HKUST spirit in action

HKUST’s campus exploded into action after a brief lull for the Lunar New Year holiday, as students came out in strength for the Students’ Union (SU) and student society elections from early February to late March. Sparing no effort to get their classmates’ votes, campaign teams created unique designs, came up with catchy slogans, and worked hard to get sponsors. Their efforts bolstered each group’s solid election platform and underlined their commitment to serve.

Amid campaign exuberance, a handover ceremony was held for the Students’ Union Executive Committee as the new student leaders took up the mantle to lead the SU into its 10th year. Attended by representatives of previous sessions, the handover was part of HKUSTSU’s 10th Anniversary Kick-Off Ceremony, held on 19 February. Official celebrations will take place at the end of this anniversary year.

The event coincided with the first Independent Clubs Festival, organized to enhance coordination among the 36 societies of the Independent Clubs Association. HKUST’s new Sandpit got a real “working-in” for the Festival. Students, faculty, staff and community members enjoyed music performances, dragon and lion dances, and tai chi and martial arts exhibitions by member societies, as well as calligraphy and paintings being created on the spot.

The election campaigns and other events were a reflection of the vivid HKUST spirit found in every student here; a spirit that is creative, and dedicated to the best... in both work and play.
Science and technology as engines of growth

What drives wealth creation, enables improvements in the quality of life, and becomes a source of competitive advantage? The answer today is knowledge—creating it and commercializing it.

Science and technology are the prime sources of new knowledge, and thus engines of economic growth. Success in developing these areas is of critical importance to nations and corporations alike, and the focus of a thought-provoking symposium organized by HKUST.

“Economic Development through Commercialization of Science and Technology”, held in Hong Kong and Nansha from 19 to 22 March, brought together technology, business and academic leaders from 10 major economies to share their experiences in promoting technology-driven growth. Co-organized by the Hong Kong Science & Technology Parks Corporation, the conference focused on the research commercialization process under four themes: country experiences, important high-technology sectors, successful regional development cases, and applications to the Pearl River Delta region.

“In looking at common factors under these four themes within the framework of universities, research institutes, government and business, we can start to answer the questions of what determines success in the research commercialization process, and whether or not success in one place can be emulated elsewhere,” says Prof Otto Lin, HKUST’s Vice-President for Research and Development and host of the Symposium.

Models and experiences from Silicon Valley, India’s high-tech region of Bangalore, the UK’s Cambridge Science Park, as well as those of the Chinese Mainland, Germany, and other countries were presented. Eminent science and technology policy decision makers such as Prof Henry S Rowen, Director Emeritus of Stanford’s Asia/Pacific Research Center and former US Assistant Secretary of Defense, and Mr Azriel Hemar, Deputy Chief Scientist in Israel’s Ministry of Industry and Trade, shared their views on the commercialization process.

Over 120 high-level members of academia and industry from Southeast Asia, the Mainland, Taiwan and Hong Kong, as well as diplomats and media representatives, attended the four-day event.

The symposium topics hold great importance both globally and for Hong Kong and the region, according to Prof Lin. “One factor crucial to Hong Kong’s continued success is developing strategic high-tech industries, and leveraging its already strong relationship with the Pearl River Delta in the process.”

In keeping with HKUST’s mission to assist in the economic and social development of Hong Kong, this Symposium is part of the University’s continuing effort—in partnership with government, business, and industry—to propel the territory into a knowledge-based society.

Roundtable on nanotechnology

Tiny medical devices inside a human body, encyclopedias stored on chips the size of a pinhead, batteries that run for weeks—these are just some of the intriguing prospects offered by the world of nanotechnology.

Hong Kong’s business, Government and diplomatic corps leaders were introduced to this exciting technology of the future at the 28th HKUST Business Roundtable Dinner, held at the Hong Kong Club on 4 March. The dinner featured Prof Che-Ting Chan of the Department of Physics, who introduced recent discoveries in the field and their potential applications. He highlighted some of the areas in which HKUST has taken the lead, such as fabrication of the world’s smallest single-walled carbon nanotubes (0.4 nm) and the discovery of their superconducting properties, as well as work in ER (electro-rheological) fluids, which can be applied to suspension systems, dampening and braking devices and have implications in a variety of industrial sectors.

The Business Roundtable Dinners are sponsored by Dr Helmut Sohmen, Chairman of the World-Wide Shipping Agency and University Court member, who initiated them in 1993. They offer an informal yet intellectually stimulating environment for senior business executives, government officials, diplomats and community leaders to develop closer contacts with HKUST and share up-to-date information on high-impact areas at the University.

Prof Che-Ting Chan explains potential applications of nanotechnology to an interested audience at the HKUST Business Roundtable Dinner.
Students of HKUST’s Masters of Technology Management (MTM) programs are expanding their global view through a strategic partnership with the University of Pennsylvania (Penn) School of Engineering & Applied Science. Penn is an Ivy League university and one of the top 10 in the US.

The two universities signed a Statement of Strategic Alliance at HKUST on 27 February, paving the way for closer collaboration in their postgraduate technology management programs. Students from each program can take courses for credit at the other institution, providing them further international perspectives and access to a wider range of world quality faculty.

A lively panel discussion and dinner on 25 February found HKUST’s MTM students and faculty sharing their experiences on work and developments in China with a group of 35 of their counterparts from Penn’s Executive MTM program visiting HKUST.

The Penn students, many first-time visitors to the region, included managers from major US corporations. Lisa Simone, one of the Penn panelists and Principal Staff Engineer with Motorola, found the experience invaluable. “Meeting people here has been an opportunity to form networks,” she said, adding that she was very interested in doing business in China in the near future. Her feelings were echoed by HKUST student Yvonne Pang, Account Manager with Nokia in Hong Kong, who was impressed with the depth of interest the discussion generated.

HKUST’s MTM is the first program of its kind in Hong Kong, as is Penn’s in the US. “HKUST and Penn share the common goal of educating technology managers who can turn innovations into commercial success in the global marketplace,” noted Prof Kang L Wang, Dean of Engineering at HKUST. “As Hong Kong’s only research university specializing in science, technology and management, HKUST will continue to develop alliances with leading international institutions, in tandem with Hong Kong’s global drive.”

In recognition of their outstanding research achievements, two HKUST faculty were awarded this year’s prestigious Croucher Senior Research Fellowships. Prof Tai Kai Ng, Associate Professor of Physics, and Prof Randy Y C Poon, Associate Professor of Biochemistry, received the fellowships after rigorous evaluation by panels of international experts. They will concentrate on research and be released from teaching and administrative duties for a year.

Prof Ng, an expert in condensed matter physics, will continue his work on strongly correlated electrons (what can happen when electrons interact strongly with one another). He uses analytical approaches to understand different models of these electrons, and is currently exploring new techniques to describe their plausible non-fermi liquid states. The study of strongly correlated electrons may provide insights for physicists to understand how the four forces of nature we know today are generated from one fundamental, unified law of physics, and affects many other areas in physics.

Prof Poon’s research focuses on the molecular basis of cell cycle control in normal and cancer cells. Using state-of-the-art molecular biology and cell biology techniques in the laboratory, he studies a family of proteins called cyclin-dependent kinases, which are engines that drive all cell division. It is believed that understanding precisely how the cell cycle is controlled will aid in the design of novel therapeutic approaches to treat cancers.

Six HKUST faculty have been awarded Senior Research Fellowships since the scheme’s inception in 1997. The Croucher Foundation was set up more than 20 years ago by noted philanthropist Noel Croucher, and promotes the standard of natural sciences, technology and medicine in Hong Kong through education and research activities.
International Spring Dinner

The University’s new China Garden restaurant took on an international flavor on 4 March when almost 230 non-local students, faculty and staff gathered for an evening of fun, great food and cultural exchange at the Spring Dinner.

The annual gathering, first organized by the Student Affairs Office’s International Student Center (ISC) in 1999, enables non-local students studying at the University to celebrate the Lunar New Year together. This year’s lively event was co-hosted by the Mainland Students and Scholars Society and the PG Hall wardens. MCs were Wenxin Li from New York University and mainland postgraduate Mei Xue.

During the evening, lantern riddles, bingo and a lucky draw were enjoyed by all, while Chris Rockett from Georgia Institute of Technology ensured everything went with a swing with his guitar performance. Fellow Georgia Tech student William Robinson also contributed to the occasion with a speech on behalf of all the exchange students.

The Spring Dinner is one of a number of programs that ISC organizes to make non-local students feel at home at HKUST and in Hong Kong. These include pre-departure information, airport welcome, online news bulletins, an orientation program as well as cultural and social activities. Some of these programs are organized jointly with the International Association of Students in Economics and Management, HKUST Chapter, and the Mainland Students and Scholars Society.

The percentage of non-local undergraduate students at the University is currently around 1%. To be in line with HKUST’s international standing and outlook, the University plans to gradually increase the number of non-local undergraduate students to 10% in the next decade. “An internationalized student body enables our students to learn from different cultures, to broaden their outlook,” says Prof Yuk-Shee Chan, Vice-President for Academic Affairs. “This will greatly benefit their personal development and future careers.”

“Hide and seek” technology gains notice

You can’t see the characters hidden in this image, because Ming-Sun Fu has invented a watermarking technology that makes them invisible. Fu, PhD candidate in Electrical and Electronic Engineering at HKUST, was a finalist for the Far Eastern Economic Review 2001 Young Inventors Award, one of only 14 out of 216 entries from 70 universities in the Asia-Pacific region. His watermarking technology allows information to be embedded in halftone images, found in newspapers, magazines and other printed matter. The technology offers an affordable method to authenticate documents and protect property rights without compromising visual quality, and could add value to products ranging from concert tickets to birthday cards, according to the young inventor. Compatible with most laser printers, the invention has potentially wide applications. Three US patents are pending on related technologies.

Rowing to victory

Rowing hard and fast, HKUST Rowing Teams beat out competitors at the 2002 Open Indoor Rowing Championships, held from 2 to 3 March. The Men’s Team, captained by Kai-Fung Lo (CIVL Year 2), took home the Men’s Championship, while the Women’s Team captained by Wai-Kai Tang (CHEM Year 2), became proud holders of the first runners-up trophy. This is the second year HKUST teams have competed successfully. They are now in training for the Grand Championships, to be held on the Shing Mun River in Shatin in September. Interested students can find out more about rowing by contacting su_row@ust.hk
萬誠嘉教授——學習的實驗

萬誠嘉教授（Prof. Surendra Mansinghka）有一個理想，就是讓學生在學習的過程中得到個人化的指導和支援。

這位科大財務學系兼任教授把商科和財務學學生必修的“財務管理入門”課程來一個大革新，從三方面著手改變以講課為主導的授課傳統：

(一) 創造一個能激發學習興趣、使課程變得趣味十足的支援環境；

(二) 寻找能強化學習的教學方式；及

(三) 評估教學在人數眾多的班中的角色。

“與其說我是一個老師，毋寧說我是一個促進學生學習的人。”萬誠嘉教授說。

由 2001 年春季開始，他把課程重新組合，以每週一次、每次不多於30個學生的導修課配合內容精煉的講課。導師成為教學隊伍中不可或缺的成員，他們須具備良好的溝通技巧以及協助學生改善學習的熱誠。

“導師是我的耳目，幫助我更了解學生的需要。”萬誠嘉教授說。

他和三位導師為學生提供多元化、靈活之溝通渠道，除上課和導修外，還包括電郵、網上論壇、面談、電話、傳真等。萬誠嘉教授估計，教學小組於過去一個學期內覆蓋逾千個電郵，平均每星期花20多小時與學生會面，備課及準備試題用上幾百小時；但他認為一切辛勞都是值得的。“我深深感到責任是盡可能為學生提供學習機會，然後鼓勵他們為自己的學習負責。”

在萬誠嘉教授和導師們的努力下，課程內容豐富了，評估方法重新調整，教學過程也受到監控，結果令人鼓舞。課程在學系評估中得到高度評價，學生與教學隊伍之間溝通日益密切，對老師們的表現十分讚賞，萬誠嘉教授仍在不斷改進課程，引進創新的教學方式，其中包括以三年級學生輔導低年級的同學。

2001 年 12月，萬誠嘉教授和教學小組獲科大頒發“創新教學卓越大獎”。但他謙稱：“這個計劃就好比一個學習的實驗，因為我的學生、我的助教，連我自己也在邊做邊學呢!”

藝術才華大檢閱

2月26日舉行的“科大學生會合唱團音樂會——聲夜悠揚”為2002年度科大藝術節揭開序幕。為期四週的節目包括多個學生團體表演（中樂、弦樂、管樂、鋼琴及戲劇），以及展覽和文化講座。科大首個樂隊比賽——“搖滾革命”亦是重點節目之一。本屆藝術節鼓勵科大學生不僅參與演出，更協助節目籌備和推廣，藉以進一步提升校園的文化氛圍。
創新科技監測空氣質量

球首部高科技大氣監測走航平台將於4月8日舉行啟用典禮。這部由科大研
究人員設計的走航平台獲香港賽馬會慈善信託基金撥款1,230萬港元建造，能實時收
集空氣質量數據，提供高密度和高質量的空氣成分時空分佈資料。走航平台亦將廣
泛於學校及公共場所舉行示範，提高學生
及公眾對環保的關注和認識。科大研究人員在多個部門的合作下，耗時一年半，在一部24座位小型客貨車上
開發出高科技走航平台。平台上裝備的儀
器包括：測量微量氣體及揮發性有機物質
的傅里葉轉換紅外線光譜儀、偵測空氣懸
浮微粒粒徑分佈的低壓電衝擊器、元素碳
分析儀、自動氣象站及全球定位系統等。

首席研究員、化學工程學系副教授陳
澤強博士指出：在一輛開動的汽車上收集
精確的環境數據是一項嶄新的嘗試，需要
不同技術和工藝配合，確保高度精密的儀
器不會受車輛震盪影響。他說：
“在建造走航平台的過程中，我們
積累了不少寶貴經驗，有助日後開
發類似的研究設施。”

目前，環境數據是由固定的
監測站收集得來。在監測站之間或
以外的情況只能倚靠數學方法去估
算或模擬。然而香港市區大廈林
立，導致氣流複雜，區與區之間
的空氣污染程度變化頗大，需要特
別的方法來了解空氣質量情況。科大的走
航平台讓研究人員只需沿著指定的路線走
便可以收集到沿途的空氣質量數據。

這些連續性數據有助研究人員深入了解空
氣污染物的分佈方式和擴散情況。

大氣監測走航平台計劃項目經理、科
大環境及持續發展研究所副所長方明教授說：
“走航平台的優勢是邊走邊測，特別適
合在一些觀測盲點，如隧道、山頂或交通
繁忙的地段等進行空氣監測工作；更可以
追蹤空氣污染物的擴散路線和微結構，這
是固定監測站做不到的。”

方教授又指出：“走航平台還有多方
面應用；例如為地產發展計劃進行環境影
響評估，在垃圾堆填區的周邊進行測量，
或在淺海化學品意外現場監察情況。”

計劃中亦包括了利用走航平台到市民
和學生中間推廣環境教育。在賽馬會的撥
款支持下，走航平台將從本周五起訪問多間中學，
以及在一些公共場所作大氣走航監測示範。

方教授和陳教授預備以比賽方式選擇
要訪問的中學。邀請全港中學生提出建議
書，列舉科大監測平台採訪他們學校的原
因，目的及該校訪問後推廣環保意識、
教育的方案。兩位教授亦計劃日後邀請中
學生在暑假到走航平台上進行短期研究培
訓。

Home Affairs
Ms Cartman Shuk Ying Chan (RDC) is happy to announce the birth of a son,
Lok Yan Lee, on 18 December 2001.

教職員消息
科大研究開發有限公司陳淑盈女士於
2001年12月18日喜獲麟兒，取名李樂
人。

New Arrivals
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Discounted Price 折實價
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世界各國近年積極推動科技發展，把科研成果產業化，不少國家和地區已藉此成功帶動經濟增長。如何有效運用科技促進經濟發展？香港特區可否從這些成功個案中汲取經驗？

香港科技大學與香港科技園公司於4月19至22日合辦“科技產業化與經濟發展國際研討會” ，邀請歐洲、北美和亞洲的學者、專家及工商界領袖分享經驗，並與120多位來自東南亞及兩岸三地的學者、政府官員和企業高層主管共同探討適合本地區發展的模式。

研討會先後在香港及廣州南沙舉行，內容分為四個主要部分：(一) 國家經驗，由來自德國、瑞典、以色列、加拿大、新加坡、韓國及中國內地的講者分享當地科技發展經驗與模式；(二) 適合香港發展的高科技領域，包括微電子、資訊科技及生物科技的最新發展；(三) 美國矽谷、亞洲小龍及英國劍橋科學園的成功發展案例；(四) 珠江三角洲地區的未來規劃。

獲邀的講者均是各地區舉足輕重的專家，包括：中國科學技術部副部長徐冠華教授、美國史丹福大學亞太研究中心榮休院長及前任美國國防部助理部長Henry S Rowen教授、德國佛蘭豪爾研究院院長 Hans-Jürgen Warnecke 教授、韓國三星高等科技學院院長Kwan Rim教授、新加坡國立大學創新兼技術企業管理中心主任黃寶金教授、以色列工業及貿易部副首席科學家Azriel Hemar先生、台灣積體電路製造股份有限公司副總執行長曾繁城博士、香港特區創新科技署署長何宣威先生等。與會者亦參觀了科大深圳創辦的科大創新科技園及廣州科技園，並獲廣州市政府設宴款待。
節假期過後，科大校園再次熱鬧起來。2月初至3月底的學生會和屬會選舉紅紅火火，競選隊伍各出奇謀，努力拉票，充分表現同學們的創意和熱誠。

為了博取支持的一票，競選隊伍設計了獨特的形象和宣傳標語，更四出尋找紀念品贊助商。當然，最重要的還是誠懇的態度和切實的政綱。

在一片競選口號聲中，學生會在2月19日舉行了學生會十周年揭幕典禮，邀請歷屆代表出席助興。新舊兩屆幹事會在典禮上進行了交棒儀式，第十屆幹事會接下了任命，領導學生會進入第十個年頭。

同一天中午，由36個學社組成的學社聯會舉行了首屆學社學會節——“拉闊科大，玩轉沙池”，目的是凝聚各學社，加強聯繫，發揮創意。主辦單位更一反傳統，在新建成的沙池附近舉行活動。各學社一個接一個表演自己的強項，包括音樂、舞蹈、舞龍、太極、武術等多個節目；更有書畫家即席揮毫，使到場的學生、教職員及社區人士度過愉快的一小時。

科大的校園生活朝氣蓬勃，繽紛多彩；同學們既拼搏讀書，也玩得盡興。發揮創意、全情投入——這就是科大精神。