Breaking new grounds in plant genetics research
NUS President Prof Tan Chorh Chuan led a delegation to China from 31 May to 5 June 2009, where he met with his counterparts at Peking University, Tsinghua University, Nankai University, Tianjin University, Fudan University and Shanghai Jiao Tong University.

One of the highlights of this trip was Prof Tan’s meeting with Dr Li Yuanchao, Member of the Political Bureau of the Central Committee of the Communist Party of China (CPC), Member of the Secretariat of the CPC Central Committee and Head of the Organisation Department of the CPC Central Committee, at the Organisation Department of the CPC Central Committee. Dr Li Yuanchao had visited NUS in 2007 when he was Party Secretary of Jiangsu Provincial Committee of the CPC.

At a separate meeting, Prof Tan also met with Mr Zhang Xinsheng, Vice-President of the Chinese Olympic Committee, and former Deputy Minister, Ministry of Education of the People’s Republic of China.

During the visits to the universities, Prof Tan discussed recent developments at NUS and agreements were signed with five universities where NUS will offer PhD scholarships to selected students. Sealing this educational collaboration with NUS are Tsinghua University, Nankai University, Tianjin University, Fudan University and Shanghai Jiao Tong University.

At Tsinghua University, Prof Tan delivered a lecture “Global Universities in a Globalised World” as its 46th Contributing Speaker at the Tsinghua Global Vision Lecture Series. Since its inception, many distinguished international visitors to Tsinghua University, such as Dr Edmund Phelps, 2006 Nobel Laureate in Economic Sciences and Dr Jeffrey S. Lehman, former President of Cornell University, have contributed to the series.

In his lecture, Prof Tan spoke on the role of global universities in nurturing students who will succeed in the globalised world and who will make major contributions to society. He also outlined the seven general characteristics that should be integral aspects of a global university, for example, the need for the institution to have global visions and aspirations and to lead in innovating education that is adapted for, and capitalises on unique opportunities in the globalised world.

On NUS’ vision of being a global university centred in Asia, Prof Tan said: “In this vision, NUS aspires to be a leading global university which also has special expertise, insights and partnerships within Asia. The students within NUS would have a strong appreciation of issues of global importance while incorporating relevant perspectives from Asia. The University would endeavour to exercise significant thought-leadership in issues of greatest relevance to Asia.”

The new look Knowledge Enterprise takes on a global focus

With this July’s issue, Knowledge Enterprise (KE) will be taking a more focused, global approach in line with NUS’ vision to be a leading global University that is centred in Asia. The new KE will bring you monthly updates in the areas of high-impact research, transformative education and the University’s contribution to the wider community and society – news that showcase not only the achievements and accolades of our talented pool of students and faculty from across the world, but the unique global education that NUS offers; one that nurtures our students as thinking individuals who are resourceful and adaptable.

We hope you will find the new KE a refreshing and informative read and we welcome you to share your comments with us at email: Knowledge_Enterprise@nus.edu.sg
NUS President Professor Tan Chorh Chuan has been named Chair of the International Alliance of Research Universities (IARU) at the annual IARU Presidents’ Meeting held in April 2009. Hosted by University of Cambridge, the meeting was attended by presidents and senior staff from the 10 member institutions – Australian National University (ANU), ETH Zurich, Peking University, University of California, Berkeley, University of Cambridge, University of Copenhagen, University of Oxford, University of Tokyo, Yale University and NUS.

Prof Tan took over the Chairmanship from President of ANU Prof Ian Chubb, who has led the alliance since its formalisation in 2006.

“...it is an honour to lead such a prestigious alliance of top universities,” said Prof Tan. “The alliance enables exciting innovations in global education, facilitates cross-institutional learning and fosters coordinated action in key areas such as environmental sustainability.”

Prof Tan noted that to address some of the big issues and challenges confronting the world today, multicultural and multidisciplinary teams of researchers from different international contexts will be required. He said: “The alliance provides the platform for the exchange of ideas and for collaboration amongst researchers across IARU. For NUS’ students, the University’s active participation in this prestigious network provides them with unique opportunities to study with top students from these top universities from around the world. Some of the programmes bring highly talented students and faculty from IARU partners to NUS, creating impact for a wider group of NUS’ students.”

To encourage greater student mobility, all the IARU institutions are offering courses under the IARU Global Summer Programme from June to August 2009. The University of Oxford and NUS are also launching a summer internship programme this year.

During his two-year term as the head of the alliance, Prof Tan hopes that by working synergistically with the IARU universities, IARU can make significant contributions to thought-leadership and programmes that help address issues of global relevance and importance.

Prof Tan, a renal physician, was appointed President of NUS in December 2008. He is concurrently the Deputy Chairman of the Agency for Science, Technology and Research in Singapore.

“The alliance provides the platform for the exchange of ideas and for collaboration amongst researchers across IARU. For NUS’ students, the University’s active participation in this prestigious network provides them with unique opportunities to study with top students from these top universities from around the world. Some of the programmes bring highly talented students and faculty from IARU partners to NUS, creating impact for a wider group of NUS’ students.”

– NUS President Professor Tan Chorh Chuan
GLOBAL HIGHLIGHTS

PROMOTING ENTREPRENUERSHIP: NUS' second college in Beijing, China.

Honoured at Clinician Scientist Awards 2009

We congratulate the award winners of the Clinician Scientist Awards (CSA) 2009 [see box]. Funded by the National Research Foundation and administered by the National Medical Research Council of the Ministry of Health, the CSA aims to help clinician scientists produce relevant medical research for better health care in Singapore.

The award has two categories: Senior Investigator (SI) and Investigator (Inv). The former caters to senior doctors who are already actively involved in highly productive research and hold at least one peer-reviewed active research grant. They will be funded for a period of five years under the scheme. The Inv category caters to younger doctors with the potential of becoming independent investigators and who wish to develop a career in translational and clinical research.

The clinician scientists will spend the majority of their time exploring and expanding into specialist new research and bringing insights from their clinical work to the laboratories, while also tending to patients to stay in touch with medicine.

The CSA has been presented to nearly 30 recipients since 2004. Aimed at driving translational and clinical development, it is part of overall talent development under Phase II of Singapore’s Biomedical Sciences Initiative.

Recipients of the Clinician Scientist Awards 2009

A/Prof Tai E Shyong – CSA (SI)
Associate Professor, Department of Medicine
NUS Yong Loo Lin School of Medicine
Senior Consultant
Division of Endocrinology,
University Medicine Cluster
National University Health System
Area of Research: The causes and effects of obesity, high blood pressure, diabetes and high cholesterol in Singapore

Dr Mahesh Choolani – CSA (SI)
Associate Professor, Department of Obstetrics and Gynaecology
NUS Yong Loo Lin School of Medicine
Senior Consultant
Department of Obstetrics and Gynaecology,
National University Hospital, National University Health System
Area of Research: Prenatal diagnosis

Dr Joseph Wee – CSA (SI)
Senior Consultant, Department of Radiation Oncology,
National Cancer Centre Singapore (NCCS)
Adjunct Associate Professor,
Duke-NUS Graduate Medical School Singapore
Area of research: Nasopharyngeal Cancer

Dr Dan Yock Young – CSA (INV)
Assistant Professor, Department of Medicine
NUS Yong Loo Lin School of Medicine
Consultant
Department of Gastroenterology and Hepatology,
University Medicine Cluster
National University Health System
Area of Research: Harnessing liver cells for the treatment of liver diseases

Dr Chen I-Cheng Mark – CSA (INV)
Registrar
Communicable Disease Centre,
Tan Tock Seng Hospital
Duke-NUS Graduate Medical School Singapore
Area of research: Epidemiology and modelling the transmission of infectious diseases such as SARS and influenza within the hospital environment.

NUS sets up overseas college in Beijing

As part of its ongoing efforts to promote entrepreneurship, NUS has set up its latest overseas college in Beijing. The NUS College in Beijing (NCBJ) is NUS’ second college in China and the sixth of its kind in the world.

The pioneer batch of 10 undergraduates selected for the NCBJ programme will be starting their year-long programme in August this year. The students will study entrepreneurship-related and discipline-based modules part-time at Tsinghua University’s School of Economics and Management. They will also serve internships with nine technology-related start-ups.

Both NUS and Tsinghua University recently signed a Memorandum of Understanding to facilitate the setting up of the overseas college in Beijing.
A top-tier scientific journal has published the significant findings in plant genetics research by an NUS team from the Department of Biological Sciences. The findings could lead to a better yield of major cash crops across the region.

Led by Assoc Prof Yu Hao, the team’s ground-breaking research was described in the May issue of the journal *Developmental Cell* as a means of shortening the crop cycle and enhancing food crops and ornamental plants by classical breeding or genetic engineering. It looked at an organism, *Arabidopsis*, which is used for studying plant biology and was the first plant to have its entire genome sequenced.

Assoc Prof Yu and his team, comprising four NUS students, revealed that the same genes which control the flowering time of plants also determine the appropriate timing of the floral organ development. This includes male and female organs as well as the number and arrangement of these organs.

The team examined the mutation of three flowering time genes – SHORT VEGETATIVE PHASE (SVP), SUPPRESSOR OF OVER-EXPRESSION OF CONSTANS 1 (SOC1) and AGAMOUS-LIKE 24 (AGL24). They employed various genetic and molecular techniques to identify key regulators involved in the genetic pathway. As a result, they found that a key gene, SEPALLATA3 (SEP3), functions directly downstream of these flowering time genes to regulate a group of floral organ identity genes. This novel pathway is indispensable to flower development and seed yield. Applications of these findings include enhancing food production of major cash crops such as rice and other cereals in many regional countries.

“Plant research should eventually solve vital problems relevant to our everyday life such as food and medicine supply, and environmental protection,” said Assoc Prof Yu, whose research strength lies in a clear vision of plant functional genomics, or how genes function and interact. He also has 20 papers in international refereed journals including *Nature, Nature Genetics* and *Plant Cell*.

Moving forward, Assoc Prof Yu and his team are investigating other genes involved in the genetic pathway that they had found. This could pave the way to more genetic resources for crop improvement. His team is also studying similar key genes in economically-important crops such as orchids so as to manipulate their floral traits through genetic engineering methods.

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**Paving the way in plant genetics research**

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**First overseas representative office for NUS Overseas College alumna**

Local content provider Dream Axis is one of the nine participating companies in the NCBJ programme. This Singapore-based start-up was co-founded by Winne Soh, a recent computing graduate and winner of this year’s IT Youth Award. Winne will be setting up Dream Axis’s first overseas representative office in Beijing this month and intends to recruit third-year computing student and NCBJ participant Wang Hanxing to help her kick start the office.

Winne had previously participated in the NUS Overseas Colleges programme in Shanghai for a year. She believes that her overseas stint provided her with an entrepreneurial outlook, equipped her well and inspired her to set up Dream Axis and venture overseas.
Eight NUS graduate students clinched the prestigious China National Excellent Overseas Graduate Award 2008

Recognised for their outstanding achievements in science and technology, eight NUS graduate students have clinched the prestigious China National Excellent Overseas Graduate Award 2008 [see box]. Each recipient will receive US$5,000 granted by the China Scholarship Council.

With eight Chinese students being conferred the National Excellent Overseas Graduate Award this year, NUS is the university with the highest number of awardees, leading the list of universities including Harvard University, Stanford University, California Institute of Technology, University of Cambridge, the University of Tokyo and University of California, Berkley.

This Award which has been given since 2003, serves as an important indicator for the Chinese government and students in their selection of world-class universities, as the selection of winners is based solely on research achievements attained at the international level.

Honoured for contributions to French education and research

Assoc Prof Lim Kah Bin of the Department of Mechanical Engineering has joined the ranks of prominent figures to be conferred the title of l’Officier dans l’Ordre des Palmes Académiques (Officer in the Order of Academic Palms) by the French Republic. He was recognised for his involvement in the renewal of the Double Degree Programme (DDP) between NUS and France’s Grandes Écoles, the country’s prestigious institutions of higher learning, and received the title for his contribution in nurturing bilateral ties between France and Singapore.

Created by Napoleon Bonaparte, the Ordre des Palmes Académiques is one of the world’s oldest civil awards honouring individuals who have made major contributions to French national education and expansion of French culture in the rest of the world.

In 2003, Assoc Prof Lim received the award of le Chevalier dans l’Ordre des Palmes Académiques (Knight in the Order of Academic Palms). Reminiscing on his decision to pursue his graduate studies in France in 1979 on a French government scholarship, Assoc Prof Lim said: “The French are well-known for their technology and their schools are very good. This is why when I was sent to France after my Bachelor degree in Singapore. Without a second thought, I decided to go ahead despite language difficulties.” He studied at the Ecole Centrale des Arts et Manufactures de Paris, one of France’s oldest and most prestigious engineering schools.

Assoc Prof Lim was also honoured for his contribution to the research alliance SONDRA, where he was heavily involved as its laboratory’s director. SONDRA, a research alliance comprising Supeléca – a French Grande Ecole; ONERA – the French national aerospace research centre; NUS and Singapore’s Defence Science Technology Agency, was set up in Paris and the laboratory aims to tap into research manpower available there. SONDRA has proved to be a good platform for training Singaporeans and projects achieved include the design of antenna and radar imaging.

Recipients of the China National Excellent Overseas Graduate Award 2008

- Ms Liu Hua
  Department of Oral & Maxillo-Facial Surgery
  Faculty of Dentistry
- Ms Bi Xinyan
  Department of Chemical & Biomolecular Engineering
  Faculty of Engineering
- Mr Pu Kanyi
  Department of Chemical & Biomolecular Engineering
  Faculty of Engineering
- Mr Jiang Jianming
  Department of Biological Sciences
  Faculty of Science
- Mr Liu Chang
  Department of Biological Sciences
  Faculty of Science
- Ms Sun Hongyan
  Department of Chemistry
  Faculty of Science
- Mr Dai Liang
  Department of Physics
  Faculty of Science
- Mr Qi Dongchen
  Department of Physics
  Faculty of Science
We proudly celebrate the following recent achievements:

- In recognition of his outstanding contributions and accomplishments in Offshore and Marine Engineering research and development as well as education, Department of Civil Engineering Prof Choo Yoo Sang was conferred the Lifetime Achievement Award – Maritime Academics 2009 on 7 May 2009. Prof Choo received the Award from Chairman and President of ClassNK (Nippon Kaiji Kyokai) Mr Noboru Ueda at the Third International Maritime Video and Excellence Awards Ceremony in Singapore.

- A team led by Assoc Prof Adrian Cheok, Keio-NUS CUTE Centre, has developed Petimo – an interactive robotic toy that enhances the way children make and keep friends. Petimo has been selected as one of the three best submissions for the C4C-Como for Children Design Competition in the track of “Interaction at the Pre-school”. The competition was held in June as part of the IDC 2009-8th International Conference on Interaction Design and Children in Italy.

- Department of Mechanical Engineering and Director of Minerals, Metals and Materials Technology Centre Prof Arun Mujumdar was conferred the Platinum Award by his alma mater, Mumbai University Department of Chemical Technology, now the Institute of Chemical Technology (ICT), on the 21 May 2009 in Mumbai, India. He received the Award and citation from Chairman of the Atomic Energy Commission of India Dr Anil Kakodkar.

- Faculty of Law and Faculty of Arts and Social Sciences, in collaboration with the Duke-NUS Signature Program in Health Services Research, organised a symposium on ageing that was graced by Guest-of-Honour, Minister in the Prime Minister’s Office, Mr Lim Boon Heng, on 29 May 2009. The symposium, titled Health Care Challenges for an Ageing Population: Managing Health Care and End of Life Decisions in Singapore, drew experts from various fields and provided a platform for researchers to share their work in medicine, sociology, economics, anthropology and law with those concerned about the well-being of older adults. It aimed to provide a basis for better policy formulation for the aged in Singapore.

- Engineering graduate Pranoti Nagarkar Israni emerged winner in the Open Category of the world-class, global business plan competition Start-Up@Singapore 2009 (30 May 2009). She won for her invention of the roti-maker “Rotimatic”, which ingeniously prepares the Indian bread with only the push of a button. Pranoti went home with a cash prize of $40,000 and one year’s free incubator space at the NUS Enterprise Incubator.
The ageing population is one of the key issues that Singapore has to address in the coming years. According to figures from the Ministry of Community Development, Youth and Sports (MCYS), one out of every 12 Singaporeans today is aged 65 or above. However, by the year 2030, the ratio will be one out of five.

Recognising the pressing issues associated with ageing, NUS has set up the Virtual Institute for the Study of Ageing (VISA). The institute aims to catalyse the development of the university’s research for the creation of new knowledge surrounding the ageing process, and for its application to better the social and individual consequences of ageing in Singapore.

Tan Chin Tuan Centennial Professor and NUS Deputy President (Research and Technology) Prof Barry Halliwell, who is at the helm of VISA, said: “We have liaised with various ministries which include the Ministry of Health and the MCYS as well as major charities such as Council for Third Age. This is to ensure that NUS is answering real questions on ageing posed by the ministries.”

He added while there have been a number of studies on ageing conducted in Europe and the US, little has been done in Asia. Citing the example of drug metabolism, he noted: “Everybody assumes that Asians are like Caucasians in the way they handle drugs. But this is unlikely to be the case. There are likely to be big differences in Asians and Caucasians’ metabolism of pharmaceutical agents.”

The idea of VISA was first mooted some two years ago. Currently, there are approximately 50 groups, centres and institutes at NUS conducting some 230 projects on ageing. Issues examined often cut across disciplines and fall into the themes of ageing cell, ageing body and ageing society.

Calling all alumni, staff, graduating students and friends of NUS: Make a gift to the Annual Giving 09 (AG09) campaign.

AG08, the previous Annual Giving drive, was completed on 31 March 2009 with participation from 3,612 alumni, staff, graduating students and friends of NUS, representing an 11% increase over the number of donors who supported AG07.

The gifts to AG08 totalled $956,337, which will help NUS give out over 1,500 bursaries to financially needy students this coming academic year.

In the AG08 Report, NUS President Prof Tan Chorh Chuan pointed out that even though students’ tuition fees are heavily subsidised by the Singapore Government and NUS students also have the option of taking up the Tuition Fee Loan and NUS Study Loan, many of them still require further financial assistance in the form of bursaries to cover living and study expenses.

Prof Tan added that with the current economic downturn impacting many families, the number of students who apply and qualify for financial aid is expected to increase.

Thanking donors, he also said: “More than ever before, we will count on your continuing support. I appeal to you to renew your support and make a gift now. By participating in AG09 you help us to ensure that no deserving student will be denied the NUS education because of financial difficulties.”

In addition to university-wide bursaries and scholarships, there is also the new option to support a student programme fund at a Faculty/School of choice. This option was added in response to suggestions made by some donors.

To make an online gift to AG09, please visit: www.Sayyes.nus.edu.sg