

Overview of Research Activities of The University of Hong Kong 2014–15

1. Institutional Policy on Research

1. Excellence and innovation in teaching and learning, research and knowledge exchange form the core of the University of Hong Kong's (HKU) mission, as it strives to attract and nurture outstanding scholars from around the world and contribute to the advancement of society and the development of leaders through a global presence, regional significance and engagement with the rest of China.

2. Flowing directly from this institutional vision, HKU's research policy aims to strengthen its capabilities in both fundamental and outcome-driven research and knowledge exchange within a culture that enables our researchers to flourish. The University emphasises innovative, high-impact and multidisciplinary research, and believes that an outstanding research culture enhances the quality of research postgraduate education. It recognises that it must be fully accountable for the effective management of the public and private resources it deploys towards its research aims, and welcomes the opportunity to act in partnership with the wider community to generate, disseminate and apply knowledge.

3. To further cultivate a supportive, dynamic environment in which staff and students can excel in research at an international level and realise their full potential in advancing and transferring knowledge, the University Research Committee (URC) has developed the following five strategies:

- (a) to develop strategic research areas and themes;
- (b) to support 'blue-sky' and curiosity-driven research;
- (c) to nurture next-generation scholars and researchers;
- (d) to encourage knowledge transfer to community and society; and
- (e) to enhance international and Mainland collaborations.

4. For the past decade, the University has employed a Strategic Research Themes (SRTs) initiative. Launched in 2004 and now in its third cycle, the initiative aims to identify strategic research areas and themes where interdisciplinary collaboration will offer the potential for important breakthroughs. It also serves as a platform for nurturing interdisciplinary collaborative research projects for external research grant applications. The third round of this initiative provides focussed support over a three-year period for 16 SRTs and 5 emerging SRTs, grouped under the 5 areas of *Community*, *Biomedicine*, *Environment*, *Frontier Technology* and *China*.

5. Alongside its specific research strategies, the University continues to invest in the human resources necessary to sustain a research culture dedicated to excellence. This includes sustaining a proactive human resource policy and management structure to, inter alia, facilitate academic recruitment and retention, enhance diversity in international staff recruitment, and recognise performance.

6. Within this broad strategic framework the University continues to encourage research excellence in a number of important specific areas. It continues to fund curiosity-

driven research and to incubate new research initiatives with seed-funding grants. Emphasis is also increasingly placed on the impact of its research through the translation and application of its findings and through knowledge exchange. The University also continues, through its RPg policies, to develop a culture of student-centred, performance-based, and shared-responsibility research.

7. The following institutional policy developments took place during the report period.

Strategic Research Areas and Themes

8. This initiative prioritises support for collaborative, interdisciplinary research. In the current third cycle, 16 themes and 5 emerging themes have been identified under five broad areas of focus: *Community, Biomedicine, Environment, Frontier Technology and China*. Neuroscience is a new theme in this round, as are the emerging themes on Food; Law, Literature, Language; and Integrative Biology. More information can be found at www.hku.hk/research/strategic-research.

9. During the reporting year, funding was awarded to an HKU-led Theme-based Research Scheme (TRS) project related to the University's strategic research theme of Infection and Immunology. This theme, part of the initiative since 2004, also has a related Partner State Key Laboratory (SKL) for Emerging Infectious Diseases. The new TRS project is on the "Molecular Basis for Interspecies Transmission and Pathogenesis of Middle East Respiratory Syndrome Coronavirus".

10. In reviewing the annual reports of the strategic research themes (SRTs) and emerging SRTs (e-SRTs), the URC recommended two key objectives for SRTs/e-SRTs: (i) a primary objective to develop a focused subject or programme that would be suitable for a large externally funded collaborative project and several top-class publications; and (ii) a secondary objective (for more mature themes that have already attracted significant external funding) to incubate emerging fields within the broad theme by bringing in new people and encouraging new synergies.

Seed Funding to Incubate Group-based Collaborative Research Projects

11. HKU has been successful in bidding for competitive funding under the Research Grants Council's (RGC) collaborative large-scale research projects (namely, the Areas of Excellence (AoE) Scheme, Theme-based Research Scheme (TRS), and Collaborative Research Fund (CRF); please refer to *Research Highlights* later in the report). To maintain this momentum and further enhance the competitiveness of our academic staff in the application for such projects, during the reporting year the URC introduced an internal research support programme for Seed Funding to Incubate Group-based Collaborative Research Projects, with the first application round in October/November 2014.

Research Integrity

12. While achieving excellence in research, HKU aims to establish a culture among the university community of upholding research integrity. Promoting responsible academic conduct has therefore been made a top priority of the research management.

13. Professor Frederick K.S. Leung has been appointed as the Director of Education and Development for Research Integrity since June 2011. His remit includes looking into areas covering training and education for staff and students, as well as the latest developments in research and good practice elsewhere. Due to the increasing work in this area, Professor Danny Chan has been appointed as the Deputy Director of Education and Development for Research Integrity starting from January 1, 2015. The research ethics compliance continues to be handled by the relevant ethical approval bodies, namely the Human Research Ethics Committee (HREC), the Institutional Review Board of the University of Hong Kong/Hospital Authority Hong Kong West Cluster (HKU/HA HKW IRB, the “IRB”), and the Committee for the Use of Live Animals in Teaching and Research (CULATR). During the reporting period, the HREC implemented two measures to help to improve transparency of the ethics approval process: (i) requiring principal investigators to include the HREC approval reference number in all materials sent to potential and actual participants; and (b) creating a public webpage to list all research projects with ethical approval.

14. Over the reporting year, a number of ongoing and new initiatives have been undertaken to promote responsible conduct of research (RCR). RCR seminars for staff have become a regular event at the University, with seminars held twice yearly (once in each semester). Since March 2010, 13 have been organised, two of which were held in the reporting year in September 2014 and May 2015. More than 1,240 academics at all grades, from Postdoctoral Fellows to Chair Professors, have attended these 13 RCR seminars. Since July 2012, all new staff are required to attend an HKU RCR session/seminar within 12 months of assuming duty at the University to be eligible for internal research and conference support and research postgraduate student supervision. In February 2015, the URC decided to extend the mandatory requirement to existing staff who joined the University before July 2012 to attend an RCR seminar by June 30, 2017.

15. The Research Integrity Funding Scheme was established in 2012–13 to encourage Faculties to tailor research integrity education and training programmes/activities for their members to promote their awareness of research integrity. A total of 13 proposals have been funded in the past three rounds.

16. The URC supported an HKU delegation consisting of Faculty representatives and a research postgraduate student to attend the 4th World Conference on Research Integrity on May 31–June 3, 2015 in Rio de Janeiro, Brazil. A joint report will be submitted by the delegation to the URC.

Research Data and Records Management Policy

17. Over the past couple of decades, measures to tackle the challenge of effectively managing growing amounts of research data have been introduced overseas, for example in the UK and the USA. Although Hong Kong currently has no mandatory requirement in place, HKU acknowledges its responsibility to manage and safeguard research data.

18. The University’s Policy on the Management of Research Data and Records was approved by the Senate in May 2015. The Policy seeks to promote the highest standards in the management of research data and records as fundamental to both high quality research and academic integrity (www.rss.hku.hk/integrity/research-data-records-management). The responsibilities of researchers and the University are detailed in the Policy,

recognising the need for accurate and retrievable data and records to be safely stored during the research and beyond. HKU's Policy has been developed by the URC, after consulting Faculties and considering overseas policies and practices. The establishment of a Task Force on Management of Research Data and Records to oversee the planning of the implementation of the Policy was also approved by the Senate in May. The Task Force will consider a wide range of implementation issues including guidelines and operational procedures, related infrastructure, and training and support.

2. Collaborative Research

19. Collaboration in research at a wide range of levels is highly valued by the University's management and by individual researchers. Research across disciplines at HKU is actively encouraged, for example through the Strategic Research Themes initiative, in which funding is focused on themes that build on expertise and interests that cross disciplines, and the Hong Kong Jockey Club Building for Interdisciplinary Research, which provides space, technologies and facilities for cultivating an interdisciplinary environment to enhance collaboration amongst researchers within HKU. Researchers of the University are also heavily involved in large-scale collaborative projects with local institutions. For example, of the 41 Areas of Excellence (AoE) and Theme-based Research Scheme (TRS) projects awarded to date, HKU is co-ordinating 18 and participating in a further 15. The University has introduced an internal funding scheme to help incubate these large-scale collaborative projects.

20. Internationalisation through productive and strategic engagement in China, Asia and the rest of the world is a key feature that is embedded in many elements of the University's strategic plan. HKU has positioned itself to be a globally competitive, regionally engaging and locally impactful university, and in the face of the challenges ahead, the enhancement of collaboration with international and Mainland partners is highly valued. In addition to working closely with other local institutions, HKU actively participates in Universitas 21 (U21), a consortium of leading universities around the world dedicated to the internationalisation of higher education. The University is also a member of the Association of Pacific Rim Universities, a regional network of 42 world-class institutions.

21. HKU also collaborates with a number of leading institutions, laboratories, pharmaceutical companies, research institutes and government bodies, both overseas and in mainland China. The University currently has 5 Partner State Key Laboratories—Brain and Cognitive Sciences, Emerging Infectious Diseases, Liver Research, Synthetic Chemistry, and Pharmaceutical Biotechnology—and will continue to make good use of the prestigious status of Partner SKLs to reinforce our research collaborations with Mainland partners for greater impact. As outlined below, partnership between the University and industry is also an ongoing focus to promote the application of research results.

22. Joint PhD Degree programmes with prestigious overseas universities represent another form of international partnership by the University to enhance research collaborations. In 2014–15, joint PhD programmes continued to be offered with King's College London (KCL) and Imperial College London (ICL), and the first intake of students enrolled in joint educational placements for PhD students with the University of

Toronto. Through these initiatives, students have the opportunity to benefit from shared research excellence in a wide range of disciplines between HKU and its partners and to acquire enriching international experience. In 2014, the first batch of students – from civil engineering, English and pathology – graduated from the joint programmes with KCL and ICL

23. New initiatives for international collaboration during the reporting year included the following examples:

- (a) A partnership agreement was signed with the University of Cambridge to collaborate on emerging issues on medical ethics, law and policy. This builds on ongoing collaboration between the interdisciplinary HKU Centre for Medical Ethics and Law (CMEL) and Cambridge University. Scholars from Cambridge will be supported to spend up to four weeks at HKU annually to facilitate research interactions. A variety of guest lectures and seminars at CMEL on topics of interest will be provided to the academic community and the general public.
- (b) HKU's School of Public Health has been designated as a WHO Collaborating Centre for Infectious Disease Epidemiology and Control for four years, forming part of an international collaborative network set up by WHO in support of its programme at the country, intercountry, regional, interregional and global levels. Also, the Centre of Influenza Research under the School is one of 13 laboratories worldwide designated as a WHO H5 reference laboratory, providing international reference laboratory services and training and data and risk assessment.
- (c) HKU is collaborating with the University of Bristol to launch a new project that aims to encourage and facilitate the study of the history of Hong Kong in the UK. The project, hosted at the University of Bristol and funded by the Hatton Trust, will support cutting-edge research into the history of Hong Kong by funding research studentships, visiting fellowships, conferences and workshops, exploring new and under-researched areas in Hong Kong history. Professor Sir Eric Thomas, Vice-Chancellor of the University of Bristol, visited Hong Kong to launch the project.
- (d) The Dr Li Dak-Sum Research Centre was established by HKU and the Karolinska Institutet, a world-renowned medical university in Sweden. The Centre, made possible by a large donation from Dr Li, aims to build a world-class hub in Asia for stem cell biotech and regenerative medicine, a field that is one the most exciting developments in modern biomedicine and offers unprecedented opportunities in the areas of cell replacement for the treatment of many currently incurable diseases.

24. The institutes of research and innovation established by HKU in Shenzhen and Zhejiang represent an integral part and an extension into the Chinese Mainland of the University's research. The facilities will offer opportunities for HKU researchers to widen their areas of investigation and strengthen partnerships with Mainland research communities. They will also play an important role in transferring technology and innovations from HKU to the Mainland. The HKU-Shenzhen Institute of Research and Innovation (HKU-SIRI, www.siri.hku.hk) provides an HKU base in the Pearl River Delta region. Since its inception in 2011, HKU-SIRI has attracted considerable funding at both

local and national levels such as the National Basic Research program of China (973 Program) (國家重點基礎研究發展計劃-973 計劃), the National Natural Science Foundation of China (NSFC) (國家自然科學基金), and the Shenzhen Science and Technology Program (i.e. Basic Research Project, Peacock Program). For example, in the past reporting year, HKU-SIRI received total funding of RMB 7.89 million under the 973 Program (RMB 3.1 million for the first two years for one newly awarded task and RMB 4.79 million for the last three years for one ongoing task), over RMB 11 million for 17 projects under NSFC and RMB 1.9 million for 7 basic research projects under the Shenzhen Science and Technology Program.

25. In December 2014, a ceremony was held to mark the opening of the HKU-Zhejiang Institute of Research and Innovation (HKU-ZIRI, www.ziri.hku.hk). The institute was incorporated in 2012 and provides the University a unique opportunity to set up an R&D base in the Yangtze River Delta Region and to facilitate knowledge and technology transfer of the University on the Mainland. HKU is partnering with the Department of Science and Technology of Zhejiang Provincial People's Government, in collaboration with Hangzhou Municipal Government and Lin'an City Government. HKU-ZIRI will provide research and development in high-end and cutting-edge disciplines. The first three laboratories, led by the Faculty of Engineering, are specialising in Aerodynamics and Acoustics, Nanofluids and Thermal Engineering, and Physical Internet. The chief scientists from HKU will be leading over 30 postgraduates, PhD students and researchers to undertake research in the respective areas.

26. Large numbers of individual researchers undertook collaborative projects during the report period with researchers in the PRC or elsewhere in the world across a wide range of activities, including joint research projects, co-authoring of papers, teaching or lecturing, providing consultancy or peer review services, supervising research students, and serving as external examiners.

27. HKU has introduced a number of initiatives to help increase research competitiveness and international collaboration. Details are given below for the application rounds for these initiatives during the reporting period, including the new Glasgow/HKU Early Career Mobility Funds.

(a) *Visiting Research Professors Scheme*

Since its inception in 2009, the Visiting Research Professors Scheme (VRPS) has attracted 50 leading scholars from around the world. In this reporting year, 10 nominations were received, and 7 awards were made to prominent professors from Yale University, Princeton University, Johns Hopkins University, the University of Toronto, the University of Geneva, McGill University and the MRC National Institute for Medical Research. The mid-term/final reports on VRP appointments received from Faculties demonstrated the VRPs' valuable contributions, particularly in enhancing the research profile and international collaborations of Faculties through co-authoring papers and collaborating in projects, giving feedback on research proposals, and strengthening/developing links between HKU and their host institutions.

To allow more comprehensive review of nominations submitted under the Distinguished Visiting Scholars Scheme (DVSS) and the VRPS, the application and selection cycle of the two schemes are now synchronised. In

2015, 4 distinguished scholars were selected under the DVSS Scheme.

(b) *HKU Overseas Fellowships*

HKU established the Overseas Fellowship awards to support academic staff members to visit overseas institutions over a period of one to two months for research collaborations. In 2014–15, 5 HKU staff visited overseas universities—the University of British Columbia, University College London, the University of Bern, Boston University and the University of Montpellier—while 10 awards were freshly given to support HKU staff to visit overseas institutions within the 2015–16 academic year.

(c) *Glasgow/HKU Early Career Mobility Funds*

To strengthen the partnership between HKU and the University of Glasgow, both universities have launched the reciprocal Glasgow/HKU Early Career Mobility Funds to enable early career researchers to spend part of their research time in the partner institution. In the first application exercise, a total of 11 applications were received from HKU members, and 4 awards were made to 1 member of academic staff and 3 PhD students who will visit the University of Glasgow in the 2015–16 academic year.

(d) *King's/HKU Fellowships*

HKU and King's College London established reciprocal King's/HKU Fellowships to strengthen their partnership by enabling their academic staff members to visit the partner institution. In the reporting period, 2 HKU members visited King's. In the latest application round, 1 Fellowship was awarded to an HKU staff member who will visit King's within the academic year 2015–16.

(e) *Doris Zimmern HKU-Cambridge Hughes Hall Fellowship*

To forge closer ties, and foster cultural exchange and academic excellence, between HKU and Hughes Hall, University of Cambridge, HKU offers co-funding alongside the Doris Zimmern Charitable Foundation to enable teaching and research staff of the University to spend a period of time at Hughes Hall, as visiting fellows, for research collaboration and other academic exchange. The cost of the accommodation and a pro-rata College fee in respect of individual fellows is covered by the University. Since its inception in 2009, 47 HKU members have been awarded Fellowships to reside at Hughes Hall for research collaboration and academic exchange, and 10 of them paid their visits within the academic year 2014–15

3. Knowledge Exchange

28. Knowledge exchange (KE) is the third core mission of the University alongside research and teaching and learning, and HKU is strongly committed to building KE into the University's culture. Indeed, one of the URC's five strategies is "to encourage knowledge transfer to community and society". Since 2009, the University has put in place infrastructure to support KE, including a KE Office (www.ke.hku.hk) and counterpart units within each

faculty. KE activities are reported to UGC annually. Some highlights from the 2014–15 reporting year include the following:

- (a) *Impact as the priority aim:* As well as making an impact in academia, HKU researchers actively bring their findings into the community through KE. A key focus here to move these developments forward is the issue of “impact”, as articulated, for example, in the criteria for KE funding and KE awards as well as in the range of communication of KE success stories at the University. In April 2015, a two-day joint conference with Leeds University was held at HKU on *Moving Beyond Research to Engagement and Impact*. Overseas and local academics discussed and analysed the complexities of shaping an impact agenda in higher education, and academics from a number of UK institutions shared their experience of the UK Research Experience Framework (REF) 2014, which includes a 20% weighting on impact beyond academia. HKU is also holding an ongoing series of impact workshops for staff.
- (b) *Capacity building:* Working closely with the KE Office (KEO), the Faculties have strengthened their Faculty KE units to promote and co-ordinate KE initiatives. There has also been an expansion of KE activities co-ordinated at the faculty level. KE has been fully embedded in each Faculty’s core activities, and there has been strong buy-in from the non-Faculty-based units across the University. KE is also recognised in the Faculty budget resource allocation process, and has been incorporated into the performance review process for individual academics. Technology transfer has been reaffirmed as a core function of the University under the KE mission. In 2014–15, the Technology Transfer Office (TTO) (www.tto.hku.hk) has undergone a reorganisation and it is now overseen by the KEO.
- (c) *Knowledge access:* The HKU Scholars Hub (<http://hub.hku.hk/>) provides a one-stop online platform for searching our experts. The view count has seen a significant increase from 1.3 million views in 2013–14 to 2.3 million in 2014–15. According to the media impact study coordinated by the Communications and Public Affairs Office, in 2014–15, on average there were 70.5 KE-related news items on HKU each day. All Faculties have KE webpages on their websites, and increasingly individual academics are also making use of web technologies to share their knowledge and expertise.
- (d) *Knowledge engagement:* More and more faculty members are engaging in delivering public lectures, and there were over 1,000 events that were open to the public each year in the past three years. The University Museum and Art Gallery (UMAG) has been rejuvenated as a significant KE organ of the University, and the exhibits in the Stephen Hui Geological Museum under the Faculty of Science have been enhanced using KE funding. A Partnerships webpage (www.ke.hku.hk/eng/links/partnerships) links external organisations to the various online resources of the University to explore opportunities of working with our students and to search for our researchers for potential collaboration.

- (e) *Broadening KE opportunities:* The University continued to make use of the UGC KT funding to run the Competitive Impact Project Funding Scheme in 2014–15, with 83 proposals received and 62 supported. The KT funding was also again used in the reporting year to run the Student KE Project Grant Scheme. The 3MT Competition has become an annual event for research postgraduate students, with 41 students participating this year. The KE Awards—presented at the University's annual Award Presentation Ceremony for Excellence, alongside the long established awards for teaching and research—help make outstanding KE accomplishments visible and encourage more academic staff to engage in KE activities.

University–Industry Partnership

29. University–industry partnership is an important element of KE, and the commercialisation of intellectual property through technology transfer is encouraged by HKU, as the practical application of technological advances benefits both the University and the community as a whole. The TTO provides services relating to technology transfer, research contract review and liaison with industries and businesses, while commercial operations come under Versitech, a wholly-owned subsidiary of HKU.

30. TTO continues to strengthen professional capabilities in technology transfer in support of the University's mission of knowledge exchange. In the past reporting year, TTO has organised the following training courses and events:

- (a) *InnoCarnival 2014:* TTO was one of the co-organisers for this major nine-day event that was organised by the Innovation and Technology Commission (ITC) and held from November 1–9, 2014 at the Hong Kong Science Park. Under the event's main theme of "Technology for a Better Living", HKU showcased seven projects from the Faculties of Engineering, Medicine and Science, with investigators and their teams using various exhibits, demonstrations, specimens, videos and posters to demonstrate the application of their research and inventions to visitors.
- (b) *Entrepreneurship Academy:* The popular seminar series run by TTO since 2010 on entrepreneurship development was held from February to April, 2015. Due to high demand, this year was the first year in which the enrolment was extended to undergraduate students, in addition to postgraduate students and researchers. TTO saw a substantial increase in the number of attendees and over 110 people on average attended each of the ten meetings held. Apart from the workshops, support continues to be given to the participants and alumni to have networking opportunities with early stage entrepreneurs and access to CoCoon, an open co-working space for entrepreneurs.
- (c) *DreamCatchers 2015:* DreamCatchers is HKU's latest entrepreneurship series. The inaugural event was held on May 31, 2015 and TTO was one of the key co-organisers. Dreamcatchers provides a hub to inspire and nurture innovation and entrepreneurship, with forums, mixers, events, courses, marketplaces, co-workspaces and a portal, covering all tech, biz, social, cultural and media spheres. It is cross-sector and inter-generational, for alumni and students with passion and determination to innovate and change

the world. Around 70 speakers shared their experience on start-ups and the event was attended by 1,000 delegates.

- (d) *Bio International Convention 2015*: TTO co-ordinated HKU's participation in the Bio International Convention 2015, which was held in Philadelphia, USA, from June 15–18, 2015. Five projects relating to the treatment of infectious diseases as well as the treatment of cancer by bacterial therapy and chemical drugs were showcased at the event. Moreover, some technologies relating to disease diagnosis, fluorescent probes and cancer therapeutic drugs were also introduced. Furthermore, four HKU biotech companies in the business of diagnostic kits, HIV/AIDS vaccine development, stem cells and tissue engineering were featured at the exhibition. The HKU booth attracted many visitors. TTO and the HKU technology companies took the opportunity to establish new business connections with investors, business partners and collaborators.

TSSSU@HKU

31. TSSSU@HKU is a newly established award scheme that provides funding support to technology start-up companies formed by HKU members. This scheme leverages on the "Technology Start-up Support Scheme for Universities" (TSSSU) launched by ITC in October 2014 for local universities, in which annual funding of up to HK\$4 million will be provided to each university to encourage technology start-ups. The first two rounds of TSSSU applications were concluded in December 2014 and April 2015 respectively, and 55 applications were received. A total of 11 new start-up companies were awarded in these two rounds, the following 5 of which are commercialising HKU technologies:

- (a) Accosys Limited – an indoor localisation system for providing indoor positioning solutions and services;
- (b) Hong Kong Unific Publishing Limited – an e-textbook for primary and secondary schools;
- (c) Living Tissues Company Limited – providing regenerative tissues for cartilage repair to solve musculoskeletal problems;
- (d) OrthoSmart Limited – correction of abnormal curvatures of the spine by using specially tailored super-elastic nickel titanium rods; and
- (e) Novoheart Limited – stem cell-based technologies for pharmaceutical discovery and development of novel therapeutics for heart diseases.

Contract Research Projects and Licensed Inventions

32. During the reporting year a number of examples of successful university-industry partnership took place. Versitech Ltd undertook a total of 6 contract research projects within 2014–15 with various industrial sectors. As of 2014–15, Versitech Ltd has licensed a cumulative total of 125 inventions and know-hows to industry, representing an overall commercialisation rate of 33.6%.

33. Some examples of the latest developments of HKU technologies transferred include the following:

- (a) *Deployment of a new diabetic retinopathy screening platform in China:* This screening platform, developed jointly by Professor D.S.H. Wong (Department of Ophthalmology) and an industrial partner, was successfully deployed in China through a project supported by the Chinese Ministry of Health and the Lifeline Express China Foundation. The new IT platform allows hospitals to remotely screen patients with diabetic retinopathy early so that patients could seek medical help at an early stage of development.
- (b) *Market launch of a new cloning system for next generation sequencing (NGS):* A new cloning platform for NGS, based on a novel pNGS fosmid system developed by HKU's Center of Genomic Sciences, has been successfully launched to the market by an internationally recognised genomics research company that provides cloning kits for dedicated NGS. This state-of-the-art technology is now made available to research laboratories around the world where researchers may use it to detect cancer specific genetic alterations, for example.
- (c) *Contract research collaboration on social network site monitoring system:* This system was developed by Dr K.P. Chow (Department of Computer Science) and his team in collaboration with the Hong Kong Custom and Excise Department to fight internet crime. The system is able to proactively monitor social media platforms, such as Facebook and Instagram, to detect and locate suspected cases of IP infringement. Hong Kong is the only place in the world so far to employ this kind of automated data analysis system to tackle this challenging problem.
- (d) *Online building maintenance cost (BMC) database and estimator platform:* Dr D.C.W. Ho and Professor K.W. Chau (Department of Real Estate and Construction) have developed this database and platform for the Hong Kong Independent Commission against Corruption (ICAC). The system can improve the transparency of the building maintenance market, particularly important for ageing buildings, and it is now in use by the public.

5. Undergraduate Research

34. The Undergraduate Research Fellowship Programme (URFP) – launched by the University in 2011 – aims to enhance the learning experience of undergraduate students and nurture the next generation of researchers/scholars through providing opportunities for students to undertake research study under the guidance and supervision of academics who have a strong research track record and experience in training research postgraduate students. The fourth round of the URFP was undertaken during the reporting year in September 2014. In the first three rounds of the exercise, 201 academically outstanding undergraduate students enrolled in the programme, 84 of whom were granted awards and successfully completed internships locally, in the Mainland or overseas. For the fourth round, 83 students were selected for enrolment in the URFP 2015–16, of which 37 were granted awards to undertake internships. These students are expected to complete their research study within the 2015–16 academic year.

6. Research Highlights

35. A number of research highlights in 2014–15 are listed below:

Theme-based Research Scheme (TRS)

36. An HKU-led project on the ‘Molecular Basis for Interspecies Transmission and Pathogenesis of Middle East Respiratory Syndrome Coronavirus’ was awarded HK\$46.7 million in funding in the fifth round of the Theme-based Research Scheme (TRS). The Scheme was introduced to support themes of strategic importance to the long-term development of Hong Kong. This project, coordinated by Professor P.C.Y. Woo of the Department of Microbiology, is a collaborative effort by researchers from local institutions as well as the Middle East and China. HKU is also collaborating in 3 of the other 4 projects funded in this round.

37. The RGC has awarded funding to a total of 23 projects in the 5 rounds of TRS. HKU is the co-ordinating institution of 10 awarded projects, which have received total funding of \$500 million, with HKU researchers also involved in a further 9 projects.

Areas of Excellence (AoE)

38. The Areas of Excellence (AoE) scheme has provided support since its inception for 18 projects over 6 funding rounds to nurture areas of international excellence through high-quality research and inter-institutional collaboration. HKU is the co-ordinating institution of 8 of these 18 AoE projects, representing total funding of \$605 million. The University is also participating in a further 6 co-ordinated by other institutions. During the reporting year, the HKU-led AoE project “Developmental Genomics and Skeletal Research” was completed.

2015–16 General Research Fund / Early Career Scheme (GRF/ECS) Exercise

39. For the 13th year in a row, HKU secured both the highest number of approved projects and the largest share of approved funding in the General Research Fund (GRF) exercise (and also the largest share of funding for eighteen of the last nineteen exercises). Nearly a quarter (22.7%) of the supported projects were those of HKU Principal Investigators, who were awarded HK\$150.190 million out of the total funding of HK\$594.455 million (excluding on-costs). HKU submitted 606 applications in this round, and 215 were approved, representing a success rate of 35%. As with last year, the University received the largest amount of funds for projects under the Biology and Medicine Panel.

40. In the 2015–16 funding rounds of the Early Career Scheme (ECS), RGC supported 151 projects in total. HKU submitted 62 applications in this round, of which 25 were approved, securing HK\$15.185 million in funding (excluding on-costs).

2014–15 Collaborative Research Fund (CRF) Exercise

41. Of the 30 projects funded in the 2014–15 round of RGC’s Collaborative Research Fund (CRF), HKU is the lead institution of 8 (3 equipment projects and 5 group research projects), and is participating in a further 11 projects as a collaborating institution. The 8

projects for which HKU is the lead institution are as follows:

Equipment projects

- (a) “Micro-PET for pre-clinical molecular imaging research in Hong Kong”, HK\$4 million*, Project Coordinator: Professor P.L. Khong (Department of Diagnostic Radiology), in collaboration with PolyU;
- (b) “Establishment of a shared live cell imaging platform for super-resolution microscopy”, HK\$4 million*, Project Coordinator: Professor G.S.W. Tsao (Department of Anatomy), in collaboration with CityU, HKBU and CUHK;
- (c) “Inert-Environment Facilities for investigating optical-electrical-thermal properties of hybrid structure optoelectronics”, HK\$3.05 million*, Project Coordinator: Dr W.C.H. Choy (Department of Electrical and Electronic Engineering), in collaboration with CityU and HKUST;

Group projects

- (d) “A multidisciplinary study on CD133 liver cancer stem cells: Molecular mechanisms, clinical relevance and therapeutic implications”, HK\$5.33 million*, Project Coordinator: Dr S.K.Y. Ma (Department of Anatomy);
- (e) “Novel structure and function of human sirtuins”, HK\$5.40 million*, Project Coordinator: Professor Q. Hao (Department of Physiology);
- (f) “Investigation of effects and molecular mechanisms of FGFR2-positive cancer-associate fibroblasts on tumor microenvironment in esophageal squamous cell carcinoma”, HK\$3.49 million*, Project Coordinator: Professor X. Guan (Department of Clinical Oncology), in collaboration with CUHK;
- (h) “Fe-enhanced primary sedimentation and sludge acidogenesis for resources (P and PHA) recovery during wastewater treatment”, HK\$8.89 million*, Project Coordinator: Professor X.Y. Li (Department of Civil Engineering), in collaboration with PolyU and HKUST; and
- (i) “A multi-disciplinary approach to investigate vascular dysfunction in obesity and diabetes: From molecular mechanism to therapeutic intervention”, HK\$8.78 million*, Project Coordinator: Professor A. Xu (Department of Medicine), in collaboration with CUHK.

* excluding on-costs

Humanities and Social Sciences Prestigious Fellowship Scheme (HSSPFS)

42. HKU has one of the two awarded projects in the Humanities and Social Sciences Prestigious Fellowship Scheme in the 2015–16 round, with its project securing a higher share of the funding with HK\$0.745 million. The project is titled “Explaining Socioeconomic Differences in the Psychological Adjustment Process: A Dynamic Resource Theory” and is being undertaken by Professor C. Cheng of the Department of Psychology.

43. Since the scheme began in 2012–13, HKU has the highest cumulative number of fellowships and largest funding amount of any UGC-funded institution: 9 fellowships (total value HK\$6.027M) out of a total of 24 awarded (total value HK\$16.169M).

NSFC/RGC Joint Research Scheme

44. Funding of HK\$23.25 million was awarded to 22 projects from 5 UGC-funded institutions through the National Natural Science Foundation of China/Research Grants Council (NSFC/RGC) Joint Research Scheme in 2014–15. HKU submitted 47 initial applications, of which 11 were shortlisted and 7 funded, the highest number amongst institutions. HKU received total funding of HK\$ 7.615 million for the following projects:

- (a) “Rationalizing scaffold design with optimal cell niche for mesenchymal stem cell (MSC)-based therapy in disc degeneration”, Dr. B.P. Chan (Department of Mechanical Engineering);
- (b) “Organic memory array fabricated under ambient air environment: from polycrystalline thin film to single crystal devices”, Dr. K.L. Chan (Department of Mechanical Engineering);
- (c) “Fatty acid binding protein-4 as a mediator of autoimmune diabetes: from molecular mechanism to clinical significance”, Professor A. Xu (Department of Medicine);
- (d) “Understanding the evolution and interspecies transmission of betacoronaviruses by structural and biophysical approaches”, Professor K.Y. Yuen (Department of Microbiology);
- (e) “Orexin-induced modulation of activity-dependent synaptic plasticity is critical for the maturation of vestibular circuitry and functions”, Professor Y.S. Chan (School of Biomedical Sciences);
- (f) “Schizophrenia-related de novo and compound heterozygous mutations”, Professor P.C. Sham (Centre for Genomic Sciences); and
- (g) “Nur77: new insights in signaling and mechanism of activation of epithelial-mesenchymal transition and tumor metastasis”, Professor A.S.T. Wong (School of Biological Sciences).

ANR/RGC Joint Research Scheme

45. In the 2014–15 round of the French National Research Agency and the Research Grants Council Joint Research Scheme (ANR/RGC), HKU received HK\$4.497 million for 2 projects out of the 5 funded:

- (a) “A novel PD1 DNA-based vaccination strategy to mimic Gag-specific responses found in HIV Elite Controllers”, Professor Z. Chen (Department of Microbiology); and
- (b) “Pattern formation by bacteria: from theoretical physics to synthetic biology”, Professor J. Huang (School of Biomedical Sciences).

SFC/RGC Joint Research Scheme

46. In the newly introduced Scottish Funding Council (SFC)/RGC Joint Research Scheme, which supports research projects in the fields of life sciences and energy, HKU received the largest share of the funding amongst the institutions, securing 6 out of the 13 awarded projects and total funding of HK\$0.75 million.

National Natural Science Fund—National Natural Science Foundation of China (NSFC)

47. HKU-SIRI members are eligible to apply for funding through the National Natural Science Fund of the National Natural Science Foundation of China (NSFC). In the reporting year, HKU-SIRI received total funding of RMB10.78 million for 15 projects under NSFC, the results of which were announced in August 2014.

Innovation Technology Support Programme (ITSP)

48. Since the introduction of the Innovation and Technology Fund's Innovation Technology Support Programme (ITSP) in 1999, HKU has had 170 projects approved (up to the end of June 2015). This represents about a fifth (19%) of the 911 projects approved under ITSP. The total funding granted to the University for these projects is \$435.22 million.

49. In the reporting year, 14 HKU projects were awarded total funding of HK\$32.24 million. A further 4 projects were funded HK\$8 million under the University-Industry Collaboration Programme (UICP).

Public Policy Research

50. During the reporting year, the University was awarded total funding of HK\$2.9 million for 5 projects under the Public Policy Research (PPR) funding scheme, which is administered by the Central Policy Unit (CPU).

Croucher Foundation: Fellowships and Innovation Awards

51. HKU has been awarded more Croucher Foundation Senior Research Fellowships (47 out of a total of 105 fellowships awarded since 1997, including Senior Medical Research Fellowships) than any other local institution. Four of these Fellowships were awarded to HKU academics during the reporting year: Professor B.J. Cowling (School of Public Health), Professor U.S. Khoo (Department of Pathology), Professor P.C.Y. Woo (Department of Microbiology), and Professor Z. Zhou (Department of Biochemistry).

52. Through the Innovation Awards, the Croucher Foundation offers substantial support to a small number of exceptionally talented scientists at a formative stage in their careers, in order to enable them to pursue their own scientific, intellectual and professional inclinations. Dr Z. Zhang (Department of Physics) was awarded HK\$2.5 million over a five-year period for his research entitled "Quantum Transport in Unitary Fermi Gases" and HK\$1.8 million to organise joint workshops with Dr K.T. Law (HKUST).

Other Croucher Foundation Funding

53. The Croucher Foundation sponsors a number of Advanced Study Institutes (ASIs) each year to enable experts in a particular field to meet and conduct advanced tuition on a defined topic. In the reporting period, HKU organised an ASI on nasopharyngeal cancer in November 2014, and received funding in May 2015 for two new ASIs, HK\$0.6 million for each, on immunometabolism and new functional materials.

54. Funding for summer courses is also provided by the Croucher Foundation to help educate and inspire promising postgraduate students and early career researchers from Hong Kong and the wider region. Successful applicants receive HK\$0.6 million per course for three courses to be held once every two years over a period of six years. A summer course on “Cancer Biology” was first held in 2013, with the second on August 10–14, 2015. In December 2014, a new grant was approved for summer courses on “Advanced Imaging – From System Biology to Single Cell & Single Molecule Analysis”, and the first course was held on August 2–8, 2015, with the second scheduled for 2017.

55. Sponsorship is also provided through the Croucher Foundation for international conferences and seminars. Two conferences, each with funding of HK\$100,000, were organised by HKU researchers during the reporting period in the areas of marine ecosystems and coordination chemistry, and sponsorship for three events in the coming year was also approved during the report period.

56. During the reporting year, the Croucher Foundation also provided sponsorship of HK\$1 million per year for a three-year collaborative project on “Studies on the Pathogenesis and Treatment of Sjögren’s Syndrome”, led by Professor L. Lu (Department of Pathology) and Professor Chen Dong (Institute of Immunology, Tsinghua University).

HK Scholars Program

57. Introduced by the Society of Hong Kong Scholars and the Office of the National Administrative Committee of Postdoctoral Researchers under the Ministry of Human Resources and Social Security, the HK Scholars Program is a cross-border initiative that aims to nurture outstanding postdoctoral fellows (PDFs) from the Mainland in Hong Kong. In the fifth round of this initiative (the results of which were announced just out of the reporting year in August 2015), 7 HKU researchers were selected to supervise PDFs for a period of 2 years.

Published Research

58. HKU has an excellent record of published research, both in discipline-specific journals and in more high-profile publications such as *Science*, *Nature*, and *The Lancet*. The University has the highest number of refereed publications, both in absolute terms and expressed as a ratio of publications per staff member, of any UGC-funded institution. For 2013–14 (the latest available statistics; see the CDCF data mart website) HKU had 5,858 peer-reviewed refereed publications.

59. The University does particularly well in scientific publications. According to statistics published by Thomson Reuters, there were a total of 407,774 citations of 27,307 HKU papers in journals tracked by Thomson Reuters between January 2005 and April 2015. This was the

highest number of citations of any UGC-funded institution. In 2014 the University had 4,126 publications in journals tracked by Thomson Reuters, again more than any other UGC-funded institution, attracting 10,539 citations to date (November 5, 2015). Thomson Reuters also ranked 117 HKU professoriate staff among the world's top 1% of scientists, based on the number of citations recorded for their publications (June 2015). As noted above, nine HKU academics have been named among the world's top scientists in the 2015 Highly Cited Researchers from Thomson Reuters, based on the number of papers officially designated by Essential Science Indicators as Highly Cited Papers (September 2015).

Patents

60. Since 1998, the University has filed 1,549 patents in various parts of the world, mostly in the United States (689), the European Union (221) and Greater China (246 in China, including Hong Kong, and 24 in Taiwan). Within the same period 469 patents were granted, 39.7% of which were in the United States (186). During the 2014–15 academic year, HKU filed 157 patents, and 50 patents were granted and 11 patent applications were abandoned.

Commercialisation

61. In 2014–15, the University achieved a record-high level of income from the commercialisation of its intellectual property, with an income of HK\$21 million, which is more than six times higher than the income in 2013–14.

Agreements/Legal Documents

62. During 2014–15, HKU handled 528 technology/knowledge transfer related agreements/legal documents—such as licensing, consultancy and materials transfer agreements—with counter signing parties in Hong Kong (192), the People's Republic of China (138), North America (91), the European Union (58) and the rest of the world (49).

External Academic Honours

63. The University is proud of its record of academic recognition. A number of important academic awards and honours have been bestowed on HKU researchers over the reporting period, including the following examples:

- (a) Professor S.Y.R. Hui, Chair of Power Electronics and Philip K.H. Wong Wilson K.L. Wong Professor in Electrical Engineering in the Faculty of Engineering, is the 2015 recipient of the Institute of Electrical and Electronic Engineers (IEEE) William E. Newell Power Electronics Award for his contributions to power electronics applications in planar wireless charging and sustainable lighting technology. The award was granted “IEEE Technical Field Award status” in 2005 by the IEEE as the most prestigious award for the field of Power Electronics. Professor Hui is the first Hong Kong scientist to receive this award.
- (b) Dr W. Yao, Associate Professor of the Department of Physics, received the International Organization of Chinese Physicists and Astronomers Achievement in Asia Award (Robert T. Poe Prize), for his important

contributions to the physics of spin and valley pseudospin in 2-dimensional transition metal dichalcogenides. The award is presented annually to a physicist/astronomer (or a team) of Chinese ethnicity working in Asia who has (have) made outstanding contributions in physics/astronomy. The other co-winner of this prize was Dr Y. Han of the Hong Kong University of Science and Technology.

- (c) Professor C.Y. Jim, Chair of Geography in the Faculty of Social Sciences, was the 2014 recipient of the L.C. Chadwick Award for Arboricultural Research presented by the International Society of Arboriculture (ISA) in the United States. Professor Jim is the first recipient in Asia of this Award. ISA is a nonprofit organisation that promotes the professional practice of arboriculture and fosters a greater worldwide awareness of the benefits of trees through research, technology and education.
- (d) Dr A. Cook, Associate Professor in the Department of Philosophy, was awarded the John Thackray Medal of the Society for the History of Natural History in London for her original and compelling book, “John Jacques Rousseau and Botany: The Salutary Science”, published in 2012. She was presented with the Thackray Medal on July 19, 2014 at the Society’s Annual General Meeting held at Magdalen College, Oxford.
- (e) Two professors were appointed Changjiang Scholars 2013–14 by the Ministry of Education in China: Professor F.K.S. Leung, Professor in the Division of Mathematics and Science Education of the Faculty of Education, and Professor K.Z. Zhou, Professor in the School of Business of the Faculty of Business and Economics. Changjiang Scholars are highly distinguished in different fields of research studies and are well known for their contributions to the development of higher education in China. Professor Leung is the first Changjiang Scholar in the field of Mathematics Education.
- (f) Professor G. Zhao and his team with members including Professor M. Sun, both of the Department of Earth Sciences, were presented a second-class State Natural Science Award 2014 for research on ‘Paleoproterozoic amalgamation of the North China Craton and the assembly of the Columbia super continent’, which has led to significant scientific achievements highlighted by more than 200 scientific papers.
- (g) Professor G. Xu, Professor in the School of Humanities (History), was awarded the Shigemitsu Fellowship by the Japan Society of Boston in recognition of his outstanding scholarship in the field of international affairs. Professor Xu, a prominent scholar in the fields of modern Chinese and international history, is one of the first recipients of this fellowship programme, the purpose of which is to encourage new research and scholarship in the field of international affairs.
- (h) Professor K.C.A. Leung, Joseph Needham - Philip Mao Professor in Chinese History, Science and Civilization, from the School of Humanities, received the Chavalier dans l’Ordre des Palmes académiques from the French Ministry of National Education (Higher Education and Research) for her academic achievements and contributions to French culture
- (i) Professor V.W.W. Yam, Philip Wong Wilson Wong Professor in Chemistry and Energy and Chair Professor of the Department of Chemistry, was

selected as the winner of the Ludwig Mond Award 2015 by the Royal Society of Chemistry in the UK. Professor Yam was awarded for her work on the innovative design of new strategies utilising non-covalent metal-metal interactions as spectroscopic reporters for host-host interactions and microenvironment changes, and for chemosensing and biological assays.

- (j) Nine HKU academics have been named among the world's top scientists whose work has been highly cited by fellow academics and are hence making a significant impact in ongoing research in their respective fields of study. The HKU academics featured in Highly Cited Researchers from Thomson Reuters – an annual list recognising leading researchers in the sciences and social sciences from around the world – in 2015 are Dr K.H. Chan (Department of Microbiology); Professor Y. Guan (School of Public Health); Professor J. Lam (Department of Mechanical Engineering); Professor J.S.M. Peiris (School of Public Health); Dr L.L.M. Poon (School of Public Health); Professor N.P. Shah (School of Biological Sciences); Professor M. Sun (Department of Earth Sciences); Professor K.Y. Yuen (Department of Microbiology); and Professor G. Zhao (Department of Earth Sciences).

Outstanding Researcher Award Scheme

64. The Outstanding Researcher Award Scheme is an annual initiative of the University that gives recognition to the excellent work of its researchers. At a ceremony on March 30, 2015, the following awards, for research achievements during and prior to the report period, were presented:

(i) Outstanding Researcher Award

Professor Y. Guan, School of Public Health
Professor Y. Li, Department of Mechanical Engineering
Professor H. Yang, Department of Statistics and Actuarial Science
Professor Z. Zhou, Department of Biochemistry

(ii) Outstanding Young Researcher Award

Dr S. Ali, Department of Law
Dr M.C.L. Chau, School of Business
Dr X.C. Li, Department of Chemistry
Mr C.J. Lin, Department of Architecture
Dr J.T.K. Wu, School of Public Health

(iii) Outstanding Research Student Supervisor Award

Professor H.Y. Chan, School of Humanities (Music)
Dr R.C.K. Chan, Department of Urban Planning and Design
Professor D. Jin, Department of Biochemistry
Professor S.M. Rowlinson, Department of Real Estate and Construction

65. The HKU Research Output Prize, part of the Outstanding Researcher Award Scheme since 2005, rewards the author (or team of authors) for a single outstanding item of research output (such as a publication, artistic production or patent). Each Faculty selects an output item for the prize, and Faculties can determine the research output form that best represents their research achievement. At the ceremony in March 2015, ten Research Output Prizes were awarded for the following research output items:

Faculty of Architecture: “Exploring factors affecting the relationship between light consumption and GDP based on DMSP/OLS nighttime satellite imagery”, *Remote Sensing of Environment*, 134 (2013) pp. 111-119, by Jiansheng Wu, Zheng Wang, Weifeng Li and Jian Peng

Faculty of Arts: “The Tragedy of Liberation: A History of the Chinese Revolution 1945-1957”, *Bloomsbury Press*, New York, 2013, 376pp., by Frank Dikötter

Faculty of Business and Economics: “Investment shocks and the commodity basis spread”, *Journal of Financial Economics*, 110 (2013), pp. 164-184, by Fan Yang

Faculty of Dentistry: “Dental Fear and Anxiety in Children and Adolescents: Qualitative Study Using YouTube”, *Journal of Medical Internet Research* 2013, Vol. 15, Issue 2, e29, by Xiaoli Gao, SH Hamzah, Cynthia Kar Yung Yiu, Colman McGrath and Nigel M King

Faculty of Education: “The Malleability of Intellectual Styles”, *Cambridge University Press*, New York, 2013, 368pp., by Li-fang Zhang

Faculty of Engineering: “Femto-Second Laser-Based Free Writing of 3D Protein Microstructures and Micropatterns with Sub-Micrometer Features: A Study on Voxels, Porosity, and Cytocompatibility”, *Advanced Functional Materials* 2014, 24, pp. 277-294 (Online publication date: July 16, 2013), by Barbara Pui Chan, Jiao Ni Ma, Jin Ye Xu, Chuen Wai Li, Jin Ping Cheng and Shuk Han Cheng

Faculty of Law: “Consumer Financial Dispute Resolution in a Comparative Context: Principles, Systems and Practice”, *Cambridge University Press*, Cambridge, 2013, 267pp., by Shahla F. Ali

Li Ka Shing Faculty of Medicine: “The genesis and source of the H7N9 influenza viruses causing human infections in China”, *Nature*, Vol. 502, 10 October 2013, pp. 241-244, by Tommy Tsan-Yuk Lam, Jia Wang, Yongyi Shen, Boping Zhou, Lian Duan, Chung-Lam Cheung, Chi Ma, Samantha J. Lycett, Connie Yin-Hung Leung, Xinchun Chen, Lifeng Li, Wenshan Hong, Yujuan Chai, Linlin Zhou, Huyi Liang, Zhihua Ou, Yongmei Liu, Amber Farooqui, David J. Kelvin, Leo L.M. Poon, David K. Smith, Oliver G. Pybus, Gabriel M. Leung, Yuelong Shu, Robert G. Webster, Richard J. Webby, Joseph S.M. Peiris, Andrew Rambaut, Huachen Zhu and Yi Guan

Faculty of Science: “Magnetoelectric effects and valley-controlled spin quantum gates in transition metal dichalcogenide bilayers”, *Nature Communications* 4, 2053, 2013, by Zhirui Gong, Gui-Bin Liu, Hongyi Yu, Di Xiao, Xiaodong Cui, Xiaodong Xu and Wang Yao

Faculty of Social Sciences: “On the Ethics of Torture”, *SUNY Press*, Albany, 2013, 191pp., by Uwe Steinhoff

Major International Research Events

66. During the 2014–15 reporting period, various important international research conferences were organised by HKU. These include the following:

- (a) December 16–17, 2014—the 2014 International Conference on Information and Communications Security (ICICS) brought together individuals involved

in multiple disciplines of information and communications security to foster the exchange of ideas. ICICS 2014 was co-organised by the Centre for Information Security and Cryptography of HKU's Department of Computer Science, and the Institute of Software, Chinese Academy of Sciences.

- (b) March 7–8, 2015—the Tenth International Symposium on Healthy Aging ‘A Decade of Positive Aging’ was organised by the Research Centre of Heart, Brain, Hormone and Healthy Aging of the Li Ka Shing Faculty of Medicine. The symposium continued focus on the promotion of healthy ageing from a multidisciplinary perspective and provided updates on the development of novel therapeutic as well as diagnostic approaches against ageing-related problems.
- (c) June 1–4, 2015—the International Conference on Biodiversity, Ecology and Conservation of Marine Ecosystems (BECOME 2015) attracted over 280 delegates from 26 countries. The conference was jointly organised by the Swire Institute of Marine Science and School of Biological Sciences, HKU Faculty of Science. Participants shared their views and discussed the latest scientific discoveries in biodiversity, ecology, and conservation of marine ecosystems worldwide, and explored ways to better conserve marine biodiversity and fisheries resources.
- (d) June 3–6, 2015—the School of English hosted a major international conference ‘The Sociolinguistics of Globalization: (De)centring and (de)standardization’. Over 400 delegates from 43 countries participated in the four-day conference, which featured 5 plenary speakers, 8 invited panels and 55 thematic parallel sessions. This conference aimed to offer a platform for continued dialogue over two fundamental and interrelated questions: How are we to continue theorising language and communication under globalisation? How can sociolinguistic theory shed new light on our understanding of globalisation?

Research Assessment Exercise 2014

67. The Research Assessment Exercise (RAE) 2014, undertaken by the UGC to assess the research quality of the UGC-funded institutions and to encourage world-class research, was carried out in 2013–14. To co-ordinate and support HKU's submission, the University set up a Small Group on Preparation for the UGC RAE 2014 and appointed a Project Officer for the RAE. All information on eligible staff, research outputs, research strategy statements, external research grants and esteem measures was submitted by HKU to the UGC by the deadline in December 2013. HKU submitted data under 46 costs centres for 1,014 eligible researchers.

68. The RAE 2014 results were released during the reporting year in January 2015. Over half of the research done by HKU's 1,014 eligible staff (the largest amongst all institutions) was rated as world leading or internationally excellent. Out of the 13 broad panel areas, HKU had the highest rating in 5 (highest proportion of the research rated as 4* or 3*): health sciences; social sciences; humanities; creative arts, performing arts and design; and education. Of the 46 cost centres under which HKU's submission was assessed, HKU had the highest percentage of 4 stars ratings in 24 of them (in 20 of these 24 cost centres, there were at least two submitting institutions).

69. The results provide insights into areas of strength and areas that are not performing as strongly. HKU is critically reviewing the full range of findings to help inform the development of institutional strategy and disciplinary areas for the future. This process has already begun. Initial responses were sought from the cost centres and Faculty Deans. The Senior Management Team has analysed the results and shared their findings with the Deans and Heads. Appropriate measures are being mapped out for how to address any problems identified by RAE 2014, and strategies to further sustain and enhance the University's competitiveness in research are being considered. Any new strategies and measures will be integrated with the University's teaching and learning and knowledge transfer activities.

V. CONCLUSIONS

70. Over the reporting year, HKU researchers have continued to demonstrate excellence in research and they are making their mark locally, regionally and globally. Through its strategies and policies, the University aims to support their vital, cutting-edge work in an environment that promotes excellence, innovation and collaboration and a commitment to making a positive impact on society.

71. Whilst the University is proud of its achievements to date, it remains determined to enhance and expand its research strengths and foster a robust culture for the creation, application and transfer of knowledge.

72. The University has appointed a new Pro-Vice-Chancellor (Research) in September 2015 who is developing with the Senior Management Team and Faculties new strategies in research, especially in areas on innovation, interdisciplinarity, internationalisation and impact.