

Message from the Dean

The Faculty of Science of The University of Hong Kong just celebrated its 70th

anniversary in 2009. The Faculty not only has a long history but is also in a phase of expansion and change. We have embarked on a rigorous exercise of curriculum reform, giving our students wider choices, more flexibility, broader perspectives, and enhanced practical and research training.

Our complement of professorial and research staff has also greatly

expanded, covering research in many areas at the frontiers of science.

After decades of offering an undergraduate curriculum under the British model of specialized education, we have moved to a credit-based major/minor system in 2004. Together with the Faculty common admission introduced in 2007, science students now have more choices and flexibilities to pursue science training for a variety of careers. Experiential learning and common core requirements are steps toward the goal of whole-person education. Currently we are working on a set of foundation courses using the integrated science approach for the incoming science students beginning in 2012.

Although scientific research has a short history in Hong Kong, the development of our Faculty has been phenomenal. We now have one of the strongest publication and citation records among universities in Asia, and we are aiming to tackle problems of global significance. Every year, more and more papers are published in major journals such as Nature, Science, and the Proceedings of the National Academy of Science and our work is attracting world attention. With strong support from the Research Grants Council, laboratories in HKU Science have state-of-the-art equipment and facilities. In the coming decade, we hope to develop our research to a level competitive with the best of the world.

As a gateway to China, Hong Kong is in a unique position to bring China and the world together in science. With 77% of our faculty having PhD degrees from Europe, Australia, and North America, and many having extensive research experience working in the West, we have strong ties and collaborations with international groups. At the same time, we have an increasing number of collaborative projects with China, at a time when China is investing heavily in research and development.

Thanks to the University's Centenary Recruitment Plan, we have 25 new faculty members joining our ranks since 2006. This new group of scholars came to us

from all over the world, as the result of active global search and recruitment. We are proud to say that HKU Science has one of the most diversified and international professorial body in Asia, offering our students a true international experience.



Through this booklet, I hope to convey to you the current state of development in HKU Science. To our alumni and friends in the community, you will see that HKU Science has grown and reinvented itself to fit in the modern world. To prospective students, you will find our commitment to excellence in teaching and learning is supported by a strong research environment. To fellow scientists everywhere, I invite you to work with us and develop research collaborations. For international students, we want to extend our welcome to you to come here either as full-time or exchange students and I assure you that you will find your experience in HKU Science to be a stimulating one.

Sincerely yours,

Sun Kwok
Dean, Faculty of Science

Mission



The Faculty of Science endeavours:

- To achieve excellence in research and scholarship in science;
- To lead scientific research in Hong Kong and rank highly against international benchmarks;
- To provide a specialist education for future scientists to the highest international standard;
- To provide a comprehensive education, developing fully the intellectual and personal strengths of students through a variety of learning experiences;
- To promote science literacy within the University and in society as a whole.



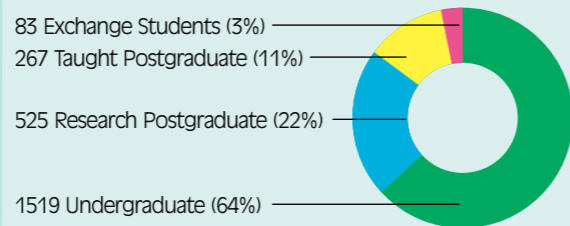
Departments/School

School of Biological Sciences
 Department of Chemistry
 Department of Earth Sciences
 Department of Mathematics
 Department of Physics
 Department of Statistics and Actuarial Science



Students

Student Enrolment (2009-2010)

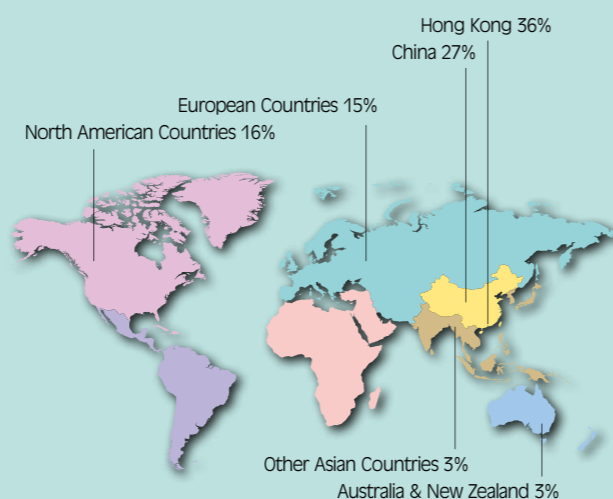


Male to female students' ratio: 6:4

Staff

	<i>Number</i>
Academic Staff	
- Professoriate	125
- Research & Academic Support	113
Non-academic Staff	
- Administrative & Support	63
- Technical	81
Total	382

Professoriate staff by Place of Origin (as in March 2010):



Male to female staff ratio 7:1

Research

Total External Competitive Research Funding received in the past years

Items	HK\$ (in Million)					
	2004-05	2005-06	2006-07	2007-08	2008-09	2009-2010
General Research Fund	30	30.42	34.8	38.27	30.71	35.92
NSFC/RGC Joint Research Scheme	0.8	0.74	0.72	1.11	0.69	1.83
Collaborative Research Fund	-	7.2	3.4	6.37	9.4	-
Innovation and Technology Fund	-	5.5	1.86	1	18.4	2.22
Areas of Excellence (every 2-3 years)	50	-	-	16.8	-	158.27
Special Equipment Grants (one-off)	-	-	-	20	-	-
TOTAL	80.8	43.86	40.78	83.55	59.2	198.24

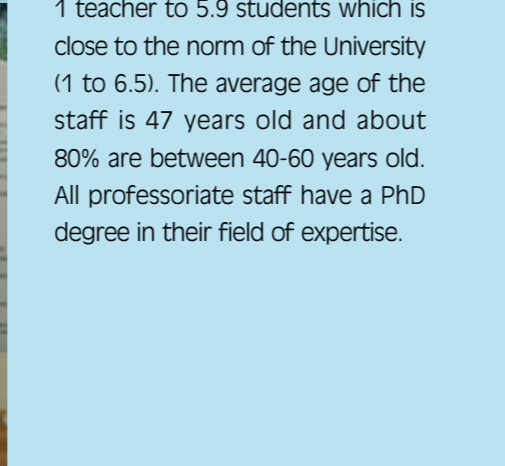
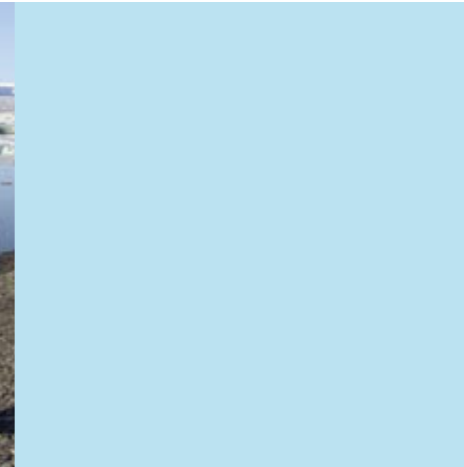
Public Education (2009 - 2010)

	<i>Number</i>
Science and admission talks at secondary schools	96
Visits to Stephen Hui Geological Museum	52
Public Lectures	21
Junior Science Institute and other enrichment programmes for secondary school students	17
Campus Visits	11
Workshops for secondary school teachers	10

Teachers



The Faculty has a good mix of academic staff at different levels with 40% in professor rank. About 31% of the professoriate staff (or 37 colleagues) are in the biological sciences field forming the largest department in the Faculty. The other five departments each have between 12-19 staff members. In terms of staff student ratio, we have 1 teacher to 5.9 students which is close to the norm of the University (1 to 6.5). The average age of the staff is 47 years old and about 80% are between 40-60 years old. All professoriate staff have a PhD degree in their field of expertise.



Faculty Retreat on the new 4-Year BSc curriculum



As a leading research and teaching university, our teachers are pursuing research at the forefront of science and have a good track record to perform competitively internationally. We place heavy emphasis on teaching; while our academic staff are world class researchers, they are also dedicated teachers advising teaching and learning.

In preparation for the 4-year curriculum, the Faculty is going through an expansion phase; 25 new Faculty members have joined the Faculty in the past three years. New colleagues bring in new energy and new dynamics and many of them are in interdisciplinary fields further strengthening the interdisciplinary collaborative work in teaching and research.

Teaching and Learning



Inter-university ecology field course fostered the exchange between HKU and the Johannesburg University and Xiamen University

The Faculty offers the following programmes:

Undergraduate Programmes

- Bachelor of Science (*full-time*)
- Bachelor of Science in Actuarial Science (*full-time*)

Taught Postgraduate Programmes

- Master of Science in the field of Applied Geosciences (*full-time and part-time*)
- Master of Science in Environmental Management (*part-time*)
- Master of Science in the field of Food Industry: Management and Marketing (*part-time*)
- Master of Science in the field of Food Safety and Toxicology (*full-time and part-time*)
- Master of Science in the field of Material Science (*full-time and part-time*)
- Master of Statistics (*full-time and part-time*)
- Postgraduate Diploma in Earth Sciences (*full-time and part-time*)

Research Postgraduate Programmes

- Master of Philosophy (*full-time and part-time*)
- Doctor of Philosophy (*full-time and part-time*)

15 Science majors in the BSc programme

- Astronomy
- Biochemistry
- Biology
- Biotechnology
- Chemistry
- Earth Sciences
- Ecology & Biodiversity
- Environmental Science
- Food & Nutritional Science
- Mathematics
- Mathematics/Physics
- Microbiology
- Physics
- Risk Management
- Statistics





The Bachelor of Science programme has adopted a **common admission policy** since 2007 allowing students the flexibility to select any of the 15 Science majors once they are admitted. This programme has proven to be a very popular programme to secondary school students attracting the most number of applicants among all study programmes in the territory. The Bachelor of Science in Actuarial Science programme remains, for many years, the programme with the best intake quality in Hong Kong.



Earth Science field trip in Taiwan



Our undergraduate curriculum employs a diversity of teaching and learning approaches to ensure learning outcomes are achieved with the most effective methods. The importance of experiential learning and out-of-classroom learning experience are emphasized in the curriculum and we believe that such experiences are essential to broaden the students' horizon, and to enhance their capacity in communication and intercultural understanding and to better prepare them for the various challenges of this ever-changing world. All students are required to take at least one form of experiential learning activities such as **overseas exchange study, internship, field camp and research project**. An academic advisory system is in place in the Faculty to provide academic advising to students and to help them explore and find out the courses and majors that suit their interest, ability, and career aspiration.



In response to the implementation of the 4-year undergraduate curriculum in HK in 2012, the Faculty has been actively planning for this new curriculum including the offer of a common Science curriculum for all BSc students in the first year of this new 4-year programme. The Faculty is also in full support of the HKU common core curriculum which provides a key common learning experience for all HKU students. Common core courses, in particular those under the Science and Technological Literacy Area of Inquiry, are being developed.

The taught postgraduate programmes aim to provide specialized training for students in the various fields of science. Research postgraduate training forms an important part of the Faculty. The Faculty has a long history and a well established system of training its research postgraduate students. A wide range of research topics in Astronomy, Biological Sciences, Chemistry, Earth Sciences, Environmental Science, Mathematics, Physics, Statistics and Actuarial Science, and other interdisciplinary projects are offered to over 500 research students from over 13 countries.

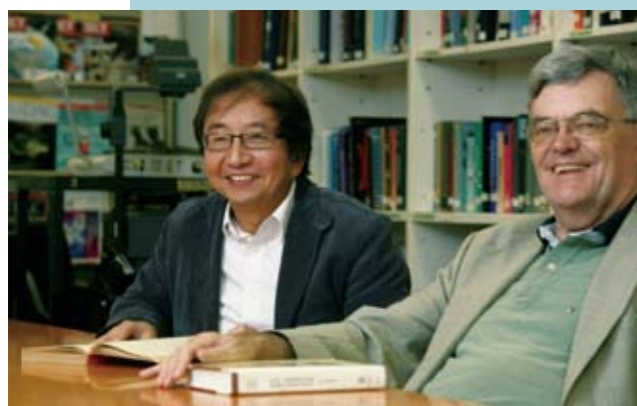
The Faculty strives for excellence in research and has been most supportive of interdisciplinary research. We have some top notch researchers and world class facilities at the forefront of science. The Faculty has one of the most numbers of Areas of Excellence in research (supported by the University Grants Committees of the Hong Kong SAR Government) in The University of Hong Kong. The three **Areas of Excellence** are **Theory-Modeling and Simulation of Emerging Electronics, Institute of Molecular Materials, and Marine Environment Research and Innovative Technology**. We also have a State Key Laboratory in Synthetic Chemistry.

The Centre of Theoretical and Computational Physics comprises members from Physics Department who are in active interaction with colleagues in the Department of Chemistry and departments in the Faculty of Engineering. The Material Science group of researchers, also from Chemistry and Physics, are in active collaboration with the Engineering departments and are working on innovative design of new organic light-emitting devices for efficient lighting, amongst others.

Our researchers in Mathematics are engaged in mathematical modeling and scientific computing. Stochastic and Time Series Analysis are two of the key areas of our Department of Statistics and Actuarial Science which are actively developing new statistical models and tools for economic and financial data analysis.



Members of the emerging strategic research theme "Earth as a Habitable Planet"



Our biological scientists are working on three key areas: endocrinology and cell biology, aquatic science, and food science and safety. **Global Climate Change** and **Earth as a Habitable Planet** are also two key interdisciplinary areas for research and investigation. We also have a new group of 'Paleoenvironments' researchers recently formed to study key periods in the 'deep' geological past.

Infrastructure



Swire Institute of Marine Science in Cape d'Aguiar, Hong Kong



Stephen Hui Geological Museum

The six departments/school in the Faculty currently occupy space in the following buildings in the main campus: Chong Yuet Ming Chemistry Building, Chong Yuet Ming Physics Building, Hui Oi Chow Science Building, James Hsiung Lee Science Building, Kadoorie Biological Sciences Building, Meng Wah Complex, and Run Run Shaw Building. Together with the off-campus facilities in Cyberport and the Swire Institute of Marine Science, the Faculty's current space provision is approximately 20,000 m². By 2012, the number of undergraduate science students will increase by 25%. The Faculty is seeking new teaching and research space to cope with this expansion.

The **Stephen Hui Geological Museum** is the first geological museum in Hong Kong. A comprehensive mineral collection from all over the world collected and donated by Dr Stephen Hui forms the core of the Earth Material display. The mission of the museum is to inspire an understanding and appreciation of the dynamic natural world of Earth Sciences, and its application to our daily life and to provide an attractive object-based learning laboratory for the nature and evolution of our planet to visitors of all ages.

The **Swire Institute of Marine Science** is an off-campus research facility on marine biology situated in the only marine reserve of Hong Kong in the scenic Cape d'Aguiar.





Public talk delivered by the Department of Mathematics

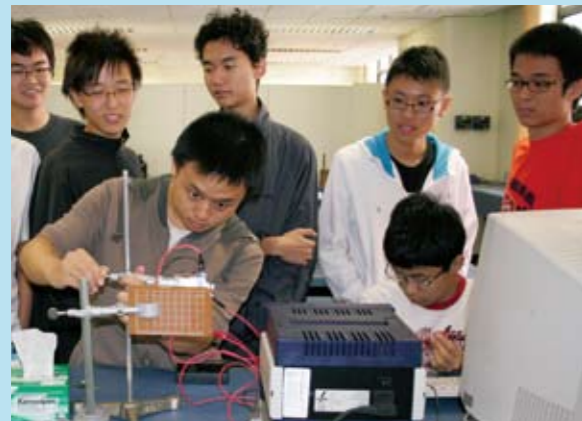
Campus Visit – the Faculty welcomes secondary school groups and public to visit our campus and facilities. Laboratory tours, science-rich and fun-filled demonstrations are designed to arouse visitors' interest and appreciation of science. The Stephen Hui Geological Museum opened in 2009 has an attractive world class collections of minerals, rocks and fossils which showcase the evolution of the 4.5 billion years old earth.

Talk @ My School Programme – the Faculty has been organizing talks on a wide range of science issues along with admission talks in secondary schools, increasing the understanding of prospective students on both science disciplines and the Faculty's curriculum. Our Student Ambassadors also help to reach out to scientifically-inclined students and bridge the gap between the Faculty and community.

In addition to the structured programmes, the Faculty has built close collaboration with different partners in local area, including Hong Kong Science Museum and Ocean Park, etc. It also endorses the awareness campaigns undertaken by regional institutes. Through the "Regional Centre of Excellence in Marine Pollution" (a United Nations regional Centre of Excellence endorsed by 11 member countries in the Asian Pacific region) awarded to the Faculty, it will provide regional training to environmental professionals, and at the same time, promote our research excellence and international visibility in marine environmental management in the region.

The bi-annual newsletter **Science@HKU** and periodical media coverage also provide platforms for the Faculty to explore current issues in scientific aspects, fostering science communication and enhancing public's appreciation to science.

Alumni are important assets to the Faculty and we maintain close relationships with our over 15,000 alumni in the last 70 years, providing support to alumni events and programmes.



As part of its commitment to community involvement, we are dedicated to promote science literacy and serve the wider society. The Faculty offers an array of outreach activities to secondary school students, teachers and general public, and the flagship programmes include:

Public Lecture Series – a series of diverse lectures are delivered to the public throughout the year to explore science topics of general interest and concern, thus enhancing their awareness and understanding to issues and debates at the frontiers of science.

Junior Science Institute – building on the positive feedback of Summer Science Institute, which had become a centerpiece of local summer science learning activities since 2002, the Faculty has redesigned a series of hands-on learning programmes to offer secondary school students a wider exposure to different science disciplines all year round. Through a variety of inspiring workshops, laboratory exercises, field trips, lectures and other interactive activities, participants are able to embark on the journey of science exploration.



Faculty's 70th Anniversary Celebration Dinner





Introducing the Faculty of Science



THE UNIVERSITY OF
HONG KONG



FACULTY OF SCIENCE • THE UNIVERSITY OF HONG KONG

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