As a new Dean of Engineering, I would like to introduce our new team of Associate Deans who would help Engineering grow. They are Professor Victor Li On Kwok on Research, Professor Francis Chin Yuk Lun on External Relations, Professor Leslie George Tham on Undergraduate Curricula, and Professor Soh Ai Kah on Undergraduate Affairs. I am extremely delighted to have an enthusiastic and dedicated team to work with.

Many challenges lie ahead for the Faculty of Engineering. Our aspiration is to transform the Faculty into one that rivals the best in the world. This is necessary to transform Hong Kong into a high tech city in the Pacific Rim, and be the intellectual hub that supports Hong Kong, the Pearl River Delta area, and the greater China area. Hong Kong is strategically located as the gateway between the East and West, and has the cultural diversity to assimilate foreign ideas easily. For this reason, it is attractive to many scientists from around the world. Hence Hong Kong can serve to draw the best from around the world, and grow into an important technological hub.

The Faculty of Engineering traditionally has attracted the best minds due to its long history. It has been the leading engineering institution in the region, with a large alumni body. Hence, with strong alumni support the Faculty is poised to play an important leadership role in changing Hong Kong.

The University of Hong Kong has always excelled at educating young minds at the undergraduate level. The impending change into a four-year curriculum in 2012 calls for a new way to educate our students. Students will receive a broad-based education, where the emphasis will be on teaching our very talented and highly motivated students to think by learning the fundamentals, as well as knowing enough of other subjects to meet the demand of the modern world.

However, the fast changing scene of advanced technological innovation in the region requires more engineering graduates at the Master and PhD levels. Correspondingly, the research activities of HKU Engineering have to grow and excel to meet this demand. We pride ourselves in our bilingual and cosmopolitan education, and we will continue that tradition of educating students who can serve as global citizens and leaders. With the integration of the global economy, our students have to be even more versatile to work around the world.

I have immersed myself for over 30 years in leading US institutions of research and higher learning, and I would like to share my experience here. To bring the Faculty of Engineering to a different level, we need to recruit the best and the brightest to our Faculty for our academic staff, mentor and nurture the younger generation of staff so that they will grow to be world class. In turn, the world class staff will educate and nurture young minds and young engineers to meet the increasing human resource demand of the region.

To meet the increasing challenge and to enhance the Faculty performance to a higher level, our new plans has to be fueled by donations and fund from the private sector. We need help and advice from loyal alumni to move our faculty forward, and we look forward to your continued support to the Faculty.

Weng Cho CHEW
Dean of Engineering

The Faculty has a new management team led by Professor W.C. Chew with effect from May 28, 2007.
Ng Man Hin Matthew (EComE Year 3 student)  
Flying Scholarship of the Hong Kong Air Cadet Corps.

Taking a plane off the ground, flying it in the boundless blue sky, and landing it safely — even though these became routine work for Matthew Ng, our third year EComE student, he still found them exhilarating and rewarding.

Matthew was one of six awardees from a pool of 75 candidates who competed for the Flying Scholarship of the Hong Kong Air Cadet Corps. He attended a 2-week training, from 24 February to 10 March, in the Moorabbin Airport of Melbourne in Australia under the program organized by the Advanced Aviation Education Program (AAEP). During the stay, he studied fixed-wing aircrafts on a full-time basis in a flying school and sat for several exams offered by the Australia Civil Aviation Safety Authority (CASA), while also receiving flight training that allowed him to attain a solo flying certificate endorsed by the Australia Authority.

"Flying is a practical science," said Matthew. "And it has a close relationship with Engineering." Having an aspiration to become an Aircraft Maintenance Engineer, Matthew treasured this opportunity to allow him a taste of the Aviation Industry.

His engineering education taught him to carefully conduct pre-flight inspection before every takeoff, including visual inspection of the aircraft fuselage, checking all moving control surfaces as well as draining fuel samples. "There was a time I discovered that a bolt was missing on the engine cowling. I didn't hesitate to report it to my flight instructor immediately and at last I helped him to fix the defect together. I believe Aircraft Maintenance is the front line towards total flight safety, and I enjoy taking up the responsibility in keeping the aircrafts in good condition!"

Shen Yijiang (MPHIL Year 2 student)  
Best Student Paper Award of The 2006 IJENG Int'l workshop on Imaging Engg

Shen Yijiang presents his award paper, "Binary Image Deconvolution with Pansic Semidilute Programming," which is co-authored with his supervisors, Dr. E. Lam (left) and Dr. N. Wong (right).

Wai Chun Chung (EComE Year 2 student)  
Au Kin Hei Timothy (CE Year 2 student)  
Fung Dat Shun Dixon (EE Year 2 student)  

Entrance Scholarships in electrical and Electronic Engineering

(from left) Wai Chun Chung (EComE), Au Kin Hei Timothy (CE), Fung Dat Shun Dixon (EE) with his supervisor Dr. N. Wong.

Kong Zhen (PHD student)  
Research internship at INRIA in France

Mr. Kong Zhen with his supervisor Dr. Y.K. Kwok.
Department of Industrial and Manufacturing Systems Engineering

Champion in YDC Entrepreneurs Challenge 2007

Mr. Yuan Rong, year 2 IMSE student, teamed up with students from the Faculty of Business to win the champion in YDC Entrepreneurs Challenge 2007, organized by the Young Entrepreneurs Development Council. The team, advised by Dr. George Huang from IMSE, beat more than 160 teams of 700 candidates from other 8 Hong Kong Universities through 3 rounds and took home HKD 30,000 for the Champion.

The team's taxi-top advertising concept won the grand prize in the competition. Judges were impressed with the level of competition, noting that members of the top two teams were all first-year undergraduates. "It was surprising," the head judge Roger Marshall said, "some of the presentations were as good as anything we've seen in the real-life business sector." "The idea for taxi-top advertisements came from our experience with in-car television screens in mainland taxis," said Yuan Rong, a 2nd Year IMSE student, originally from Beijing.

The YDC Entrepreneurs Challenge was held for the eighth year in collaboration with Stanford University since 2000. Over 700 local university students formed into more than 160 teams have enrolled in the Competition. They had to develop business ideas into detailed business plans and present them to a judging panel comprising entrepreneurs, venture capitalists and other professionals.

Department of Civil Engineering

Lau Tak Bun, Denvid (Mphil student)
Croucher Foundation Scholarships 06-07

Wong Tse Man, Ken (2005 PhD graduate)
Croucher Foundation Fellowship 2006-07

HKU Engineering students won the Robocon Hong Kong Contest the third time

Two teams of HKU engineering students from Departments of Electrical and Electronic Engineering, Mechanical Engineering and Civil Engineering, carrying the names of Evolution (Cheung Wai Yeung, Li Tam Tan Fung, Ma Ho Yuen, Au Ming Tsun, Lam Yau Kin, Shi Rui Chao, Tam Wai Shun, Wong Shek Hon, Leung Yu Hin and Yip Tsz San) and Sapientia (So Chik Man, Ip Wilson Hugh, So Ngai Hin and Lam Jonah) won the Championship and First Runner-up in the Robocon 2007 Hong Kong Contest in June. This is the third Robocon championship secured by HKU teams over the past four years.
Staff

Honours & Awards

Department of Electrical and Electronic Engineering

Professor J.H.W. Lee has been re-appointed as a member of the Red Tide/Harmful Algal Bloom Expert Advisory Group by the Agriculture, Fisheries and Conservation Department, HKSAR Government.

Professor H.H.P. Fang has been awarded the First Prize of Technology Advancement by the City Government of Guangzhou.

■ He received the First Prize of China’s Petrochemical Industrial Association on November 13, 2006 for a project on the Removal of Nitrogenous Pollutants in Wastewaters from Petroleum Refineries. Professor ZHOU Shaoqi of South China University of Technology, Guangzhou, China worked jointly with Prof. Fang on this project.

■ He has provided consultancy services to the Civil Engineering and Development Department of Hong Kong SAR Government on the 12-m pilot trial of sediment bioremediation of Kai Tak Approach Channel.

Department of Civil Engineering

Department of Mechanical Engineering

Professor A.H.W. Ngan has been awarded “the Rosenhain Medal & Prize 2007” by The Institute of Materials, Minerals and Mining in October 2007 in UK for his distinguished achievement in materials science. Prof. Ngan is the only Chinese on the recipient list since 1984.

■ He received an Outstanding Reviewer Award by Acta Materialia Inc. in 2006.

Professor M.M. Kumaraswamy has been awarded a UNIVERSITAS 21 Fellowship to engage in joint research and scholarship development activities with counterparts at the National University of Singapore (NUS) in 2006-07.

■ He has been re-appointed as a member of the Transport Advisory Committee by HKSAR Government.

Professor C.F. Lee received an Honorary Doctor of Science degree from the University of Western Ontario, Canada on November 5, 2006.

Dr. Z.Q. Yue won the 2006 Mao Yi-Sheng Soil Mechanics and Geotechnical Engineering Youth Award (2006年度茅以昇土力学及岩土工程大奨—青年奨) in China, awarded on May 26, 2007, Dalian, China.

Department of Computer Science

Professor T.H. Tse and his collaborators have been awarded a Virtual Earth Award for their outstanding research project “On Testing Non-Testable Information Retrieval Systems with Geographical Components on the Web”. It is one of the ten projects selected for the award by Microsoft Research from proposals throughout the world, and is the only awarded project from outside of USA and Europe.

Professor Felix Wu has been appointed as the Philip K.H. Wong Wilson KL. Wong Professorship in Electrical Engineering.

Professor K.T. Chau and his collaborators have been awarded the *Environmental Excellence in Transportation Award for Education, Training and Public Awareness in 2006* by the International Society of Automotive Engineers (SAE) for their innovative education and training program in electric, hybrid and fuel cell vehicles.

Dr. Graziano Chesi has been appointed Guest Editor of the Special Issue on Positive Polynomials of the IEEE Transactions on Automatic Control.

Dr. K.Z. Chen has been awarded Science Prize (the second grade) by the Ministry of Education in China to recognize his achievement in “Research on computer pattern recognition technology” and other achievements on the same area made by Nanjing University, China.

Dr. C.O. Ng and his collaborators at Dalian University of Technology, were awarded a First Class Prize of Natural Science Award by the State Ministry of Education, China in January 2007 for their research achievements in the marine environmental mass transport modeling.

Dr. Sam C. M. Hui was elected as the President of ASHRAE Hong Kong Chapter for the fiscal year 2006-2007.
It is with great sadness that we mourn the passing of Professor Allen T. Chwang on June 13, 2007, at the age of 63. Professor Chwang was the Head of Department of Mechanical Engineering in 1991-1993 and was named Sir Robert Ho Tung Chair of Mechanical Engineering in 1991. We are deeply grateful for his contributions to the Faculty and the University. Professor Chwang will be sadly missed.

Tse Chi Yung, a double degree graduate (BBA(S) / BEng(SE)) in 2005, has been recruited by one of the world’s top Internet companies, Google, as a Software Engineer. Chi Yung’s success in securing an attractive job offer from Google does not only attribute to the substantial and comprehensive training he received from the programme in the Department of Computer Science, it also symbolizes the importance of one’s unflagging commitment and passion to his own interest. Chi Yung and his teammates represented HKU in the World Final of the ACM Programming Contest in 2005 and the team ranked number 12 among more than 4,000 teams with the award of the bronze trophy. This result led to a trip invited by Google to its headquarters in California. Chi Yung loves programming and courses in algorithm design and data structure. He joined Google in late September 2006.

Upon earning my BEng degree in Building Services Engineering in 2005, I joined Ove Arup & Partners Hong Kong Ltd as a graduate engineer, specializing in Building Physics and sustainable building design. Working in a leading engineering consultancy firm is a marvelous opportunity for a fresh graduate. Arup offers 2 years HKIE Scheme A training for the graduate engineers, providing both in-house and on-job training. My assignments include microclimate analysis for built environment, advanced studies for different green and building design strategies and design features, feasibility of high-energy efficiency building systems and conventional building services system design.

I have the exposure to both engineering and business issues in the company, including engineering design, marketing, project coordination as well as meeting with clients, sub-consultants and suppliers. I would say that HKU provided an excellent platform for us to broaden our knowledge and to train our mind.
Maximize the Use of Wind Energy by Micro-Wind Turbines

by Dr. D.Y.C. Leung and Dr. M.K.H. Leung

Wind is an indispensable renewable energy source and a promising solution to energy crisis and air pollution problems. Presently, Dr. Dennis Y.C. Leung and Dr. Michael K.H. Leung of the Department of Mechanical Engineering are actively collaborating with Mr. Lucien Gamborata, a French inventor, to develop innovative micro-wind turbines.

Conventional 3-blade wind turbines (20 to 200 m in diameter) are designed to produce high power output (30 to 5,000 kW) at a high wind speed (> 13 m/s). However, when the wind is not strong, the wind turbines do not spin and the energy production is zero. The average wind speed in Hong Kong is only about 5 m/s. A giant wind turbine would mostly be idle and would not produce energy.

Micro wind turbines are designed to address this deficiency. Each micro-wind turbine (200 to 500 mm diameter) can start operation at a wind speed as low as 1 m/s. Similar to the toy LEGO, a wind energy collector of any shapes and scales can be built from micro-wind turbines. Individual power output can add up to drive a motor generator and produce electricity. As the micro-wind turbines can be mass produced by injection molding, the cost will be very competitive. Results from wind tunnel and field tests are very encouraging. We look forward to further innovative development, and environmental benefits to the community.

"Lineament Monitoring System"

Automatic 24-hour monitoring of online copyright infringement

Unlike the combat against other types of piracy activities, when tackling Internet piracy and other computer crime problems relating to infringement of intellectual property rights, law enforcement cannot be easily accomplished by manual inspection. Tools and technologies to perform automatic and systemic digital data collection are needed.

For the purpose of Internet investigations, the Customs and Excise Department (C&ED) and Centre for Information Security and Cryptography (CISC), Department of Computer Science, Faculty of Engineering, the University of Hong Kong have jointly developed a computer system named "Lineament Monitoring System". It is capable of performing automatic 24-hour monitoring of online copyright infringement by BitTorrent (BT) users. The system is now in use by C&ED since March 2007.

Advanced technologies have been adopted in the research and development of the Lineament Monitoring System. Web Crawling algorithm has been used to search through the specific forums on the Internet. The Lineament Engine developed by 2 final year project students of Computer Science Department in 2006, Martin and Robin, is used to decode and analyze the BT protocol. Artificial intelligent and expert system technology has been used to allow officers of C&ED to create their own rules to monitor and track potential Internet piracy activities.
The Symposium organised by the Department of Civil Engineering, The University of Hong Kong was held on November 10, 2006 in the Intercontinental Grand Stanford Hotel, Kowloon, Hong Kong. The opening remarks of the Symposium was delivered by Professor Y.K. Cheung, Special Advisor to the Vice-Chancellor of The University of Hong Kong, and the closing remarks by Ir Y.K. Cheng, Chairman of the Joint Structural Division of HKIE and IStructE. Nine prominent overseas and local academics, researchers and engineers presented and shared their experience on the latest development and technology in the field of steel and composite structures. The papers were published in the symposium proceedings, edited by the symposium chairman, Dr. B. Young. The symposium was attended by over 120 engineers from various government departments, consultant firms and construction companies. The sponsorship for this Symposium from the Corus Asia Limited is gratefully acknowledged.

An academic exchange was established between the Department of Civil Engineering, The University of Hong Kong (HKU) and the Department of Civil of Urban and Geosystem Engineering of Seoul National University (SNU), Korea in July, 2006. This exchange agreement reflects the increasing intellectual exchange between HKU and SNU researchers. In February 2006, a group of research postgraduate students from Seoul National University (SNU) visited the Croucher Hydraulic Laboratory for an intensive 2-day workshop. This laboratory-to-laboratory intensive exchange is supported by the Brain Korea 21 programme, and aims to enhance internationalization and collaboration between leading Asian Pacific university partners.

In January 2007, HKU and SNU launched a new Journal of Hydro-environment Research (JHER) which was published by Elsevier and an official publication of the International Association of Hydraulic Engineering and Research (IAHR). This venture is the vision of a group of researchers from elite Asian universities. Prof. J.H.W. Lee (HKU) and Prof. Il Won Seo (SNU) are the Chief Editors.

The construction industry will soon benefit further from the revamped SMILE-SMC web-site, an upgraded one-stop resource website which was launched by The University of Hong Kong (HKU) in 2006, aiming to help construction organizations to improve their competitiveness and performance levels. The University of Hong Kong (HKU) signed an innovative University-Industry Partnership Agreement with China Trend Building Press Limited in June 2007 for the 2nd phase development and operation of this SMILE-SMC web-site.

Aiming at spreading and multiplying the SMILE-SMC benefits, the website was developed by the Centre for Infrastructure & Construction Industry Development (CICID), based at the Department of Civil Engineering, HKU and members from other Departments and partners from industry. Under the Agreement, China Trend Building Press Limited will update, upgrade, maintain and further promote the website. You are welcome to have a glance at SMILE-SMC through the following link: http://smile.hku.hk/.

The Boeing Company and Cathay Pacific Airways jointly offered a 6-month engineering internship programme for university students in Hong Kong who have completed their second year of undergraduate study in engineering. Mr. Chow Yin Lam Dick and Mr. Wong Man Chi Man Joao (ME Year 3 students) successfully went through the very tough selection process. Joao started his internship programme at the Boeing Company in Seattle, USA in June 2007, while Dick will join with another group of participants in January, 2008. Congratulations to their fabulous efforts.

From left: Dr. Thomas Ng, Prof. Mohan Ramakrishnan and Mr. Peter Lee (of HKU), with Mr. Felix Leung and Mr. Simon Lam of China Trend.
The Faculty has established strong academic links with the industry, academic circles as well as overseas and local Engineering professional bodies. This year, the Faculty has made tremendous progress in its internationalization and outreach initiatives by strengthening ties with the industry and external academia.

The Fifth Asia-Pacific Bioinformatics Conference

The Fifth Asia-Pacific Bioinformatics Conference, APBC2007, hosted by the Department of Computer Science, was held in Wang Gungwu Theatre, Graduate House, The University of Hong Kong on January 14-18, 2007.

The Conference was an annual forum for exploring research, development, and novel applications of bioinformatics aiming to bring together researchers, professionals, and industrial practitioners for interaction and exchange of knowledge and ideas.

It attracted more than 180 participants from the Asia Pacific, Europe and North America. A total of 104 papers came from many countries, including Australia, Bangladesh, Canada, China, Denmark, France, Germany, Hong Kong, Hungary, India, Israel, Italy, Japan, Korea, Malaysia, Mexico, New Zealand, Portugal, Singapore, Taiwan, Thailand, UK and USA were received. Of these, 35 papers were accepted (33% acceptance rate) and over 100 posters were presented with 3 tutorial sessions and 3 keynote speeches as well as an industrial talk and a banquet talk.

Generous support from Lee Hysan Foundation, K. C. Wong Education Foundation and Hewlett Packard for this Conference is gratefully acknowledged.

Over 300 water experts from 11 countries in 4 continents participated in a two-day International Symposium on Sustainable and Safe Water Supplies organized by Professor H.H.P. Fang, Department of Civil Engineering, on January 15-16, 2007. The Symposium included 19 international experts from Europe, U.S., Australia, Japan, Korea, Taiwan, Singapore, Hong Kong, Macau and Mainland China, comprising the Stockholm Water Prize (2003) recipient and members of the National Academy of Engineering from several countries. Selected papers presented in this Symposium have been published by the International Water Association as a special issue of Water Science and Technology: Water Supply (vol. 7(2), 2007; ISBN: 1843396114).