

# Change Reaction



NATIONAL UNIVERSITY OF SINGAPORE  
ANNUAL REPORT 2010

What if we can change the world? Like all leading universities, we strive for discoveries or innovations that will change society for the better. Our education seeks to challenge our students to surpass themselves, and to change mindsets. Both Asia's growth and problems present us with a chance to lead in this change. And if one thing leads to another, we – NUS students, faculty and alumni – can embark on imaginative ways to help change the world. To make a difference in society, one step at a time.



# Vision

## Towards a Global Knowledge Enterprise

A leading global university centred in Asia, influencing the future

# Mission

To transform the way people think and do things through education, research and service

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Audrey Tan, Faculty of Arts and Social Sciences  
*Co-Founder of PlayMoolah, a fun online platform for children  
to save, manage and understand the value of money.*

## CHAIRMAN'S STATEMENT

“If nothing ever changed, there would be no butterflies.” Author Unknown

Many of us may have read the book “Who Moved My Cheese?” by Spencer Johnson. It is the story of four characters living in a maze which face unexpected change when they discover their cheese has disappeared. It reveals profound truths to organisations dealing with change and the necessity of adapting to change. Despite the financial turmoil, 2009 has been an exciting year for NUS with intense competition in the ever changing higher educational landscape. Change is a challenge and an opportunity that NUS has to embrace to make a quantum leap forward and stand out internationally.

For over a century, the University has undergone many changes and taken steps to become more nimble to respond quickly to the challenges and competition posed by other leading universities. NUS is now recognised for its unique role as a university with both an Asian and international identity, retaining a global outlook while drawing on the character and resources of the region. With the rising Asia, being a well-connected knowledge hub with an integrated understanding of critical issues in Asia, the University provides a vibrant node that draws top students, faculty and researchers from around the world. Emphasising on independent and critical thinking which generate thought-leadership, students are better prepared for a fast changing and globalising world.

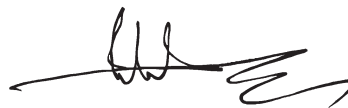
Over time, NUS has also evolved into a research-intensive university, a major player in the global league of research universities with significant research breakthroughs. Substantial progress has been made in many research areas including biomedical sciences and translational medicine, quantum technology, nanoscience and environmental sustainability. While we have

made excellent progress in research, we must ensure that our culture of excellence is not easily uprooted by complacency and we continue to change and reinvent ourselves to make our research really world class.

With globalisation, NUS must keep at the forefront of innovation in global education, research and institutional networks. We need to continuously map our globalisation strategies and leading key initiatives to contribute to a thriving environment for entrepreneurship to flourish, propelling the entrepreneurial spirit within NUS and beyond.

Our success would not have been possible without the contributions of many. I also wish to express my appreciation to my fellow members of the Board of Trustees for their invaluable contributions, guidance and wisdom, particularly, Mr Lee Tzu Yang who has stepped down from the Board this year. He has served unstintingly on the Board over the last five years. He has definitely made an indelible footprint on NUS.

My heartfelt gratitude also goes to the benefactors, management, staff, students and alumni – thank you for your dedicated support in the past year. To rise to the challenge and realise our shared aspiration in these fast changing and challenging times, let us work towards making NUS a leading global university centred in Asia.



**WONG Ngit Liong**  
Chairman, Board of Trustees



NUS Commencement Dinner 2010



Book launch by President S R Nathan



Inauguration of Aquatic Science Centre at Sungei Ulu Pandan



University Awards 2010



Former UN Secretary-General and Li Ka Shing Professor Kofi Annan's visit to NUS



Former UN Secretary-General and Li Ka Shing Professor Kofi Annan's visit to NUS



IARU Presidents Meeting in Beijing



Singapore Dragon Boat Festival 2010



In-Fusion International Fiesta



Chinese Minister Dr Li Yuanchao at the launch of the Master in Public Administration and Management programme



## PRESIDENT'S MESSAGE

“Be the change you want to see in the world.”

Mahatma Gandhi

It has been an exhilarating year for NUS. We have continued our excellent trajectory of progress towards our vision of becoming a leading global university centred in Asia. As in the past, we have placed a singular focus on nurturing and recruiting faculty who are among the leaders in their fields, and last year has been particularly fruitful in this regard. New programmes to develop our administrative staff were also successfully launched. Student quality has continued to rise and our engagement with our alumni has further deepened.

NUS' education is defined by its rigour and differentiated by its distinctive global programmes. Over the past year, we have continued to re-shape the curricula in several Schools including Engineering, Medicine, Business and Computing, to position them strongly for the future. Our students are also able to leverage on our strong linkages with top foreign universities to do joint and double degree programmes, while the more entrepreneurially inclined ones spend a year at our Overseas Colleges located in the major entrepreneurial hubs of Silicon Valley, Bio Valley, Stockholm, Beijing, Shanghai and Bangalore.

On the teaching front, the NUS Teaching Academy was established to tap on the very best teachers in our University to help drive NUS' education to new heights of excellence. I envision that the Teaching Academy will inspire and nurture future generations of outstanding educators and drive quality and innovation in our education.

Research in NUS is flourishing, in scope, scale, quality and impact. We have continued to make excellent progress in developing our integrative research clusters – in Finance and Risk Management; Ageing; Biomedical Sciences and Sustainability, as well as the Asia-related and cross-cluster programmes in the new Global Asia Institute. The aim is to create powerful new synergies among the deep pools of research talent in NUS to give our University a strong competitive edge, and to provide new and distinctive value to Singapore as a significant player in a rising Asia.

Today NUS thrives as a dynamic university, characterised by a strong sense of self-belief and forward movement. We have been ranked as one of the top three universities in Asia and among the leading institutions in the world. Our University's success is a reflection and result of the quality and creativity of the NUS community. As we continue to pursue our strategic goals with passion and resolve, I look forward to working with our faculty, staff, students, alumni, benefactors and partners to take NUS to new heights of excellence.



**TAN Chorh Chuan**

President

## BOARD OF TRUSTEES

### **WONG Ngit Liong**

**Chairman**

Board of Trustees

**Chairman & Chief Executive Officer**

Venture Corporation

*Appointed on 28 March 2006*

Mr Wong is a member of the Singapore Research, Innovation and Enterprise Council under the Prime Minister's Office and serves on the International Academic Advisory Panel. He holds a First Class (Honours) degree in Electrical Engineering from the University of Malaya and a Masters degree in Electronics Engineering from the University of California at Berkeley where he was a Fulbright Scholar. He also holds a Master of Business Administration degree with distinction from McGill University under the Canadian Commonwealth Fellowship.

### **Hans-Dieter BOTT**

**Former Managing Director**

Siemens

**Immediate Past President**

Singaporean-German Chamber of Industry & Commerce

*Appointed on 1 April 2009*

Mr Bott is Vice President of the Executive Council of the Singapore Manufacturers' Federation and sits on the Boards of the Singapore Symphonia Company Limited, SMa Services Pte Ltd and Exploit Technologies Pte Ltd. He holds a diploma in Business Administration from the Chamber of Commerce Nuremberg, Germany.

### **Edward Alec D'SILVA**

**Senior Advisor**

SAA Architects

*Appointed on 1 April 2006*

Mr D'Silva is a member of the Public Service Commission, Presidential Council for Religious Harmony, National Institute of Education Council and Publication Panel Committee. He serves as Chairman of the Singapore Youth Award Panel, Councillor for Central Community Development Council, Panel Member of the Strata Titles Board, and volunteer for the Prisons Fellowship Service. He holds a Bachelor of Architecture degree from the University of Singapore.

### **Lucas CHOW Wing Keung**

**Chief Executive Officer**

MediaCorp

*Appointed on 1 April 2006*

Mr Chow sits on the Boards of MediaCorp, the National Integration Council, Ministry of Community Development, Youth and Sports, Orchard Parade Holdings Ltd and Japan Emobile Ltd. He is also Chairman of Health Promotion Board and Tripartite Committee on Workplace Health Promotion. Mr Chow graduated with a Bachelor of Science (Honours) from the University of Aston, United Kingdom.

### **GOH Yew Lin**

**Managing Director**

G.K. Goh Holdings

*Appointed on 1 April 2008*

Mr Goh serves on the boards of various companies including Temasek Holdings (Private) Limited, Seatown Holdings Pte Ltd, Trailblazer Foundation Ltd, CIMB Securities International Pte Ltd, and Boyer Allan Management Ltd. He is also Chairman of the Yong Siew Toh Conservatory of Music and Deputy Chairman of the Singapore Symphonia Company Limited. Mr Goh holds a Bachelor of Science (Economics) degree from the University of Pennsylvania.



## **HAN Fook Kwang**

### **Editor, The Straits Times**

Singapore Press Holdings

*Appointed on 1 April 2008*

Mr Han has served in various public service organisations, including the Land Transport Authority, Feedback Unit Supervisory Panel, Community and Parents in Support of Schools Advisory Council, Bioethics Advisory Committee and Lifelong Learning Endowment Fund Advisory Council. Mr Han graduated from the University of Leeds in Mechanical Engineering and holds a Masters in Public Administration degree from Harvard University.

## **HSIEH Fu Hua**

### **Executive Director and President**

Temasek Holdings

*Appointed on 1 April 2006*

Mr Hsieh is the Executive Director and President of Temasek Holdings (Private) Limited and Co-Founder and Advisor of PrimePartners Group of Companies. He is a Board Member of National Arts Council and Term Trustee of SINDA. He graduated with an honours degree in Business Administration from the University of Singapore.

## **Kay KUOK Oon Kwong**

### **Executive Chairman**

Shangri-La Hotel

*Appointed on 1 April 2008*

Mdm Kuok is the Managing Director of Shangri-La Hotels (M) Berhad and Director of Allgreen Properties Limited. She is also the Chairman of the Board of National Healthcare Group, President of the Singapore Hotel Association, Director of the Wildlife Reserves Singapore Conservation Fund and sits on the National Youth Achievement Award Council. She is a Barrister-at-Law from Gray's Inn London.

## **HIEW Yoon Khong**

### **Chief Executive Officer**

Mapletree Investments

### **Senior Managing Director, Special Projects**

Temasek Holdings

*Appointed on 1 April 2009*

Mr Hiew is a Director of Mapletree Logistics Trust Management Ltd. He is also a Board Member of Changi Airport International and Sentosa Development Corporation. He holds a Master of Arts degree in Economics from the University of Warwick as well as a Bachelor of Arts degree in Economics from the University of Portsmouth.

## **Professor Olaf KÜBLER**

### **President Emeritus**

ETH Zurich

*Appointed on 1 April 2006*

Professor Kübler chairs the Scientific Advisory Board of Karlsruhe Institute of Technology and was Chairman of the Scientific Advisory Board of Institute of Science and Technology Austria. He is a partner of Robert Bosch Industrietreuhand KG and also serves on its Supervisory Council. Professor Kübler holds undergraduate and graduate degrees in theoretical physics from TU Karlsruhe and ETH Zurich respectively, and obtained his doctorate from the University of Heidelberg.

## **Michael LIEN Jown Leam**

### **Deputy Chairman**

Wah Hin & Co

*Appointed on 1 April 2009*

Mr Lien is the Deputy Chairman and Executive Director of Wah Hin and Company. He is a Board Director of Temasek Holdings (Private) Limited. Mr Lien was a Colombo Plan Scholar and holds a First Class honours degree in Economics with double majors in Finance and Econometrics from Monash University, Australia.



### **Dr Edison LIU Tak-Bun**

#### **Executive Director**

Genome Institute of Singapore, A\*STAR

*Appointed on 1 April 2008*

Dr Liu is the Scientific Advisory Group member of the Singapore Bio-Bank, Chairman of the Governing Board of Health Sciences Authority of Singapore, President of the Human Genome Organisation, member of Duke-NUS Graduate Medical School Governing Board and Board Member of Singapore Clinical Research Institute. He holds a Bachelor of Science in Chemistry and Psychology and Doctor of Medicine from Stanford University.

### **Paul MA Kah Woh**

#### **Chairman**

Mapletree Logistics Trust Management

*Appointed on 1 April 2006*

Mr Ma holds directorships in Mapletree Investments Pte Ltd, CapitaLand China Development Fund Pte Ltd, CapitaLand China Development Fund II Ltd, SMRT Corporation Limited, Hwa Hong Corporation Limited, Nucleus Connect Pte Ltd and Keppel Infrastructure Fund Management Pte Ltd. He is a Fellow of the Institute of Chartered Accountants in England and Wales and a Member of the Institute of Certified Public Accountants of Singapore.

### **Lieutenant-General (NS) NG Yat Chung**

#### **Head, Portfolio Management & Operations and Co-Head, Singapore**

Temasek Holdings

*Appointed on 1 April 2006*

LG (NS) Ng was former Chief of Defence Force in the Singapore Armed Forces. He is the Chairman of Singapore Institute of Technology and a Director of Fraser and Neave, Limited and Singapore Power Limited. He holds a Master of Arts (Mathematics) from the University of Cambridge and a Master of Business Administration from Stanford University.

### **Olivia LUM Ooi Lin**

#### **Group Chief Executive Officer and President**

Hyflux

*Appointed on 1 April 2006*

Ms Lum is a Director on several companies of the Hyflux group and a Director of National University Health System Pte Ltd. She is also the President of Singapore Compact for Corporate Social Responsibility, Patron of the Singapore Productivity Association and a member of the Corporate Governance Council. An alumna of National University of Singapore, Ms Lum graduated with an honours degree in Science.

### **Chandra Mohan K NAIR**

#### **Partner**

Tan Rajah & Cheah

*Appointed on 1 April 2006*

Mr Nair is a member of Duke-NUS Graduate Medical School Governing Board, NUS High School of Mathematics and Science Governing Board, Criminal Law Advisory Committee of the Ministry of Home Affairs, and Management Committee of the National University of Singapore Society. He is also a Justice of the Peace. He holds a Bachelor of Laws honours degree from the University of Singapore.

### **Professor SAW Swee Hock**

#### **Professorial Fellow**

Institute of Southeast Asian Studies

*Appointed on 1 April 2006*

Professor Saw is NUS President's Honorary Professor of Statistics. He is an Honorary Professor in the University of Hong Kong and Xiamen University, and an Honorary Fellow of the London School of Economics and Political Science, University of London. He holds a Master of Arts degree from the University of Malaya in Singapore and a doctorate in Statistics from the London School of Economics and Political Science, University of London.



## **Professor TAN Chorh Chuan**

### **President**

National University of Singapore

*Appointed on 1 April 2006*

Professor Tan is concurrently Deputy Chairman of Singapore's Agency for Science, Technology and Research. He is also the Chairman of the International Alliance of Research Universities and a member of the World Economic Forum's Global University Leaders Forum. Professor Tan obtained his MBBS, Master of Medicine (Internal Medicine) and PhD from the National University of Singapore and MRCP (UK) from the Royal College of Physicians.

## **Sunny George VERGHESE**

### **Group Managing Director and Chief Executive Officer**

Olam International

*Appointed on 1 April 2009*

Mr Verghese is the Chairman of International Enterprise (IE) Singapore. He is also Chairman of the Governing Council of Human Capital Leadership Institute (HCLI) and a Singapore representative on the ASEAN Business Advisory Council. He holds a postgraduate Management degree from the Indian Institute of Management, Ahmedabad and completed the Advanced Management Program from the Harvard Business School.

## **Halimah bte YACOB**

### **Deputy Secretary-General**

NTUC

### **Member of Parliament**

Jurong Group Representation Constituency (GRC)

*Appointed on 1 April 2006*

Mdm Halimah is the Chairman of Jurong Town Council as well as a Board Member of SMRT Corporation Ltd, Mendaki Holdings Pte Ltd and Temasek Cares CGL Limited. She is also a Deputy Member of the International Labour Organisation Governing Body. She holds a Bachelor of Laws honours degree from the University of Singapore and a Master of Laws from the National University of Singapore.

## **Phillip TAN Eng Seong**

### **Director**

EQ Insurance Company

*Appointed on 1 April 2008*

Mr Tan was a former Partner of PricewaterhouseCoopers and is currently active in community service, serving on the Boards and the Audit, Finance and Investment committees of a number of statutory and charitable bodies. He is a Fellow of the Institute of Chartered Accountants in England and Wales and a Fellow of the Institute of Certified Public Accountants of Singapore.

## **Lucien WONG Yuen Kuai**

### **Managing Partner**

Allen & Gledhill LLP

*Appointed on 1 April 2006*

Mr Wong holds directorships in various companies including Singapore Airlines Limited, Singapore Press Holdings Limited and Cerebos Pacific Limited. He is also the Chairman of Maritime and Port Authority of Singapore, and a Board Member of Monetary Authority of Singapore. Mr Wong holds a Bachelor of Laws honours degree from the University of Singapore.

## **YEOH Chee Yan**

### **Second Permanent Secretary**

Ministry of Education, Singapore

*Appointed on 14 July 2008*

Ms Yeoh is the Chairman of National Library Board and a member of the LIEN Centre for Social Innovation Board. She holds a Bachelor of Arts (Honours) degree in Philosophy and Psychology from the University of London and a Master of Science degree in Social Psychology (with Distinction) from the London School of Economics and Political Science, University of London.





## SENIOR MANAGEMENT

### **Professor TAN Chorh Chuan**

President

### **Professor TAN Eng Chye**

Deputy President  
(Academic Affairs) and Provost

### **Professor Barry HALLIWELL**

Deputy President  
(Research and Technology)

### **Joseph P MULLINIX**

Deputy President  
(Administration)

### **Dr Lily CHAN**

Chief Executive Officer  
NUS Enterprise

### **Professor YONG Kwet Yew**

Vice President  
(Campus Infrastructure)

### **Daniel CHO Kwong Chow**

Vice President  
(Human Resources)

### **Professor Lily KONG**

Vice President  
(University and Global Relations)

### **Professor Seeram RAMAKRISHNA**

Vice President  
(Research Strategy)

### **WEE Sin Tho**

Vice President  
(Endowment and Institutional Development)

### **Professor LAI Choy Heng**

Vice Provost  
(Academic Personnel)

### **Professor TAN Thiam Soon**

Vice Provost  
(Education)

### **Professor TAN Tai Yong**

Vice Provost  
(Student Life)



## CALENDAR OF EVENTS: AUGUST 2009 – JULY 2010

# Change of Events

- 1 The inaugural Asian Law Deans Forum on Legal Education, jointly hosted by the Faculty of Law and Temasek Foundation with the support of the Asian Law Institute, marked the first high-level meeting on legal education and cross-institution collaboration. It drew over 45 leaders of law schools from 30 institutions from the East Asian non-OECD countries, including China, India, Indonesia, Malaysia, Pakistan, Philippines and Thailand.
- 2 The Lee Kuan Yew School of Public Policy celebrated its 5<sup>th</sup> anniversary with a gala dinner and a dialogue session with Guest-of-Honour Minister Mentor Lee Kuan Yew. It also marked the occasion with the announcement of the appointment of former United Nations Secretary-General and Nobel Laureate Kofi Annan as the first Li Ka Shing Professor, as well as the launch of its first Chinese language programme, the Master in Public Administration and Management in collaboration with NUS Business School.
- 3 Two 150 year-old townhouses in Malacca, which will be used by the Department of Architecture as a field school and resource centre, were officially opened by the Governor of Malacca, TYT Yang di-Pertua Negeri Melaka, His Excellency Tun Datuk Seri Utama Mohd Khalil bin Yaakob. Ms Agnes Tan, daughter of the late Tun Tan Cheng Lock, a highly-respected Peranakan community leader, had bequeathed the townhouses to the department. The townhouses were restored over two years by NUS faculty and students together with a Malacca-based conservation architect.
- 4 The Duke-NUS Graduate Medical School Singapore (Duke-NUS) was officially opened by Prime Minister Lee Hsien Loong. Duke-NUS' inaugural class, which commenced in 2007, will be graduating in 2011 with a joint M.D. degree from NUS and Duke University – the first such degree in the history of both universities.
- 5 Dr Lee Seng Tee was conferred the Honorary Degree of Doctor of Letters by NUS Chancellor President S R Nathan at a special ceremony at the Istana. A well-known businessman, philanthropist and patron of education and the arts, Dr Lee was recognised for his invaluable contributions in promoting education.
- 6 HRH Prince Andrew, the Duke of York, KG graced the Commonwealth Scholarship and Fellowship Plan (CSFP) 50<sup>th</sup> Anniversary reception at the University to celebrate CSFP's long-standing tradition of recognising and promoting the highest level of intellectual development. NUS will offer two graduate scholarships under CSFP, the first institution in Singapore to do so, to encourage talent development and research collaborations between Singapore and the Commonwealth countries.



# Guest-of-Honour Minister Mentor Lee Kuan Yew

2 September 2009



- 7 The Keio-NUS Connective Ubiquitous Technology for Embodiments (CUTE) Centre, which aims to be among the world's top five labs in interactive media, was officially opened by NUS Chancellor President S R Nathan. A partnership between NUS' Interactive and Digital Media Institute and Keio University's Graduate School of Media Design, the CUTE Centre will offer educational and research opportunities in interactive digital media.
- 8 The Prime Minister of the Netherlands, His Excellency Dr Jan Peter Balkenende, together with the NUS Board of Trustees Chairman Mr Wong Ngit Liong, inaugurated the NUS Centre for Aquatic Science Research (subsequently renamed Aquatic Science Centre at Sungei Ulu Pandan), an initiative by the Singapore-Delft Water Alliance at NUS. Dr Balkenende also unveiled the Albert Winsemius Lane, named in honour of the late Dr Albert Winsemius, who was an economic advisor to Singapore from 1961 to 1984.
- 9 Senior Minister and Co-ordinating Minister for National Security Prof S Jayakumar launched the Centre for International Law (CIL), which is a collaboration between NUS, the Attorney-General's Chambers and the Ministry of Foreign Affairs. The Centre aims to be an intellectual hub and a thought leader for the teaching, research and development of international law and policy in the region.
- 10 Twenty alumni received the NUS Alumni Awards in recognition of their outstanding achievements locally and abroad, and for services rendered to the University or alumni community. Senior Minister and Co-ordinating Minister for National Security Prof S Jayakumar and Chairman of Temasek Holdings Mr S Dhanabalan were conferred the Eminent Alumni Award, the highest honour for NUS alumni.
- 11 The inauguration of the new premises of the Solar Energy Research Institute of Singapore (SERIS) was graced by Guest-of-Honour Dr Tony Tan, Chairman of the National Research Foundation. SERIS, which is sponsored by the Singapore Economic Development Board and NUS, aims to take the lead in solar energy research and development in Asia.
- 12 The NUS Business School held a soft launch of its new Mochtar Riady Building, which was graced by Mr S Dhanabalan, Chairman of the School's Management Advisory Board. The nine-storey building, named after the founder and chairman of the Lippo Group, was presented with the BCA Green Mark Gold Award by the Building and Construction Authority for its environmental-friendly features and sustainability initiatives.
- 13 NUS President Prof Tan Chorh Chuan and NUS Deputy President (Academic Affairs) and Provost Prof Tan Eng Chye participated in the 4<sup>th</sup> meeting of the Global Colloquium of University Presidents, chaired by United Nations Secretary-General Mr Ban Ki-Moon and hosted by Yale President Prof Richard C Levin at Yale University. Themed "The Roles of Science in Meeting Global Challenges", the Colloquium aims to promote international collaboration on technical and scientific matters.
- 14 Former United Nations Secretary-General and Nobel Laureate Prof Kofi Annan delivered his first public lecture titled "Asia and Africa: Past Lessons, Future Ambitions" in his capacity as the inaugural Li Ka Shing Professor of the Lee Kuan Yew School of Public Policy at the University Cultural Centre. Prof Annan was also hosted to lunch by NUS President Prof Tan Chorh Chuan at the University.



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- 15 NUS welcomed two Lee Kuan Yew Distinguished Visitors during the academic year. They were: Lord Martin Rees, Astronomer Royal and Professor of Cosmology and Astrophysics at the University of Cambridge, and Prof Aaron Ciechanover, 2004 Nobel Laureate on Chemistry and Distinguished Research Professor from the Faculty of Medicine at the Technion-Israel Institute of Technology.
- 16 The Department of Pharmacy's inaugural "Educating Pharmacists@Asia" symposium brought together 14 leading experts from nine universities to share insights on "Educating Future Pharmacists for Patient-Centric Services and Research". The two-day symposium, which also marked the 105<sup>th</sup> year of pharmacy education in Singapore, involved more than 75 participants from 10 countries around the world.
- 17 Dr Li Yuanchao, Member of the Political Bureau and Secretariat of the Communist Party of China (CPC) Central Committee and Minister of the Organisation Department of the CPC Central Committee, officiated at the launch of the new Master in Public Administration and Management (MPAM) programme. The MPAM programme, which is conducted in Chinese, will enable students to develop skills in decision making and policy analysis, and participate in overseas study missions and attachments.
- 18 The Faculty of Dentistry's official opening was graced by Guest-of-Honour Mr Wong Ngit Liong, Chairman of the NUS Board of Trustees, who planted a symbolic clove tree to mark the occasion. The new building will house three student clinics and facilities such as laboratories, an X-ray facility as well as seminar and tutorial rooms for both undergraduate and graduate students.
- 19 *Why am I here?*, the first book authored by NUS Chancellor President S R Nathan, was launched at the University. Published by the NUS Centre for Maritime Studies and sponsored by Keppel Corporation, the book recounts the President's experiences as a Seaman's Welfare Officer from 1956 to 1962 and also provides a fascinating insight into Singapore's maritime history.
- 20 The Lee Kuan Yew School of Public Policy hosted the annual Asia Vision 21 conference, together with the Harvard University Asia Centre and ASH Centre for Democratic Governance and Innovation at Harvard Kennedy School, which carried the theme "Values, Conflicts and Change in Asia". The Asia Vision 21 conference brings together government officials, business leaders and scholars from the United States and Asia to examine long-term issues and concerns facing Asia.
- 21 The Honourable the Chief Justice of the Republic of Singapore Chan Sek Keong was conferred the Honorary Degree of Doctor of Laws by NUS Chancellor President S R Nathan at Commencement 2010 in recognition of his contributions in the legal field. Chief Justice Chan was among the first graduating class of 1961 of the law school of the University of Malaya in Singapore, which later became the Faculty of Law.
- 22 The Logistics Institute-Asia Pacific (TLI-Asia Pacific) launched Asia Pacific's first Sustainable Supply Chain Centre in partnership with leading logistics company DHL. Hosted at TLI-Asia Pacific, the Sustainable Supply Chain Centre of Asia Pacific will play a leading role in developing new solutions and best practices in sustainable supply chains and addressing challenges specific to the region.





Lord Martin Rees



Prof Aaron Ciechanover

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REVIEW OF EDUCATION

# Changing Mindset

“The global biodiversity crisis must be dealt with rapidly – our conscientious efforts to build and share our knowledge on environmental conservation are a small but distinct step in that direction.”

Prof Navjot Sodhi, Faculty of Science

*Received the Distinction in Teaching Award from Harvard University for his teaching contributions in Conservation Biology during the 2009 spring semester.*



## 1 August 2009 – 31 July 2010

The University continues to receive global recognition in the year of review. In the annual Quacquarelli Symonds (QS) Asian University Rankings (AUR) released in May 2010, NUS was ranked third among Asia's top 500 universities. This ranking is based on certain criteria such as the quality of research through citations and the proportion of international staff and students. In another study, "Bibliometric Profiles of Management Research at the Erasmus University 1999–2006" conducted by the Center for Science and Technology Studies at Leiden University in the Netherlands in October 2009, NUS was ranked 8<sup>th</sup> position – the only Asian university in the top 10 list.

At Faculty level, the NUS Business School obtained the European Quality Improvement System accreditation, placing the School on par with other premier business schools such as London Business School and Judge Business School at the University of Cambridge. In the Eduniversal Global Top 100 Business Schools Rankings released in November 2009, the School was ranked first among other business schools in Asia, and awarded five palmes which signified the highest category attained.

### NEW EDUCATION INITIATIVES

In striving to nurture the next generation of thought leaders, a number of new multi-disciplinary programmes was established with leading overseas partners.

These programmes include the Joint NUS-Imperial College Ph.D. programme for Computing, Engineering, Science and Medical students; the Duke-NUS Graduate Medical School Singapore's new Ph.D. programme in Integrated Biology and Medicine; a new Master of Science in Nursing (Research) and Ph.D. programme in nursing; and the Ph.D. programme in Cancer Biology, offered by the Cancer Science Institute of Singapore.

To prepare a new generation of engineers to solve future challenges in engineering, the Faculty of Engineering introduced the Design-Centric Curriculum. Innovative, flexible and cross-disciplinary, the Design-Centric Curriculum fosters creativity and helps students to develop better design skills. Students will focus on integrated thematic challenges such as Engineering in Medicine, Future Transportation Systems and Smart Sustainable Cities that place emphasis on multi-disciplinary teamwork.

As the pioneer of medical education, NUS is mindful of the need to constantly align its medical curricula with the needs of society. The Yong Loo Lin School of Medicine has completed an extensive review of the medical curriculum, with the final phase of the new curriculum implemented in the upcoming Academic Year 2010/2011. The revised curriculum integrates the basic sciences with clinical practice, providing early clinical exposure, enhanced ambulatory and simulation training, internship and clinical competencies. The changes are also in line with our goal of nurturing compassionate graduates with inquiring minds and a lifelong learning habit as well as strong in clinical practice and academic medicine.

The upcoming University Town, to be opened in August 2011 with two Residential Colleges and a Graduate Residence, will offer students a transformative educational experience in a residential living environment. Prof John Richardson has been appointed Master of the residential college which will house the University Scholars Programme with Prof Wang Gungwu as Rector, whilst Assoc Prof Gregory Clancey will be Master of the second residential college with Prof Tommy Koh as Rector.

The success of a pilot trial on residential learning by the University Scholars Programme, using the Prince George's Park Residences (PGPR), has opened up more such learning opportunities for students. In the new Academic Year 2010/2011, the pilot will be expanded to include more students while the second residential college will also run its pilot residential programme at PGPR. Classes conducted by the Writing Unit for students in this pilot programme will be opened to other NUS undergraduates. The development of the Undergraduate Seminars and Multi-disciplinary Modules at the second residential college has also made good progress.



### Playing a definitive role in environmental conservation

For the last two years, Prof Navjot Sodhi (*Faculty of Science*) worked tirelessly on co-editing a book project entitled "Conservation Biology for All".

This was no ordinary book project. It was a labour of selflessness, a response to the call of conservation scientists from the developing world, who lacked the economic means to access authoritative textbooks on biodiversity matters. Available free online from January 2011 by Oxford University Press, the book is an admirable and worthy effort from the conservation community who devoted many long hours to the project without any financial gain.

Similarly, Prof Sodhi's passion and commitment to environmental conservation are clearly imparted in the courses he teaches. An authority on Conservation Biology and Environmental Management, Prof Sodhi recently received the Distinction in Teaching Award from Harvard University for his teaching stint during the 2009 spring semester as the Sarah and Daniel Hrdy Fellow in Conservation Biology, a prestigious fellowship awarded by Harvard.

Prof Sodhi taught an undergraduate course entitled Conservation Biology where he trained students to conduct comprehensive research on a tropical country, write succinctly and develop abilities to make public statements. This innovative exercise resulted in five letters being published in newspapers in Kenya, Indonesia, Jamaica, Colombia and Belize. Effective in generating enthusiasm among the students he taught at Harvard, Prof Sodhi received a resounding evaluation of an almost perfect score.

"The potential to think and learn is limitless," said Prof Sodhi. "This achievement encourages me to use novel teaching methods such as debates and provocative write-ups to enable students to express opinions and think beyond their potential."

## STRENGTHENING OUR GLOBAL NETWORK

The University made significant headway in building up a presence in Asia and beyond. Our first research institute in China, the NUS Research Institute or NUSRI, was set up within the Dushu Lake Science and Education Innovation Park of the Suzhou Industrial Park. NUSRI is the first research institute to be sited in Suzhou Industrial Park by a non-Chinese University. Slated to be completed end 2011, NUSRI aims to maintain a high-level research programme to champion research areas which are of strategic importance to NUS.

An NUS Incubation Centre housing NUS' spin-offs and Chinese companies working with the University's intellectual properties and start-ups will be established at NUSRI. NUSRI will also offer executive training programmes targeted primarily at the local professionals, managers, executives and businessmen. Through NUSRI, we hope to expand the NUS research ecosystem and entrepreneurial landscape, as well as provide a strong foothold for other China initiatives. In addition, our Faculties and Departments will have a common platform to synergise their resources when engaging China.

Riding on China's rapid economic growth, the Lee Kuan Yew School of Public Policy (LKY School) linked up with the Chinese government to offer the Master of Public Administration and Management programme to their government officials and executives from state-owned enterprises in China.

Concurrently, the LKY School also secured the bid to provide the Executive Programme for the Leadership Development Initiative of the Central Asia Regional Economic Cooperation (CAREC) Programme of the Asia Development Bank to its eight CAREC countries – Afghanistan, Azerbaijan, China, Mongolia, Kazakhstan, Uzbekistan, Tajikistan and Kyrgyzstan.

We have also ventured into new and emerging markets to seek and create fresh global opportunities for our students. Apart from establishing exchange programmes at universities located in non-traditional destinations such as Mexico, South Africa, Poland and Hungary, we offered two new international summer programmes known as Semester at Sea and the Mayan Route.

A shipboard global study programme, Semester at Sea is operated by the non-profit Institute for Shipboard Education in conjunction with the University of Virginia. Two NUS students set sail for the first time on the Summer 2010 voyage which stopped at Canada, Spain, Italy, Croatia, Greece, Turkey, Egypt, Morocco and the United States. The Mayan Route is a four-week summer programme in the south of Mexico, where students attend lectures at the Tecnológico de Monterrey and learn about the history and culture of the Mexican state of Chiapas.

In the period of review, the University signed seven Student Exchange agreements, bringing the total number of NUS student exchange partners to 321<sup>1</sup>.

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<sup>1</sup> As at 1 May 2010 and inclusive of university-wide and faculty-level partners



### Teaching with her heart

Teaching is something which Assoc Prof Ong Soh Khim (*Faculty of Engineering*) holds close to her heart. "My personal teaching philosophy is to teach with my heart, to teach with passion, to keep my teaching lively and inspiring and to have a positive attitude towards teaching and students," she said.

Having gone through the path of an engineering student herself has helped Assoc Prof Ong to craft her teaching methodology and advise her students well so that mistakes would not be repeated. "Engineering subjects must relate to application and practice and nothing is more convincing than showing students the application of each engineering principle," said Assoc Prof Ong.

Assoc Prof Ong's area of research expertise is manufacturing engineering, which includes the application of augmented reality in the development of assistive technologies such as assistive, adaptive and rehabilitative devices for people with disabilities. Her research team has devised a virtual interface which will enable the physically handicapped to use as an effective interface to operate electrical appliances and computer functions fully. A patent has been filed and field tests have proven its feasibility.

Her leadership in academia and groundbreaking research in manufacturing engineering have led her to win the 2009 Emerging Leader Award (Academia) from the US Society of Women Engineers – the first Singaporean woman engineer to be honoured with this award.

"Winning this award sends a strong signal that a Singapore-trained engineer is at par with other nominees worldwide," said Assoc Prof Ong. "It is also a recognition of my efforts and achievements during the last 15 years as an academic and researcher."



### Explore. Dream. Discover.

"Twenty years from now you will be more disappointed by the things that you didn't do than by the ones you did... Sail away from the safe harbour. Catch the trade winds in your sails." Mark Twain's inspiring quote has motivated Apoorv Agrawal (*Faculty of Engineering/School of Computing/University Scholars Programme Year 1*) to seize numerous opportunities which he might have otherwise foregone.

Computing and IT aside, Apoorv harbours a keen appreciation of politics. "Politics plays a ubiquitous role in our lives – it shapes almost every other aspect of our lifestyle, economic status, mental and physical health, education and outlook", said Apoorv.

This interest drove him to participate in the Harvard National Model United Nations (HNMUN) 2010, one of the most reputed political conferences with a world class political simulation environment. The HNMUN 2010 attracted delegations from across the globe – from Tokyo to Los Angeles and Ivy League universities to military schools. NUS was the only delegation from Singapore. "Our representation marked the steady concern and participation of Singapore in world politics at university level," Apoorv noted.

Assigned to delegate for The Republic of Philippines, the NUS team presented their case on "Peacekeeping Operations" at the Legal Committee under the General Assembly of HNMUN. The resolution they had drafted gathered strong support from the ASEAN and EU delegations and was eventually approved by the committee.

Having no qualms "sailing away from safe harbours", this Dean's List student has travelled to 12 countries in his first academic year at NUS. He also represented NUS at the 14<sup>th</sup> International Summer Programme 2010 at Universität Ulm in Germany during the term vacation.

## **NEW JOINT, CONCURRENT AND DOUBLE DEGREE PROGRAMMES LAUNCHED IN ACADEMIC YEAR 2009/2010**

### **Joint Degree Programme**

- Joint Bachelor of Arts between Faculty of Arts and Social Sciences, NUS, and University of North Carolina at Chapel Hill

### **Concurrent Degree Programmes**

- Bachelor of Computing (Computational Biology) Honours, School of Computing, Bachelor of Science (Computational Biology) Honours, Faculty of Science, NUS, and Scientiae Magister in Computational Biology, Brown University
- Master of Science in Logistics and Supply Chain Management, The Logistics Institute-Asia Pacific, NUS, and Georgia Institute of Technology
- Bachelor of Science (Honours) in Life Sciences, Faculty of Science, NUS, and Master of Research in Molecular Biophysics (M.Res.), King's College, London

### **Double Degree Programmes**

- Master in Public Policy, Lee Kuan Yew School of Public Policy, NUS, and Master in Public Administration, Peking University
- Master of Business Administration, NUS Business School, and HEC School of Management, Paris
- Master of Science in Hydraulic Engineering and Water Resources Management, Faculty of Engineering, NUS, and Master of Science in Civil Engineering with Hydraulic track, Delft University of Technology

## **SECOND MAJORS OFFERED FOR DOUBLE MAJOR PROGRAMMES IN ACADEMIC YEAR 2009/2010**

- Recording Arts and Sciences, Yong Siew Toh Conservatory of Music

## **NEW GRADUATE DEGREE PROGRAMMES LAUNCHED IN ACADEMIC YEAR 2009/2010**

- Master of Science in Quantitative Finance (Coursework), Faculty of Science
- Master of Science in Hydraulic Engineering and Water Resources Management, Faculty of Engineering
- Master of Public Administration and Management, Lee Kuan Yew School of Public Policy and NUS Business School





### Helping students to help themselves

A good teacher, Distinguished Professor Shen Zuowei (*Faculty of Science*) believes, is one who helps students to discover their interests and strengths and encourage them to excel.

Prof Shen, who specialises in Applied Mathematics, abides by this philosophy. He trains his undergraduate students to acquire certain skills to learn and discover solutions by themselves while he encourages his graduate students to use adaptive learning skills, namely learning according to the problems that need to be solved, once they have built the essential foundation. "With this adaptive learning process, I lead them into an area gradually," he explained. "I then encourage them to look for scientifically interesting problems to work on."

Prof Shen's research interests include wavelet frames, Gabor frames and their applications in imaging sciences. His more recent work focuses on imaging sciences where mathematical theories and algorithms are developed for various applications in digital image analysis, processing and restorations that can be used in areas such as computer version, biomedical images and remote sensing.

A highly-cited mathematician, Prof Shen's achievements have been recognised by both the local and international communities. In August 2010, he was invited to give a lecture at the International Congress of Mathematicians (ICM) in India, a major scientific event held every four years for the mathematics community, which demonstrates the vital role mathematics plays in society.

Prof Shen was recently honoured with the title of Distinguished Professor for his outstanding research contributions, particularly his pioneering work in the fields of wavelet and Gabor frames and their applications in imaging sciences. He is one of the four professors in NUS with this title.



### On the track of an evolutionary biologist

While her contemporaries were interested in what urban Singapore had to offer, Gwynne Lim Shimin (*Master of Science – Life Sciences*) was more intrigued with the diversity of life around her, scrutinising and even tasting various flora!

Gwynne has her parents and Assoc Prof Rudolf Meier to thank for cultivating her interest in evolutionary biology. "From young, my parents instituted a reward system by buying me books on natural history or allowing me to stay up late to watch nature documentaries if I had good grades," she said. "I was also fortunate to have been in the University Scholars Programme, as I was assigned Prof Meier as my academic advisor who provided numerous research opportunities in evolutionary biology."

This confluence of opportunity and interest paid off. Gwynne won the International Fulbright Science and Technology Award 2010, the US Government's most prestigious education scholarship for graduate students to undertake Ph.D. study in the fields of science, technology or engineering at top US universities. The second Singaporean to have won this award, Gwynne will pursue her Ph.D. in systematic botany at Cornell University.

"It is a great honour as the Fulbright awards are meant to stimulate mutual understanding between the US and other countries," said Gwynne. "Such cooperation is vital as biological phenomena like mass extinctions go beyond national boundaries."

The budding biologist aspires to tread the same path as British naturalist Alfred Russel Wallace who had conducted extensive fieldwork in Southeast Asia. "The biodiversity and biogeography of Southeast Asia is deeply fascinating. It inspired Wallace to come up with the idea of evolution independently of Charles Darwin, and definitely deserves greater scientific attention and protection," she said.

REVIEW OF RESEARCH

# Changing Reality

“My work on global production networks helps our audience make better sense of the increasingly messy corporate relationships that connect different places and regions of the world.”

Prof Henry Yeung, Faculty of Arts and Social Sciences

*Ranked first in the listing of top 50 cited human geographers on the basis of age-weighted h-index in the Journal of Economic Geography (Volume 10).*



## 1 August 2009 – 31 July 2010

Widely recognised as a leading research-intensive university, NUS continues to receive strong funding support from government agencies and industry to facilitate cutting-edge research which addresses important issues relevant to Singapore and globally.

We received close to S\$469 million from the Ministry of Education (MOE), National Research Foundation (NRF), the Agency for Science, Technology and Research (A\*STAR) and other granting agencies in the year<sup>1</sup>, marking an increase of almost 25 per cent from the year before.

Some major grants received within this period include S\$63 million to promote research, education and commercialisation of environmental and water technologies; S\$17 million to focus on research, forums and leadership programmes; and S\$7 million for Sustainable Development Research which is carried out in collaboration with the Urban Redevelopment Authority (URA), Housing Development Board (HDB), Land Transport Authority (LTA) and National Parks Board (NParks).

Our research output reflected a very strong standing in the year of review. A total of 834<sup>2</sup> new projects was started and 785<sup>2</sup> projects completed in the year. The University signed 178<sup>1</sup> research collaborative agreements valued at close to S\$156 million. A total of 5,427<sup>3</sup> papers was published in conferences and internationally refereed journals in 2009.

### NEW RESEARCH INITIATIVES

Singapore's fifth Research Centre of Excellence (RCE), the Singapore Centre on Environmental Life Sciences Engineering (SCELSE) was established with a funding of S\$120 million over a period of five years. The RCE, which will be hosted at the Nanyang Technological University, will operate in close collaboration with NUS with part of the SCELSE physically housed at the University. The SCELSE aims to be a world leader in microbial biofilm research and control, as well as a source of novel environmental engineering applications which can help solve problems from dirty water to toxic pollutants and infectious diseases.

We have been awarded three RCEs in the last three years – Mechanobiology Institute, Singapore (2009), Cancer Science Institute of Singapore (2008) and the Centre for Quantum Technologies (2007).

Taking the lead to establish the University as a resource hub on Asian and global issues, the NUS Global Asia Institute was set up to provide a platform for integrative Asian studies. An initial set of research themes, which focuses on critical issues for Asian cities in a globalising world, has been identified. This includes managing resources for livable Asian cities and the future of urban society in Asia.



The University also launched the Centre for International Law (CIL), enhancing Singapore's efforts to become a leading legal hub in Asia. CIL was established as a university-level research institute in response to the growing need for international law expertise, capacity building and thought leadership in the region.

To provide integrated and interdisciplinary solutions to critical financial issues in Asia and beyond, the NUS Finance and Risk Management Cluster was set up. It was identified as a core area to be developed to ensure Singapore's continued stature as a financial hub. Members of the Cluster include the Risk Management Institute (RMI), the Institute of Real Estate Studies (IRES), the Saw Centre for Quantitative Finance and the Departments of Mathematics, Statistics and Applied Probability, Finance and Economics.

The University unveiled its Plasmonics and Advanced Imaging Technology Laboratory (P&AIT), which focuses on interdisciplinary research in science and technology at the nano-scale level. The P&AIT Laboratory houses the Helium Ion Microscope, the first to be showcased in Asia, which opens new doors in nanoscale imaging. The cutting edge skill and facility of this imaging system will have a great impact in the areas of biological sciences, material sciences and semi-conductors, thus benefiting a wide range of NUS researchers.

### Devising a master framework to address global economic challenges

In the course of his 14-year career, Prof Henry Yeung (*Faculty of Arts and Social Sciences*) has chalked up numerous accolades and awards, his latest achievement being ranked first in the listing of top 50 cited human geographers on the basis of age-weighted h-index in the *Journal of Economic Geography (Volume 10)*. This accolade places him among an elite group of world-renowned human geographers.

Working with an international team of researchers, Prof Yeung pioneered the development of a theoretical framework to understand the complex organisation of global production networks (GPNs) in contemporary globalisation.

Their GPN framework enables them to study complex organisational relations among firms, institutions and states in different economies, which helps explain why leading firms from some high growth economies can dominate specific subsectors in global industries. It also provides an insight into the dynamic growth of specific regions in a relatively weak national economy.

Prof Yeung's research is especially useful in an era where business organisations are evolving to be more complex globally. "Our work helps policy makers, researchers and business people to make better sense of the increasingly messy corporate relationships that connect different regions of the world," said Prof Yeung. "It makes them realise that economic fortunes are now more interdependent than ever and allows them to develop different strategies and responses to handle the global economic challenges."

<sup>1</sup> Financial Year 2009 (1 Apr 2009 - 31 Mar 2010)

<sup>2</sup> Figures reflect number of new projects that commenced in FY2009 and those completed in FY2009 respectively, and excludes IRC accounts.

Listing generated from OFS' SAP PS system as at 2 June 2010.

<sup>3</sup> Data extracted from SCOPUS online database on 21 July 2010 and represents document types Article, Conference paper, Review, Article in Press and Editorial.

## SIGNIFICANT RESEARCH BREAKTHROUGHS

### • **Introducing the world's first semi-cloned fish**

The pioneering efforts of Assoc Prof Hong Yunhan (Faculty of Science) and his research team have successfully demonstrated, for the first time, the feasibility of semi-cloning as a technique for reproduction. Using the Medaka fish, which shares a number of genes with humans in the area of reproduction, the team produced the world's first semi-cloned fertile female Medaka fish, by haploid embryonic stem cell nuclear transfer into a normal egg.

These findings have important implications for reproductive medicine and technology. The current technique for cloning – human-assisted reproduction by somatic cell nuclear transfer – has been widely debated because of its low efficiency. It further raised ethical concerns about producing an offspring that would be identical to the donor.

### • **Understanding Brain Tumours via Stem Cell Research**

A group of researchers, led by Dr Wang Hongyan (Duke-NUS Graduate Medical School Singapore) have discovered a tumour-suppressing protein which may provide insights into certain types of human brain tumours, and possibly a wide variety of cancers. A study conducted on the fruit fly's developing brain showed that the fruit fly protein *PP2A* (protein phosphatase 2A) suppresses brain tumour formation and controls the balance of self-renewal and differentiation of neural stem cells. This discovery complements Dr Wang's earlier identification of a protein kinase *Polo* as a tumour suppressor, enabling her to make a connection between *PP2A* and *Polo*.

### • **Creating smart and tough solutions for sustainable needs**

A research team headed by Prof Richard Liew (Faculty of Engineering) has uncovered a novel solution to conventional steel structures. Proven to be superior in terms of impact and fatigue performance, the Steel-Concrete-Steel (SCS) "sandwich" system is also more cost effective and environmentally-friendly than conventional stiffened steel plate structures. The SCS "sandwich" system is particularly suitable for applications where high structural stiffness and extreme loading are needed. The oil tanker is an example of a marine application, where collision and grounding may cause catastrophic impact on the environment.

### • **Turning on the flowering 'switch' in plants**

A study, conducted by Dr Liou Yih-Cherng with team members Assoc Prof Yu Hao and Assoc Prof Yang Daiwen (Faculty of Science), has found that the plant version of an enzyme *Pin1* can control the flowering time of plants. The *Pin1* is an important enzyme that is linked to human cancers and Alzheimer's disease.

This is the first time scientists have succeeded in turning on the flowering 'switch' in plants, which translates into greater returns for crops by shortening their harvesting time. It will also have important applications in the floral industry as plants can be engineered to flower faster so as to increase yield.



### Creating tough sustainable solutions for tomorrow

For six years, Prof Richard Liew (*Faculty of Engineering*) and his team of researchers have been concentrating on developing a novel steel-concrete-steel (SCS) sandwich composite system for applications where high structural stiffness and resistance to survive extreme loadings are required.

The team found that their SCS system can be used as an alternative to conventional steel and concrete structures. Not only does it withstand harsh environmental conditions, its innovative modular construction methods can speed up construction and the materials can be recycled for sustainable civil infrastructure, offshore and military industries.

As high performance materials of enhanced strength over density are used to optimise the performance of the structures, the advantages of the SCS system are many. Its high level of stiffness minimises the work of welding stiffeners, makes structural geometries simpler and provides an improved fatigue life span.

"We have conducted extensive experiments to investigate the structural performance of SCS sandwich system," said Prof Liew. "Its characteristic properties including compressive strength, shrinkage and creep, fire resistance and effect of freeze-thaw cycles have been studied systematically." As a result, Prof Liew and his team achieved a breakthrough to produce cost effective, environmentally-friendly, high performance cementitious materials for industry use.

The SCS system is currently ready to be implemented in various civil, offshore and military applications including high rise buildings, large span structures, offshore production platforms, ice caissons, fire and blast walls, double hull tankers and retrofitting of existing marine structures.



### Worthy lessons from the humble fruit fly

Dr Wang Hongyan (*Duke-NUS Graduate Medical School Singapore*), who conducts research on neuroscience and behavioural disorders, used the fruit fly *Drosophila* as a model to study the process of self-renewal and differentiation in neural stem cells. Using a combination of genetics and cell biology as well as a biochemical approach, she later embarked on a genome-wide analysis aimed at identifying and characterising brain tumor suppressors in the fruit fly.

Studies carried out by Dr Wang on the fruit fly revealed that its *PP2A* (protein phosphatase 2A) suppresses brain tumour formation and controls the balance of self-renewal of neural stem cells. She had earlier identified a protein kinase *Polo* which exhibits similar properties. "Our findings have paved a way for further research on mammals in the areas of brain development and tumorigenesis," said Dr Wang.

Dr Wang felt that the fruit fly deserves more attention as a specimen for research. "The fruit fly is an excellent organism for genetic studies as various tools are already well established," she explained. "Its life cycle of nine days is very short which allows us to develop our research very rapidly."

Her discoveries, which hold great significance in the understanding of stem cells and corresponding types of cancers, had first earned Dr Wang the Singapore National Academy of Sciences and A\*STAR Young Scientist Award (the sole winner in Biological and Biomedical Sciences). She further received a generous funding of US\$1.5 million to support her research efforts in this field.



## 5 Studying natural hazards with InSAR technology

Dr Emmanuel Christophe and his research team (Centre for Remote Imaging, Sensing and Processing) have brought remote sensing to the next level with the Interferometric Synthetic Aperture Radar (InSAR). CRISP is the only agency in the region after Japan to have successfully produced interferometric maps over equatorial regions.

This technology, which has the ability to measure subtle changes, can be used to monitor natural hazards such as earthquakes and volcanic eruptions. By using InSAR, researchers had successfully processed a series of satellite images of the recent Haiti earthquake that revealed Haitian land surface changes. In the Singapore context, InSAR technology can be applied in the building of infrastructures such that fault lines are avoided, as well as designing buildings at the correct angles.

## No Quantum Leap for Interactive Proofs!

Research on quantum computing has grown rapidly in recent times attracting much attention from academic institutions and research centres worldwide. Contributing to this evolving field is Dr Rahul Jain (*School of Computing/Centre for Quantum Technologies*) and his team who recently solved a question which was left unanswered for the last 10 years.

Working on the research for about one year, their objective was to compare the power of Quantum Interactive Proofs and Classical Interactive Proofs. In a nutshell, Interactive Proofs are proof systems in which a Verifier with limited resources tries to verify a statement with the help of a Prover with unlimited resources. However, the Prover is untrustworthy and the Verifier needs to verify the Prover's claims.

In this setting, if the Verifier is a (probabilistic polynomial time bounded) classical computer, then the class of problems which have such proofs is called IP (for Interactive Proofs). If the Verifier is a (polynomial time bounded) quantum computer, then the class of problems which have such proofs is called QIP (for Quantum Interactive Proofs). Since a classical computer is also a quantum computer, QIP forms a super-set of IP.

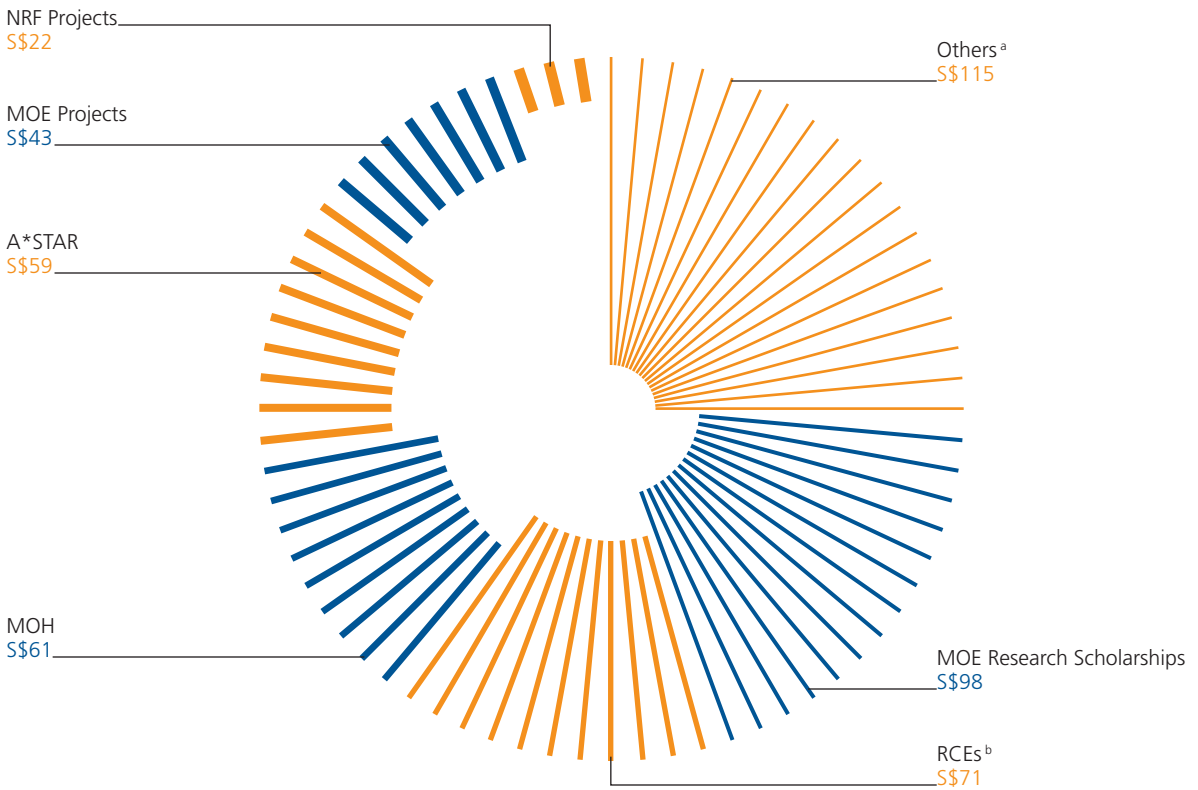
Dr Jain and his team proved that  $QIP = IP$ . "This finding shows that there is no extra power gained where interactive proofs are concerned if the Verifier is a (polynomial time bounded) quantum computer," explained Dr Jain.

Dr Jain and his team won the Best Paper Award at the 42<sup>nd</sup> ACM Symposium on Theory of Computing (STOC 2010), which is widely considered as a top conference in Theoretical Computer Science. This paper has also been invited to the *Journal of ACM* which is widely considered as a top journal in Theoretical Computer Science.



Total project value awarded by external sources<sup>4</sup>

**EXTERNAL GRANTOR FY2009** (in millions)



<sup>4</sup> Figures updated as at May 2010

<sup>a</sup> (Ministries/Stat Boards/Industry/Foundations/Individuals) local/overseas

<sup>b</sup> Mechanobiology, Cancer, Quantum Technologies

**Total: S\$469 million**

REVIEW OF ENTREPRENEURSHIP

# Changing Perceptions

“We hope *tenCube*’s success story will inspire other local start-ups to accomplish their dreams and establish their presence globally.”

Rishi Israni, *tenCube*’s Founder and Chief Technology Officer

*One of the four NUS graduates who set up tenCube, a start-up company which was acquired by McAfee Inc, the world’s largest dedicated security technology company.*



## 1 August 2009 – 31 July 2010

Raising our profile among external stakeholders and the entrepreneurial community, the University was actively involved in a number of prestigious events during the year of review.

The highlight of the year was the launch of the inaugural InnovFest 2010, which pulled together a series of innovation and entrepreneurship-related events to boost investment, technology transfer and networking opportunities within the finance, business and technology communities in Asia. One of these events was the Technology Commercialisation Forum 2010, which attracted some 300 industry stakeholders and technology transfer professionals and highlighted key emerging technologies from the region.

InnovFest 2010 also saw the launch of the Xtra Chapter Challenge Programme and Innovation/Entrepreneurship Practicum Grant. Supported by the National Research Foundation under the University Innovation Fund, these initiatives were introduced to encourage the University community to develop and further commercialise their business ideas.

Under the Xtra Chapter Challenge Programme, three awards were given, one of which was presented to a research project on the discovery of *Entritin*, a cell-penetrating peptide (amino acid chain) that constitutes an important vector for topical and oral drug delivery. A total of seven grants under the Innovation/Entrepreneurship Practicum Grant was also presented. One of these grants was awarded to a project on the development of a medical device to help cerebral palsy patients improve their quality of life.

The Global Entrepreneurship Week 2009 (GEW 2009), which celebrated the pursuit of entrepreneurship, was another key event which attracted the participation of 29 partners from secondary schools, non-profit organisations and MNCs all over Singapore. As a testament to the high level of interest and success in this field, the GEW events collectively engaged 19,600 participants in over 40 events, an increase of over 8,000 participants from its inaugural launch in 2008.



### May the phone be with you

*tenCube's* success story will set the benchmark for local start-ups to make good on the global stage.

A home-grown NUS start-up company founded by four NUS graduates – (clockwise from top left) Darius Cheung, Indradeep Biswas, Varun Chatterji and Rishi Israni – *tenCube* was acquired by McAfee Inc., the world's largest dedicated security provider, in August 2010.

Set up in 2005 to solve the problem of mobile phone theft, *tenCube's* idea dramatically evolved into a full suite of device and data protection features within the first year. "We had all felt the pain of losing phones," said Rishi Israni, *tenCube's* Founder and Chief Technology Officer. "It was the loss of two mobile phones in two weeks that sparked off the idea."

*tenCube* founders put their combined savings of S\$30,000 to start the company. They subsequently won the Start-up@Singapore Business Plan Competition 2006 and the prize money of S\$30,000 was used as additional seed funding. Tapping on the NUS Enterprise incubation ecosystem, *tenCube* also leveraged on its overseas launchpad in Silicon Valley to gain a presence in the United States.

In 2008, *tenCube* launched its anti-theft software for mobile platforms called WaveSecure for consumers. Its first breakthrough was an Original Equipment Manufacturer (OEM) deal with Nokia in India followed by other telecom operators in the region including SingTel.

The *tenCube* team has braced itself for a more exciting ride ahead. "We see great synergy in our unique product expertise and McAfee's market reach which will help solve the problem of mobile phone theft faster," said Rishi.

With this synergy, the product's tagline "May the phone be with you" will certainly ring true.



## INDUSTRY ENGAGEMENT

We continue to actively engage with industry, sourcing for projects and inventions as well as licensing opportunities with spin-off potential.

Over 157 industry and research collaborations took place in the year of review, totalling a project value of S\$118 million. A significant example is the award of a S\$20 million grant by the Singapore Economic Development Board for the development of the S\$63 million Singapore-Peking-Oxford Research Enterprise (SPORE) for Water Eco-Efficiency. A partnership between NUS, the University of Oxford and Peking University, the five-year initiative aims to promote education, research and industry collaboration on water and environmental technologies.

A total of 84 patents was filed and 28 patents granted in the review period. We also received 208 invention disclosures, registering a substantial increase of 79 per cent over the previous year.

The University's Industry Liaison Office was appointed as the Technology Transfer Office for the Campus for Research Excellence And Technological Enterprise, Singapore-MIT Alliance for Research and Technology and the Media Development Authority in 2009, reinforcing NUS' position as a leader in managing, developing and licensing Intellectual Property (IP).

## NURTURING ENTREPRENEURIAL MINDSETS

A total of 208 students embarked on the NUS Overseas Colleges (NOC) and *innovative* Local Enterprise Achiever Development (iLEAD) programmes in the period of review. NOC's Experience India! Programme especially received an overwhelming response from the student community, with an unprecedented 39 students departing for India to intern at start-ups, venture firms, local Indian companies as well as international organisations. The students were involved in projects spanning IT, biotech, entrepreneurship development, media and advertising, rural business process outsourcing and ecotourism.

The national-level Start-Up@Singapore (S@S) Business Plan Competition 2010, organised by the NUS Entrepreneurship Society, attracted a total of 270 teams and 780 participants. The winner of S@S 2009, *Zimplistic Inventions*, won the third prize in the highly competitive Intel® + UC Berkeley Technology Entrepreneurship Challenge. The competition is a joint project between Intel Corporation and the Lester Center for Entrepreneurship and Innovation at UC Berkeley that brings together entrepreneurial teams from world class engineering and business schools. This notable achievement demonstrates the quality of winners of S@S competitions.



### STRONG FUNDING SUPPORT

Apart from sourcing for dedicated mentors and providing comprehensive incubation facilities for our NUS start-ups, we also seek to establish funding schemes and R&D resources to support these fledgling companies.

Two examples of NUS spin-off companies that have successfully raised third party funding are *BioMers*, a medical device company that focuses on aesthetic orthodontic solutions and *tenCube*, a mobile security software company. *BioMers* successfully closed a round of funding from Nanostart Asia, a local subsidiary of German company Nanostart AG while *tenCube* secured US\$1 million in strategic investments from One97 Communications, a leading telecommunications application services provider in India.

In August 2010, *tenCube* was acquired by McAfee Inc., the world's largest dedicated security technology company based in California.

*tenCube* was founded by four NUS graduates Darius Cheung, Varun Chatterji, Rishi Israni and Indradeep Biswas, who had won the Start-up@Singapore Business Plan Competition 2006. The company had tapped on NUS Enterprise's ecosystem of business clinics, network of private angels and infrastructure support as well as the incubator's pool of mentors. It also secured a presence in the United States through the University's launchpad in NUS College in Silicon Valley.

*tenCube's* accomplishment is an indication of the growing success of NUS start-ups which have made an impact in an era of fast evolving technologies and innovations.

### Money Matters with PlayMoolah

The NUS Overseas College stint at Silicon Valley provided a great source of inspiration for students Lee Min Xuan (left, *NUS Business School/University Scholars Programme Year 4*) and Audrey Tan (right, *Faculty of Arts and Social Sciences Year 4*).

Noting the rapid propagation of consumerism in popular children's games and media coupled with the declining state of financial literacy in the United States, Min Xuan and Audrey chanced upon the idea to leverage on game mechanics (a new field of persuasive technology) to effect positive behavioural change and cultivate good money management habits.

Buoyed by the overwhelming interest and encouragement shown by their Stanford University professors, a web-based tool PlayMoolah was conceptualised to help parents and their children navigate the process of financial education together. "We aim to start young and empower children with the tools to take control of their lives and learn with a sense of purpose and ownership," explained Audrey. "The technology is designed for behaviour and mindset change, such that they will be equipped with the confidence and skills needed for financial literacy."

The duo spent a year engaging in customer development through surveys, focus groups and voluntary teaching in schools. They have also raised seed funding, built a prototype and tested their Minimum Viable Product (MVP) with a core group of parents and children. PlayMoolah will be launched next year in the United States.

"PlayMoolah has enabled us to meet the most inspired, intelligent and compassionate people who come up with solutions for the world's problems," said Min Xuan. "It is exciting to work on something fundamentally game-changing which matters to people."

GIVING BACK TO THE COMMUNITY

# Changing Lives

“Community work means giving back to society a bit of what we’ve been given. As students, what we learn becomes more meaningful when it makes a difference in people’s lives.”

Wee Liang En, Yong Loo Lin School of Medicine

*One of the 10 medical students worldwide who presented a paper on “The Neighbourhood Health Screening” community service project at the World Health Summit 2009 in Germany.*





A survey conducted by the National Volunteer and Philanthropy Centre, a national body that promotes and develops volunteerism and philanthropy across all sectors in Singapore, revealed that 23 per cent of Singapore youths aged between 15–24 years were volunteers, the highest among all age groups<sup>1</sup>.

It is heartening to note that our students compare favourably with the national average as every one in three NUS undergraduates is a volunteer<sup>2</sup>.

In the year of review, our students raised about S\$540,000, with a collection of over S\$443,000 from Flag Day 2009 alone.

Other noteworthy events include:

- A *Charity Run* organised by Kent Ridge Hall which raised a sum of S\$60,000 in aid of the Children's Cancer Foundation.
- A donation drive by the NUS Students Union and Graduate Students' Society which collected close to S\$19,000 for the victims of Typhoon Ketsana and the Padang earthquake.
- *Charity Fiesta 2009* and *Breakers' Day 2009* by the NUS Students' Union Volunteer Action Committee which collectively raised S\$10,000.

Apart from fund-raising efforts, students from various faculty clubs and societies were involved in community service projects, at home and abroad. Some of the local projects included the provision of direct service to a wide spectrum of special needs groups such as the intellectually disabled, mentally ill, elderly as well as disadvantaged youths and family.

Many of our students also participated in Overseas Service Learning trips such as Youth Expedition Projects where they volunteered for 2–3 week stints in the region. Some of these were:

- A youth expedition trip to New Delhi, India organised by NUS Students' Muslim Society to assist a local NGO Salaam Baalak Trust in providing support services for street children.
- *Power Up Serdang 2010*, a community service project by NUS Students' Nursing Sub-Club to promote the healthcare needs of local villagers in Serdang Village, Medan, Indonesia.
- *Project Greenheart*, an expedition to Phnom Penh, Cambodia by the NUS Environmental Science and Engineering Sub-Club to provide a clean and renewable source of energy to the students of Lavalla School.
- *Project Mam Xanh 2009*, a community service project by NUSSU Volunteer Action Committee to construct and refurbish a primary school and conduct an educational camp for children and youths in a village community in Vietnam.

Apart from community service, our students are also involved in eco projects which aim to raise awareness of environmental sustainability among the campus community. The main environmental student body at NUS, Students Against Violation of the Earth (SAVE), takes the lead in initiating meaningful programmes to promote social responsibility towards the environment. These programmes include the NUS Green Carnival, Earth Hour and various energy and waste management projects.

<sup>1</sup> The Straits Times, "Youth rally round charitable causes", 16 January 2010

<sup>2</sup> Cited from Undergraduate Volunteerism & Social Giving Survey 2009



### For the common good

"Books only teach the hardware of medicine, but the software must come from interacting with patients in the community" – a simple philosophy aptly stated by Wee Liang En (*Yong Loo Lin School of Medicine Year 2*), who nurtures a passion in medicine and community work.

Liang En is currently involved in the Neighbourhood Health Screening (NHS), a community service project organised by medical and nursing students. This programme provides medical care to needy residents staying in rental flats in Taman Jurong through free health screening and sending of volunteers (doctors and students) into the community so that their healthcare needs and health-seeking behaviours can be better managed.

Liang En presented a paper on this project titled "The value of a student-initiated, faculty-supported community project: The Neighbourhood Health Screening" at the World Health Summit 2009 in Germany – he was one of the 10 medical students from around the world selected for this Summit. Having developed an interest in public health policy, Liang En found the Summit particularly insightful. It gave him a better understanding of the nuances of public health policy which would prove useful in the long run.

Liang En feels that such community service projects are vital as they teach medical students to care more about the communities they are going to practice in. "What was unique about the NHS was that we brought the clinic to the resident," he elaborated. "We found that students learnt about empathy for patients, developed a passion for public service and a commitment to care for the underserved. This will help them in their future careers."



### Sharing the message of human solidarity

Having embarked on four major community projects in China, India and Mexico during her years at the University, Siti Hazirah Bte Mohamad's (*Faculty of Arts and Social Sciences/University Scholars Programme Year 3*) dedication and enthusiasm for reaching out to the less fortunate truly transcends boundaries.

Recently in India on the Temasek Foundation-NUS Leadership Enrichment and Regional Networking programme, Hazirah volunteered with a local NGO Salaam Balaak Trust to work with street children in New Delhi and helped to set up a mini library at the NGO's headquarters. She also worked with Tibetan refugees while travelling in Dharamsala.

After her India stint, Hazirah volunteered with an organisation in Mexico called Feed The Children Vallarta where she taught English to Mexican children. Also participating in the FireFly programme, she distributed bread from a local bakery to dump workers and their families living around the garbage dump areas. "I was truly humbled by this experience and literally had to hold back tears," recalled Hazirah. "I saw how people fed themselves in areas unimaginable to Singaporeans but I was also amazed at their resilient human spirit."

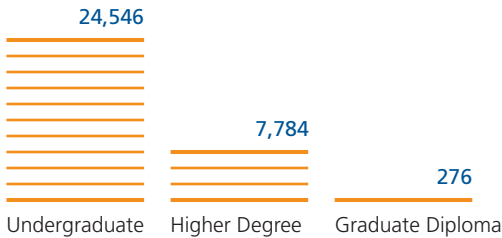
Hazirah's interest in community work was piqued when she first participated in a community service trip to tsunami-hit Thailand during her Junior College days. It was an eye-opening experience which increased her motivation to volunteer further.

Perceiving voluntary work as a lifelong vocation, Hazirah considers her volunteering efforts a small step towards making a difference. "Instead of being an armchair critic on the pitiful state of affairs involving poverty around the world, I decided I could do something about it and so I did and will continue to do so!" she said.

## ACADEMIC YEAR IN REVIEW

### PROFILE OF NUS STUDENTS

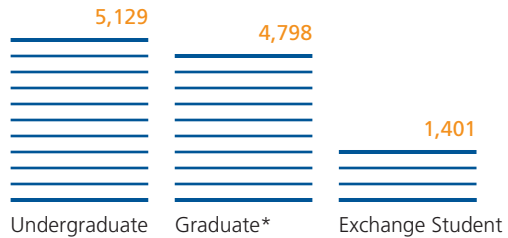
Academic Year 2009/2010 (As at February 2010)



**Total: 32,606**

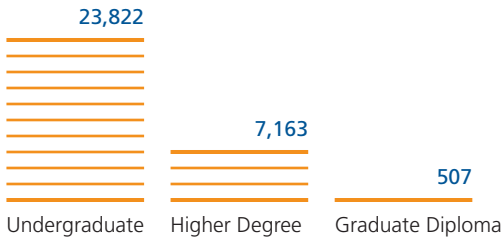
### PROFILE OF NUS INTERNATIONAL STUDENTS

Academic Year 2009/2010 (as at February 2010)



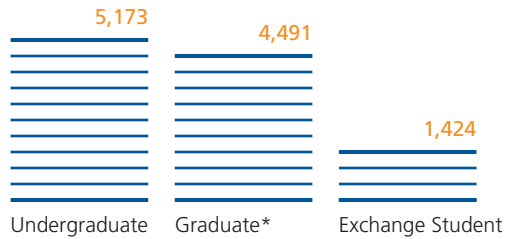
**Total: 11,328**

Academic Year 2008/2009 (as at February 2009)



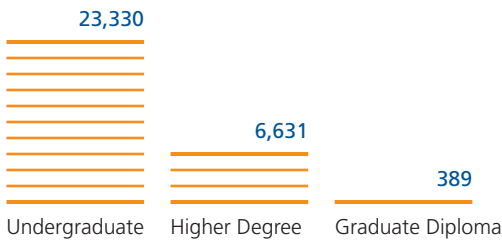
**Total: 31,492**

Academic Year 2008/2009 (as at February 2009)



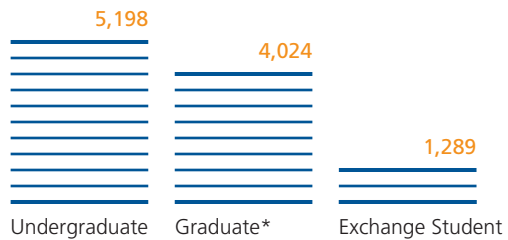
**Total: 11,088**

Academic Year 2007/2008 (as at February 2008)



**Total: 30,350**

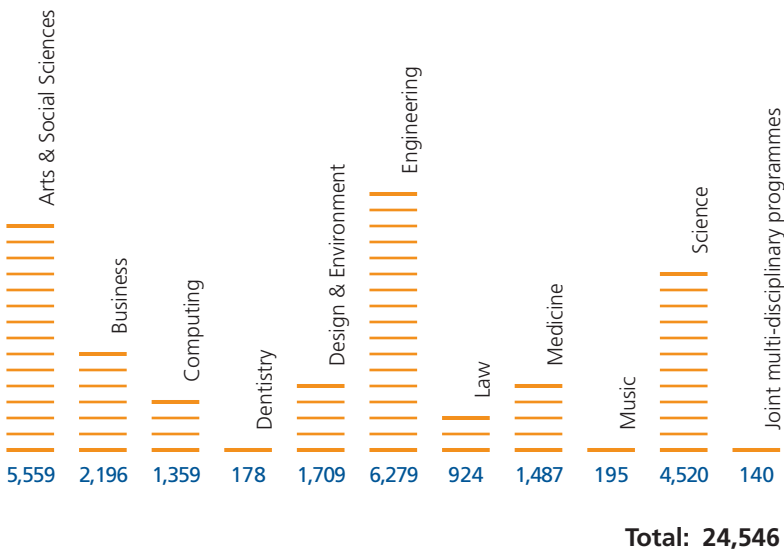
Academic Year 2007/2008 (as at February 2008)



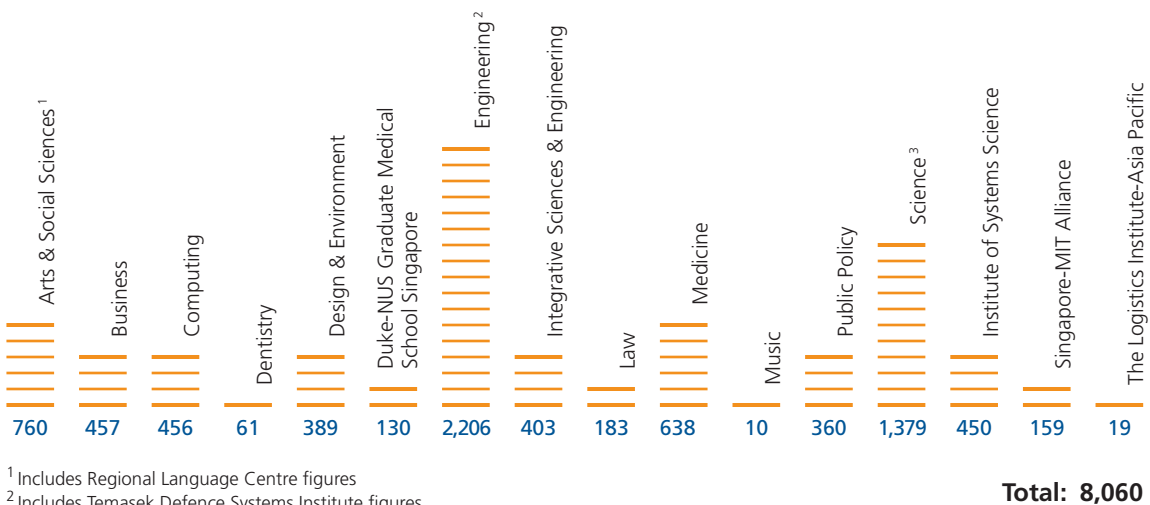
**Total: 10,511**

\*Includes graduate diploma students

### UNDERGRADUATE ENROLMENT 2009/2010 (as at February 2010)



### GRADUATE STUDENT ENROLMENT 2009/2010 (as at February 2010)

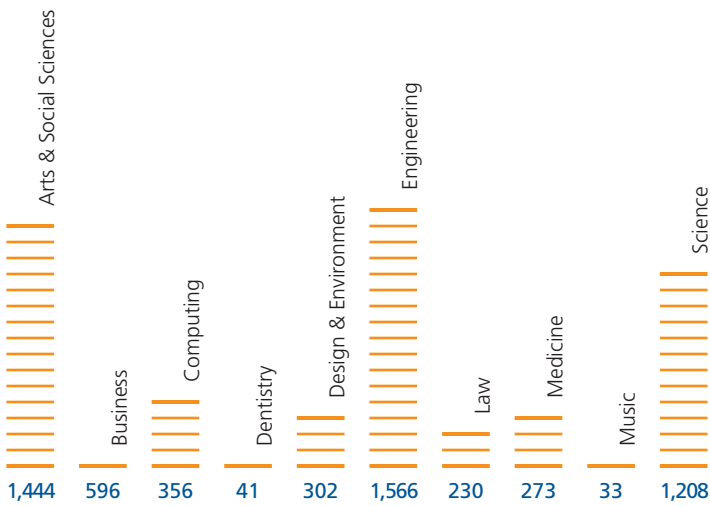


<sup>1</sup> Includes Regional Language Centre figures

<sup>2</sup> Includes Temasek Defence Systems Institute figures

<sup>3</sup> Includes Risk Management Institute figures

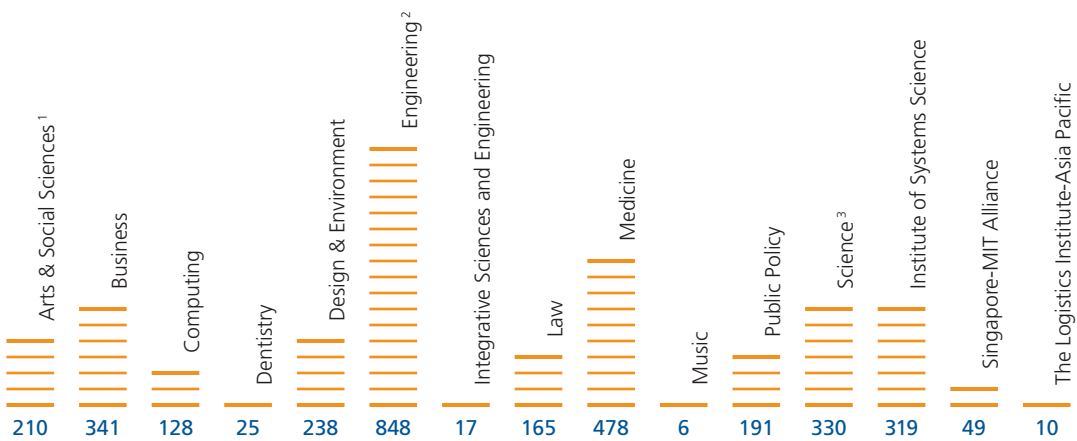
**PROFILE OF CLASS OF 2010 (First Degree Graduates)\***



**Total: 6,049**

\*Figures correct as at 3 August 2010. Double degree graduates are counted towards both their home and second faculties

**PROFILE OF CLASS OF 2010 (Higher Degree & Graduate Diploma Graduates)\***



**Total: 3,355**

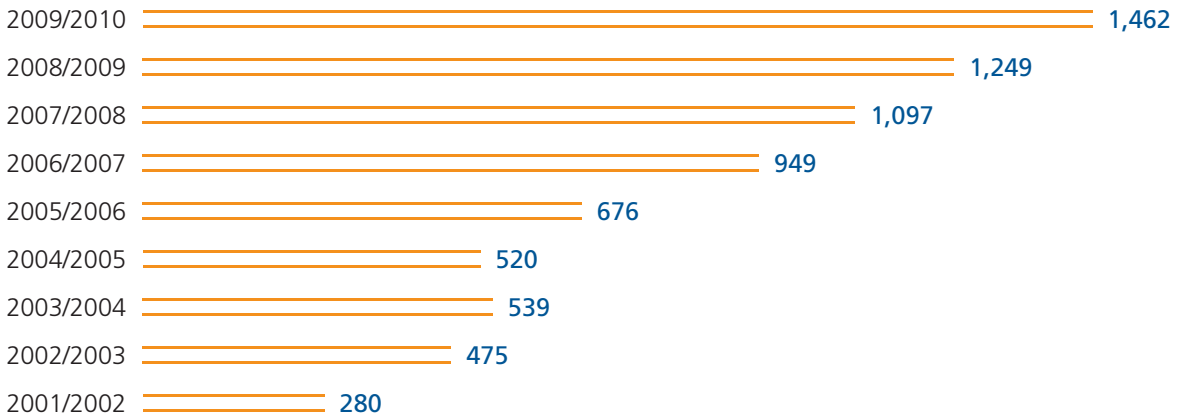
\*Figures correct as at 3 August 2010

<sup>1</sup> Includes Regional Language Centre figures

<sup>2</sup> Includes Temasek Defence Systems Institute figures

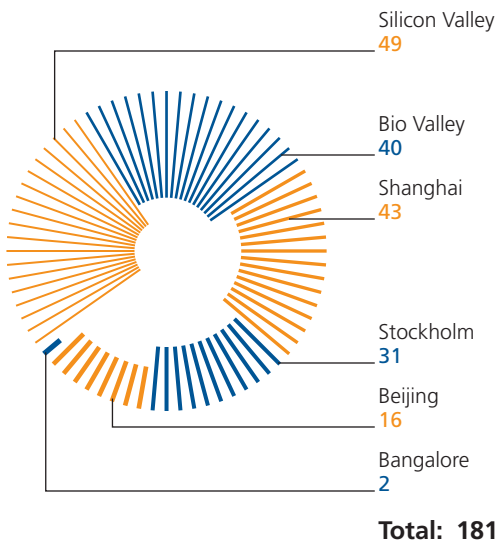
<sup>3</sup> Includes Risk Management Institute figures

### NUS STUDENTS ON STUDENT EXCHANGE\*

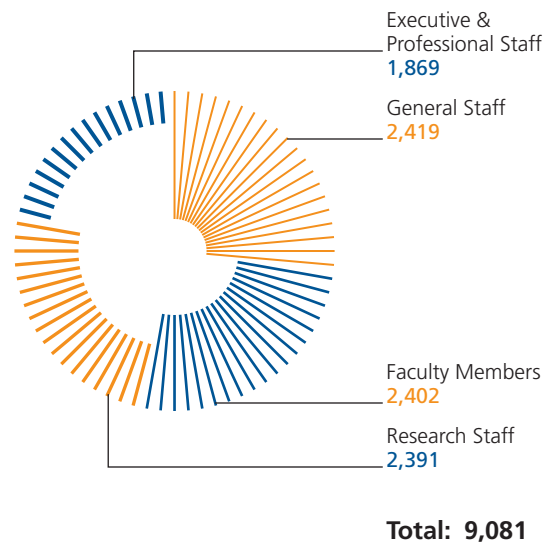


\*Undergraduate students on student exchange with overseas partner universities

### NUS STUDENTS AT NUS OVERSEAS COLLEGES FOR ACADEMIC YEAR 2009/2010 (as at August 2010)



### PROFILE OF NUS FACULTY MEMBERS AND STAFF (as at June 2010)

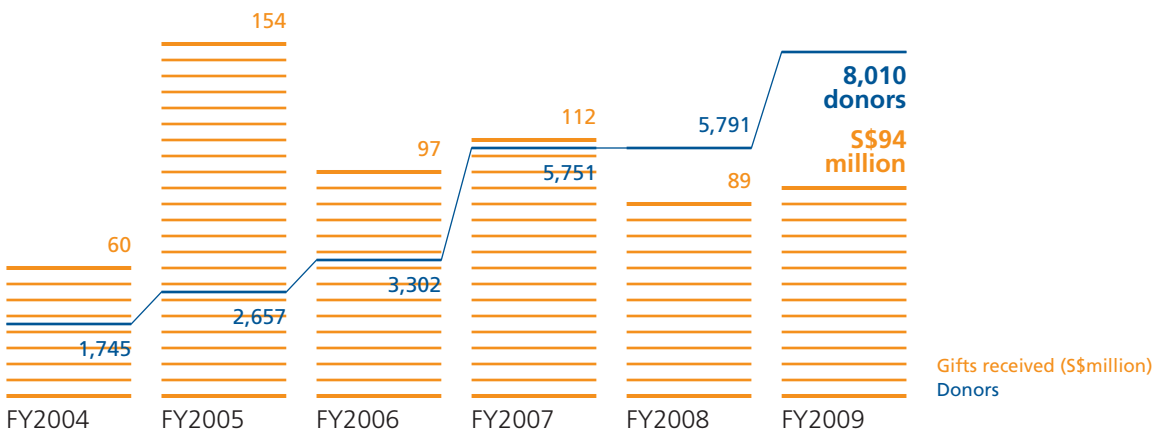


Note: Figures shown are in Full Time Equivalent, unless otherwise stated

## BENEFACTIONS

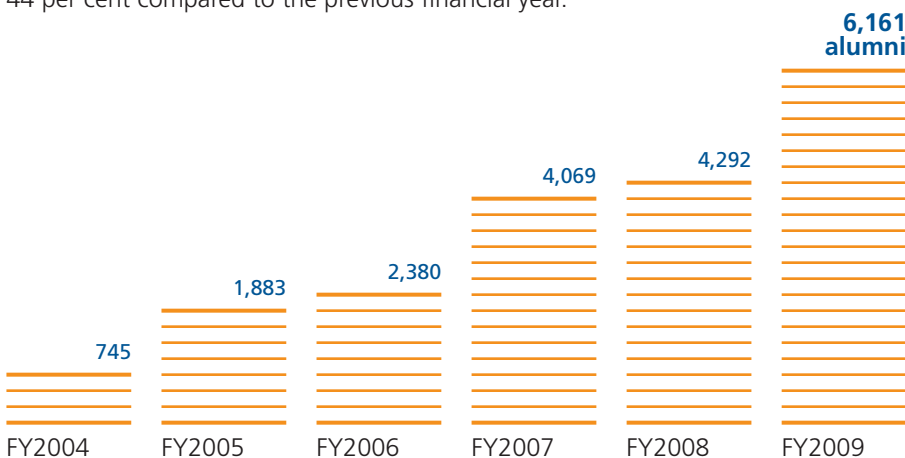
NUS is grateful to our 8,010 donors who gave generously to the University in Financial Year 2009 (1 April 2009 to 31 March 2010). Their gifts amounted to a total of S\$93,592,000.

### DONORS AND GIFTS



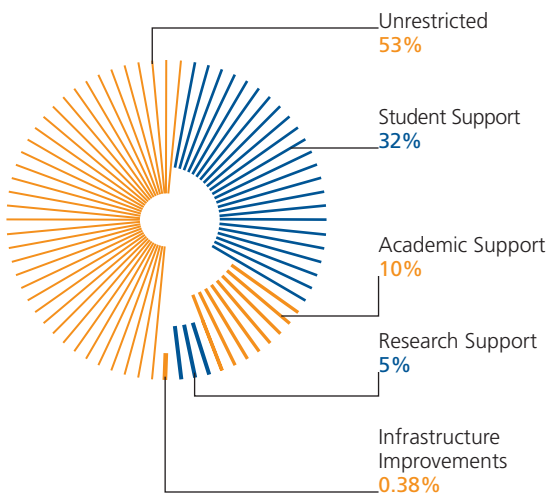
### ALUMNI DONORS

The number of donors who gave a total of S\$10 million increased by 44 per cent compared to the previous financial year.

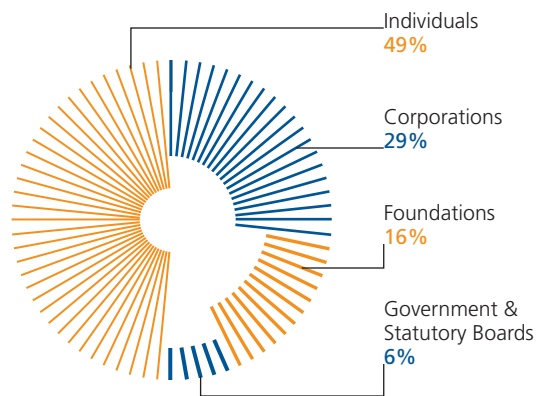




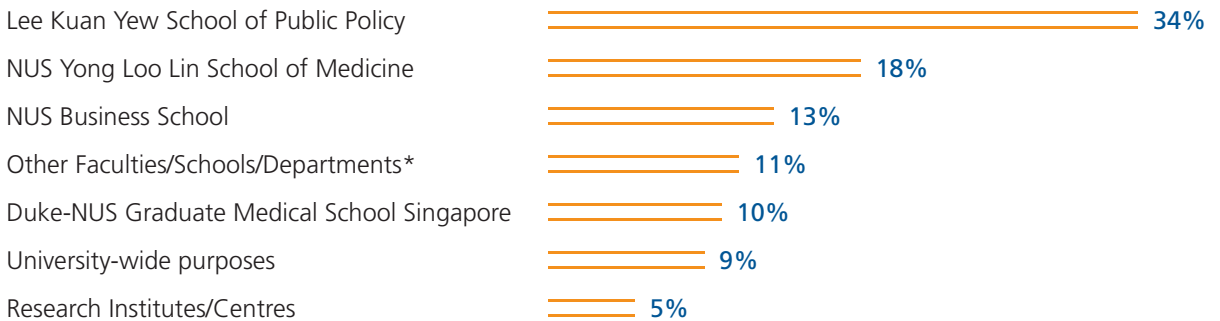
**GIVING BY PURPOSE FY2009** (in millions)



**GIVING BY SOURCE FY2009** (in millions)



**GIVING BY DESIGNATION FY2009** (in millions)



\*Include the Faculty of Arts and Social Sciences, Faculty of Engineering, Faculty of Law, School of Computing, Faculty of Science, Faculty of Dentistry, School of Design and Environment, Yong Siew Toh Conservatory of Music, University Scholars Programme, Halls of Residence and non-Faculty-based departments.

## PERMANENT SOURCE OF SUPPORT

As of 31 March 2010, the University's endowment was valued at S\$2.01 billion, an increase of S\$0.25 billion over the previous year.

### Investing in change and funding our future

All gifts made to the University are investments in NUS' future.

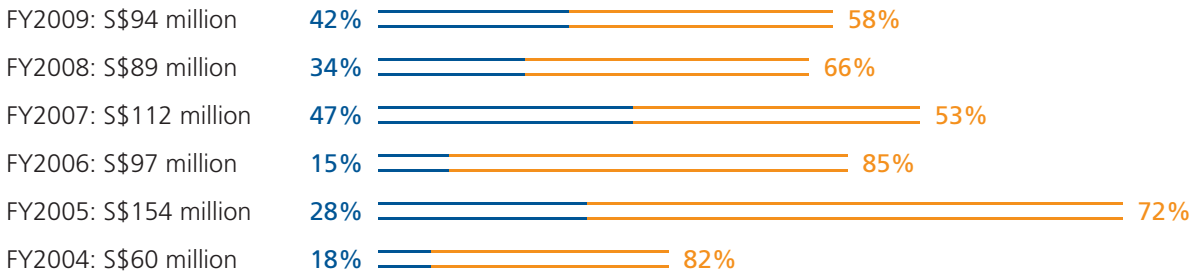
- *Expendable gifts* have an immediate impact. The entire amount will be spent on the intended gift purpose and will eventually be exhausted.
- *Endowed gifts* have a long-term impact on the future of the University. NUS will preserve the principal amount and invest it to earn returns that will support the gift purpose.

All eligible gifts attract a Government matching grant which goes into the NUS Endowment Fund that provides support to the University in perpetuity. The prevailing 1:1 matching grant doubles the impact of any gifts.

### Where endowment dollars go

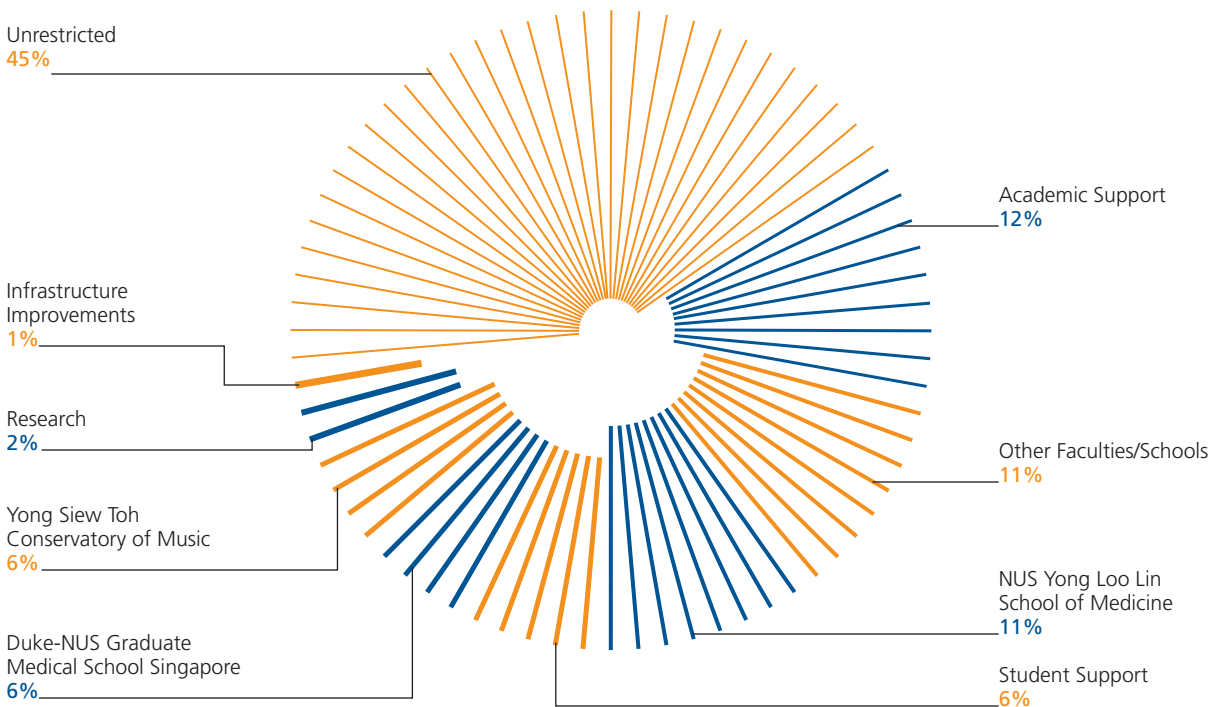
- *Restricted gifts* are made to support a particular purpose e.g. academic and student support, research and infrastructure improvements.
- *Unrestricted gifts* allow the University the greatest flexibility to direct funds to where they are needed most urgently or would create the greatest impact. It also allows the University to take advantage of unexpected opportunities to advance education and research. Most gifts to the University are unrestricted.

### ENDOWED VS. EXPENDABLE GIFTS



Endowed Gift  
Expendable Gift

### RESTRICTED VS. UNRESTRICTED ENDOWMENT FUNDS (as at 31 March 2010)



## CORPORATE GOVERNANCE

### INTRODUCTION

NUS is committed to a high standard of corporate governance and, has always recognised the importance of good governance as being critical to the effective performance and operation of the University. Good governance is also crucial in realising its vision of being a leading global university centred in Asia, influencing the future, excelling in teaching, research, enterprise, thought-leadership and public service. The University has accordingly put in place a corporate governance structure with comprehensive and clear lines of reporting, responsibility and accountability.

### OUR GOVERNANCE EVALUATION CHECKLIST

In addition to the application of good governance practices as a corporate entity, we have as an institution of public character (“IPC”), adopted best practices in key areas of governance that are closely aligned to the principles enunciated in the Code of Governance for Charities and Institutions of a Public Character (the “Code”). In line with the disclosure requirement by the Charity Council that all IPCs are required to disclose the extent of their compliance with the Code, NUS’ Governance Evaluation Checklist can be found at the Charity Portal website [www.charities.gov.sg](http://www.charities.gov.sg).

### OUR BOARD OF TRUSTEES

The NUS Board of Trustees comprises 23 members appointed by the Minister for Education, and is chaired by Mr Wong Ngit Liong. Our Board of Trustees includes eminent business leaders, academics, entrepreneurs, and professionals from the public service and private sectors. Members are appointed on the strength of their calibre, experience, stature and potential to contribute to the proper guidance and development of the University, as well as valuable relationships which they bring that are of strategic importance to

the University. Profiles of the Board members are found on pages 8 to 15 of the Annual Report.

The Board of Trustees is responsible for ensuring that the University acts in the furtherance of its objectives in education and research, and properly accounts and safeguards the funds and assets of the University. The Board of Trustees works closely with the management and stakeholders of the University to shape the vision, chart the major directions, and develop programmes and initiatives to produce a strong and enduring impact for the University, and for Singapore and beyond.

To support the Board of Trustees in discharging its functions, Board committees have been formed as dictated by corporate, operational and business needs pursuant to the Articles of Association of the University. There are eight Board committees, namely, the Executive Committee, Audit Committee, Campus Planning and Development Committee, Entrepreneurship Committee, Investment Committee, Nominating Committee, Remuneration Committee, and Development Committee. These Board committees assist the Board of Trustees to provide oversight of the University and to facilitate decision making. Membership of the Board Committees is carefully selected to ensure an equitable distribution of responsibility among Board members and promote the effectiveness of each committee’s focus and contribution. Where necessary, non-Board members who have expertise in their respective fields are also co-opted to enhance the deliberations and decision making process of some of the Board Committees.

The present composition of the Board Committees is as follows:

#### **Executive Committee**

Wong Ngit Liong (*Chairman*)  
 Prof Tan Chorh Chuan  
 Lucas Chow Wing Keung  
 Goh Yew Lin  
 Chandra Mohan K Nair  
 Olivia Lum Ooi Lin  
 Paul Ma Kah Woh  
 LG (NS) Ng Yat Chung

#### **Remuneration Committee**

Wong Ngit Liong (*Chairman*)  
 Edward D'Silva  
 Han Fook Kwang  
 Chandra Mohan K Nair  
 Prof Olaf Kubler  
 Kay Kuok Oon Kwong  
 Phillip Tan Eng Seong  
 Halimah Yacob

#### **Nominating Committee**

Wong Ngit Liong (*Chairman*)  
 Edward D'Silva  
 Hsieh Fu Hua  
 Chandra Mohan K Nair  
 Dr Edison Liu Tak-Bun  
 Prof Saw Swee Hock  
 Lucien Wong Yuen Kuai

#### **Investment Committee**

Goh Yew Lin (*Chairman*)  
 Prof Tan Chorh Chuan  
 Hiew Yoon Khong  
 Michael Lien Jown Leam  
 LG (NS) Ng Yat Chung  
 Phillip Tan Eng Seong  
 Chan Chia Lin (*Co-opted*)  
 Lee Ming San (*Co-opted*)  
 Dr Ong Hung Guan (*Co-opted*)

#### **Audit Committee**

Paul Ma (*Chairman*)  
 Lucas Chow Wing Keung  
 Han Fook Kwang  
 Phillip Tan Eng Seong  
 Sunny Verghese  
 Lucien Wong Yuen Kuai  
 Yeoh Chee Yan

#### **Entrepreneurship Committee**

Lucas Chow Wing Keung (*Chairman*)  
 Prof Tan Chorh Chuan  
 Hans-Dieter Bott  
 Michael Lien Jown Leam  
 Dr Edison Liu Tak-Bun  
 Sunny Verghese  
 Gay Chee Cheong (*Co-opted*)  
 Kenny Yap (*Co-opted*)

#### **Development Committee**

Wong Ngit Liong (*Chairman*)  
 Prof Tan Chorh Chuan  
 Kay Kuok Oon Kwong  
 Olivia Lum Ooi Lin  
 Prof Saw Swee Hock  
 Phillip Tan Eng Seong

#### **Campus Planning and Development Committee**

LG (NS) Ng Yat Chung (*Chairman*)  
 Prof Tan Chorh Chuan  
 Edward D'Silva  
 Hiew Yoon Khong  
 Kay Kuok Oon Kwong  
 Prof Olaf Kubler  
 Lim Ee Seng (*Co-opted*)  
 Raymond Woo (*Co-opted*)

### OUR SENIOR MANAGEMENT

Management functions and day-to-day operations of the University are led by the Senior Management of the University, headed by the President, Professor Tan Chorh Chuan. The President is the University's Chief Executive Officer. More information on the University's management team can be found at its website [www.nus.edu.sg](http://www.nus.edu.sg).

### OUR POLICIES AND PROCEDURES TO MANAGE CONFLICTS OF INTEREST

Board members and staff are required in their respective capacities to act at all times in the best interest of the University. Policies and procedures are designed to prevent and address potential conflict-of-interest situations while promoting ethical business conduct of officers and staff in line with the strong focus of the University on integrity.

NUS' Articles of Association contain provisions for the management and avoidance of conflicts of interest by members of its Board of Trustees. Such provisions include (a) permitting a Board member to be interested in any transaction with NUS provided that the member has declared the nature of the interest to the Board of Trustees and abstains from participating in the Board's decision in respect of the transaction concerned, (b) permitting a Board member, or a firm associated with the member, to act in any professional capacity for the University and to be remunerated for professional services as if the Board member was not a Trustee, and (c) permitting a Board member to be reimbursed for out-of-pocket expenses, travelling and other expenses properly incurred by the Board member in attending and returning from meetings

of the Board of Trustees, any of its committees, or any general meeting of the University or otherwise in connection with the affairs of the University. NUS Articles' expressly stipulate that Board members shall not receive any remuneration for services rendered by them as members of the Board of Trustees.

In addition, the Board of Trustees has adopted the practice of requiring every Board member to annually review and refresh their independence by disclosing to the Nominating Committee whether there are any factors that will affect the member's independence in the decision making process of the Board.

The University's terms of business and code of conduct for staff include a Conflict of Interest Policy which all staff members must observe and comply with. In accordance with the current Policy, staff must ensure that their private activities and interests do not conflict with their professional obligations to the University. When a staff member is in a situation where there is potential violation of a prohibition, the staff member shall make a full disclosure and may request for an exception. Approval for an exception will be at the discretion of the University. In addition, staff members must certify annually their compliance with the University's prevailing policy on conflict of interest and related policies.

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

# Summary Financial Statements prepared from the Audited Financial Statements

For the financial year ended 31 March 2010

## CONTENTS

- 62** Important Note
- 63** Report of the Trustees
- 65** Independent Auditors' Report
- 68** Statements of Financial Position
- 70** Statements of Comprehensive Income
- 71** Notes to the Summary Financial Statements

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

## Important Note

The Summary Financial Statements as set out on pages 68 to 74 contain only a summary of the information in the full financial statements. The Summary Financial Statements do not contain sufficient information to allow for a full understanding of the results and the state of affairs of the Group and the Company.

For further information, the full financial statements and the Auditors' Report on those statements should be consulted. Readers who require a copy of the full financial statements can contact the Company's Office of Financial Services, University Hall, Tan Chin Tuan Wing #03-02, 21 Lower Kent Ridge Road, Singapore 119077, Tel: 6516 1981. The full financial report can also be viewed at the Company's website: <http://www.nus.edu.sg/annualreport/>.



NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

## Report of the Trustees

The Board of Trustees are pleased to present their report to the members together with the audited consolidated financial statements of the National University of Singapore (“the Company”) and its subsidiaries (collectively, “the Group”) and statement of financial position, statement of comprehensive income, and statement of changes in funds and reserves of the Company as of and for the financial year ended 31 March 2010.

### TRUSTEES

The Trustees of the Company in office at the date of this report are:

Mr Wong Ngit Liong ( <i>Chairman</i> )	Mr Hsieh Fu Hua	Mr Phillip Tan Eng Seong
Professor Tan Chorh Chuan	Professor Olaf Kubler	Mr Lucien Wong Yuen Kuai
Mr Chandra Mohan K Nair	Mdm Kay Kuok Oon Kwong	Ms Yeoh Chee Yan
Mr Lucas Chow Wing Keung	Professor Edison Liu Tak-Bun	Mr Hans-Dieter Bott
Mr Edward Alec D’Silva	Ms Olivia Lum Ooi Lin	Mr Hiew Yoon Khong
Mr Goh Yew Lin	Mr Paul Ma Kah Woh	Mr Michael Lien Jown Leam
Mdm Halimah Bte Yacob	LG (NS) Ng Yat Chung	Mr Sunny Verghese
Mr Han Fook Kwang	Professor Saw Swee Hock	

### ARRANGEMENTS TO ENABLE TRUSTEES TO ACQUIRE SHARES AND DEBENTURES

Neither at the end of nor at any time during the financial year was the Company a party to any arrangement whose objects are, or one of whose object is, to enable the Trustees of the Company to acquire benefits by means of the acquisition of shares or debentures of the Company or any other body corporate.

### TRUSTEES’ INTERESTS IN SHARES OR DEBENTURES

As the Company is a company limited by guarantee and not having a share capital, there are no matters to be disclosed under Section 201(6)(g), Section 201(6A)(h), Section 201(11) and Section 201(12) of the Companies Act, Cap 50.

The Trustees of the Company at the end of the financial year have no interest in the share capital (including any share options) and debentures of the Company’s related corporations as recorded in the register of the directors’ shareholdings kept by the Company’s related corporations under Section 164 of the Singapore Companies Act.

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

# Report of the Trustees

## TRUSTEES CONTRACTUAL BENEFITS

Since the beginning of the financial year, no Trustee has received or become entitled to receive a benefit which is required to be disclosed under Section 201(8) of the Singapore Companies Act, by reason of a contract made by the Company or a related corporation with the Trustee or with a firm of which he/she is a member or with a company in which he/she has a substantial financial interest except for salaries, bonuses and other benefits and transactions with corporations in which certain trustees have an interest as disclosed in the financial statements.

## AUDITORS

The auditors, Deloitte & Touche LLP, have expressed their willingness to accept re-appointment.

On behalf of the Trustees



**Mr Wong Ngit Liong**  
Trustee



**Professor Tan Chorh Chuan**  
Trustee

31 July 2010

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

# Independent Auditors' Report to the Board of Trustees of National University of Singapore

We have examined the Summary Financial Statements which have been prepared by the Trustees set out on pages 68 to 74.

In our opinion, the Summary Financial Statements are consistent, in all material respects, with the full financial statements and the Report of the Trustees of the National University of Singapore (the Company) and its subsidiaries (collectively, "the Group") for the year ended 31 March 2010.

For a better understanding of the state of affairs of the Group and the Company as at 31 March 2010 and the results of the Group for the financial year ended on that date and of the scope of our audit, the Summary Financial Statements should be read in conjunction with the full financial statements and our audit report thereon.

We have issued an unqualified audit report dated 31 July 2010 on the full financial statements of the Group for the financial year ended 31 March 2010 which is as follows:

## **"INDEPENDENT AUDITORS' REPORT TO THE BOARD OF TRUSTEES OF NATIONAL UNIVERSITY OF SINGAPORE**

### **REPORT ON THE FINANCIAL STATEMENTS**

We have audited the accompanying financial statements of the National University of Singapore (the Company) and its subsidiaries (collectively, "the Group") which comprise the statements of financial position of the Group and the Company as at 31 March 2010, the statements of comprehensive income and statements of changes in funds and reserves of the Group and the Company and consolidated statement of cash flows of the Group for the financial year from 1 April 2009 to 31 March 2010, and a summary of significant accounting policies and other explanatory notes, as set out on pages # to #.

### **MANAGEMENT'S RESPONSIBILITY FOR THE FINANCIAL STATEMENTS**

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Singapore Companies Act, Cap. 50 (the "Act") and Singapore Financial Reporting Standards. This responsibility includes: devising and maintaining a system of internal accounting controls sufficient to provide a reasonable assurance that assets are safeguarded against loss from unauthorised use or disposition; and transactions are properly authorised and that they are recorded as necessary to permit the preparation of true and fair profit and loss accounts and balance sheets and to maintain accountability of assets; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

# Independent Auditors' Report to the Board of Trustees of National University of Singapore

## AUDITORS' RESPONSIBILITY

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Singapore Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by Management, as well as evaluating the overall presentation of the financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

## OPINION

In our opinion,

- a. the consolidated financial statements of the Group and the statement of financial position, statement of comprehensive income and statement of changes in funds and reserves of the Company are properly drawn up in accordance with the provisions of the Act and Singapore Financial Reporting Standards so as to give a true and fair view of the state of affairs of the Group and of the Company as at 31 March 2010 and of the results and changes in funds and reserves of the Group and the Company and cash flows of the Group for the financial year from 1 April 2009 to 31 March 2010; and
- b. the accounting and other records required by the Act to be kept by the Company and by those subsidiaries incorporated in Singapore of which we are the auditors have been properly kept in accordance with the provisions of the Act.

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

# Independent Auditors' Report to the Board of Trustees of National University of Singapore

## REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

During the course of our audit, nothing has come to our attention that,

- a. the 30% cap mentioned in Regulation 15(1) of the Charities Act, Cap. 37 (Institutions of a Public Character) (Amendment) Regulations 2008 has been exceeded; and
- b. the use of the donation money are not in accordance with the objectives of the Company.”

The logo for Deloitte & Touche LLP is written in a dark blue, cursive script. The word 'Deloitte' is on the left, followed by an ampersand '&', then 'Touche', and finally 'LLP' on the right.

**Deloitte & Touche LLP**

Public Accountants and Certified Public Accountants

Singapore  
31 July 2010

Note:

# The page numbers are as stated in the Independent Auditors' Report dated 31 July 2010 included in the National University of Singapore's full financial statements.

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

# Statements of Financial Position

As at 31 March 2010

	GROUP		COMPANY	
	2010 S\$'000	2009 S\$'000	2010 S\$'000	2009 S\$'000
<b>ACCUMULATED SURPLUS</b>	2,530,575	1,591,358	2,497,912	1,576,819
<b>ENDOWMENT FUNDS</b>	1,688,844	1,559,182	1,688,500	1,558,901
<b>CAPITAL PRESERVATION ACCOUNT</b>	–	124,275	–	124,275
<b>FAIR VALUE RESERVE</b>	406	(737)	396	(747)
<b>TRANSLATION RESERVE</b>	(19)	(67)	–	–
<b>TOTAL EQUITY</b>	<b>4,219,806</b>	<b>3,274,011</b>	<b>4,186,808</b>	<b>3,259,248</b>
<b>NON-CURRENT ASSETS</b>				
Subsidiary companies	–	–	200	200
Associated companies	12,816	570	500	500
Fixed assets	2,088,413	1,853,099	2,085,525	1,850,494
Intangible assets	19,169	15,176	18,964	15,026
Available-for-sale investments	7,122	4,354	3,997	2,854
Student loans (repayable after 12 months)	252,395	263,848	252,395	263,848
Long-term loan to subsidiary company	–	–	250	250
Amount owing by an investee company (repayable after 12 months)	53,351	–	53,351	–
Prepayments (to be utilised after 12 months)	37,236	–	37,236	–
	<b>2,470,502</b>	<b>2,137,047</b>	<b>2,452,418</b>	<b>2,133,172</b>
<b>CURRENT ASSETS</b>				
Student loans (repayable within 12 months)	62,193	–	62,193	–
Debtors	361,897	550,348	360,478	548,157
Consumable stores	642	550	213	190
Deposits and prepayments (to be utilised within 12 months)	92,272	26,791	91,324	26,746
Amount owing by subsidiary company	–	–	463	171
Held-to-maturity investments	–	500	–	500
Investments at fair value through income or expenditure	2,804,148	2,006,132	2,804,148	2,006,132
Derivative financial instruments	1,238	9,431	1,238	9,431
Fixed deposits	385,055	262,138	385,055	262,138
Cash and bank balances	298,924	212,829	270,946	193,895
Amount owing by an investee company (repayable within 12 months)	–	14,621	–	14,621
	4,006,369	3,083,340	3,976,058	3,061,981
Fixed assets held for sale	–	30,244	–	30,244
Total Current Assets	<b>4,006,369</b>	<b>3,113,584</b>	<b>3,976,058</b>	<b>3,092,225</b>
<b>TOTAL ASSETS</b>	<b>6,476,871</b>	<b>5,250,631</b>	<b>6,428,476</b>	<b>5,225,397</b>

The accompanying notes form an integral part of these financial statements.

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

# Statements of Financial Position

As at 31 March 2010

	GROUP		COMPANY	
	2010 S\$'000	2009 S\$'000	2010 S\$'000	2009 S\$'000
<b>CURRENT LIABILITIES</b>				
Creditors and accrued expenses	274,551	139,392	270,285	135,839
Provisions	53,500	47,081	53,108	46,764
Grants received in advance	121,154	82,769	113,463	77,563
Derivative financial instruments	874	956	874	956
Amount owing to subsidiary company	–	–	–	1,303
Short-term loans	–	207,000	–	207,000
	<b>450,079</b>	<b>477,198</b>	<b>437,730</b>	<b>469,425</b>
<b>NON-CURRENT LIABILITIES</b>				
Deferred capital grants	1,284,711	1,244,317	1,281,663	1,241,619
Advances from Government for student loans	272,275	255,105	272,275	255,105
Fixed rate notes	250,000	–	250,000	–
	<b>1,806,986</b>	<b>1,499,422</b>	<b>1,803,938</b>	<b>1,496,724</b>
<b>TOTAL LIABILITIES</b>	<b>2,257,065</b>	<b>1,976,620</b>	<b>2,241,668</b>	<b>1,966,149</b>
<b>NET ASSETS</b>	<b>4,219,806</b>	<b>3,274,011</b>	<b>4,186,808</b>	<b>3,259,248</b>

*The accompanying notes form an integral part of these financial statements.*

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

# Statements of Comprehensive Income

For the financial year ended 31 March 2010

	GROUP		COMPANY	
	2010 S\$'000	2009 S\$'000	2010 S\$'000	2009 S\$'000
<b>OPERATING INCOME</b>				
Tuition and other fees	275,227	250,947	271,009	247,290
Other income	188,652	175,658	184,910	172,051
	463,879	426,605	455,919	419,341
<b>OPERATING EXPENDITURE</b>				
Expenditure on manpower	804,848	745,631	791,388	732,459
Depreciation and amortisation expenditure	224,662	200,820	223,899	200,037
Other operating expenditure	611,593	603,021	606,808	595,247
	1,641,103	1,549,472	1,622,095	1,527,743
Operating Deficit	(1,177,224)	(1,122,867)	(1,166,176)	(1,108,402)
Net investment income (loss)	365,224	(676,650)	365,136	(676,655)
Gain on disposal of fixed assets held for sale	239,306	–	239,306	–
Share of results (net of tax) of associated companies	12,246	35	–	–
Deficit before Grants	(560,448)	(1,799,482)	(561,734)	(1,785,057)
<b>GRANTS</b>				
Operating Grants:				
Government	1,032,660	900,402	1,016,953	884,575
Agency for Science, Technology & Research	68,426	69,465	68,426	69,465
Others	92,645	62,478	92,527	62,069
Deferred capital grants amortised	182,722	178,359	181,709	177,298
	1,376,453	1,210,704	1,359,615	1,193,407
<b>SURPLUS (DEFICIT) FOR THE YEAR BEFORE TAX</b>	816,005	(588,778)	797,881	(591,650)
Income tax	–	–	–	–
<b>SURPLUS (DEFICIT) FOR THE YEAR</b>	<b>816,005</b>	<b>(588,778)</b>	<b>797,881</b>	<b>(591,650)</b>
<b>OTHER COMPREHENSIVE INCOME:</b>				
Exchange differences on translating foreign operations	48	39	–	–
Change in fair value of available-for-sale investments	1,143	(1,791)	1,143	(1,791)
<b>OTHER COMPREHENSIVE INCOME (LOSS) FOR THE YEAR, NET OF TAX</b>	1,191	(1,752)	1,143	(1,791)
<b>TOTAL COMPREHENSIVE INCOME (LOSS) FOR THE YEAR</b>	<b>817,196</b>	<b>(590,530)</b>	<b>799,024</b>	<b>(593,441)</b>

The accompanying notes form an integral part of these financial statements.



# Notes to the Summary Financial Statements

For the financial year ended 31 March 2010

## 1 GENERAL

The Company (Registration Number 200604346E) is incorporated in Singapore as a company limited by guarantee and its registered office and place of business is 21 Lower Kent Ridge Road Singapore 119077. The financial statements are expressed in Singapore dollars.

The Company is principally engaged in the advancement and dissemination of knowledge, and the promotion of research and scholarship.

The consolidated financial statements of the Group and the statement of financial position, statement of comprehensive income and statement of changes in funds and reserves of the Company as of and for the year ended 31 March 2010 were authorised for issue in accordance with a resolution of the Board of Trustees on 31 July 2010.

## 2 CHANGES IN ACCOUNTING POLICIES

In the current financial year, the Group has adopted all the new and revised FRSs and Interpretations of FRS ("INT FRS") that are relevant to its operations and effective beginning on or after 1 April 2009. The adoption of these new/revised FRSs and INT FRSs does not result in changes to the Group's and Company's accounting policies and has no material effect on the amounts reported for the current or prior years, except as disclosed below.

### FRS 1 – Presentation of Financial Statements (Revised)

FRS 1 (2008) has introduced terminology changes (including revised titles for the financial statements) and changes in the format and content of the financial statements. In addition, the revised Standard requires the presentation of a third statement of financial position at the beginning of the earliest comparative period presented if the entity applies new accounting policies retrospectively or makes retrospective restatements or reclassifies items in the financial statements.

### Amendments to FRS 107 Financial Instruments: Disclosures – Improving Disclosures about Financial Instruments

The amendments to FRS 107 expand the disclosures required in respect of fair value measurements and liquidity risk. The Group has elected not to provide comparative information for these expanded disclosures in the current year in accordance with the transitional reliefs offered in these amendments.

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

# Notes to the Summary Financial Statements

For the financial year ended 31 March 2010

## 2 CHANGES IN ACCOUNTING POLICIES *(cont'd)*

At the date of authorisation of these financial statements, the following FRSs, INT FRSs and amendments to FRSs relevant to the Company were issued but not yet effective:

### FRS 28 – Investments in Associates (Revised)

Improvements to Financial Reporting Standards (issued in June 2009)

Consequential amendments were also made to various standards as a result of these new/revised standards.

Management anticipates that the adoption of the above FRSs, INT FRSs and amendments to FRSs issued but not yet effective at the date of authorisation of these financial statements in future periods will not have a material impact on the financial statements of the Company in the period of their initial adoption except for the following:

### FRS 28 (Revised) – Investments in Associates

In FRS 28 (Revised), the principle adopted under FRS 27 (Revised) that a loss of control is recognised as a disposal and re-acquisition of any retained interest at fair value is extended by consequential amendment to FRS 28 (Revised); therefore, when significant influence is lost, the investor measures any investment retained in the former associate at fair value, with any consequential gain or loss recognised in profit or loss.

FRS 28 (Revised) will be adopted for periods beginning on or after 1 July 2009 and will be applied prospectively in accordance with the relevant transitional provisions and, therefore, no restatements will be required in respect of transactions prior to the date of adoption.

At the date of authorisation of these financial statements, Management expects that the adoption of the other FRSs, INT FRSs and amendments to FRS that were issued but effective in future periods will have no material impact on these financial statements of the Group and the Company in the year of their initial adoption.

# Notes to the Summary Financial Statements

For the financial year ended 31 March 2010

## 3 RELATED PARTY TRANSACTIONS

Parties are considered to be related if one party has the ability to control the other party or exercise significant influence over the other party in making financial and operating decisions.

The Group receives grants from the Ministry of Education (MOE) to fund its operations and is subject to certain controls set by MOE.

Hence, other state-controlled enterprises are considered related parties of the Group. Many of the Group's transactions and arrangements are with related parties and the effect of these on the basis determined between the parties is reflected in these financial statements. For related parties debtors and creditors balances, the terms of these balances are disclosed in the respective notes to the financial statements.

There were transactions with corporations in which certain trustees have the ability to control or exercise significant influence.

Details of significant balances and transactions between the related parties are described below:

	GROUP		COMPANY	
	2010 S\$'000	2009 S\$'000	2010 S\$'000	2009 S\$'000
<b>State-controlled enterprises and companies within the Group</b>				
<b>Balances</b>				
Debtors	278,450	490,496	277,960	487,047
Amount owing by subsidiary company and associated company	–	–	463	171
Long-term loan to subsidiary company	–	–	250	250
Creditors and accrued expenses	19,843	11,172	20,057	11,712
Amount owing to subsidiary company	–	–	–	1,303
Deferred Capital Grants	1,171,874	1,146,204	1,168,827	1,144,947
Grants received in advance	49,767	59,894	43,174	59,894
<b>Transactions</b>				
Endowed donations	10	–	18	–
Non-endowed donations received	5,921	8,762	6,092	8,762
Other income	–	–	2,667	2,711
Other operating expenditure	27,174	40,367	47,873	50,519
Operating/capital grants received	1,626,325	1,176,143	1,606,224	1,155,371

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

# Notes to the Summary Financial Statements

For the financial year ended 31 March 2010

### 3 RELATED PARTY TRANSACTIONS *(cont'd)*

	GROUP		COMPANY	
	2010 S\$'000	2009 S\$'000	2010 S\$'000	2009 S\$'000
<b>Corporations in which trustees have the ability to control or exercise significant influence (including donations received from trustees)</b>				
<b>Balances</b>				
Debtors	87	96	87	96
Creditors and accrued expenses	14	12	14	12
<b>Transactions</b>				
Endowed donations	531	–	531	–
Non-endowed donations	375	864	375	864
Other income	351	250	351	250
Other operating expenditure	818	515	818	515
Operating/capital grants received	–	57	–	57

### 4 KEY MANAGEMENT PERSONNEL COMPENSATION

The compensation for twenty (2009: nineteen) and sixteen (2009: fifteen) key management personnel of the Group and the Company respectively, are as follows:

	GROUP		COMPANY	
	2010 S\$'000	2009 S\$'000	2010 S\$'000	2009 S\$'000
Short-term benefits	8,932	9,013	8,319	8,414
Post-employment benefits	298	286	245	237
	9,230	9,299	8,564	8,651





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