# READY. SET. FORWARD.

NATIONAL UNIVERSITY OF SINGAPORE

**Annual Report** 

2016

# READY FOR THE WORLD.

At NUS, we offer an Asian and global experience that is both transformative and holistic. We help our students venture beyond the scope of conventional thinking and understanding, providing rich opportunities for them to learn, explore and make a difference to society.



### CONTENTS



# **VISION**

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

### **CHAIRMAN'S STATEMENT**







- 1 Inauguration of Yale-NUS College Campus
- **2** Board of Trustees' visit to NUS research centres
- 3 & 4
  Commencement 2016
- **5** Commencement Dinner 2016





On 1 April 2006, the National University of Singapore underwent a momentous change. On that day, the University transitioned from a statutory board to a not-for-profit company limited by guarantee. This change is attributed to the forward looking and bold initiative taken by the Singapore Government to empower the University with a greater sense of ownership and responsibility. A new Board of Trustees was formed to replace the old University Council.

NUS was founded in 1905, with a donation of \$87,000 raised by the local community and with an initial enrolment of 23 students.

Corporatisation marks the dawn of a new era where the University is able to exercise greater autonomy on financial and administrative matters; build on its areas of strength; raise its international profile and standing; and enhance students' learning experience. Corporatisation also inspired a greater sense of responsibility and accountability amongst the University's stakeholders, namely, the Board of Trustees, senior management, faculty, staff, students, benefactors and alumni. Each has a greater role to play in charting the direction of the University and venturing into unchartered waters to break new ground.

2016 marks the 10<sup>th</sup> anniversary of the corporatisation of the University.

In the past decade, corporatisation has provided NUS with autonomy and flexibility in allocating financial and manpower resources to build peaks of excellence in niche and high impact areas. From a predominantly teaching institution, NUS has undergone tremendous transformation to be amongst the top research intensive universities in Asia and globally. Our world renowned researchers have successfully unravelled new knowledge, and achieved significant breakthroughs and discoveries in their respective spheres of expertise.

Beyond producing graduates for the work force, the comprehensive global educational experience and nurturing environment have not only enabled our students to explore and realise their full potential, but also equipped them with the necessary skills to be competitive, enterprising and able to seize opportunities and reinvent strategies to solve complex and interconnected issues in a fast-changing and innovation-driven environment.

Recognising the importance of lifelong education, NUS launched the new School of Continuing and Lifelong Education, a landmark programme to help Singaporeans and NUS graduates who wish to skill and re-skill for future careers. With the addition of the new School, NUS today has 17 Faculties and Schools spanning three campuses, with 38,000 students taught by some of the world's finest professors, in advanced and state-of-the-art facilities.

For the first time, NUS was recognised as the top university in Asia by both the Quacquarelli Symonds University Rankings: Asia 2016 and Times Higher Education Asia University Rankings 2016. These recognitions are strong affirmation of NUS' growing reputation as a premier tertiary institution.

To my fellow members of the Board of Trustees both present and past, it is indeed my privilege to serve alongside with all of you in this journey of transformation and change. This journey is similar to a train ride, at some point in time, old members disembark and new members will board. While on this train, our role goes beyond just providing oversight and guidance; we collectively play a pivotal role to uplift and transform the higher education landscape of Singapore and nurture the future generations of leaders. The many successes and outstanding achievements of the University are also the result of the tireless efforts and dedication of senior management, faculty, staff, students, alumni and benefactors. My heartfelt thanks to all of them.

This year, NUS will benefit greatly from the appointment of three new members, who are outstanding leaders in their fields. I would like to warmly welcome Mr Loh Chin Hua, Dr Leslie Teo and Mr Wong Fong Fui. I am also very grateful to Mr Hans-Dieter Bott, Ms Chan Chia Lin and Mr Han Fook Kwang who have stepped down from the Board, for their immense dedication, leadership and support.

NUS will continue to aspire to attain greater peaks of excellence and become a truly leading global university centred in Asia and influencing the communities in Singapore, the region and beyond.

WONG NGIT LIONG

Chairman, Board of Trustees

### PRESIDENT'S MESSAGE











- **1** Georgetown
  University Fall Faculty
  Convocation 2015
- **2** Launch of Institute of Data Science with Microsoft
- **3** Open Day 2016
- **4** MOU signing of Tahir-NUS-Universitas Gadjah Mada Collaboration in
- **5** The 36<sup>th</sup> Singapore Lecture at NUS

Last year was a good one for NUS. We continued to make strong progress as a leading global university. At the same time, we embarked on focused strategic thrusts that will strengthen the University's position as a key hub of educational innovation, knowledge creation and application, and entrepreneurship.

In our fast-paced and changing world, tremendous opportunities will be thrown up, but there will also be great uncertainties. To be future-ready, NUS, and the students we nurture, must be imaginative, bold, adaptive and innovative, if we are to continue to play an impactful national and global role, and reach new peaks of achievement and excellence.

We have, over the last few years, systematically laid a strong foundation for future-readiness. In education, we now offer one of the most diverse global experiences in the world, with 80% of our undergraduates benefiting from at least one overseas educational experience. We offer a multitude of joint and double-degree programmes with prestigious overseas partner universities. The NUS Overseas Colleges programme offers a unique experiential education in major entrepreneurial hotspots around the world.

We have continued to reshape our undergraduate learning experience, with an increasing emphasis on multidisciplinary and exploration-centred learning approaches. The introduction of our grade-free first semester, and the extension of our residential college learning experiences have been very positively received by our students. To equip our students with foundational life skills, we have introduced a groundbreaking life skills module, called "Roots and Wings", run by our Centre for Future-ready Graduates.

These approaches have enhanced the employability and competitiveness of our graduates. The Global Employability University Ranking 2015 placed NUS 17<sup>th</sup> in the world on graduate employability, up from 39<sup>th</sup> place in 2014.

The launch of the School of Continuing and Lifelong Education (SCALE), in close collaboration with industry partners, will strengthen NUS' position as a provider of quality and highly relevant new degree and certificate programmes for adult learners. SCALE will also contribute significantly to Singapore's lifelong learning and SkillsFuture initiatives.

In research, NUS has further enhanced its broad-based excellence. We have brought together many faculty and research groups across different disciplines to tackle large complex societal challenges. These integrative research groups include Ageing, Asian Studies, Biomedical Science & Translational Medicine, Finance & Risk Management, Integrative Sustainability Solutions, Maritime and Materials Science clusters.

In addition, our new Smart Nation cluster will focus on cybersecurity, and big data aggregation and analysis, and enhance NUS' drive to develop deep capabilities in an era of transformative IT technologies.

In parallel, we have vigorously pursued synergistic partnerships with industry partners. These collaborative efforts include Microsoft with our recently launched Institute of Data Science and Sembcorp Industries in the Sembcorp-NUS Corporate Laboratory. These collaborations will allow our researchers to work closely with practitioners on leading industry challenges, testbed solutions and develop deep pools of talent and expertise to meet future developments.

NUS has continued to perform well in global rankings, and was listed as the top-ranked Asian university, and among the top 30 universities in the world by Times Higher Education World University Rankings. We were also placed top in Asia and 12<sup>th</sup> in the world by Quacquarelli Symonds (QS) University Rankings. The QS World University Rankings by Subject placed NUS among the world's 10 best universities for 13 subjects.

I would like to thank our faculty, students, staff, alumni, benefactors, partners and friends of NUS who have played such pivotal roles in our strong progress.

While we are doing well, we need to remain alert and responsive to the profound forces of change that are dramatically altering the world. This would enable us to further raise our impact and contributions, as a leading global university, centred in Asia, influencing the future.

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PROFESSOR TAN CHORH CHUAN
President

### **BOARD OF TRUSTEES**



Mr WONG Ngit Liong
Chairman
Board of Trustees
Chairman & Chief Executive Officer
Venture Corporation Limited
Appointed on: 28 March 2006

Mr Wong is a member of the Singapore Research, Innovation and Enterprise Council under the Prime Minister's Office. He is currently Chairman and Chief Executive Officer of Venture Corporation Limited, a leading global provider of technology services, products and solutions. He holds a First Class (Honours) degree in Electrical Engineering from the University of Malaya and a Master's 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.



Ambassador CHAN Heng Chee
Ambassador-at-Large
Ministry of Foreign Affairs
Appointed on: 1 April 2012

Ambassador Chan is Chairman of the Lee Kuan Yew Centre for Innovative Cities in the Singapore University of Technology and Design, Chairman of the National Arts Council, Member of the Presidential Council for Minority Rights, Director of the Board of the S Rajaratnam Endowment, Deputy Chairman of the Social Science Research Council and Member of the Constitutional Commission 2016. She was Singapore's Ambassador to the United States, Singapore's Permanent Representative to the United Nations, High Commissioner to Canada and Ambassador to Mexico. She holds a PhD in Political Science from the National University of Singapore. She has received honorary degrees from Britain and Australia.



Dr CHEONG Koon Hean
Chief Executive Officer
Housing & Development Board (HDB)
Deputy Secretary (Special Duties)
Ministry of National Development
Appointed on: 1 April 2013

Dr Cheong is on the boards of the HDB, the International Federation for Housing and Planning and the Civil Service College. She was also formerly Chief Executive Officer of the Urban Redevelopment Authority. She serves on several international expert panels and is a nominating committee member of the Lee Kuan Yew World City Prize. A Colombo Plan scholar, she holds a First Class Honours degree and University Gold Medal in Architecture and a Doctor of Architecture *honoris causa* from the University of Newcastle; as well as a Master's degree in Urban Development Planning from University College London. She is also the Tan Swan Beng Endowed Professor in Nanyang Technological University.



Ms CHONG Siak Ching Chief Executive Officer National Gallery Singapore Appointed on: 1 April 2011

Ms Chong sits on the boards of Singapore Press Holdings and Economic Development Innovations Singapore Pte Ltd. She is Board Member of the National Arts Council and Governing Board Member of Yale-NUS College. She is a Non-Resident Ambassador to the Republic of Chile. Ms Chong holds an honours degree in Estate Management and a Master's degree in Business Administration from the National University of Singapore.



Mr Lucas CHOW Wing Keung
Chairman
Health Promotion Board
Appointed on: 1 April 2006

Mr Chow is Chairman of Singapore Health Promotion Board. He was formerly Group Chief Executive Officer and Managing Director of Far East Orchard Limited and Executive Director of Far East Organization. Mr Chow sits on the Yellow Ribbon Fund Committee. Mr Chow graduated with a Bachelor of Science (Honours) from the University of Aston, United Kingdom.



Mr GOH Choon Phong
Chief Executive Officer
Singapore Airlines
Appointed on: 1 April 2015

Mr Goh is Board Director of SIA Engineering Company. He is also Chairman of Budget Aviation Holdings Pte Ltd which owns and manages Scoot and Tigerair. He is a Member of the Board of Governors of the International Air Transport Association (IATA), on which he is a Member of the Strategy and Policy Committee, Chair Committee and Audit Committee. As IATA's Chairman-elect, Mr Goh is due to assume the role of Board Chairman of the Association at the close of its 2017 Annual General Meeting. Mr Goh holds a Master of Science degree in Electrical Engineering and Computer Science and three Bachelor of Science degrees, in Computer Science & Engineering, Management Science and Cognitive Science, from the Massachusetts Institute of Technology, US.

### **BOARD OF TRUSTEES**



Mr GOH Yew Lin
Managing Director
G.K. Goh Holdings Ltd
Appointed on: 1 April 2008

Mr Goh is Managing Director of Singapore-listed G.K. Goh Holdings Ltd, an investment company with operations in aged care, and in financial and business services. He is Chairman of Seatown Holdings Pte Ltd, Yong Siew Toh Conservatory of Music and Singapore Symphonia Company Limited, and is Deputy Chairman of the National Arts Council. He also serves on the boards of Temasek Holdings (Private) Limited and Trailblazer Foundation Ltd. Mr Goh holds a Bachelor of Science (Economics) degree from the University of Pennsylvania.



President Emeritus ETH Zurich Appointed on: 1 April 2006

Professor Olaf KÜBLER

Professor Kübler is a member of the German Council of Science and Humanities (Wissenschaftsrat). He serves on the Board of the Institute of Science and Technology Austria (IST 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.



Dr Noeleen HEYZER

Social Scientist and
Former United Nations Under-Secretary-General

Appointed on: 1 August 2013

Dr Heyzer was appointed by United Nations Secretary-General Ban Ki-moon as Under-Secretary-General of the United Nations, as well as the first woman Executive Secretary of the Economic and Social Commission for Asia and the Pacific (ESCAP) since its founding in 1947, and also as his Special Adviser for Timor-Leste. She was previously the head of the United Nations Development Fund for Women (UNIFEM). She holds a Bachelor of Arts and a Master of Science from the University of Singapore, as well as a Doctorate in Social Sciences from Cambridge University.



Mdm Kay KUOK Oon Kwong
Executive Chairman
Shangri-La Hotel Limited
Appointed on: 1 April 2008

Mdm Kuok is Managing Director of Shangri-La Hotels (M) Berhad, Chairman of Allgreen Properties Limited, and Director of Kuok (Singapore) Limited. She is Chairman of the Board of National Healthcare Group, Yale-NUS College Governing Board and TTSH Community Fund. She is also Director of the Wildlife Reserves Singapore Conservation Fund and Director of The Courage Fund Ltd. She is a Barrister-at-Law from Gray's Inn London.



Mr Peter HO Hak Ean
Senior Advisor
Centre for Strategic Futures
Senior Fellow
Civil Service College
Appointed on: 1 April 2011

Mr Ho is the Senior Advisor to the Centre for Strategic Futures and a Senior Fellow in the Civil Service College. He is also Chairman of the Urban Redevelopment Authority, the Singapore Centre on Environmental Life Sciences Engineering, and the Social Science Research Council. He was Head of Civil Service, Permanent Secretary (Foreign Affairs), and Permanent Secretary (Defence). He was the founding Chairman of the Maritime and Port Authority of Singapore. Mr Ho holds a Bachelor of Arts (Honours) in the Engineering Tripos and a Master of Arts from the University of Cambridge. He is a Fellow of the Academy of Engineering Singapore.



Mr Michael LIEN Jown Leam
Executive Chairman
Wah Hin and Company
Appointed on: 1 April 2009

Mr Lien is Executive Chairman of Wah Hin and Company. He is a Board Member of Temasek Holdings (Private) Limited. He was Managing Director of Morgan Stanley and headed its Singapore corporate finance business up to 2002. He previously served at Singapore's Ministry of Trade and Industry. Mr Lien is also the founder of Leap Philanthropy. Mr Lien was a Colombo Plan Scholar and holds a Bachelor of Economics (First Class Honours) degree, with majors in Finance and Econometrics from Monash University, Australia.

12 NATIONAL UNIVERSITY OF SINGAPORE

### **BOARD OF TRUSTEES**



Mr Andrew LIM Ming-Hui
Partner
Allen & Gledhill LLP
Appointed on: 1 April 2012

Mr Lim is Co-Head of Corporate Mergers & Acquisitions at Allen & Gledhill. He is currently a Director of Jurong Engineering Limited and Singex Pte Ltd. He also serves on the Board of the Council for Private Education of Singapore and the Community Chest Committee. Mr Lim graduated from the National University of Singapore with a Bachelor of Laws honours degree and a Master of Laws degree. He is a Fellow of Singapore Institute of Directors.



Mr NEO Kian Hong
Permanent Secretary (Education Development)
Ministry of Education

Appointed on: 1 August 2013

Mr Neo is Permanent Secretary (Education Development) in the Ministry of Education. He was formerly Chief of Defence Force in the Singapore Armed Forces. He has served on the boards of Jurong Town Corporation and Singapore Technologies Engineering Ltd. Mr Neo holds a Bachelor of Engineering (Electrical & Electronics) from the University of London, UK, as well as a Master of Science (Management of Technology) from the Massachusetts Institute of Technology, US.



Mr LOH Chin Hua
Chief Executive Officer and Executive Director
Keppel Corporation Limited
Appointed on: 1 April 2016

Mr Loh is Chairman of several companies within the Keppel Group. They include Keppel Offshore & Marine Ltd, Keppel Land Ltd, Keppel Infrastructure Holdings Pte Ltd, Keppel Telecommunications & Transportation Ltd, and Alpha Investment Partners Ltd. He also holds directorship in several Keppel companies, namely, Keppel FELS Ltd and Keppel Shipyard Ltd. A Colombo Plan Scholar with a Bachelor in Property Administration from the Auckland University and a Presidential Key Executive Master of Business Administration from the Pepperdine University, Mr Loh is also a Chartered Financial Analyst.



Mr NG Wai King Managing Partner WongPartnership LLP Appointed on: 1 April 2015

Mr Ng is Managing Partner of WongPartnership, and maintains an active mergers and acquisitions and private equity practice. He graduated from the National University of Singapore with a Bachelor of Laws honours degree where he was awarded the AV Winslow Prize. He subsequently obtained a Master of Laws degree from Columbia University School of Law where he graduated as a Harlan Fiske Stone Scholar.



Mr Chaly MAH Chee Kheong
Former Chief Executive Officer
Deloitte Southeast Asia
Appointed on: 1 April 2015

Mr Mah recently retired as Chief Executive Officer of Deloitte Southeast Asia and Chairman of Deloitte Singapore. He is Chairman of Singapore International Chamber of Commerce and Chairman of the Singapore Accountancy Commission. He also serves on the boards of Economic Development Board and Sentosa Development Corporation. He graduated with a Bachelor of Commerce degree from the University of Melbourne, Australia. He is an associate member of the Institute of Chartered Accountants in Australia, as well as a fellow member of CPA Australia and the Institute of Singapore Chartered Accountants.



Professor TAN Chorh Chuan
President
National University of Singapore
Appointed on: 1 April 2006

Professor Tan is Chairman of National University Health System, Deputy Chairman of Singapore's Agency for Science, Technology and Research, and Director of Monetary Authority of Singapore. He is a member of several international committees, advisory boards and associations, and played leadership roles in a variety of these. He 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.

### **BOARD OF TRUSTEES**



Mr Phillip TAN Eng Seong
Director
EQ Insurance Company Ltd
Appointed on: 1 April 2008

Mr Tan is a Director of EQ Insurance Company Ltd and is currently 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.



**Dr Leslie TEO Eng Sipp**Chief Economist and Director, Economics & Investment Strategy GIC Private Limited

Appointed on: 1 April 2016

Dr Teo was Deputy Division Chief in the Asia Pacific Department at the International Monetary Fund and Head of the Financial Surveillance Division at the Monetary Authority of Singapore. Dr Teo is a Council Member of the Economic Society of Singapore and a Board Member of the Pacific Pension and Investment Institute. Dr Teo holds a Bachelor of Arts from the University of Chicago, US and PhD in Economics from the University of Rochester, US. He is a certified Financial Risk Manager and CFA Charterholder.



Mr Abdullah TARMUGI

Member of the Presidential Council for Minority Rights and Former Speaker of Parliament

Appointed on: 1 April 2012

Mr Tarmugi is a member of the Presidential Council for Minority Rights, former Speaker of Parliament, Singapore, and former Minister of Community Development and Sports. He is also an Independent Director for the Islamic Bank of Singapore, GuocoLand Ltd, Goodhope Asia Holdings Ltd and Pacific Insurance Bhd. He holds an Honours degree in Social Science from the University of Singapore and a postgraduate Diploma (Merit) in Urban Studies from the University of London under the Commonwealth Scholarship.



Mr WONG Fong Fui
Chairman & Group Chief Executive Officer
Boustead Singapore Limited
Appointed on: 1 April 2016

Mr Wong is Chairman and Group Chief Executive Officer of Boustead Singapore Limited. He was formerly Group Chief Executive Officer of QAF Limited and EasyCall International Limited. He was a Member of the Economic Strategies Committee (ESC) and a Co-Chairman for the ESC Land Sub-Committee. Mr Wong graduated as a chemical engineer from the University of New South Wales (UNSW) and was awarded an Honorary Degree of Doctor of Business by UNSW.



Dr TEH Kok Peng
Chairman
Azalea Asset Management Pte Ltd
Appointed on: 1 April 2011

Dr Teh is Chairman of Azalea Asset Management Pte Ltd. He is a Board Member of Overseas Chinese Banking Corporation, Sembcorp Industries Ltd and Taikang Life Insurance Ltd. He is also a Senior Adviser of China International Capital Corporation, a member of the Trilateral Commission and Founding Director on the Board of the S Rajaratnam Endowment CLG Limited. Dr Teh obtained First Class Honours in Economics at La Trobe University, Melbourne, and his doctorate in Economics at Nuffield College, Oxford University.



Ms Elaine YEW Wen Suen

Member of Global Executive Committee
Egon Zehnder

Appointed on: 1 April 2014

Ms Yew is a member of Egon Zehnder's eight-person Global Executive Committee. Before joining the firm 16 years ago, Ms Yew was Executive Director with Goldman Sachs, London. She chairs the NUS Centre for Future-ready Graduates, Industry Advisory Board. She also serves on the Board of Governors of the Convent of the Holy Infant Jesus group of schools in Singapore. She has a Bachelor of Arts Honours degree in English and Drama from the University of Kent and Master's degree in Business Administration from INSEAD, France.

# **SENIOR MANAGEMENT**



**Professor TAN Chorh Chuan President** 



Professor TAN Eng Chye
Deputy President
(Academic Affairs) and Provost



Professor HO Teck Hua

Deputy President
(Research & Technology) and
Tan Chin Tuan Centennial Professor



Mr Don YEO Yong Kiang Deputy President (Administration)



**Dr Lily CHAN**Chief Executive Officer
NUS Enterprise



Professor John Eu-Li WONG
Senior Vice President
(Health Affairs) and Isabel Chan
Professor in Medical Sciences



Professor YONG Kwet Yew Vice President (Campus Infrastructure)



Ms Aileen TAN
Vice President
(Human Resources)



Ms Jenny LEE
Vice President
(Endowment and Institutional
Development)



Professor Andrew WEE
Vice President
(University and Global Relations)



Professor Philip Li-Fan LIU Vice President (Research & Technology)



Professor Bernard C Y TAN Vice Provost (Undergraduate Education & Student Life)



Professor CHAN Eng Soon Vice Provost (Special Duties) and Keppel Chair Professor



Professor PHOON Kok Kwang Vice Provost (Academic Personnel)

## **CALENDAR OF EVENTS**

1 AUG 2015 - 31 JUL 2016

### **AUG 2015**

A total of \$451,120 was raised for 19 charity programmes at Rag and Flag 2015, the signature event of NUS Students' Union. Rag Day, which was held at The Float@ Marina Bay as part of Singapore's Golden Jubilee Weekend and National Day Parade celebrations, was attended by Guest-of-Honour Dr Vivian Balakrishnan, Singapore's then Minister for Environment and Water Resources.

The Kent Ridge Ministerial Forum 2015, themed "The Years Ahead: National Decisions, Global Impact", saw Dr Ng Eng Hen, Minister for Defence, urging the audience to build a Singapore that would continue to remain special for the next 50 years.

### SEP 2015

Minister for Health Gan Kim Yong officiated at the groundbreaking ceremony of the National University Centre for Oral Health. Slated to open in 2019, the centre will support an increased intake of dentistry undergraduates, champion research collaborations between oral healthcare professionals and healthcare colleagues from other fields, and offer subsidised specialised dental care.

### **OCT 2015**

More than 30 university presidents from prestigious educational institutions around the world attended the Symposium on International Liberal Education hosted by Yale-NUS College. The Symposium, which discussed trends and challenges in higher education as well as the future of liberal education, also served as a platform to strengthen ties between institutions.

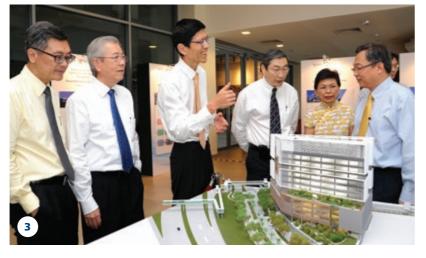
Yale-NUS College inaugurated its new campus in a celebration graced by Singapore Prime Minister Lee Hsien Loong. Acting Minister for Education (Higher Education and Skills) Ong Ye Kung also attended the event together with leaders from local and overseas educational institutions.

NUS Engineering celebrated its 60<sup>th</sup> anniversary with a gala dinner at the Shangri-La Hotel, together with Guest-of-Honour Dr Yaacob Ibrahim, Minister for Communications and Information and some 600 guests.

Singapore Deputy Prime Minister Tharman Shanmugaratnam spoke at NUS Business School's Leadership Forum and Gala Dinner, which marked the School's 50<sup>th</sup> anniversary. He highlighted that creativity and innovation would enable Singapore to survive in a rapidly changing world. Also in attendance was Mr S Dhanabalan, Chairman of the School's Advisory Board.















### **CALENDAR OF EVENTS**

### **NOV 2015**

Mr Xi Jinping, President of the People's Republic of China, delivered the 36<sup>th</sup> Singapore Lecture titled "Forging A Strong Partnership to Enhance Prosperity of Asia" at NUS as part of his official visit to Singapore. In his opening address, he credited the University with producing talented individuals and outstanding public leaders.

9 Minister for Finance Heng Swee Keat was the Guest-of-Honour at the launch of the Clinical Imaging Research Centre at NUS. The centre is the first in Southeast Asia — and one of the few worldwide — to use an innovative advanced medical imaging technology to study disease pathways. The President of Iceland, Dr Ólafur Ragnar Grímsson visited NUS during his three-day state visit to Singapore, the first by an Icelandic President. Dr Grímsson gave a public lecture titled "Clean Energy, Climate and the Arctic" as part of the Yale-NUS College President's Speaker Series.

To mark the end of the University's year-long 110<sup>th</sup> anniversary celebrations, the Yong Siew Toh Conservatory Orchestra gave a rousing performance at Singapore Botanic Gardens, which was attended by some 2,500 people.

### **MAR 2016**

The nearly complete skeleton of the sperm whale recovered in Singapore waters was officially unveiled at the Lee Kong Chian Natural History Museum by Ms Ho Ching, CEO of Temasek Holdings. Other guests included Dr Vivian Balakrishnan, Minister for Foreign Affairs and Mr S Dhanabalan, Chairman of Temasek Trust and Mandai Safari Park Holdings.

Commemorating the first anniversary of Singapore's Founding Prime Minister Lee Kuan Yew's passing, NUS organised a forum at the Lee Kuan Yew School of Public Policy titled "The Enduring Ideas of Lee Kuan Yew" which saw panellists speaking on various aspects of Mr Lee's legacy, including multiracialism, leadership renewal and his global influence.













### **CALENDAR OF EVENTS**

### **APR 2016**

NUS President Professor Tan Chorh Chuan was conferred the 2015 CASE Asia-Pacific Leadership Award by the Council for Advancement and Support of Education for his creative and visionary leadership.

The Sembcorp-NUS Corporate Laboratory, a partnership between Sembcorp Industries and NUS, with the support of the National Research Foundation (NRF), was launched by Mr Teo Chee Hean, Singapore Deputy Prime Minister and NRF Chairman.

### **MAY 2016**

An agreement between NUS and Indonesia's Universitas Gadjah Mada (UGM) to collaborate on medical education and research was inked by NUS President Professor Tan Chorh Chuan, UGM Rector Professor Ir Dwikorita Karnawati and Dato' Sri Professor Dr Tahir, with former Indonesian President Professor Dr Susilo Bambang Yudhoyono in attendance.

The Institute of Data Science, launched by NUS Chairman Mr Wong Ngit Liong, NUS Deputy President (Research & Technology) and Tan Chin Tuan Centennial Professor Ho Teck Hua and Microsoft CEO Mr Satya Nadella, will cultivate deep and strategic capabilities in data science; analytics and optimisation; as well as cybersecurity.









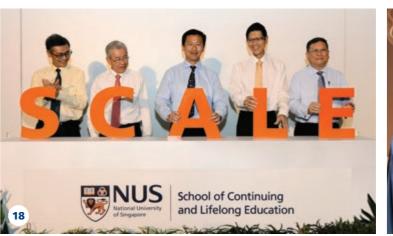
### **JUN 2016**

The University's new School of Continuing and Lifelong Education, which promotes and expands lifelong learning opportunities for working adults, was launched by Acting Minister for Education (Higher Education and Skills) Ong Ye Kung.

### **JUL 2016**

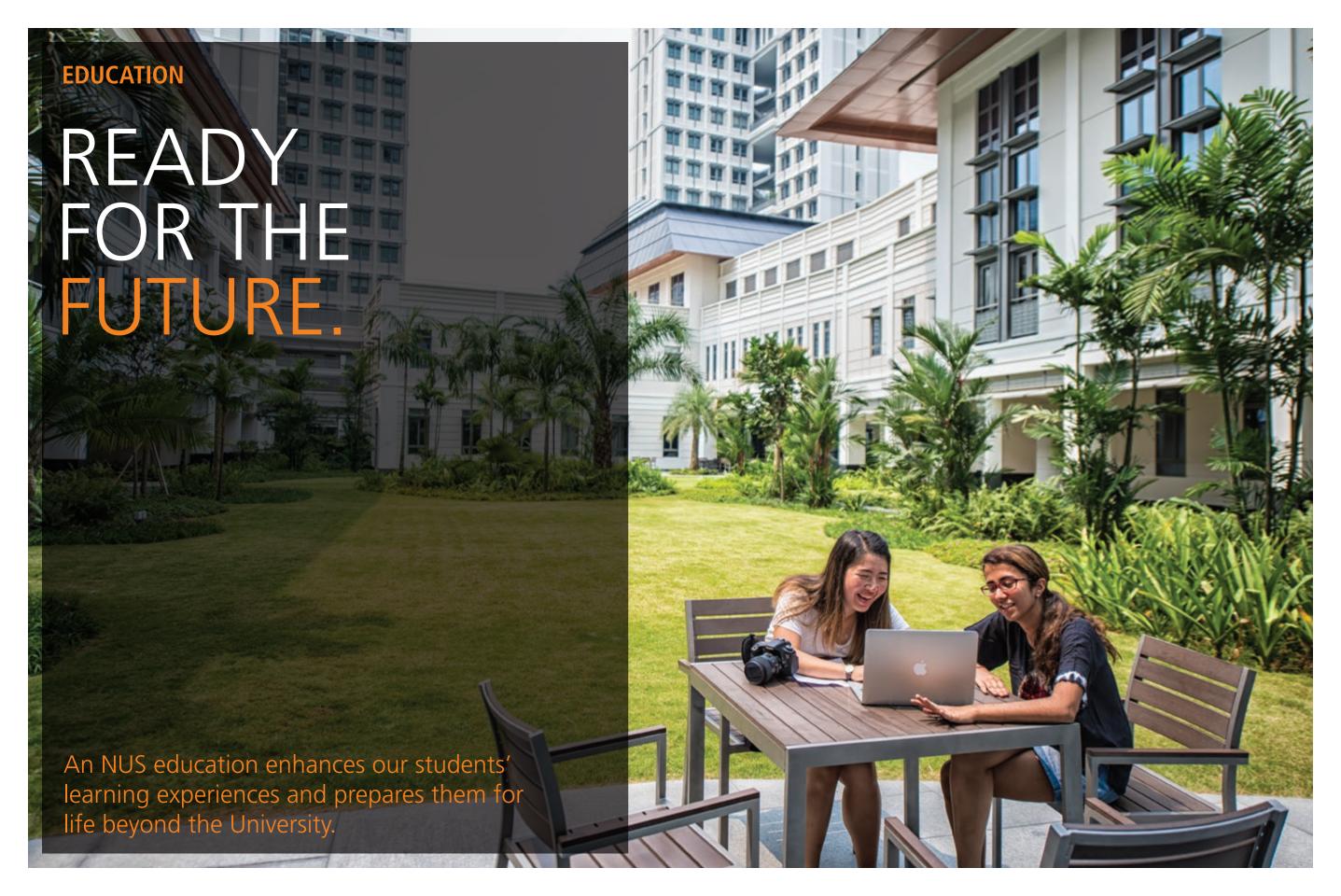
Speaker of the Singapore Parliament Madam Halimah Yacob was conferred the Honorary Doctor of Laws for her outstanding contributions to Singapore and the community at the NUS Main Commencement Ceremony 2016.

The Institute of South Asian Studies at NUS organised the South Asian Diaspora Convention 2016, which was attended by more than 1,000 delegates. Singapore Prime Minister Lee Hsien Loong participated in a dialogue during the Gala Dinner while Guest-of-Honour Mr Ranil Wickremesinghe, Prime Minister of Sri Lanka, gave the keynote address at the opening of the convention.











At NUS, we equip our students with a comprehensive, future-ready suite of personal and interpersonal skills that will enable them to leverage opportunities ahead with acuity and dexterity.

### **TOPPING THE CLASS**

In Academic Year (AY) 2015/16, NUS emerged tops among Asian universities in two rankings. The **Times Higher Education** rankings pegged us at number one in the Asia University Rankings 2016 for the first time since the category was introduced in 2013. NUS was also named the best university in the **Quacquarelli Symonds (QS) University Rankings: Asia 2016** for the third year running.

NUS remained tops for employer reputation, second for academic reputation and third for citations per paper, which gauges research impact. The University also received perfect scores in four of QS' 10 metrics — academic reputation, employer reputation, citations per paper and international faculty.

QS World University Rankings by Subject 2016 placed NUS among the world's 10 best universities for 13 subjects versus 11 the previous year. The subject areas covered a wide spectrum from engineering, technology and natural sciences to arts and humanities, social sciences and management. The University was also Asia's best across 24 subjects, up from 21 subjects last year. We were among the world's top five universities in Civil & Structural Engineering (3<sup>rd</sup>) and Chemical Engineering (5<sup>th</sup>).

In the **2015/2016 QS World University Rankings**, NUS was 12<sup>th</sup>, up 10 rungs from the previous year. The University was also placed among the world's top 10 universities for engineering and technology, social sciences and management, and natural sciences, and top 20 for arts and humanities, and life sciences and medicine.

In terms of graduate employability, NUS jumped 22 spots to 17<sup>th</sup> in the **Global Employability University Ranking 2015**. We were also the only Singapore university to be among the world's top 20. The ranking is based on a survey with responses from over 2,200 recruiters from 21 countries.

According to the **ShanghaiRanking's Global Ranking of Academic Subjects 2016** published in June, the Faculty of Engineering was one of the world's top 20 universities for five of seven engineering subjects. It was also in the top five for energy science and engineering, and chemical engineering.

The **Financial Times 2016** global ranking of customised executive education programmes placed NUS Business School in 12<sup>th</sup> spot — up four notches from last year. NUS is the only Southeast Asian university listed in the rankings.

The Logistics Institute - Asia Pacific, a collaboration between NUS and the Georgia Institute of Technology for research and education programmes in global logistics, was presented with the Best Educational Course Provider award for the 12<sup>th</sup> time at the **2016 Asian Freight, Logistics and Supply Chain Awards** in June. The awards are based on a poll using criteria such as curriculum that closely matches real-world requirements of private sector; private sector involvement in programmes; and employment rate of graduates.

# ADDRESSING NEED FOR NEW KNOWLEDGE AND SKILLS

The University continues to roll out fresh initiatives not just to enable a positive learning experience, but to ensure our students are well-equipped to meet the challenges of an ever-changing job landscape.

- Our new General Education curriculum was implemented for more than 6,000 undergraduates from the faculties of Arts and Social Sciences (FASS), Engineering, and Science, and schools of Business, Computing, and Design and Environment in AY2015/16. General Education connects disciplinary knowledge and perspectives with the skills needed for lifelong learning after graduation.
- The grade-free system for first-year undergraduates on the modular system, implemented in AY2014/15, has enabled them to transition more smoothly into university life. It supports a learning environment that encourages academic exploration, such as reading modules beyond one's discipline of study. From AY2016/17, the scheme will be enhanced to provide greater flexibility in the first-year grade-free experience.
- Roots and Wings, a foundational life skills programme, kicked off in January 2016 to equip first-year undergraduates with personal and interpersonal skills. Run by the Centre for Future-ready Graduates, it prepares NUS students for an increasingly complex world. More than 2,100 freshmen have undergone the mandatory Roots and Wings 1.0. The more in-depth Version 2.0 has also been introduced as a credit-bearing module.
- Another self-development initiative, Future-ready Leaders Programme, focuses on helping student leaders understand how to unlock their fullest potential and build self-leadership through camps and integration sessions. Student leaders applied what they have learnt by volunteering to plan and facilitate NUS projects. The pilot programme was rolled out in December 2015 and received positive feedback from participants.

- The Faculty of Law (NUS Law) has revised its **Class of Honours policy** to reflect the rising quality of students, bringing its Honours awards closer to comparable universities in the UK and Australia. Starting with the 2016 graduating cohort, NUS Law has doubled the number of students eligible for First Class Honours degree from the current top five per cent to the top 10 per cent. More students are now awarded Second Class (Upper Division) Honours degree, covering the top 65 to 68 per cent from 50 per cent previously.
- A new \$12 million School of Continuing and Lifelong Education (SCALE) was launched in June 2016 to promote and expand lifelong learning opportunities for working adults. SCALE will work closely with government agencies, companies and industry to design and offer professional courses for employees. This will help Singapore companies and industries to stay competitive with industry-relevant professional development while supporting national manpower needs.
- A Minor in Film Production was introduced in Semester 2, AY2015/16 at FASS, where students take modules in NUS as well as New York University's Tisch School of the Arts, one of the world's leading institutions in cinema studies.
- In the pipeline is an undergraduate Major in Data Science and Analytics, the first of its kind to be offered by a university in Singapore. The course, which debuts in AY2016/17, will produce much needed data science experts involved in the areas of data collection, processing and analyses. The four-year direct Honours programme, offered by the Faculty of Science and in collaboration with the School of Computing, will have an initial intake of about 60 students.

### **EDUCATION**

# STRENGTHENING OUR CULTURE OF COLLABORATION

In the year of review, NUS forged new education and research alliances and enhanced existing partnerships on both the regional and global levels.

- In October 2015, NUS, University of California, Berkeley and University of Cambridge announced that they would work towards a new global alliance to collaborate on research and graduate-level programmes. This would provide an avenue for scholars and students at partner institutions to address the world's most pressing problems through collaborative research and educational programmes.
- NUS and **Tsinghua University** signed a Memorandum of Understanding in December 2015 to further build on our strong existing ties. The partnership, funded through an \$11 million donation from the family of the late Mr Ng Teng Fong, will conduct joint research and development in areas such as data science and analytics. Student exchanges, and entrepreneurship education and research for both undergraduate and postgraduate students, are also in the pipeline.
- NUS and Indonesia's **Universitas Gadjah Mada (UGM)** began a new era of partnership in medical education and research aided by a \$1 million gift from Indonesian philanthropist Dato' Sri Professor Dr Tahir. The Tahir-NUS-UGM Collaboration in Medicine signed in May 2016 paves the way for Yong Loo Lin School of Medicine and UGM to work together on medical education, including student electives and developing a global medicine curriculum. The two schools will also build clinical and governance capacity through training workshops and attachments in medical specialties.
- In June 2016, NUS and **Duke University** signed the Phase III agreement, affirming the Duke-NUS Medical School (Duke-NUS) collaboration. This will further enable Duke-NUS to reinforce its strengths as a leader in innovative medical education and research. Duke-NUS will also continue to partner SingHealth to develop the SingHealth Duke-NUS Academic Medical Centre as a world-class centre for quality clinical delivery, education and translational research.

### **GATEWAY TO THE WORLD**

Gaining global experience remains high on the list for many NUS students. To help fuel their interest in diverse overseas experiences, we forge new collaborations to broaden our already extensive menu of student exchange, internship and summer programmes, as well as study trips across the globe.

 In the period of review, the University set up two new NUS Overseas Colleges (NOCs) — in partnership with the École Polytechnique Fédérale de Lausanne (EPFL) in Switzerland and the Technische Universität München (TUM) in Munich, Germany. This brings the number of NOCs to nine. The other NOCs are in Beijing, New York, Shanghai, Silicon Valley, Singapore, Stockholm and Tel Aviv.

The inaugural batch of students will embark on the new NOC programmes next year. Comprising undergraduates and graduate students, they will spend six months interning at design-centric and engineering firms in Switzerland, while taking entrepreneurship-related courses at EPFL. TUM's unique engineering-based innovation culture will offer students the opportunity to gain practical engineering knowledge and work in deep-technology start-ups.

Both EPFL and TUM will also send their students on exchange programmes to NUS, a feature unique to these two NOCs.

The flagship Student Exchange Programme (SEP)
remains the largest and most popular overseas
programme. In AY2015/16, NUS had 316 SEP partner
universities spanning 43 countries. Some 1,861 NUS
students went on student exchange. Reciprocally, we
hosted 1,934 international students.

 The thematic Study Trip for Engagement and EnRichment (STEER) Programme, designed to familiarise undergraduates with regions undergoing societal and developmental changes, has expanded to new locales. In South Sulawesi, Lombok and Flores in Indonesia, students gained a better understanding of the impact of industrialisation on rural communities and conservation. In Oman, educational visits and networking sessions were organised at the Oman Chamber of Commerce and Industry, Bank Nizwa and the Muscat Securities Market.

During the academic year, 244 students participated in 11 STEER programmes in Asia, Europe and Latin America.

 In AY 2015/16, some 1,739 students took part in 163 international summer programmes, internships, research attachments and network programmes in 44 countries. The number of participants increased by 36 per cent over the previous year.

To increase our geographical and subject offerings for summer programmes, we have established new partnerships with world-class institutions such as University of Edinburgh, Corvinus University of Budapest, University of British Columbia, The Hebrew University of Jerusalem and Shanghai Jiao Tong University.

Our students now have the option of taking on international internships to gain useful work experience and international exposure. New international internship partners include Certis CISCO (Qatar), Delta Capital (Cambodia), National Chamber of Entrepreneurs of the Republic of Kazakhstan (Kazakhstan), Shangri-La International Hotel Management (Hong Kong), Sumitomo Corporation (Japan), Vistara (India) and Wilmar International (Ghana and Uganda). Our partnerships with World Vision and Conservation International have also expanded to Indonesia and Cambodia respectively.

# NEW DEGREE PROGRAMMES AT NUS IN AY2015/16

# Concurrent Degree Programmes with overseas universities

- Bachelor of Arts (Honours), NUS and Master in Public Health, Yale School of Public Health
- Bachelor of Science (Honours), NUS and Master in Public Health, Yale School of Public Health

# Joint Degree Programme with local universities

• Doctor of Philosophy, NUS-SUTD Joint Degree Programme

### **Bachelor's Degree Programme**

• Bachelor of Computing in Information Security (Honours) (School of Computing)

### **Master's Degree Programme**

 Master of Technology in IT Leadership (Institute of Systems Science and School of Computing)

### **Concurrent Degree Programmes**

- Bachelor of Arts (Honours) and Master in Public Policy (Yale-NUS College/Lee Kuan Yew School of Public Policy)
- Bachelor of Science (Honours) and Master in Public Policy (Yale-NUS College/Lee Kuan Yew School of Public Policy)
- Selected Bachelor degrees and Master in Project Management (Various Faculties/ School of Design and Environment)





NUS researchers engage in high-calibre translational research that changes life for the better.

# GROWING FROM STRENGTH TO STRENGTH

Research at NUS continues to grow in depth and breadth, garnering recognition from prestigious organisations and publications as well as increased funding that will take our groundbreaking work to the next level.

In 2015, our researchers published a total of 8,341¹ papers in international journals. There were 814² new projects launched and 687² projects completed. The University also signed 313² research collaborative agreements.

NUS continued to receive generous funding from key agencies which helped shore up the University's efforts in its pursuit of research excellence. In FY2015, we received over \$714 million<sup>3</sup> in research funds from the Ministry of Education, the National Research Foundation (NRF), and the Agency for Science, Technology and Research (A\*STAR) among others.

### **MAKING ADVANCES IN RESEARCH**

In the year of review, NUS scientists and researchers broke new ground in their respective fields. Their comprehensive work creates a deeper understanding of the world and seeks to improve the lives of the community at large.

### 1. Waste to wealth

A team of researchers from the Faculty of Engineering is looking to transform crustacean shell waste into valuable chemicals and materials. The waste shells, which contain useful chemicals such as protein, calcium carbonate and chitin, can be fractionated into different components and converted into useful chemicals which have applications in the textile and pharmaceutical industries.

The team is pushing "waste-shell-refinery" research to the next level. They are developing revolutionary fractionation methods to separate different components in the shells, and are investigating the direct use of raw shells to produce chemicals and materials. These advances will create new avenues to add value to shellfishery waste, extend the boundaries of biomass refining, and ultimately enhance sustainability.

The team's new concept for waste-shell-refinery was presented in an article, "Sustainability: Don't Waste Seafood Waste", published in *Nature* on 10 August 2015.

### 2. New magnetic phenomenon

Magnetism in nanoscale layers only a few tens of atoms thick is one of the foundations of the big data revolution. Recent work by a team of scientists from Singapore, the Netherlands, US and Ireland, published on 14 August 2015 in *Science*, has uncovered a new development in the study of thin-film magnetism.

In Singapore, the team from NUS Nanoscience and Nanotechnology Institute and the Faculty of Science discovered a new magnetic phenomenon by growing perfectly crystalline atomic layers of manganite using pulsed laser deposition. They found that magnetism is switched on abruptly when the number of manganese atomic layers changes from five to six or more.

The team plans to use local electric fields to turn the magnetism of its 5-layer films on and off, and explore potential applications in microwave devices as well as magnetic recording and computing.

### 3. Delving into dengue deviations

Certain dengue mutations spread more rapidly and cause epidemics. A team of Duke-NUS Medical School (Duke-NUS) researchers sought to determine the mutations that can cause such dengue epidemics.

Having studied dengue viruses from the 1994 Puerto Rico epidemic, the team's research showed that three mutations in the tail end of the genome enhanced the germ's virulence. The Duke-NUS research identified a mechanism that enables the dengue virus to infect humans more effectively while demonstrating how different scientific disciplines can identify driving forces behind epidemics. By determining these forces, public health resources can be focused more effectively on targeting the source of the problem.

The research findings were published in *Science* on 9 October 2015.

### 4. Crystal key to superconductivity

Researchers at the Faculty of Science studied octahedral titanium diselenide (1T-TiSe $_2$ ) single crystals with certain specifications and achieved unprecedented control over both the charge-density wave transition and the superconductivity transition temperatures. Electrically driving TiSe $_2$  over different ordered electronic phases allowed them to study the details of the phase transitions between many-body states.

Their study, published in *Nature* on 14 January 2016, showed that spatially modulated electronic states are fundamental to the appearance of two-dimensional superconductivity.

<sup>&</sup>lt;sup>1</sup> Calendar Year 2015. Data extracted from the SCOPUS online database and updated as at 8 June 2016. The figure represents the following document types: articles, conference papers and reviews.

<sup>&</sup>lt;sup>2</sup> The figures reflect the number of new projects that commenced in FY2015, and those completed in FY2015, respectively. The figures are derived from the SAP PS as at 21 June 2016.

<sup>&</sup>lt;sup>3</sup> The figures are updated as at April 2016.

### **RESEARCH**

### 5. Going with the redox flow

Renewable energies, such as solar and wind, are intermittent and fluctuating, requiring stored electrical energy in order to provide consistent power. Batteries that convert electrical energy into chemical energy can be used to mitigate this problem.

Unlike conventional batteries, redox flow batteries store energy in separate tanks and decouple the energy and power in flow batteries, making them easily scalable. Flow batteries can also be designed with great flexibility, making installation and maintenance for large-scale applications easier. The downside of these batteries is the high cost and low energy density.

Supported by the Competitive Research Programme and the NRF, a research team from the Faculty of Engineering is using the concept of redox targeting to create flow batteries of high energy density, low-cost energy storage. With promising preliminary results, in June 2016, the team received funding support from the Energy Market Authority to develop a 10 kW/50 kWh battery system for extensive field testing at a Housing & Development Board site.

The team's work has been published in *Science Advances* in November 2015, *Energy & Environmental Science* in February 2016 and *Chemistry of Materials* in March 2016.

### **COLLABORATING FOR A BETTER FUTURE**

In AY2015/16, NUS launched a slew of research programmes and initiatives that leverage our researchers' talents, expertise and knowledge as well as those of industry experts.

### 1. Smart Nation

In 2015, NUS' Smart Nation Cluster was created in line with Singapore's smart nation initiative. The cluster will develop strategic capabilities in data science, analytics and optimisation, and cybersecurity, and integrate researchers from diverse disciplines to produce world-class differentiated research to improve quality of life.

The Smart Nation Cluster encompasses:

### • National Cybersecurity R&D Lab

The NRF-funded National Cybersecurity R&D Lab (NCL), set up in September 2015, is a shared national infrastructure hosted by the School of Computing. Planned to be operational by end 2016, it will provide computing resources in a high-quality repeatable experimental environment.

NCL aims to provide a platform that fosters and encourages collaboration among researchers in academia, industry as well as government bodies both locally and internationally through the sharing and validation of research outcomes.

### • Operations Research and Analytics Cluster

The Operations Research and Analytics Cluster is a multidisciplinary initiative comprising researchers from NUS Business School, the faculties of Engineering and Science, and the Logistics Institute - Asia Pacific. It was set up in January 2016 to conduct cuttingedge basic and applied research on the optimisation, analysis and management of service systems. The cluster will focus on analytical tools in operations research, supply chain systems, healthcare service systems, urban transportation systems, and environmental and water resources systems.

### Institute of Data Science

The \$12 million Institute of Data Science (IDS), set up in May 2016 as a university-level research institute, is a key component of the Smart Nation Cluster. It was established to develop integrated data science solutions and nurture data scientists to support the smart nation initiative.

IDS will collaborate with local and international academic and industry partners. Microsoft Singapore is its first industry partner. The newly launched research institute will be the focal point for all data science research, translation, education and related activities at NUS. It will start by developing novel technologies to identify, model and predict the flow of talent across geographical regions over time, and empowering web users to make more informed decisions.

IDS will provide 50 scholarships over five years to train PhD students in data science and analytics. Undergraduate students will also be exposed to translational research.

### 2. Centre for Maritime Law

A Centre for Maritime Law (CML) was launched by the Faculty of Law in September 2015, with support from the Maritime and Port Authority of Singapore and the Ministry of Law. The centre will spearhead maritime law research in Singapore and in the region, as well as enhance knowledge and expertise in the shipping community in Singapore. CML's key research areas are international trade, transport and shipping law. It will also cover private shipping law, dispute settlement, maritime arbitration and the offshore sector. These efforts will elevate Singapore's profile as an international maritime centre.

# 3. Membrane Science and Technology Consortium

The Membrane Science and Technology Consortium was set up in September 2015 as an umbrella organisation for promoting membrane-related research at NUS. It aims to boost basic, applied and translational research in membrane topics and will focus on water, energy and environmental applications in the municipal and industrial sectors.

Three research themes have been identified:

- (1) Novel membrane materials and fabrication,
- (2) Membrane modules and innovative processes, and
- (3) Membrane systems operation, integration and optimisation.

# 4. Synthetic Biology for Clinical and Technological Innovation

The Synthetic Biology for Clinical and Technological Innovation (SynCTI), launched in September 2015, hosts Singapore's only Synthetic Biology Foundry, where biological systems are designed and produced for translational research. It aims to translate novel biological systems into benefits for human health and environmental sustainability as well as train the next wave of synthetic biologists in this emerging field.

This multidisciplinary initiative leverages the expertise of researchers at the faculties of Engineering and Science as well as the Yong Loo Lin School of Medicine. SynCTI scientists will also work closely with industry partners and leading research groups worldwide, including University of California, Berkeley, Imperial College London and University of Edinburgh.

### **RESEARCH**

### 5. Clinical Imaging Research Centre

The Clinical Imaging Research Centre (CIRC) officially opened in November 2015. It is the first centre in Southeast Asia and one of the few clinical research sites in the world to use magnetic resonance imagingcompatible positron emission tomographic (PET) technology. This technology combines two cuttingedge imaging techniques, allowing researchers to better study disease pathways.

CIRC is also the only clinical imaging research centre in Singapore able to produce and administer PET radiopharmaceuticals to patients.

A joint venture between NUS and A\*STAR, the centre will focus on diseases of particular importance to the national and regional population such as tuberculosis, dementia and diabetes and also develop imaging capabilities in clinical areas including neuroscience, cardiology, pulmonary disorders and infectious diseases. It has established strong ties with Johns Hopkins University and University College London as well as global industry players such as Siemens Healthcare and Kao Corporation.

### 6. NUS-CDL collaboration

The University has partnered real estate company City Developments Limited (CDL) to promote innovations in smart, green building technologies. In March 2016, CDL made a gift of \$2.25 million to establish two new research laboratories dedicated to the study of smart building technologies for indoor and outdoor environments, and to provide funding for research projects.

- The NUS-CDL Smart Green Home programme aims to develop innovative solutions to create homes that are safe and secure, healthy and comfortable, and acoustically pleasing. An indoor test-bed environment facility is expected to be completed by December 2017. It will be designed as a 100 m<sup>2</sup> home for testing, analysing, evaluating and piloting evolving smart home innovations in a "plug-and-play" real-life environment.
- The NUS-CDL Tropical Technologies Laboratory is an adaptable indoor-outdoor research space that can be configured to test lifestyle scenarios, space-use configurations as well as cutting-edge and emerging technologies. To be completed by end 2016, the laboratory will be used to study new ideas relating to research themes such as healthy, green living and future lifestyles.

These initiatives will further entrench Singapore's position as a leading international Smart City and improve the quality of life in our highly urbanised environment.

### 7. Sembcorp-NUS Corporate Laboratory

In April 2016, Sembcorp Industries and NUS jointly established the \$60 million Sembcorp-NUS Corporate Laboratory to develop new, competitive and sustainable solutions in the fields of energy, water and waste-to-resource. Based at the Faculty of Engineering, the laboratory will tap the combined expertise of 45 researchers from NUS and 35 engineers from Sembcorp.

The laboratory's joint team will develop cost-effective solutions for power generation, industrial wastewater treatment and water reuse. They will also study how to convert waste materials from power plants and incinerators into useful construction and other high-value materials.

### **RESEARCH STATISTICS**

**NUMBER OF PAPERS** PUBLISHED IN INTERNATIONAL JOURNALS IN CY20151



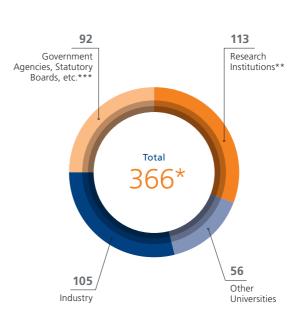
NUMBER OF NEW PROJECTS LAUNCHED IN THE YEAR<sup>2</sup>



NUMBER OF PROJECTS COMPLETED IN THE YEAR<sup>2</sup>

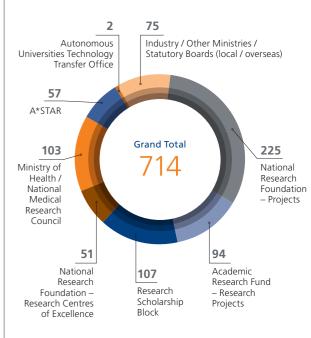


### **NEW RESEARCH COLLABORATIONS THAT TOOK OFF IN FY2015**



### \*As a single collaboration may involve more than one partner, the individual categories do not add up to the total number of agreements signed

### **TOTAL PROJECT VALUE AWARDED** BY EXTERNAL SOURCES (\$ MILLION)<sup>3</sup>



<sup>\*\*</sup> Includes A\*STAR research institutes and centres

<sup>\*\*\*</sup> Includes local public/restructured hospitals and charities

<sup>1</sup> Calendar Year 2015. Data extracted from the SCOPUS online database and updated as at 8 June 2016. The figure represents the following document types: articles, conference papers and reviews

<sup>&</sup>lt;sup>2</sup> The figures reflect the number of new projects that commenced in FY2015, and those completed in FY2015, respectively. The figures are derived from the SAP PS as at 21

<sup>&</sup>lt;sup>3</sup> The figures are updated as at April 2016.





We excel in turning ideas into commercial and functional reality. Both industry and academia hold the University in high esteem for the dynamic and lively culture of innovation among our students, faculty and alumni communities.

### **FESTIVAL OF IDEAS**

Our **InnovFest unBound** is one of Singapore's leading innovation events. The iconic two-day annual event kicked off in May and anchored the Smart Nation Innovations Week 2016. This year's event was organised jointly with unBound Media, in partnership with the Infocomm Development Authority of Singapore.

In keeping with its "Where Asian Innovation Meets the World" theme, InnovFest unBound brought together 6,000 government leaders, senior corporate executives, leading researchers and academic luminaries, as well as entrepreneurs from across the globe. NUS showcased some 100 technologies and innovations from our faculties, research institutes, and community of startups. Students also had the invaluable opportunity of personally interacting with speakers and gaining new and exciting insights from them.

### **NURTURING BUDDING ENTREPRENEURS**

The **NUS Overseas Colleges (NOC)** programme, established in 2001, provides internships at start-ups and high-growth companies for students in entrepreneurial hubs around the world and at the same time enables them to attend entrepreneurship classes at prestigious partner universities.

In Academic Year (AY) 2015/16, 270 students took part in our NOC programmes in Beijing, New York, Shanghai, Silicon Valley, Singapore, Stockholm and Tel Aviv, an increase of 13 per cent over the previous year. New locations in Lausanne and Munich, catering to technical students from undergraduate and graduate studies interested in technology commercialisation, were added in 2016.

NOC clearly has a major impact on Singapore's entrepreneurial landscape. *The Straits Times* reported that industry experts found NOC the "single most important development to boost the start-up movement [in Singapore]".1

Reflecting NOC's status as a proven, reliable and valuable pipeline for future entrepreneurs, NOC alumni have gone on to establish more than 250 start-ups.

Notable achievements of NOC alumni companies in AY2015/16 include:

Our Summer Programme on Economic and Enterprise

Development in Singapore also completed a successful

# 1. Start-ups being acquired or receiving funding:

- a. Customer feedback app **Triibe**: acquired by Mobikon in August 2015.
- B. Grocery concierge Honestbee: raised US\$15 million in Series A funding in October 2015.
- c. E-commerce retailer **HipVan**: secured US\$3.22 million in Series A funding in October 2015, which brought the company's total funding to US\$4.5 million.
- d. Beauty and wellness booking platform Wellnessly: acquired by Beaupass in April 2016.

# 2. NOC alumni and their companies gaining recognition:

- a. NOC alumni were among the inaugural Forbes' 30 Under 30 Asia list. They are: Dian Guan, co-founder of **Patsnap**; Lucas Ngoo and Quek Siu Rui, co-founders of **Carousell**; Chan Yi Wen, co-founder of **Bolt Media**; and Su Shu, founder of **Mingyizhudao**.
- b. Royston Tay, co-founder of **Zopim**, which was acquired by Zendesk in 2014, was a recipient of the NUS Outstanding Young Alumni Award 2015 and also Entrepreneur of the Year at Singapore Computer Society's 2016 IT Leader Awards.
- c. Henry Chan and Joel Leong, who co-founded ShopBack, won Gold, Best Innovative Start-Up (Growth Stage) and Silver, Best Innovative Infocomm Product (Consumer) at the 2015 Singapore infocomm Technology Federation awards.

Another entrepreneurial education programme is **Lean LaunchPad Singapore**, which seeks to help research scientists and engineers translate their inventive technologies into commercially viable products and feasible business ventures. Eleven companies have been incorporated since the 10-week long programme was launched in 2013. In AY2015/16, 27 teams took part in the fourth and fifth editions of Lean LaunchPad Singapore.

Our **Summer Programme on Economic and Enterprise Development in Singapore** also completed a successful season, attracting 50 undergraduate participants from eight countries.

### **BRIDGING RESEARCH AND INDUSTRY**

NUS' **Industry Liaison Office (ILO)** handles technology transfer matters and promotes research collaboration between NUS, industry and other parties.

In AY2015/16, it handled an extensive range of invention disclosures and patents:

No. of invention disclosures received	276
No. of regular patents filed	479
No. of patents granted	102

Some significant highlights in the period of review include:

# 1. Collaborations with industry, faculties and research centres

- a. Duke-NUS Medical School and Holmusk, a global tele-health platform, announced in August 2015, a research collaboration on using big data to improve care management for diabetes and mental health. The resulting new generation of tools will enable physicians and patients to make timely, evidencebased and personalised decisions about health and disease management.
- b. NUS, Halliburton Far East Pte Ltd and Halliburton Energy Services Inc entered into a Master Research Collaboration in November 2015 for joint research projects in various fields related to exploration for and production of hydrocarbons.
- c. In July 2016, Huawei International and NUS' School of Computing agreed to cooperate on designing a real-time, high-throughput, low-power base station for 5G wireless baseband processing.

<sup>1</sup> Chng, Grace. "Growing band of tech start-up millionaires." The Straits Times, 24 February 2015; http://business.asiaone.com/news/growing-band-tech-start-millionaires

### **ENTREPRENEURSHIP**

### 2. Technology transfer and translation

- a. The National Research Foundation approved funding for the National Additive Manufacturing Innovation Cluster in September 2015. The fiveyear funding programme supports the establishment of three separate Additive Manufacturing (AM) Centres at NUS and other local universities. The centre at NUS will focus on the development and translation of AM technologies for biomedical and healthcare applications.
- b. The Membrane Science and Technology **Consortium** was officially launched in September 2015. It aims to develop novel membrane materials and process technologies targeting the municipal and industrial sectors. The consortium brings together a multidisciplinary group of NUS faculty, industry and government partners.
- c. The **Sembcorp-NUS Corporate Laboratory**, established by Sembcorp Industries and NUS, was officially launched in April 2016. The laboratory is developing new, competitive and sustainable solutions in the areas of energy, water and wasteto-resource.

### 3. Pro-active spin-off development

- a. LuminiCell Pte Ltd: Following an exclusive licence signed in July 2015, LuminiCell has exclusive access to molecular probes which can be used for cell imaging and real-time tracking medical applications in areas such as cancer as well as infectious and vascular diseases.
- b. **Dexecure:** In November 2015, Dexecure successfully licensed technology that optimises the performance of mobile websites, by analysing and controlling the way in which JavaScript is loaded onto a page.

c. AeroLion Technologies Pte Ltd (ALT): A nonexclusive licence was inked in March 2016 for a non-GPS technology that offers autonomous navigation and obstacle avoidance in unknown indoor environments. This NUS-developed technology played a pivotal role in ALT being awarded the Environment and Water Industry funding by PUB.

In AY2015/16, ILO assisted in facilitating the licensing of NUS technologies for 19 NUS spin-off companies.

### PRIMED FOR TAKEOFF

The NUS Start-Up Runway provides comprehensive support for affiliated start-ups and spin-offs, including gaining access to funding and mentorship. It also provides co-working space, organises numerous events and workshops, and offers formal validation, incubation and acceleration programmes. Overseas launchpads such as Block 71 San Francisco and NUS (Suzhou) Research Institute further underpin the needs of growth-stage ventures seeking to expand internationally.

The NUS Start-Up Runway continued to be a hive of activity in AY2015/16.

- a. Series A Investors League, a partnership with The Co-Foundry, provides a platform for affiliated growth-stage start-ups to regularly meet and pitch to a select group of investors. Since its launch in July 2015, four events have been held attracting the participation of some 35 companies and over 100 angel investors, venture capitalists and corporates.
- b. The Modern Aging Singapore accelerator programme was launched in August 2015 in partnership with ACCESS Health International, with the support of Ministry of Health. The fourmonth programme, which attracted more than 500 participants, championed new start-ups which serve the needs of ageing populations. In December 2015, three teams — Altrue, Pillpresso and SoundEye — topped the programme and received between \$25,000 and \$50,000 in seed funding respectively.

- c. In November 2015, NUS Enterprise entered into a b. The Social Venture Lab@NUS initiated the Small two-year collaboration with StartupEast, an Israeli start-up accelerator that identifies innovative technologies from Israel and translates them into technology start-ups looking to venture into the Asian market. NUS Enterprise will provide incubation premises and services to companies StartupEast brings into Singapore, and in exchange, NUS will receive equity in those companies that secure follow-on funding or extend their stay.
- d. Two co-working spaces opened their doors NUS Enterprise@Blk71 in August 2015 and The Hangar in March 2016. With these two additional spaces, NUS' co-working space has increased by more than 20,000 sq ft and now accommodates some 75 projects or companies. More than 60 events have been held in the two new locations, including the SIA Hackathon, Barcamp Blk71, Start-Up Weekend, and regular Kopi Chat and Friday Huddle sessions with entrepreneurs. Start-ups can also seek legal, accounting and mentoring advice at The Hangar.

In addition, several NUS Enterprise portfolio companies received significant external investment, including:

- a. **Zimplistic**, creator of automatic *roti* maker Rotimatic: raised US\$11.5 million in Series B funding in July 2015.
- b. PatSnap, Intellectual Property analytic and management platform: secured US\$10 million in funding from global growth equity investor Summit Partners in October 2015.
- c. Burpple, food app: raised US\$6 million Series A funding in October 2015.

The NUS Start-Up Runway also held several exciting and engaging events, which were aimed at expanding the horizon of our budding entrepreneurs and their start-ups.

a. The DBS-NUS Social Venture Challenge Asia **2016** received over 1,000 entries from more than 30 countries in its third run. This edition of the competition saw increased involvement from corporates, such as Syngenta, Google, Visa and Unilever, which provided funding, pro bono mentorship and judging support.

- Change series to encourage students to take the first step and expose them to change-making and eventually embark on the social entrepreneurship journey. The first of the series was the Small Change Festival in October 2015, a month-long programme which held weekly film screenings and discussions on specific social issues like ageing, social inclusion, and urban poverty. It was extended to Small Change Conversations: Change at Work in February 2016 which looked at practical ways to make society better.
- c. The inaugural **Scale Up Singapore**, a joint seminar series by NUS Enterprise and NUS Business School, was held in February 2016. It shone a spotlight on the emerging market of the Internet of Things.

NUS Enterprise also works with our partners on entrepreneurship-related research projects:

- a. TechSG, a digital platform that collects, mines and crunches data about start-ups, investors and incubators to provide the most comprehensive online resource for the industry. Developed by NUS Enterprise and Wonderlabs, and sponsored by IBM, TechSG provides curated research insights and analytical tools to track the diversity, interdependency, growth dynamics and vibrancy of Singapore's entrepreneurial ecosystem. The site features close to 2,000 start-ups and founders as well as over 200 investors and entrepreneurship facilitators.
- b. Transferring Academic Knowledge and Expertise at NUS (TAKE-NUS), an integrated database and analytics system that maps and measures research outcomes and impact made by NUS researchers. Modelled after the TRIC database initiative at Imperial College, the analytic results from TAKE-NUS will be used to conduct a comparative study of NUS and Imperial College. The TAKE-NUS project is co-funded by the Ministry of Education.





NUS helps our students realise their innate spirit of giving, providing them with a host of avenues to extend a helping hand to the underprivileged and wider community.

### **ONE NUS**

NUS students are constantly on the lookout for fresh new ways to catalyse the giving spirit among their peers, melding University activities with community help projects, locally and abroad. In Academic Year (AY) 2015/16, the projects for the beneficiaries range from raising funds to medical service to youth mentoring.

### 1. Unflagging efforts

The annual NUS Students' Union (NUSSU) **Rag and Flag** event, which kicked off with Flag Day on 4 August, culminated in Rag Day on 7 August at the Float@Marina Bay. The event was held in tandem with NUS' 110<sup>th</sup> anniversary and Singapore's golden jubilee celebrations.

Reflecting NUS' strong bonds with the community, the theme of Rag Day 2015 was "Where I belong" with a tagline "To be with the people". The students successfully surpassed the \$450,000 fundraising goal, collecting \$451,120 for local beneficiaries.

### 2. Eye on health

- The **Public Health Screening** exercise, conducted by students from the Yong Loo Lin School of Medicine, Alice Lee Centre for Nursing Studies and the Faculty of Dentistry, took place at Clementi Central in October 2015. More than 1,000 persons attended the health screening. This health screening exercise has benefitted some 15,000 people over the last decade.
- From August to October 2015, four Halls of Residence — Eusoff Hall, Temasek Hall, King Edward VII Hall and Sheares Hall joined forces to organise the Combined Hall Blood Donation Drive. More than 250 volunteers participated in this noble cause.

### 3. Senior care

- A group of engineering students from the Design-Centric Programme (DCP) has engaged wheelchair users in Kampong Glam and also gathered feedback from their care providers, volunteers and vendors to better understand the issues facing the elderly who use wheelchairs. The team is currently working on both engineering and non-engineering solutions to solve the more pressing problems identified.
- Following a visit to a home for the aged, students from the Lee Kuan Yew School of Public Policy (LKY School) were inspired to organise a panel session on elderly care and volunteerism in Singapore. The panel, held in November 2015, included representatives from the home and LKY School.

### 4. Youth mentoring

- Twenty Raffles Hall residents took up the role
  of camp leaders at CampVision Live Your
  Dreams in December 2015 to mentor and impart
  values to some 100 at-risk youths. The students
  helped the troubled teens through physically and
  mentally challenging activities so as to teach them
  the importance of perseverance and teamwork.
- Students at Residential College 4 (RC4) have set up an interest group to launch a tuition programme in September 2015. Called Care, Accept, Share, Affirm or CASA for short, they provide tuition services to children from low-income, needy families living in the rental flats of Clementi neighbourhood. Besides tuition, the student volunteers also provide guidance on behavioural ethics as they believe this can help impart moral values and broaden the minds of the participants. Seventeen children from the neighbourhood are currently being taught by 15 students from RC4.

### 5. Social mission

 The Active Community Engagement Wing of College of Alice & Peter Tan (CAPT) organised a series of Community Engagement (CE) opportunities during the Freshman Orientation Camp (FOC). A total of 230 CAPT freshmen and student leaders interacted with various partner organisations such as Wesley Senior Activity Centre and Save Our Street Dogs at the FOC-CE Day in July 2015.

Another student-led initiative **CAPTleidoscope** was held in August 2015 where some 70 freshmen had further interactions with the partner organisations.

- The annual one-day NUS i.Volunteer event provides a platform for first-time volunteers to experience volunteerism. The 2015 NUS i.Volunteer took place in December 2015 when 140 NUS volunteers visited four Voluntary Welfare Organisations Red Cross Home for the Disabled, HCA Hospice Care, Bizlink and Lakeside Family Service Centre.
- Since the **Chua Thian Poh Community Leadership Programme** began in 2011, students have been involved in research projects with partners with various social missions. Every year, their research findings and recommendations are presented at an annual symposium. This year's symposium, which took place in April 2016, was attended by more than 200 people including Acting Minister for Education (Higher Education and Skills) Ong Ye Kung as Guest-of-Honour.

### **COMMUNITY**

### 6. Healing with music

Students from the Yong Siew Toh Conservatory of Music (YSTCM) have embarked on novel projects to bring musical cheer to patients.

- YSTCM's 15-member Conservatory Strings gave a performance at the Singapore General Hospital (SGH) in September 2015 and succeeded in raising close to \$27,000 for the SGH Needy Patients Fund.
- YSTCM and Science Centre Singapore joined forces with Sengkang Health (SKH), National University Health System (NUHS) and Singapore National Youth Orchestra to organise the Neuroscience of Music Making creative workshop in November 2015. The workshop explored the neurological and biological processes behind thinking, feeling, hearing and making music. It also involved a senior citizens' choir taking part in a dementia prevention study led by NUHS.
- Given the calming properties of music, a group of students called YSTCM Collective decided to launch the **Healing Music** project. Together with SKH staff, they participated in a week-long Creative Music Workshop at Alexandra Hospital in February 2016. The music created at the workshop was recorded and is now being played in hospital wards to enhance patient and staff well-being. The collaboration between YSTCM and SKH continued with ward performances and a lunchtime concert series for staff and patients.

### 7. Empathy across the seas

Exemplifying the traits of global citizens, the community efforts of NUS students also extend beyond Singapore's shores.

- Eight DCP students from the Faculty of Engineering spent a week in Phnom Penh, Cambodia in August 2015 to help address the city's water management and sanitation problems. They tested water quality from various sources in **Smile Village**, a residential area developed by non-governmental organisations, and are developing solutions to collect and retain the quality of rainwater. They are also exploring ways to turn waste into useful products. This is the group's third trip to Phnom Penh.
- The Duke-NUS Overseas Volunteering Expedition is organised annually by Duke-NUS Medical School (Duke-NUS) students with the aim of improving health efforts in the region.

In April 2016, a team of students and faculty conducted a three-day mobile clinic and health education programme for the underserved in Lembang, Indonesia where they provided health screening and treated common medical problems. They also educated children and teachers at an orphanage on personal hygiene and basic first aid skills

Since 2007, Duke-NUS has collaborated with KK
Hospital and several Indonesian entities such as
Citramas Foundation, Palang Merah (Red Cross)
Indonesia and Rumah Sakit Budi Kemuliaan
(Batam) to conduct health checks for children in
Batam. These health screenings aim to assess the
developmental milestones and general health of
children under five years of age.

The 2015 health screening exercise was carried out in May where a team of doctors and nurses, together with 16 Duke-NUS medical students attended to a record-breaking 1,851 children in a single day. In May 2016, a similar team was deployed for the annual screening in Batam.

 For the fourth year running, Project Sawasdee from Sheares Hall brought a team of communityminded residents on an overseas community service project to Thailand from May to June 2016. The team had earlier conducted four fund-raising initiatives and worked closely with its long-term partner YMCA in Chiang Mai to better understand the needs of the beneficiaries.

### **CAMPUS ECO-SUSTAINABILITY**

As the NUS community continually seeks to implement ways to enhance the environmental sustainability of our campus, NUS students too have launched a host of student-led initiatives.

 Three NUS student teams were among 100 students from over 30 universities who attended the 2015 Global University Climate Forum (GUCF) in Paris in December. The GUCF is a platform for student teams from universities around the world to collaborate on initiatives that promote sustainability at their home institutions.

At the forum, held alongside the United Nations Framework Convention on Climate Change Conference of Parties, the NUS student teams presented three innovative proposals:

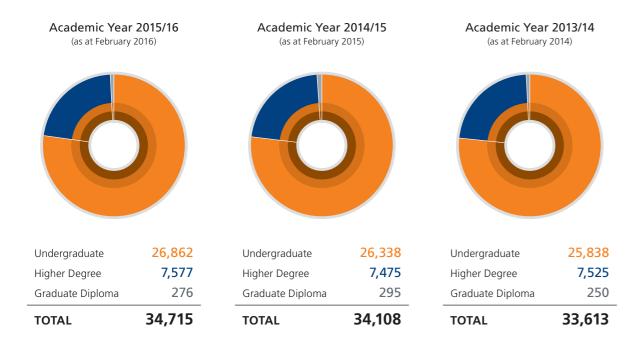
- An application to replace goodie bags,
- A green guide to student event management, and
- Sustainable Solutions Network, which comprises an annual flagship conference and online networking platform

 The Students Against Violation of the Earth (SAVE) student group hosts the annual flagship event for their "NUS Goes Lite" campaign, which aims to encourage people to reduce their ecological footprint.

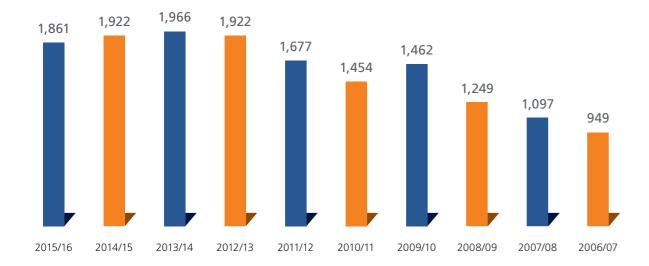
This year, the event was themed "Lite Lunches: Better Bento Choices" to emphasise the importance of reducing food and plastic wastage within NUS. A Japanese-themed pop-up café, Bento D'Lite, was set up at University Town in March 2016 to showcase the University's green initiatives and promote environmentally friendly ideas such as reducing dependency on disposables and effecting food portion control.

# **ACADEMIC YEAR IN REVIEW**

### **PROFILE OF STUDENTS**

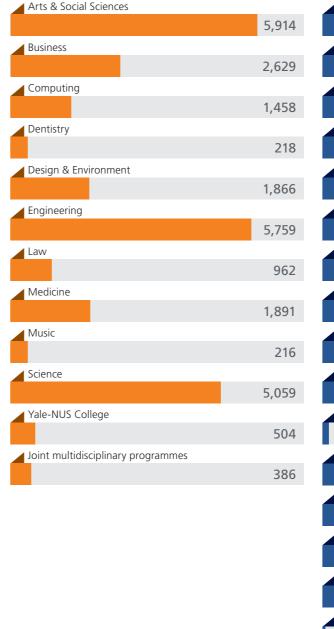


### **NUS STUDENTS ON STUDENT EXCHANGE\***



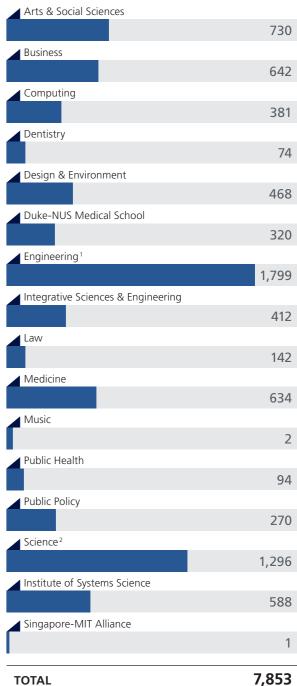
<sup>\*</sup> Undergraduate students on student exchange with overseas partner universities

# UNDERGRADUATE ENROLMENT 2015/16 (as at February 2016)



TOTAL

# **GRADUATE STUDENT ENROLMENT 2015/16** (as at February 2016)



<sup>&</sup>lt;sup>1</sup> Includes Temasek Defence Systems Institute figures

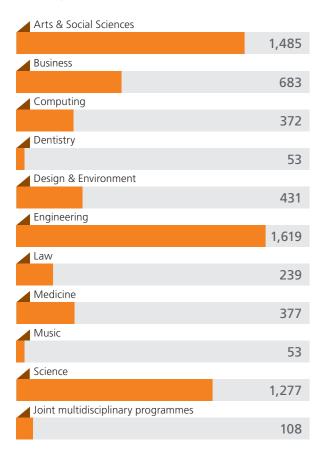
26,862

<sup>&</sup>lt;sup>2</sup> Includes Risk Management Institute figures

### **ACADEMIC YEAR IN REVIEW**

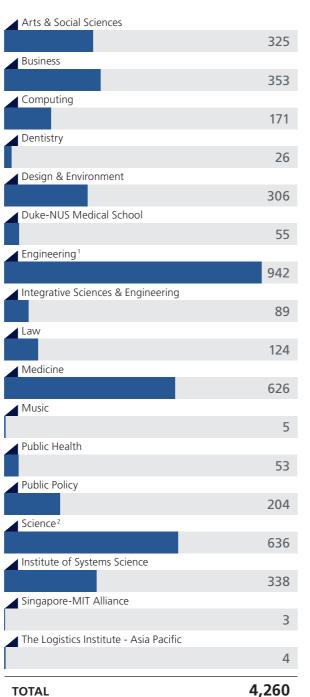
### **PROFILE OF CLASS OF 2016**

(First Degree Graduates)\*



### **PROFILE OF CLASS OF 2016**

(Higher Degree & Graduate Diploma Graduates)\*\*



TOTAL 6,697

# STUDENTS AT NUS OVERSEAS COLLEGES IN ACADEMIC YEAR 2015/16



### PROFILE OF FACULTY AND STAFF (as at June 2016)



Note: Figures shown are Full Time Equivalent and exclude staff on honorary appointments

<sup>\*</sup> Figures correct as at 1 July 2016 and are based on degrees conferred between 1 July 2015 and 30 June 2016. Double degree graduates are counted towards both their home and second faculties.

<sup>\*\*</sup> Figures correct as at 1 July 2016 and are based on degrees and graduate diplomas conferred between 1 July 2015 and 30 June 2016.

<sup>&</sup>lt;sup>1</sup> Includes Temasek Defence Systems Institute figures

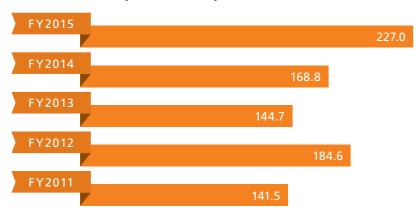
<sup>&</sup>lt;sup>2</sup> Includes Risk Management Institute figures

<sup>\*</sup> Faculty include tenurable faculty and other teaching staff

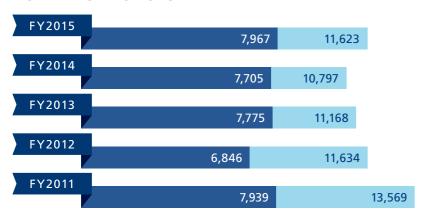
# **BENEFACTIONS**

The University is grateful to our 11,623 donors for their generous gifts of \$\$226,978,821 in FY2015 (1 April 2015 to 31 March 2016).

### **GIFT RECEIPTS (S\$ MILLION)**



### **NUMBER OF DONORS**





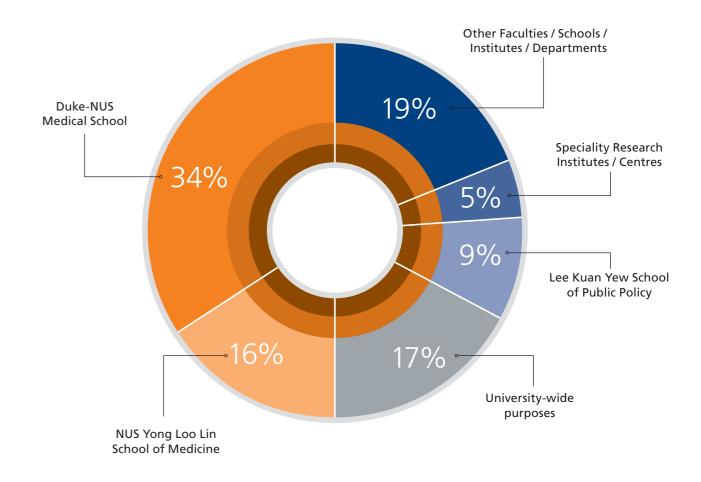
Reported figures are exclusive of unfulfilled pledges and Singapore government research grants and matching grants. At the time of publication, the figures for FY15 included in this Report are unaudited numbers.

In Academic Year 2015/16, 4,616 undergraduates received financial support\*:

3,089 1,527 **BURSARIES** 

**SCHOLARSHIPS** 

**GIVING BY DESIGNATION (IN VALUE)** 



In Financial Year 2015, we established

**NEW NAMED PROFESSORSHIPS**  NUS has benefitted from

NAMED PROFESSORSHIPS made possible by benefactors

<sup>\*</sup> University-wide bursaries and scholarships funded by Annual Giving funds, gifts designated to financial aid and unrestricted endowment funds

### **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.

### **OUR BOARD OF TRUSTEES**

The NUS Board of Trustees comprises 24 members appointed by the Minister for Education, and is chaired by Mr Wong Ngit Liong. Our Board of Trustees includes respected business/industry leaders, academics,

entrepreneurs, and professionals from the public and private sectors. Members are appointed on the strength of their calibre, experience, stature, ability to contribute to the oversight and development of the University, as well as strategic networking relationships they bring which 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**

Mr Wong Ngit Liong (Chairman)
Prof Tan Chorh Chuan
Dr Cheong Koon Hean
Mr Lucas Chow Wing Keung
Mr Peter Ho Hak Ean
Ms Kay Kuok Oon Kwong
Mr Andrew Lim Ming-Hui
Mr Phillip Tan Eng Seong

### **Remuneration Committee**

Mr Wong Ngit Liong (Chairman) Mr Peter Ho Hak Ean Prof Olaf Kübler Mr Chaly Mah Chee Kheong Mr Neo Kian Hong Mr Ng Wai King Ms Elaine Yew Wen Suen

### **Nominating Committee**

Mr Wong Ngit Liong (Chairman) Amb Chan Heng Chee Mr Michael Lien Jown Leam Mr Andrew Lim Ming-Hui Mr Chaly Mah Chee Kheong Mr Abdullah Tarmugi Mr Phillip Tan Eng Seong

### **Development Committee**

Mr Wong Ngit Liong (Chairman)
Prof Tan Chorh Chuan
Mr Goh Yew Lin
Dr Noeleen Heyzer
Mr Chaly Mah Chee Kheong
Mr Abdullah Tarmugi
Mr Wong Fong Fui
Ms Elaine Yew Wen Suen
Mr Johnny Tan (Co-opted)

### **Audit Committee**

Mr Phillip Tan Eng Seong (Chairman) Mr Goh Choon Phong Mr Neo Kian Hong Mr Ng Wai King Mr Chaly Mah Chee Kheong

### **Entrepreneurship Committee**

Mr Lucas Chow Wing Keung (Chairman)
Prof Tan Chorh Chuan
Mr Goh Choon Phong
Mr Wong Fong Fui
Ms Elaine Yew Wen Suen
Mr Gay Chee Cheong (Co-opted)
Ms Harjit Gill (Co-opted)
Mr Peter Ho Yew Chi (Co-opted)
Dr Wong Kar King (Co-opted)
Ms Yvonne Kwek (Co-opted)

### **Investment Committee**

Mr Goh Yew Lin (Chairman)
Prof Tan Chorh Chuan
Mr Michael Lien Jown Leam
Mr Andrew Lim Ming-Hui
Mr Loh Chin Hua
Dr Leslie Teo Eng Sipp
Mr Lee Ming San (Co-opted)
Mr George Raymond Zage III
(Co-opted)

# Campus Planning and Development Committee

Mr Peter Ho Hak Ean (Chairman) Prof Tan Chorh Chuan Dr Cheong Koon Hean Ms Chong Siak Ching Prof Olaf Kübler Mr Raymond Woo (Co-opted) Mr Siew Man Kok (Co-opted) 58 NATIONAL UNIVERSITY OF SINGAPORE

### **CORPORATE GOVERNANCE**

### **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. Details of the management team can be found at its website: 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. 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 declare annually their compliance with the University's prevailing policy on conflict of interest and other 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 2016

Important Note **60** Trustees' Statement **61 – 62** Independent Auditor's Report **63** 

Statements of Financial Position **64 – 65** Statements of Comprehensive Income **66 – 67** 

Notes to the Summary Financial Statements **68 – 72** 

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

### **IMPORTANT NOTE**

The Summary Financial Statements as set out on pages 64 to 72 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 Auditor's 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

### TRUSTEES' STATEMENT

The Trustees are pleased to present their statement to the members together with the summary financial statements of the National University of Singapore ("the Company") and its subsidiaries (collectively, "the Group") which comprise statements of financial position and statements of comprehensive income of the Group and Company as of and for the financial year ended 31 March 2016.

### **TRUSTEES**

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

Mr Wong Ngit Liong – Chairman Mr Peter Ho Hak Ean Professor Tan Chorh Chuan Professor Olaf Kübler Ambassador Chan Heng Chee Mdm Kay Kuok Oon Kwong Dr Cheong Koon Hean Mr Michael Lien Jown Leam Mr Andrew Lim Ming-Hui Ms Chong Siak Ching Mr Lucas Chow Wing Keung Mr Chaly Mah Chee Kheong Mr Goh Choon Phong Mr Neo Kian Hong Mr Goh Yew Lin Mr Ng Wai King Dr Noeleen Heyzer Mr Phillip Tan Eng Seong

Mr Abdullah Tarmugi Dr Teh Kok Peng

Ms Elaine Yew Wen Suen

Mr Loh Chin Hua (Appointed 1 April 2016)

Dr Leslie Teo (Appointed 1 April 2016)

Mr Wong Fong Fui (Appointed 1 April 2016)

### 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.

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

### TRUSTEES' STATEMENT

### TRUSTEES' INTERESTS IN SHARES OR DEBENTURES

As the Company is a public 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 Singapore 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.

### 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.

PROFESSOR TAN CHORH CHUAN

On behalf of the Trustees

MR WONG NGIT LIONG

Trustee

Trustee

29 July 2016

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

# INDEPENDENT AUDITOR'S REPORT TO THE TRUSTEES OF NATIONAL UNIVERSITY OF SINGAPORE

The accompanying summary financial statements of National University of Singapore (the "Company") and its subsidiaries (the "Group"), which comprise the statements of financial position of the Group and the Company as at 31 March 2016 and the statements of comprehensive income of the Group and the Company, and related notes, are derived from the audited financial statements of the Company and its subsidiaries for the year then ended. We expressed an unmodified audit opinion on those financial statements in our report dated 29 July 2016.

The summary financial statements do not contain all the disclosures required by the Singapore Financial Reporting Standards. Reading the summary financial statements, therefore, is not a substitute for reading the audited financial statements of the Company and its subsidiaries.

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

Management is responsible for the preparation of a summary of the audited financial statements derived from the annual financial statements of the Company and its subsidiaries for the year ended 31 March 2016, and be in such form and contain such information so as to be consistent with the audited financial statements.

### **AUDITOR'S RESPONSIBILITY**

Our responsibility is to express an opinion on the summary financial statements based on our procedures, which were conducted in accordance with Singapore Standard on Auditing 810, "Engagements to Report on Summary Financial Statements".

### OPINION

In our opinion, the summary financial statements are consistent, in all material respects, with the audited financial statements and the Director's report of the Company and its subsidiaries for the year ended 31 March 2016 from which they are derived.

**ERNST & YOUNG LLP** 

Zenus slong ur.

Public Accountants and Chartered Accountants

Singapore 29 July 2016

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

### STATEMENTS OF FINANCIAL POSITION

AS AT 31 MARCH 2016

	GROUP		COMPANY		
	31 March 2016	31 March 2015	31 March 2016	31 March 2015	
	S\$'000	S\$'000	S\$'000	S\$'000	
NON-CURRENT ASSETS					
Subsidiary companies	-	_	328	328	
Associated companies	122,925	115,777	73,057	72,457	
Fixed assets	3,484,025	3,485,032	3,481,580	3,482,924	
Intangible assets	8,109	9,916	8,094	9,904	
Available-for-sale investments	8,428	11,215	4,773	4,742	
Student loans (repayable after 12 months)	226,811	227,228	226,811	227,228	
Long-term loan to subsidiary company	_	-	250	250	
Prepayments (to be utilised after 12 months)	458	528	458	528	
Total Non-Current Assets	3,850,756	3,849,696	3,795,351	3,798,361	
CURRENT ASSETS					
Student loans (repayable within 12 months)	78,041	73,780	78,041	73,780	
Debtors	487,445	492,503	485,712	490,755	
Consumable stores	457	624	265	336	
Deposits and prepayments (to be utilised within 12 months)	42,994	105,071	42,617	103,934	
Amounts owing by subsidiary companies	-	_	889	979	
Investments at fair value through income or expenditure	6,379,425	5,984,437	6,379,425	5,984,437	
Derivative financial instruments	82,771	4,242	82,771	4,242	
Cash and cash equivalents	753,977	728,450	733,145	708,465	
	7,825,110	7,389,107	7,802,865	7,366,928	
Assets held for sale	_	11,200	_	11,200	
Total Current Assets	7,825,110	7,400,307	7,802,865	7,378,128	
TOTAL ASSETS	11,675,866	11,250,003	11,598,216	11,176,489	

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

# **STATEMENTS OF FINANCIAL POSITION**

AS AT 31 MARCH 2016

	GROUP		COMPANY	
	31 March 2016	31 March 2015	31 March 2016	31 March 2015
	S\$'000	S\$'000	S\$'000	\$\$'000
CURRENT LIABILITIES				
Creditors and accrued expenses	384,961	310,483	382,381	307,532
Provisions	97,240	92,093	95,080	89,687
Grants received in advance	456,926	435,988	452,859	431,136
Deferred tuition and other fees	69,373	67,953	69,248	67,808
Derivative financial instruments	709	49,606	709	49,606
Amounts owing to subsidiary companies	_	_	25,937	26,222
Advances from Government for student loans (due within 12 months)	75,494	71,721	75,494	71,721
Fixed rate notes and term loan (due within 12 months)	_	350,000	_	350,000
Total Current Liabilities	1,084,703	1,377,844	1,101,708	1,393,712
NON-CURRENT LIABILITIES  Advances from Government for student loans (due after 12 months)  Fixed rate notes and term loan (due after 12 months)	217,430 900,000	177,681 500,000	217,430 900,000	177,681 500,000
Fixed rate notes and term loan (due after 12 months)	900,000	500,000	900,000	500,000
Deferred capital grants	1,874,875	2,002,377	1,872,498	2,000,378
Total Non-Current Liabilities	2,992,305	2,680,058	2,989,928	2,678,059
TOTAL LIABILITIES	4,077,008	4,057,902	4,091,636	4,071,771
NET ASSETS	7,598,858	7,192,101	7,506,580	7,104,718
FUNDS AND RESERVES				
ACCUMULATED SURPLUS				
– Designated General Funds	2,406,939	2,267,288	2,337,013	2,195,353
– Restricted Funds	1,703,656	1,801,039	1,682,438	1,788,354
	4,110,595	4,068,327	4,019,451	3,983,707
ENDOWMENT FUNDS	3,486,406	3,120,319	3,485,974	3,119,887
FAIR VALUE RESERVE	1,801	3,377	1,155	1,124
TRANSLATION RESERVE	56	78		_
TOTAL FUNDS AND RESERVES	7,598,858	7,192,101	7,506,580	7,104,718

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

# **STATEMENTS OF COMPREHENSIVE INCOME**

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

FOR THE FINANCIAL YEAR ENDED 31 MARCH 2016

### STATEMENTS OF COMPREHENSIVE INCOME

FOR THE FINANCIAL YEAR ENDED 31 MARCH 2016

### GROUP

	DESIGNATED GENERAL FUNDS		RESTRICTED FUNDS		TOTAL	
	2016	2015	2016	2015	2016	2015
	S\$'000	S\$'000	S\$'000	S\$'000	S\$'000	\$\$'000
OPERATING INCOME						
Tuition and other related fees	445,752	416,280	_	_	445,752	416,280
Other income	212,074	206,766	120,596	90,218	332,670	296,984
	657,826	623,046	120,596	90,218	778,422	713,264
OPERATING EXPENDITURE						
Expenditure on manpower	887,909	869,214	341,667	311,034	1,229,576	1,180,248
Depreciation and amortisation expenditure	84,894	81,296	256,919	237,879	341,813	319,175
Other operating expenditure	431,076	392,038	514,019	473,185	945,095	865,223
	1,403,879	1,342,548	1,112,605	1,022,098	2,516,484	2,364,646
Operating deficit	(746,053)	(719,502)	(992,009)	(931,880)	(1,738,062)	(1,651,382)
Net investment (loss) income	4,999	110,303	(35,087)	603,278	(30,088)	713,581
Share of results (net of tax) of associated companies	(1,985)	(2,580)	8,533	12,685	6,548	10,105
Deficit before Grants	(743,039)	(611,779)	(1,018,563)	(315,917)	(1,761,602)	(927,696)
GRANTS Operating Grants: Government	728,689	712,500	523,949	479,370	1,252,638	1,191,870
Others	18,514	712,500 544	261,646	203,629	280,160	204,173
Deferred capital grants amortised	31,877	33,154	249,040	233,345	280,100	266,499
Deretted Capital grants amorused	779,080	746,198	1,034,635	916,344	1,813,715	1,662,542
SURPLUS FOR THE YEAR BEFORE TAX	36,041	134,419	16,072	600,427	52,113	734,846
Income tax	_	_	_	_	_	_
SURPLUS FOR THE YEAR	36,041	134,419	16,072	600,427	52,113	734,846
OTHER COMPREHENSIVE INCOME:						
Items that may be reclassified subsequently to income or expenditure:						
Exchange differences on translating foreign operations	(22)	116	_	-	(22)	116
Change in fair value of available-for-sale investments	-	-	(1,576)	2,409	(1,576)	2,409
Transfer of fair value reserve on sale of available-for- sale investments to income or expenditure	_	_	_	(53,598)	_	(53,598)
OTHER COMPREHENSIVE INCOME FOR THE YEAR, NET OF TAX	(22)	116	(1,576)	(51,189)	(1,598)	(51,073)
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	36,019	134,535	14,496	549,238	50,515	683,773

### COMPANY

	DESIGNATED GENERAL FUNDS		RESTRICTED FUNDS		TOTAL	
	2016	2015	2016	2015	2016	2015
	S\$'000	S\$'000	S\$'000	S\$'000	S\$'000	S\$'000
OPERATING INCOME						
Tuition and other related fees	440,972	411,402	_	_	440,972	411,402
Other income	208,595	202,361	120,596	90,218	329,191	292,579
	649,567	613,763	120,596	90,218	770,163	703,981
OPERATING EXPENDITURE						
Expenditure on manpower	865,928	847,379	341,667	311,034	1,207,595	1,158,413
Depreciation and amortisation expenditure	84,211	80,514	256,919	237,879	341,130	318,393
Other operating expenditure	422,647	383,108	514,019	473,185	936,666	856,293
	1,372,786	1,311,001	1,112,605	1,022,098	2,485,391	2,333,099
Operating deficit	(723,219)	(697,238)	(992,009)	(931,880)	(1,715,228)	(1,629,118)
Net investment (loss) income	5.340	109,934	(35,087)	603,278	(29,747)	713,212
Deficit before Grants	(717,879)	(587,304)	(1,027,096)	(328,602)	(1,744,975)	(915,906)
GRANTS Operating Grants:						
Government	708,241	691,410	523,949	479,370	1,232,190	1,170,780
Others	16,450	-	261,646	203,629	278,096	203,629
Deferred capital grants amortised	31,238	32,392	249,040	233,345	280,278	265,737
	755,929	723,802	1,034,635	916,344	1,790,564	1,640,146
SURPLUS FOR THE YEAR BEFORE TAX	38,050	136,498	7,539	587,742	45,589	724,240
Income tax	-	_	_	_	_	-
SURPLUS FOR THE YEAR	38,050	136,498	7,539	587,742	45,589	724,240
OTHER COMPREHENSIVE INCOME:						
Items that may be reclassified subsequently to income or expenditure:						
Change in fair value of available-for-sale investments	-	-	31	166	31	166
Transfer of fair value reserve on sale of available-for- sale investments to income or expenditure	_	_	_	(53,598)	_	(53,598)
OTHER COMPREHENSIVE INCOME FOR THE YEAR, NET OF TAX		_	31	(53,432)	31	(53,432)
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NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

### **NOTES TO THE SUMMARY FINANCIAL STATEMENTS**

### FOR THE FINANCIAL YEAR ENDED 31 MARCH 2016

### 1 GENERAL

The Company (Registration Number 200604346E) is incorporated in Singapore as a public company limited by guarantee and its registered office and place of business is located at 21 Lower Kent Ridge Road Singapore 119077

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 2016 were authorised for issue in accordance with a resolution of the Trustees on 29 July 2016.

### 2 SIGNIFICANT ACCOUNTING POLICIES

ADOPTION OF NEW AND REVISED STANDARDS - 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 for annual periods beginning on or after 1 April 2015. 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 financial statements for the current or prior years.

The Group has not adopted the following standards that have been issued but are not yet effective:

Description	Effective for annual periods beginning on or after
FRS 114 Regulatory Deferral Accounts	1 January 2016
Amendments to FRS 16 and FRS 41 Agriculture – Bearer Plants	1 January 2016
Amendments to FRS 27 Equity Method in Separate Financial Statements	1 January 2016
Amendments to FRS 16 and FRS 38 Clarification of Acceptable Methods of Depreciation and Amortisation	1 January 2016

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

### **NOTES TO THE SUMMARY FINANCIAL STATEMENTS**

### FOR THE FINANCIAL YEAR ENDED 31 MARCH 2016

### 2 SIGNIFICANT ACCOUNTING POLICIES (cont'd)

Description	Effective for annual periods beginning on or after
Improvements to FRSs (November 2014)	
Amendments to FRS 111 Accounting for Acquisitions of Interests in Joint Operations	1 January 2016
(a) Amendments to FRS 105 Non-current Assets Held for Sale and Discontinued Operations	1 January 2016
(b) Amendments to FRS 107 Financial Instruments: Disclosures	1 January 2016
(c) Amendments to FRS 19 Employee Benefits	1 January 2016
Amendments to FRS 1 Disclosure Initiative	1 January 2016
Amendments to FRS 110, FRS 112 and FRS 28 Investment Entities: Applying the Consolidation Exception	1 January 2016
FRS 115 Revenue from Contracts with Customers	1 January 2018
FRS 109 Financial Instruments	1 January 2018
Amendments to FRS 110 and FRS 28 Sale or Contribution of Assets between an Investor and its Associate or Joint Venture	To be determined

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

### NOTES TO THE SUMMARY FINANCIAL STATEMENTS

### FOR THE FINANCIAL YEAR ENDED 31 MARCH 2016

### 2 SIGNIFICANT ACCOUNTING POLICIES (cont'd)

At the date of authorisation of these financial statements, the management has considered and anticipated that the adoption of the FRSs, INT FRSs and amendments to FRS that were issued but not effective until future periods will have no material impact on the financial statements of the Group and the Company in the year of their initial adoption, except for FRS 115 and FRS 109 which the Group is currently assessing the impact. The details are as follows:

### FRS 115 Revenue from Contracts with Customers

FRS 115 was issued in November 2014 and establishes a new five-step model that will apply to revenue arising from contracts with customers.

Under FRS 115 revenue is recognised at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer. The principles in FRS 115 provide a more structured approach to measuring and recognising revenue. The new revenue standard is applicable to all entities and will supersede all current revenue recognition requirements under FRS. Either a full or modified retrospective application is required for annual periods beginning on or after 1 January 2018 with early adoption permitted.

The Group is currently assessing the impact of FRS 115 and plans to adopt the new standard on the required effective date.

### FRS 109 Financial Instruments

In December 2014, the ASC issued the final version of FRS 109 Financial Instruments which reflects all phases of the financial instruments project and replaces FRS 39 Financial Instruments: Recognition and Measurement. The standard introduces new requirements for classification and measurement, impairment, and hedge accounting. FRS 109 is effective for annual periods beginning on or after 1 January 2018, with early application permitted. Retrospective application is required, but comparative information is not compulsory in the year of adoption.

The Group is currently assessing the impact of FRS 109 and plans to adopt the new standard on the required effective date.

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

### NOTES TO THE SUMMARY FINANCIAL STATEMENTS

FOR THE FINANCIAL YEAR ENDED 31 MARCH 2016

### 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 government-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	
	2016	2015	2016	2015
	S\$'000	S\$'000	S\$'000	S\$'000
Government-controlled enterprises and companies within the Group				
Balances				
Debtors	407,029	376,365	406,747	376,657
Amount owing by subsidiary companies	_	_	889	979
Long-term loan to subsidiary companies	_	_	250	250
Creditors and accrued expenses	1,632	689	1,632	689
Amount owing to subsidiary company	_	_	25,937	26,222
Deferred Capital Grants	1,875,924	2,001,841	1,874,790	2,000,378
Grants received in advance	458,463	410,190	452,854	406,383
Transactions				
Endowed donations	2,370	1,134	2,370	1,134
Non-endowed donations	5,409	10,322	5,409	10,322
Other income	18,892	18,847	18,892	20,265
Other operating expenditure	80,706	75,552	80,706	78,535
Operating/capital grants received	1,984,625	1,620,774	1,962,226	1,600,989
Corporations in which trustees have the ability to control or exercise significant influence (including donations received from trustees)  Balances				
Debtors	44	3	44	3
Creditors and accrued expenses	109	90	109	90
<u>Transactions</u>				
Endowed donations	1,363	9,920	1,363	9,920
Non-endowed donations	24,029	788	24,029	788
Other income	441	299	441	299
Other operating expenditure	1,113	1,132	1,113	1,132
Operating/capital grants received	102	14	102	14

NATIONAL UNIVERSITY OF SINGAPORE AND ITS SUBSIDIARIES

### **NOTES TO THE SUMMARY FINANCIAL STATEMENTS**

FOR THE FINANCIAL YEAR ENDED 31 MARCH 2016

### 4. KEY MANAGEMENT PERSONNEL COMPENSATION

The compensation for twenty-two (2015: nineteen) key management personnel (includes the remuneration of an executive trustee) are as follows:

	GROUP AN	GROUP AND COMPANY		
	2016	2015		
	S\$'000	S\$'000		
Short-term benefits	14,297	13,587		
Post-employment benefits	327	295		
	14,624	13,882		





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