

Chairman  
My Top Home (China) Holdings Limited

**Dr Vincent H S Lo**

Chairman  
Shui On Holdings Limited

**Ms Heidi Miller**

President of International  
JP Morgan

**Mr Christopher Dale Pratt**

Chairman  
Swire Pacific Limited

**Prof Yingyi Qian**

Dean  
School of Economics and Management  
Tsinghua University

**Mr James E Thompson**

Chairman  
Crown Worldwide Holdings Ltd

**Dr Wong Chi-Yun Allan**

Chairman and Group Chief Executive Officer  
VTech Holdings Limited

**Dr Rosanna Wong Yick-ming**

Executive Director  
The Hong Kong Federation of Youth Groups

**Mrs Betty Yuen So Siu Mai**

Vice Chairman  
CLP Power Hong Kong Ltd

**Mr Shengman Zhang**

Chairman, Asia Pacific  
Citi

## SCHOOL OF HUMANITIES AND SOCIAL SCIENCE ADVISORY COMMITTEE

**Prof Angela Ki Che Leung**

Director and Chair Professor  
Hong Kong Institute for the Humanities and  
Social Sciences  
The University of Hong Kong

**Prof Lydia Liu**

Wu Tsun Tam Professor in the Humanities  
Professor of Chinese and  
Comparative Literature  
Columbia University

**Prof Kenneth Pomeranz**

Department of History  
University of California, Irvine

**Prof Andrew Walder**

Denise O'Leary and Kent Thiry Professor  
Department of Sociology  
Stanford University

**Prof Yunxiang Yan**

Professor  
Department of Anthropology  
UCLA



## APPENDIX IV: FINANCE

### OVERVIEW

For the year just ended, the global economy was marked by slackened economic growth and continuation of the financial woes especially in the Eurozone countries. Under such a complex and volatile market environment, the University suffered a sizeable reduction in interest and investment returns to \$19 million (\$343 million for 2010/11), mainly due to a drop in the fair value of the investment portfolio managed by fund managers. Coupled with the higher final-year preparation costs for launching of the new 4-year Undergraduate (UG) System in the coming year, the University recorded a consolidated deficit of \$101 million for 2011/12 (surplus of \$509 million for 2010/11).

### CONSOLIDATED INCOME AND EXPENDITURE

Consolidated income for the year decreased to \$2,916 million (\$3,186 million for 2010/11) mainly due to the above-mentioned decrease in investment returns; but partly offset by a growth in tuition fees, mostly from self-financing programs.

Consolidated expenditure for the year rose to \$3,020 million (\$2,681 million for 2010/11). The increase included the upward general adjustment in salaries, additional staffing and other spending for the preparation of the new UG System, as well as corresponding increases in expenditure for the expanded self-financing programs and other activities.

### SEGMENT RESULTS

#### ***University Grants Committee ("UGC") Block Grant-funded Activities***

The deficit of \$153 million was within the approved budget plan. It was covered by the General and Development Reserve which had been built up during the past few years for meeting the anticipated final-year draw-down preparing for the 4-year UG System to be launched in the coming year.

#### ***Self-Financing Continuing Professional Education Programs ("CPEP"), Research and Other Activities***

While the operation of self-financing CPEP activities continued to expand and contribute surplus to the University, other income from research activities was slightly reduced. Intensified by the decrease in investment returns, the overall surplus of these operating segments dropped to \$99 million (\$215 million for 2010/11).

### ***Donations and Related Activities***

With a number of pledged donations deferred pending the launch of a new round of Government Matching Grant Scheme (MGS); and with the unfavorable investment returns in 2011/12, the segment suffered a deficit of \$47 million (surplus of \$233 million for 2010/11, \$129 million of which was matching grant received from UGC under the previous round of MGS). This illustrated how the segment results would fluctuate with or without a MGS in operation during a financial year. Had the operating results of the donation activities segment been removed from the other segments which housed the otherwise recurrent activities of the University, the variance in the consolidated operating result would be reduced to \$330 million (deficit of \$54 million for 2011/12 vs surplus of \$276 million for 2010/11) instead of \$610 million (deficit of \$101 million for 2011/12 vs surplus of \$509 million for 2010/11).

### CAPITAL EXPENDITURE

Construction projects, including the Lee Shau Kee Business Building and Institute for Advanced Study Academic Building are nearly completed and targeted for occupancy in the last quarter of 2012. The new hostel with 700 student places is progressing on schedule and is expected to be completed before the end of 2012. The University has withdrawn from the off-campus joint student hostel project in Ma On Shan; for replacement, an on-campus site will be selected for building a new student hostel with 1,200 accommodation places. Other in-progress construction projects include the additional teaching and research facilities, and the other off-campus joint student hostel in Tseung Kwan O.

As at 30 June 2012, the total commitments for the approved construction projects and other capital items amounted to \$1,851 million. Of which, \$1,183 million will be supported by approved but yet to be received UGC grants, \$67 million by pledged donations and the rest by HKUST's reserves and deferred income on hand.

### OUTLOOK

With the full implementation of the Enterprise Resources Planning system and near completion of several capital construction projects in a few months' time, the University is ready to take on the challenge of the launch of the double UG cohorts in the coming fall.

It is generally anticipated that global financial woes, especially in the Eurozone, will remain unresolved. Management foresees that the University will still be confronted with challenges posed by the unstable macro economic and financial markets environment.

# CONSOLIDATED BALANCE SHEET

## AS AT 30 JUNE 2012

	2012 \$million	2011 \$million
<b>Non-Current Assets</b>		
Property, Plant and Equipment	4,030	3,617
Intangible Assets	49	47
Held-to-Maturity Financial Assets	1,019	1,423
Available-for-Sale Financial Assets	17	19
Financial Assets at Fair Value through Profit or Loss	2,368	1,656
Interest in an Associate	59	57
Interest in a Joint Venture	0	0
Bank Deposits with Maturity over One Year	60	198
	<b>7,602</b>	<b>7,017</b>
<b>Current Assets</b>		
Held-to-Maturity Financial Assets	407	204
Inventories	1	1
Accounts Receivable and Prepayments	267	234
Bank Deposits with Original Maturity over Three Months	534	759
Cash and Cash Equivalents	739	967
	<b>1,948</b>	<b>2,165</b>
<b>Current Liabilities</b>		
Accounts Payable and Accruals	470	323
Provision for Staff Benefits	122	98
Deferred Income	622	701
Tax Payable	2	2
	<b>1,216</b>	<b>1,124</b>
<b>Net Current Assets</b>	<b>732</b>	<b>1,041</b>
<b>Total Assets Less Current Liabilities</b>	<b>8,334</b>	<b>8,058</b>
<b>Non-Current Liabilities</b>		
Provision for Staff Benefits	16	14
<b>NET ASSETS</b>	<b>8,318</b>	<b>8,044</b>
<b>Capital Reserves</b>	<b>4,079</b>	<b>3,664</b>
<b>UGC Block Grant Reserves</b>	<b>967</b>	<b>1,110</b>
<b>Donations and Matching Grants Reserves</b>	<b>2,065</b>	<b>2,135</b>
<b>Other Reserves</b>	<b>1,204</b>	<b>1,130</b>
<b>Investment Revaluation Reserve</b>	<b>3</b>	<b>5</b>
<b>TOTAL FUNDS</b>	<b>8,318</b>	<b>8,044</b>



# CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEAR ENDED 30 JUNE 2012

	2012 \$million	2011 \$million
<b>Income</b>		
Government Subventions and Grants	1,687	1,701
Tuition, Programmes and Other Fees	739	672
Interest and Investment Income, net	19	343
Donations and Benefactions	27	39
Auxiliary Services and Other Income	276	281
Transfers from Capital Reserves	168	150
	<b>2,916</b>	<b>3,186</b>
<b>Expenditure</b>		
<i>Learning and Research</i>		
Instruction and Research	1,924	1,754
Library	87	79
Central Computing Facilities	96	80
Other Academic Services	70	55
	<b>2,177</b>	<b>1,968</b>
<i>Institutional Support</i>		
Management and General	170	155
Premises and Related Expenses	476	387
Student and General Education Services	166	140
Other Activities	31	31
	<b>843</b>	<b>713</b>
	<b>3,020</b>	<b>2,681</b>
<b>(Deficit) / Surplus from operation for the year</b>	<b>(104)</b>	<b>505</b>
Share of Result of an Associate	3	4
<b>(Deficit) / Surplus for the year before taxation</b>	<b>(101)</b>	<b>509</b>
<b>Taxation</b>	<b>0</b>	<b>0</b>
<b>(Deficit) / Surplus for the year after taxation</b>	<b>(101)</b>	<b>509</b>
<b>Other comprehensive (loss) / income for the year</b>		
Unrealised (loss) / gain on Available-for-Sale Financial Assets	(2)	3
Transfer from Capital Reserves to consolidated statement of comprehensive income	(168)	(150)
Exchange differences arising from retranslation	2	10
Change in share of statutory reserves of an Associate	0	1
	<b>(168)</b>	<b>(136)</b>
<b>Total comprehensive (loss) / income for the year</b>	<b>(269)</b>	<b>373</b>
<b>Transfers to / (from):</b>		
Capital Reserves	(167)	(145)
University Grants Committee ("UGC") Block Grant Reserves	(153)	61
Donations and Matching Grants Reserves	(48)	236
Other Reserves	101	218
Investment Revaluation Reserve	(2)	3
	<b>(269)</b>	<b>373</b>



*Most of the photographs used in this Annual Report are contributed by our staff, students and alumni.*

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