NUS Celebrates Singapore 2010
Youth Olympic Games
Students raise more than half a million dollars for charity

THE NUS Students’ Union (NUSSU) Rag and Flag 2010 raised a record-breaking sum of S$510,839 over three weeks for 20 beneficiaries under Singapore’s Community Chest. The beneficiaries comprised welfare organisations catering to the elderly, children, families and individuals with disabilities.

Over 6,000 NUS students were involved in the main fundraising effort on Flag Day, 3 August 2010. Carrying tin cans and stickers, the students fanned out across Singapore on that day, seeking donations from members of the public.

Said NUSSU President and Law student Mr Ho Jun Yi, “The event has gradually become an endearing NUS tradition that brings students, staff and alumni together to work towards the common cause of raising money for charity, while building floats and preparing performances collectively to thank members of the public for their donations.”

The Rag and Flag campaign is organised annually by NUSSU with participation from the NUS Halls of Residence and faculty clubs to benefit charities nominated by the students. NUSSU Rag featured 13 colourful and breathtaking floats – 11 also hand-built by students, one by NUS staff and one by NUS alumni – in a gesture of appreciation by the students for the public donations. Coinciding with the Youth Olympic Flame Arrival celebrations at NUS, the Rag Day celebrations stretched all the way into the night, and were grander than ever.

“Splendour” was the theme of this 52nd Rag Day. Each of the hall floats and performances, which displayed the magnificence of a city that the Youth Olympic Flame had passed, was equally impressive; and the faculty, staff and alumni floats and performances were no less breathtaking.

Raising the excitement of Rag and Flag, all the floats and performances as well as the fundraising efforts were judged on a competitive basis every year. The highest awards, the Chancellor’s Shields, went to the Faculty of Science and Kent Ridge Hall this year. Kent Ridge Hall broke the record for the participating body with the highest amount of collection in the history of Rag and Flag.

Looking forward to life at NUS

A warm welcome to NUS was extended to this year’s freshmen at the annual inauguration ceremony held over two sessions on 2 August 2010. More than 3,000 students representing different faculties, schools, academic programmes and halls of residences attended the event, where they were introduced to the University’s student leaders and senior administrators.

Addressing the freshmen, NUS President Prof Tan Chorh Chuan said: “In today’s competitive and fast-paced global environment, hard work is important but it may not be enough. You need to stand out from the crowd. NUS offers you more than a rigorous education and a degree – it also offers many opportunities for global immersion and for you to grow as an individual.”

During the ceremony, the new students took the University Pledge, signifying their initiation into the NUS community. They also got to enjoy a variety of music and dance performances put up by different cultural groups at NUS.
Echoing his sentiments, NUS President Prof Tan Chorh Chuan said: “The arrival of the Youth Olympic Flame at NUS is truly a historic moment for us. It is a privilege for NUS to be a part of the Journey of the Youth Olympic Flame, the very link that connects youth of the world to the Olympic Movement. We are also proud that our students’ floats from NUSSU Rag will have the opportunity to contribute to the festivities around the Flame Arrival Celebration.”

First lit in Greece, the Youth Olympic Flame had journeyed through the cities of Berlin, Dakar, Mexico, Auckland and Seoul before reaching Singapore. As the first country to hold the Youth Olympic Games, Singapore played host to 3,600 young athletes from 204 National Olympic Committees who competed in a total of 26 Olympic sports from 14 to 26 August 2010.

“As one of Singapore’s leading universities, NUS places emphasis not just on education and research, but also promotes the spirit of enterprise and provides the environment to encourage students to play an active part in their communities. This resonates with the values of the YOG. To do their part for the Singapore 2010 Youth Olympic Games, NUS and its students have come forward to organise this event and recreate its journey to welcome the Olympic Flame,” President Nathan said.

In a video message aired during the forum, Prime Minister of Singapore Mr Lee Hsien Loong congratulated NUS and University of Sydney for putting together the conference and shared his views on championship.

He said: “Championship is not just about outdoing your opponent in a competition. Championship is more than that. It’s about outdoing yourself – setting higher goals of performance and achievement, and exceeding them. It is about pursuing excellence, individually and collectively, in many fields of endeavour, to bring mankind forward.”

The forum also featured other eminent speakers, and 10 young achievers from different countries, who expounded on the topic of championship, firing the imagination and provoking the thinking of the 450 students in attendance.
Pushing frontiers of search technology

NUS and Tsinghua University in Beijing, China, together with the Media Development Authority of Singapore (MDA), launched the NUS-Tsinghua Extreme Search Centre or NExT Search Centre (“N” for NUS, “Ex” for Extreme, and “T” for Tsinghua) in Beijing, China on 23 July 2010.

Aimed at conducting leading-edge research into the technologies, framework and applications of live media search, the Centre will also explore the commercialisation of technologies for companies in Singapore, China and abroad.

“NUS is pleased to partner Tsinghua University in setting the standard for the next generation of search technology. With the combined expertise in Computer Science residing in both NUS and Tsinghua, we are confident of producing results that are of interest to the international research community and of relevance to industry and the wider society at home, in the region and beyond,” said NUS Deputy President (Academic Affairs) and Provost Prof Tan Eng Chye.

Headed by Prof Chua Tat Seng from NUS’ School of Computing and Prof Sun Maosong from Tsinghua University’s Department of Computer Science, the Centre will engage more than 150 graduate students and researchers.

It is facilitated by the Interactive Digital Media Research & Development Programme Office (IDMPO) hosted by MDA, and will operate from two sites – one in the NUS Kent Ridge Campus and another in the Tsinghua University campus in Beijing.

Support for the Centre which amounted to approximately S$20 million, includes funding of S$10 million over five years by IDMPO, with combined contributions in kind from NUS and Tsinghua. The Centre plans to raise an additional S$4 million in external grants to support its work.

New initiative to advance public health and healthcare delivery in Asia

SINGAPORE Health Minister Mr Khaw Boon Wan announced the establishment of the NUS Initiative to Improve Health in Asia (NIHA) at the East Asia Healthcare Policy Dialogue on 21 July 2010.

“This is a S$17 million programme for research, education and capacity building in health policy across Asia, supported by the very generous donation from the GSK-EDB [GlaxoSmithKline-Economic Development Board, Singapore] Trust Fund,” said Mr Khaw. He added: “I hope the NUS Initiative will enable the region to take further strides in managing the healthcare contradictions.”

NUS President Prof Tan Chorh Chuan said: “The world faces formidable challenges in public health and optimal healthcare delivery. NUS, with the support from the GSK-EDB Trust Fund, is pleased to lead an integrative effort to help address these challenges for Asia, for the future.”

Focusing on multidisciplinary research, high-level policy forums and leadership programmes, NIHA will be coordinated by the NUS Global Asia Institute, in collaboration with its Lee Kuan Yew School of Public Policy, Yong Loo Lin School of Medicine and the NUS Business School.

NIHA’s research activities will comprise multidisciplinary studies on the medical, economic, social and ethical issues that influence how health care is organised, financed, managed and delivered. The funding of $17 million will be used to support the Initiative over a period of 10 years.
EIGHT projects received close to S$5 million in funding in the first round of awards under the S$33 million GSK-Singapore Partnership for Green & Sustainable Manufacturing. The Partnership was between GlaxoSmithKline and Singapore’s Economic Development Board; and five out of the eight projects which obtained more than S$3 million in funding were led by NUS researchers. These principal investigators and their projects are:

From NUS’ Department of Chemical and Biomolecular Engineering
Assoc Prof Li Zhi
Creating new eco-safe and effective enzymes
Makes use of micro-organisms, genetic engineering and protein engineering to create new enzymes which can be used for the preparation of useful pharmaceutical intermediates and further developed into “enzyme kits” for cross-industry manufacturing process

Dr Rudiyanto Gunawan
Eco-safe crystallisation for more effective products
Devising a cost- and time-saving technology using a single-step crystallisation process for particulate formulation in pharmaceuticals, food and cosmetics industry, which reduces the need for post-production refinement of product

Assoc Prof Reginald B H Tan
Making more efficiently absorbed medicines
Employing cost effective ingredients and novel processing technologies to produce stable and more water-soluble pharmaceutical products, potentially reducing the amount of drug needed for patients as well as materials and energy required in their production

Assoc Prof Loh Kai Chee
Enhanced sustainable manufacturing
Developing new technologies involving enzymes and micro-organisms to enhance the rate of biotransformation, ensuring sustainability through minimal use of petrochemicals

From NUS’ Department of Chemistry
Assoc Prof Tan Choon Hong
Green chemistry using air for oxidation to reduce toxicity and costly waste disposal
Seeking to enable cleaner and greener oxidation processes using nature’s gift of oxygen by potentially eliminating the use of heavy metals and other chemicals which require controlled waste disposal conditions

The GSK-Singapore Partnership for Green & Sustainable Manufacturing aims to grow Singapore’s capabilities and talent base in green and sustainable manufacturing, establishing the nation as a leader in this area of research in the pharmaceuticals and fine chemicals sectors.

NUS’ latest spin-off company, Clearbridge Nanomedics, will develop a low-cost nanofibre mesh with applications in the cosmetic and wound management industries. Clearbridge Nanomedics is supported by NUS Enterprise and incubated by the Clearbridge Accelerator, one of the incubators backed by the National Research Foundation’s Technology Incubation Scheme.

First developed by NUS Faculty of Engineering Prof Lim Chwee Teck and his team, Clearbridge Nanomedics’ technology is based on a nanofibre mesh. Comprising a bio-resorbable and bio-compatible polymer, the nanofibre possesses good mechanical, physical and chemical properties which make it suitable for a wide range of applications. For a start, the first product that the company plans to develop is a high-surface contact area, ultra-pliable, time-release, leave-on facial mask.

Managing Partner of Clearbridge Accelerator and Co-Founder of Clearbridge Nanomedics Mr Jonhson Chen said: “We shall initially be focusing on the cosmetic applications, as the product is closer to the market. It also has larger market potential, with the skincare market estimated to reach US$58.5 billion by 2012.”
Double awards for NUS team at RoboCup 2010

TEAM RO-PE from NUS’ Department of Mechanical Engineering, led by Assoc Prof Chew Chee Meng, clinched two top prizes at RoboCup 2010, the world’s largest robotics competition. Fielding its life-size humanoid robot, NUS BIP III, the team emerged as winner in both challenges – the “Dribble-and-Kick” and the Technical Challenge – in the adult-size category of the RoboCup Soccer Humanoid League.

Assoc Prof Chew attributed his team’s win to their hard work, strong cooperation and ability to develop a robust system and expertise in walking algorithms. Modelled after a 10-year-old child, the 1.3-metre robot which weighs approximately 65 kg can walk up stairs and slopes. The team took about two years to develop the robot which initially only had a body, two arms and two legs.

To meet the competition requirements, the robot’s electronic components underwent a makeover in just a few months before the competition. A computer vision was added to allow the robot to find the ball and goal post in the field, as well as a six-axis force-torque sensor at each ankle location to provide ground contact information. Artificial intelligence algorithms were also written to enable the robot to play the soccer game autonomously.

Besides competing in RoboCup, the NUS BIP III has other functions. Assoc Prof Chew explained: “The humanoid robot can be an excellent home companion to perform mundane tasks for humans. It can also be used as a remote machine for human to access hazardous environments through tele-operation.” In terms of indirect applications, he noted that the study of humanoid robotics might shed some light on the human motor skill development and be used to help people who have lost the ability of walking.

Jointly organised by Singapore Polytechnic, Singapore’s Economic Development Board and Science Centre Singapore, RoboCup 2010, which was held in Singapore for the first time, saw more than 4,000 participants from 40 countries.

NUS eco-car wins four awards at inaugural Shell Eco-Marathon Asia

A team of engineering students from NUS, advised by faculty staff Assoc Prof Lu Wen Feng, designed and built an eco-car to compete in the first Shell Eco-Marathon (SEM) held in Asia this July. Some 80 teams from 10 Asian countries took part in the competition.

Named Kent Ridge Urban Concept Eco-car 2 (KRUCE 2, for short), the eco-car clinched four awards at SEM Asia 2010 – Overall Champion in Urban Concept category, Autodesk Innovative Design award, Safety award and Technical Innovation award.

KRUCE 2 was able to travel 612.4 kilometres on just one litre of fuel. Driving it was a hydrogen fuel cell power plant that was not only much more efficient than a conventional internal combustion engine, but also ensured zero-carbon emission. The team also stood out for their excellent work testing and efforts to improve their vehicle, including the installation of custom-fabricated parts and components to reduce the weight of the car and improve performance.

“Besides the expected ‘hardcore’ mechanical engineering work … there are also ‘softer’ aspects of the project experience, for example, leading a student team of diverse abilities, time management and teamwork,” said team leader Mr Tan Bor Yow. He had found the SEM Asia journey to be an enriching experience that enabled him and his team to learn and apply what books and lectures alone could not impart.
Making waves with WaveSecure

tenCube, a home-grown start-up company, was recently acquired by the world’s largest dedicated security provider, McAfee Inc. Based in Singapore, tenCube was formed in 2005 by NUS graduates Mr Darius Cheung, Mr Varun Chatterji, Mr Rishi Israni and Mr Indradeep Biswas. Mr Cheung and Mr Chatterji had previously interned at start-up companies while on the NUS Overseas Colleges programme in Silicon Valley.

Upon joining McAfee, tenCube will become part of McAfee’s “Consumer, Mobile and Small Business” unit. tenCube’s star product is security service WaveSecure. With WaveSecure, mobile phone users need not fret about losing data and privacy when they misplace or lose their phones. The device enables users to back up, restore, lock and wipe out data remotely, and even track down the locations of their missing phones. By acquiring tenCube, the developer of WaveSecure, McAfee will further establish itself as the leader in mobile security with the most complete set of next-generation mobile technologies.

Presently, tenCube has regional offices in Silicon Valley, United States and in New Delhi, India, and a team strength of 26 persons, about half of whom are NUS graduates.

Recalling the initial years of starting the company, Mr Israni, Chief Technology Officer of tenCube, said: “NUS provided all the support a start-up would need to get off the ground. We were incubated by the School of Computing and we had an office to work from. We started with all the savings and within a year we raised our seed round from NUS Venture Support and Seeds, and that gave us enough capital to give shape to our idea. All through our journey we had the guidance and support of good people from NUS Enterprise, and we are very thankful for that.”

The team has received much recognition for its breakthrough product, including the NAVTEQ Global LBS Challenge, Mobile Monday Peer Awards, Top 10 Wireless Innovation by Frost and Sullivan, and being named among the top three winners of Google’s Android Developer Challenge.

WaveSecure has also been featured in numerous print and online media, including New York Times, Asian Wall Street Journal, Inc, CNBC, The Mirror, CNET, TechCrunch and LifeHacker.

AT A GLANCE

- Marking the completion of the superstructures of NUS University Town’s first two residential colleges, Cinnamon and Tembusu, a topping-out ceremony was held on 30 July 2010. When completed in 2011, the two residential colleges will accommodate 1,200 students.

At the topping-out ceremony, NUS President Prof Tan Chorh Chuan said: “This is a milestone in the development of University Town – a key node in our efforts to offer a new and enhanced experience of living and learning on campus.”

- Initiated by the NUS Faculty of Engineering and supported by Shell Singapore, the Shell-NUS student exchange programme with the University of Cambridge is Cambridge’s first student exchange collaboration with a university in Asia. Sponsorship from Shell amounting to $46,000 over two years will enable two engineering students from NUS, for a start, to have the opportunity of studying in Cambridge for one year. There is a similar exchange programme for Cambridge students to visit NUS, and this initiative is supported by Shell in the United Kingdom.

EXCHANGE STUDENTS AT NUS: Hailing from University of Cambridge were Mr Daniel Barnard (extreme left) and Mr Jonathan Bassett (extreme right), and heading for Cambridge were NUS Engineering students Mr Chee Enqing and Ms Koh Yan Tian

TODDING-OUT CEREMONY: Key representatives celebrating the completion of the superstructures of U-Town’s two residential colleges

FOUNDRS OF TENCUBE: (From left) Mr Varun Chatterji, Mr Darius Cheung, Mr Indradeep Biswas and Mr Rishi Israni
LEADING biodiversity research centre in Southeast Asia, the Raffles Museum of Biodiversity Research (RMBR) at NUS received its latest philanthropic gift of S$25 million from the Lee Foundation. This is the Museum’s third substantial gift in six months.

With this gift, RMBR will build a new purpose-designed building to showcase Southeast Asian biodiversity and environmental issues in an exhibition hall that will be 10 times the size of the current gallery. Slated to be ready by 2014, RMBR will be renamed the “Lee Kong Chian Natural History Museum”.

NUS President Prof Tan Chorh Chuan said: “We are indeed grateful to the Lee Foundation for its very generous gift and strong support of the University’s natural history museum. We are also deeply touched by the pledges from the many donors, especially the unnamed donor. The University believes strongly in the national significance of this project and has provided the museum with a larger and highly strategic site on our Kent Ridge campus.”

Following a fundraising campaign in late 2009 to build a new natural history museum for Singapore, a total of S$46 million, including S$10 million from an unnamed donor last year and S$25 million gift from the Lee Foundation, had been raised.

A team of committed supporters of the Shaw-NKF (National Kidney Foundation) Children’s Kidney Centre raised S$1.2 million for research into the prevention and treatment of kidney disease among children at NUS by organising a benefit dinner.

Speaking at the event, NUS President Prof Tan Chorh Chuan, who is also a renal specialist, said: “We must gain a much better understanding of what causes kidney failure in children in our local context. Ultimately, research will help us find new and effective ways to prevent progression to end-stage kidney disease and dialysis.”

Since 1989, the Shaw-NKF Children’s Kidney Centre has treated more than 1,000 patients and has established itself as a leading centre for paediatric renal treatment and a preferred site in Asia for the training of renal doctors and nurses. The one-stop facility provides dialysis treatment, consultation, counselling and therapy for patients aged from infancy to 21-years-old.

The Centre was born largely out of philanthropy, through the support from the Shaw Foundation as well as many other donors. Funds were raised from generous gifts and an auction, as well as the sale of A Beacon of Hope, a book chronicling the history of the paediatric renal replacement programme in Singapore and a video showcasing the Centre’s work.

Help fund research into the prevention and treatment of kidney disease among children by calling +65 6772 4411 or emailing pave10@nus.edu.sg.