



NUS' 10th Chancellor

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NUS Welcomes Its 10th Chancellor



From left: Prof Tan, Mdm Halimah, Mr Hsieh Fu Hua, NUS Chairman and Prof Tan Eng Chye, NUS Deputy President (Academic Affairs) and Provost, at the welcome lunch

The University welcomed Madam Halimah Yacob, Singapore President and NUS' 10th Chancellor, on 14 November with a lunch reception held in her honour.

Mdm Halimah was sworn in as Singapore's 8th President, and the country's first woman President, on 14 September 2017.

Prior to her appointment as Speaker of Parliament, Mdm Halimah had served as the Minister of State at the Ministry of Social and Family Development, as well as the Ministry of Community Development, Youth and Sports from 2011 to 2013. In 2013, she became the first woman to hold the role of Speaker of Parliament and in 2001, the first Malay woman to be elected into Parliament.

Mdm Halimah graduated from NUS with a Bachelor of Laws (Honours) in 1978 and a Masters of Laws in 2001. She was a member of the NUS Board of Trustees from 2006 to 2011.

"I am a firm believer that a life lived meaningfully is the most fulfilling. And I'm still a firm believer that education is the best leveller in our society."

– Mdm Halimah Yacob,
Singapore President and
NUS Chancellor

"Despite humble beginnings, President Halimah Yacob demonstrated resolve and mettle, and went on to achieve many distinctive career peaks, both locally and globally. But her most enduring qualities have been her sense of public service and unwavering dedication to serve and advance the lives of individuals and communities, particularly the disadvantaged," said Professor Tan Chorh Chuan, NUS President during the event.

In her maiden speech as NUS Chancellor, Mdm Halimah noted how the campus has transformed drastically over the years but the heart of it all — the University's ethos of service — has remained unchanged, a "fitting link" back to its roots as a university established by the community, for the community.

"It is indeed an honour for me to serve as the Chancellor of my alma mater. What is even more meaningful for me is that the University continues to have a strong tradition of service. This calling to serve resonates deeply with me... I am therefore heartened to see this core value growing and pulsating strongly within the NUS community," said Mdm Halimah.

In commemoration of the special occasion, the University launched its official flower the *Papilionanda* National University of Singapore. An orchid with a bright apricot hue, the bloom reflects the strength and vitality of NUS and shares its ancestry with *Papilionanthe* Miss Joaquim, Singapore's national flower.

Appreciating Dr Tony Tan



Mr Hsieh Fu Hua (left), NUS Chairman presenting the Elements of NUS Crest to Dr Tony Tan at the lunch

The NUS community thanked former NUS Chancellor Dr Tony Tan Keng Yam for his unstinting and dedicated service to the University at an appreciation lunch held on 30 November.

Dr Tony Tan's relationship with the University began when he enrolled in the Department of Physics at the then University of Malaya in 1959. He topped his cohort, graduating with a First Class Honours degree.

Dr Tan returned to his alma mater as a lecturer with NUS Physics and thereafter with NUS Mathematics. In 1980, he was appointed as NUS Vice Chancellor, the youngest person to hold this position in the University's history.

As the Minister for Education from 1980 to 1981 and from 1985 to 1991, as well as Minister-in-charge for NUS and Nanyang Technological Institute from 1981 to 1983, he was a strong advocate for higher education in the nation. He ensured that deserving Singaporean students could access university education, regardless of their financial background.

On 1 September 2011, Dr Tan was sworn in as Singapore's seventh President and concurrently, Chancellor of NUS.

Paying tribute to Dr Tan, Professor Tan Chorh Chuan, NUS President said, "All of us admire him as a person who is visionary and bold. His leadership and ideas helped transform the university sector, creating a vibrant, dynamic and diversified higher education landscape offering Singaporeans more pathways to fulfil their potential, and meet the challenges of a globalised economy."

During his speech, Dr Tony Tan spoke fondly of his longstanding association with NUS. He expressed his appreciation in witnessing a period of tremendous growth during his term as NUS Chancellor, including the opening of University Town on Kent Ridge Campus



Dr Tony Tan's relationship with NUS began in 1959

and the launch of the Lee Kong Chian Natural History Museum at NUS in 2015.

Dr Tan also commended NUS for its transformation from a teaching institution into a world-class university widely respected for its excellence in education and research. NUS had also been ahead of its time in championing entrepreneurship education and expanding the entrepreneurial ecosystem locally and overseas.

Adding a touch of nostalgia to the event, the Eusoff Hall student band "Extremely Unkeen" performed a rendition of The Beatles' *I want to hold your hand*, specially dedicated to Dr Tan and Mrs Mary Tan. Dr Tan had met his wife Mary on campus when he was a student resident at Raffles Hall while Mrs Tan stayed at Eusoff College across the road. A string quartet from the Yong Siew Toh Conservatory of Music at NUS also entertained guests with Alexander Borodin's *String Quartet No 2* at the event.

Highlighting the zest and enthusiasm he saw in new graduands when he presented them with their degree scrolls during Commencement each year, Dr Tony Tan said, "This gives me great hope for a brighter tomorrow for Singapore and our society."

BLOCK71 Expands to Suzhou



BLOCK71 Suzhou will offer incubation space, technology commercialisation support and access to global networks

BLOCK71 Suzhou, an innovation and entrepreneurship development spearheaded by NUS Enterprise and NUS (Suzhou) Research Institute (NUSRI) in China has officially opened.

The latest addition to the expanding BLOCK71 global network was launched on 23 November in Suzhou by Mr Heng Swee Keat, Singapore Minister for Finance.

Mr Heng, who is also Singapore-Jiangsu Cooperation Council Chairman, said, "BLOCK71 Suzhou builds upon the strong ties between Singapore's and Jiangsu's companies and institutions. I hope BLOCK71 Suzhou will catalyse many breakthroughs and new partnerships that will benefit our people."

Speaking on the new initiative, Professor Tan Eng Chye, NUS Deputy President (Academic Affairs) and Provost, pointed out, "BLOCK71

Suzhou will help to drive active interactions between research and start-up communities in both Singapore and Suzhou, enabling them to reach international markets and scale more efficiently."

Dr Lily Chan, CEO of NUS Enterprise, shared, "Some 50 companies have been incubated at NUSRI, with several spin-off companies based on NUS innovations. Leveraging the success, we are happy to extend the BLOCK71 concept to NUSRI."

"BLOCK71 Suzhou is unique as it enables companies to tap on the research and technology expertise at NUSRI."

– Dr Lily Chan, CEO, NUS Enterprise

"Together with our partners, we hope to accelerate the growth of the start-up community in Suzhou and in China, and open doors for Singapore start-ups and companies to tap into China's fast-growing economy," she added.

Managed by NUS Enterprise, BLOCK71 Suzhou consists of two facilities located within the Suzhou Industrial Park.

The first site — BLOCK71 Suzhou 壹 — developed in partnership with NUSRI, will promote innovation and commercialisation efforts in areas such as artificial intelligence, biomedical sciences, cloud computing, robotics and smart devices.

The second location at Ascendas iHub — BLOCK71 Suzhou 貳 — a partnership with NUSRI and Ascendas-Singbridge, will be ready in Q2 2018.

Find out more at block71.co/Suzhou.

Leadership Centre Promotes Community Service



From left: Prof Tan, NUS Chairman Mr Hsieh Fu Hua, Mr Teo and Mr Chua at the cheque presentation

NUS launched the Chua Tian Poh Community Leadership Centre at University Town on 20 November. Guest-of-Honour Mr Teo Chee Hean, Deputy Prime Minister and Coordinating Minister for National Security, graced the occasion.

With the goal of being a focal point for community development activities on campus, the Centre will promote greater interaction and collaboration among NUS students, alumni, social service organisations and other

stakeholders through discussions, research on social and community issues and community development workshops.

Mr Chua Tian Poh, Chairman and CEO of Ho Bee Land Limited, gifted NUS with \$5 million in 2011 to establish the Chua Tian Poh Community Leadership Programme for nurturing a new generation of community leaders for the nation. Some 115 students have completed the programme.

In his speech, Mr Teo said that the Centre was important for community leadership development, "Many graduates [of the programme] have partnered social service organisations to create social programmes and interventions that have made a positive impact on the lives of many Singaporeans and families."

In his welcome address, Professor Tan Eng Chye, NUS Deputy President (Academic Affairs) and Provost, highlighted that the Programme has allowed NUS undergraduates to partner close to 100 social service organisations to "research on social and community issues, develop innovative solutions and measure the impact of their social interventions".

At the launch, Mr Chua presented NUS with a second philanthropic gift of \$5 million. He noted, "I was also told that graduates of the Programme continue to support the initiatives they started and provide mentorship to current undergraduates. This is a strong testimony to the success of the programme."

Blockchain Start-ups Make Headlines

In just five years, NUS Computing Assistant Professor Prateek Saxena and his students, past and present, have spun off half a dozen start-ups built upon the team's deep technology research that sought to solve large-scale computing issues.

These fledgling firms, which Asst Prof Saxena either co-founded or acts as scientific advisor to, have collectively raised about US\$50 million for product and market

development. Their combined net worth — a respectable US\$130 million.

The start-ups are Dexecure, which optimises website performance; Zilliqa, a next-generation high-throughput blockchain platform; KyberNetwork, a provider for the exchange and conversion of digital assets; TrueBit, a scalable verification solution for blockchains; SmartPool, an outfit dealing with the

mining of cryptocurrencies; and Anquan, a distributed ledger platform for financial markets.



The six companies possess solid technology credentials, thanks to researcher founders who are studying the field and building new knowledge based on emerging technologies.

Asst Prof Saxena shared that he picks about 50 undergraduates, postgraduates, interns and post-doctoral researchers every year to participate in his computing research and projects.

NUS Sports Centre Makes a Splash



The new sports centre features an indoor Olympic-sized swimming pool

The brand new University Sports Centre (USC) on the Kent Ridge campus has opened its doors to the NUS community since early October. Its host of amenities cater to a myriad of sports including fencing, floorball, squash and water polo at both competitive and recreational levels.

The three-storey facility replaces the former Sports and Recreation Centre building and offers three times more space with a total floor area of 9,104m². The USC features a triple-volume atrium; a thoroughfare coupled with

student-centric social spaces; indoor sports hall; two Olympic-sized swimming pools (one outdoor and one indoor); an outdoor training pool; four squash courts; a fitness and conditioning lab; a multipurpose mezzanine; as well as three meeting rooms of various capacities, two of which can be configured to become a larger meeting space.

The indoor sports hall on level three can be used for four sports — basketball, floorball, handball and netball. The arena is large enough for two concurrent games of netball

or basketball and seats some 350 spectators on one side of the hall, with a mezzanine level overlooking the courts.

The NUS men's water polo team began training at the USC in early October, said Gerald Sim, Year 3 NUS Business School student and team captain. Before the Centre was ready, the team practised at the Co-Curricular Activities Branch Swimming Complex located next to NUS Bukit Timah Campus. Gerald appreciated the advantages of USC's two Olympic-sized swimming pools, which provide more space for various groups to train.

New Master's Degree in Finance

NUS Business School (NUS Business) has launched a new Master of Science in Finance to address the industry's increasing demands and disruption. The degree offers a rigorous and industry-relevant learning environment, complete with robust internship and networking opportunities.

The programme features two tracks — corporate finance and investment finance — created with sector agencies, industry partners, faculty and undergraduates. Aimed to address the

broad changes in the regulatory and institutional environments, it is open to graduates both with and without business experience.

Professor Jochen Wirtz, Vice Dean (Graduate Studies) of NUS Business, explained "With increasing volatility and technological disruption to existing business models and market structures, we anticipate the demand and role of finance in the future economy to extend beyond the financial sector."

Prof Wirtz added that employers will require specialised talent with analytical and problem solving skills, complemented by high ethics, in the corporate, markets and financial intermediation sectors.

The 14-month programme includes a compulsory experiential learning component where students can opt to take on an internship placement or applied project. The first intake of 40 students will commence in October 2018.

Palliative Care: Adding Life to Days

A group of students from NUS Yong Loo Lin School of Medicine (NUS Medicine) organised a Life Stories Exhibition on palliative care from 21 to 22 October themed "Adding Life to Days". This was part of an on-going student-initiated public education project on palliative care called "Project Happy Apples", which aims to evoke reflections and spark conversations on end-of-life care.

The exhibition comprised various elements, such as the Life Stories of Patients segment which collated the legacies and life experiences of palliative care patients and how they coped, as well as interactive components such



A participant viewing the Life Stories of Patients segment

as Telephone Booth — a listening experience on a simulated decision-making process people face towards the end of their lives.

Other activities included talks, performances and Before-I-Die boards which encouraged the public to reflect on their lives and pen down their

personal aspirations, as well as thoughts on end-of-life care.

"We hope to engage the public and educate them about palliative care, highlighting its purpose and significance while correcting any misconceptions people may hold," said Year 3 NUS Medicine undergraduate Tay Kuang Teck, who headed the student organising committee.

The exhibition was conceptualised from the students' interactions with palliative care patients while on a befriending programme run in collaboration with HCA Hospice Care and the Motor Neurone Disease Support Group — National Neuroscience Institute.

Music Conservatory's Operatic Debut

The Yong Siew Toh Conservatory of Music (YST Conservatory) at NUS staged its first opera ever on Handel's *Acis & Galatea* on 6 and 7 October. Performed by a cast and orchestra consisting almost entirely of YST Conservatory students, the two performances attracted an audience of more than 1,000.

The 18th century opera relates the story of mortal Acis and nymph Galatea, whose love is thwarted by the monster Polypheme. Li Wei-Wei in Year 4 and Lim Jing Jie in Year 2 played Galatea and Polypheme, respectively. Wei-Wei has participated in an opera performance in Italy while Jing Jie has sung in smaller chamber operas and choral roles in other operas.

Wei-Wei admitted that she initially watched performances of *Galatea* in other operas. "But then I realised that I should create my own *Galatea* as everyone has different life experiences and these affect how we react on the stage," she said.

Said Professor Bernard Lanskey, YST Conservatory Dean, "One of the most interesting dimensions of this project was pushing the boundaries of what we can do in our Concert Hall and in our building — perhaps that is the more interesting avenue for immediate exploration."

Professor Alan Bennett, YST Conservatory Head of Vocal Studies, shared that



Wei-Wei (centre) with several members of the chorus

"*Acis & Galatea* would be a project that we could present well" as it is smaller in scale than most of Handel's other operas. He noted that Associate Professor Jason Lai, the conductor of the orchestra, was able to employ a historically informed approach using modern instruments.

Speaking of the educational value of the musical drama, Prof Bennett said, "The best realisation for the students was to explore how a visual dramatic component can inform how they interpret and present the music."

Leadership's Powerful Lenses



Prof Tan sharing his insights at the Leadership Dialogue

What attributes should a leader have?

Who better qualified to answer this than Professor Tan Chorh Chuan, NUS President, who has helmed the University since 2008 and will be leaving in January 2018 to join the Singapore Ministry of Health (MOH) as Chief Scientific Officer.

At 38 years old, Prof Tan was the youngest Dean at NUS Medicine. He was then seconded to MOH as Director of Medical Services, where he headed the public health response during the SARS epidemic in 2003.

He held the positions of NUS Provost, then Senior Deputy President from 2004 to 2008.

Prof Tan shared his insights recently with students, faculty, alumni and industry professionals at the Leadership Dialogue Series organised by NUS Business School.

In his presentation "The Powerful Lenses of Leadership", Prof Tan pointed out that choosing a leader depends on the most important goals and priorities that the organisation wants to accomplish.

Besides evaluating the expertise, experience and qualities of a candidate, he underscored that the harder part is to assess the institutional cultural fit.

Prof Tan stressed that the candidate needs to be someone who is open, willing to learn and yet effective in executing within the culture. Potential candidates have to be problem solvers, possess a strong sense of empathy and have low ego levels.

"You need people who are effective in existing culture, and yet able and willing to help reshape and enhance the culture to make it better."

– Prof Tan Chorh Chuan,
NUS President

Prof Tan advised those who step up to be leaders to look at the motivation behind their decision, which determines their commitment and resilience. He sees two attributes which are often lacking: people skills and system-level thinking — being able to think about issues deep and narrow, but also think about the broader systems, connections and implications.

For him personally, Prof Tan took up the position of Dean of NUS Medicine because he disagreed with the ways medical students were taught in the nineties and wanted to make positive changes — what he coined as "constructive dissatisfaction".

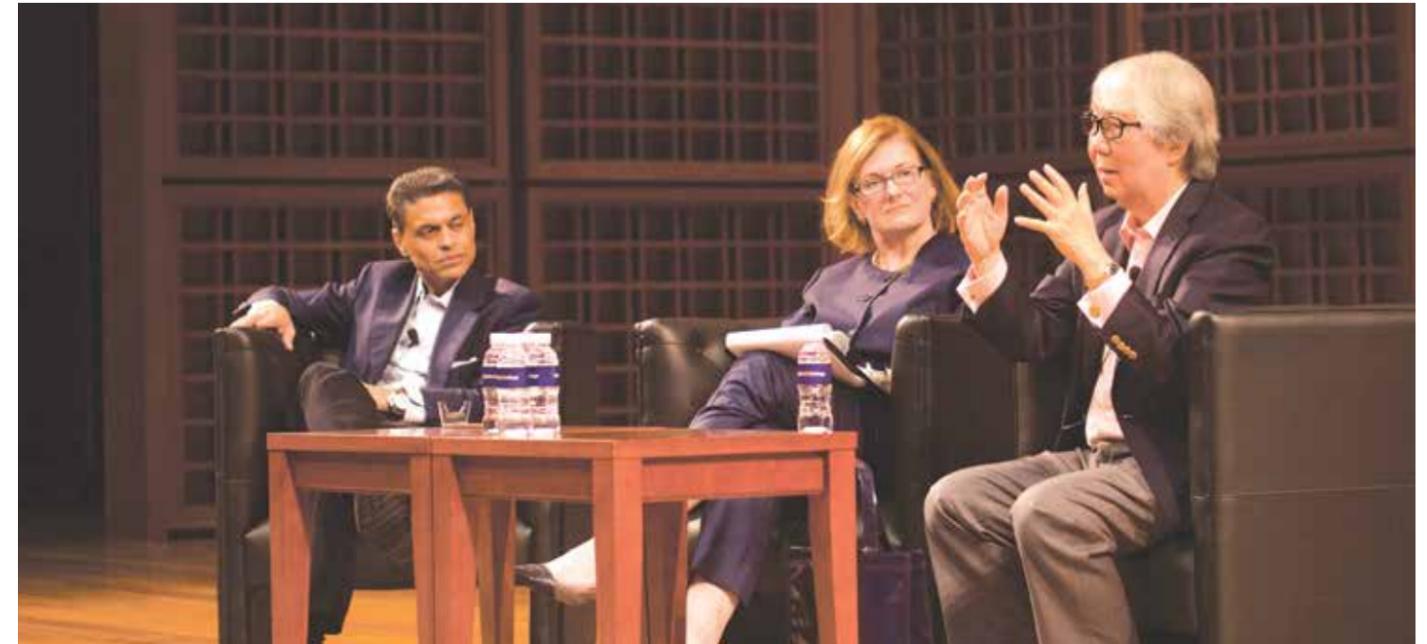
When he was asked to become Director of Medical Services in MOH, he accepted as he wanted to contribute towards tackling and preventing various diseases such as kidney failure which he encountered first-hand as a nephrologist.

Prof Tan summarised that an effective leader needs to have a vision and create a collective sense of ownership of a distilled set of ideas and have this as a way to energise activities across the institution.

When asked by a member of the audience on constantly maintaining a calm demeanour, Prof Tan replied that leaders must always be seen as a source of stability and strength to inspire their subordinates.

He further described his leadership style where he encourages a collaborative culture, ensuring there are open channels of communications and reducing any misunderstanding within the organisation.

The Unfolding 21st Century



Prof Koh (right) elaborating a point during the panel discussion as Dr Zakaria (left) and Dr Craig looked on

Dr Fareed Zakaria, renowned CNN journalist and *Washington Post* columnist, parried with Professor Tommy Koh, Singapore's Ambassador-at-Large and Rector of NUS Tembusu College, at Yale-NUS College (Yale-NUS) on 31 October, each presenting his perspectives on politics, society and technology.

The dialogue was part of the President's Speaker Series organised by Yale-NUS.

Both eminent speakers outlined their broad observations on the world today. Prof Koh pointed out several positive trends he sees for the 21st century, "We are living and benefiting from the three biggest growth stories of human history — the re-emergence of China and India, and the unexpected rise of Southeast Asia, or ASEAN."

Dr Zakaria underscored how globalisation and the information revolution are propelling transformations in the world, noting that while these had brought about much success, there are also unintended consequences. "The result of globalisation and the information

"I feel that unless you begin to see a concerted defence of openness, the forces of restrictions, closures and obstacles will inevitably triumph."

– Dr Fareed Zakaria,
CNN journalist and
Washington Post columnist

revolution coming together is that it has provided massive returns to capital and companies, and very modest returns to labour and to workers," he said. As such, significant parts of Western society feel somewhat dispossessed, he added.

A dialogue session following the presentations was moderated by Dr Trisha Craig, Dean and Senior Lecturer at Yale-NUS' Centre for International & Professional Experience.

The first topic raised by Dr Craig was protectionism, which had Dr Zakaria

expressing his concerns about China. He cited China's institutions and policies as examples that served as "conduits for the promotion of Chinese mercantilist power rather than genuine rule-based constitutions that are trying to create an open world economy".

In response, Prof Koh cautioned against demonising China. He noted that East Asian countries generally reject protectionism and believe in opening up their economies and integrating with the world.

On the rise of populism, Prof Koh felt that the huge divides between class, religious beliefs and socio-political attitudes, along with widening global inequality, provide ammunition that drives the growing movement in the US and Europe.

During the question-and-answer segment, participants discussed subjects such as viable business models for independent media; mandating the study of Warren Buffet's positive teachings in schools; and Russia's place in the 21st century.

Advancing Solar Energy

An NUS-led consortium has received a \$6.2-million research grant by the Energy Market Authority (EMA) to develop solar forecasting capabilities.

The complexities of local weather systems in a highly urbanised environment make forecasting solar power output in Singapore a challenge. This could result in imbalances between electricity demand and supply, especially when solar energy becomes more prevalent. To mitigate the effects of solar intermittency and ensure a reliable and stable power supply, the solar photovoltaic (PV) power output needs to be computed ahead of time.

The consortium will focus on improving the accuracy of solar PV output forecasts

and grid management using techniques in weather prediction, remote sensing, machine learning and grid modelling. Data of solar irradiance from sensors installed on rooftops of buildings as well as weather data from Meteorological Service Singapore will be used.

The four-year project will be headed by Principal Investigator Associate Professor Ashwin Khambadkone from NUS Electrical and Computer Engineering, and done in collaboration with the Solar Energy Research Institute of Singapore at NUS; the Centre for Remote Imaging, Sensing and Processing at NUS; the Agency for Science, Technology and Research's Experimental Power Grid Centre; and the Singapore-



MIT Alliance for Research and Technology's Centre for Environmental Sensing and Modelling.

A joint project of home-grown integrated energy

solutions provider Red Dot Power and NUS has been awarded a research grant by EMA and SP Group to implement Singapore's first utility-scale Energy Storage System.

Smart Utilities Plant for the Tropics

A four-in-one system that can simultaneously produce key daily utilities — electricity, water, air-conditioning and heat — is now a reality.

The new smart quad-generation plant, which is more environmentally friendly and cost-effective, has been developed by researchers from NUS Mechanical Engineering.

Associate Professor Ernest Chua, leader of the project, noted that energy currently required for the generation of the four utilities gives rise to extensive wastage and needs a huge floor area.

"With our smart plant, these processes are carefully integrated together such that waste energy can be harvested for useful output. Overall, this novel approach could cut energy usage by 25 to 30 per cent," he explained, adding

that the compact plant reduces carbon dioxide emission by about a third.

The utilities system uses natural gas to power the micro turbines to generate electricity. Waste heat is channelled back to chillers to produce cooled water, which then cools the air for air-conditioning. The waste heat can also be used to yield hot water or steam.

The plant recycles non-potable water, such as rain water, to obtain clean drinking water. A dual-dehumidification system incorporated can remove up to 60 per cent of moisture from the air to enable quicker cooling of the environment.

Intelligent features include real-time tracking of power consumption and remote operating of valves and pumps, to enable evaluation of energy efficiency

and process customisation for different communities. The team plans to transfer this data onto the cloud to allow mobile access and remote operation from around the world.



The system allows the tracking of the plant's processes in real time

Breakthrough in Memory Technology

An international research team helmed by NUS has created a thin, organic film that supports a million more times read-write cycles and consumes 1,000 times less power than commercial flash memories.

The innovative film can store and process data for 1 trillion cycles and has the potential to be further miniaturised from its current size of 60 square nanometres to below 25 square nanometres.

"The novel properties of our invention opens up a new field in the design and development of flexible and lightweight devices," said Professor T Venky Venkatesan, Director of NUS Nanoscience and Nanotechnology Initiative (NUSNNI), the coordinator for this groundbreaking effort.



Coordinator for the international project Prof Venkatesan (extreme right) and team at NUS led the invention of the new organic memory device

The pioneering memory device has been reported recently in the journal *Nature Materials*.

The computer industry has been pursuing memory technologies that are better and cheaper than commercial flash memories, but avoids organic systems due to their limitations in performance and behaviour.

Mr Sreetosh Goswami, a researcher from NUSNNI, overcame these challenges to successfully fabricate an organic resistive memory device that outperforms commercial flash memory in terms of endurance, energy efficiency and cost. He developed 600 working devices which demonstrated impeccable reproducibility.

The new device uses a transition metal complex designed and synthesised by Professor Sreebrata Goswami and his team from the Indian Association for Cultivation of Sciences. Professor Victor Batista and team from Yale University contributed to the science behind the device performance and the molecular properties that provide non-volatile memory behaviour.

The scientists plan to partner a consumer electronics company to commercialise the new technology. They are also looking at fabricating multistate memories to produce neuromorphic memory devices for artificial intelligence applications.

Liver Cancers Linked to Herbal Remedies

A natural plant product present in herbal medicine has been linked to liver cancers.

Scientists from Singapore and Taiwan discovered that *Aristolochia* and *Asarum* plants, commonly used in traditional herbal remedies for various conditions including weight loss and slimming, may be responsible for many liver cancers in Asia. These plants contain aristolochic acids, which have been shown to mutate many genes that cause cancer.

The research led by Professor Steven Rozen from Duke-NUS Medical School, Professor Teh Bin Tean from the National Cancer Centre Singapore, Professor Alex Chang from John Hopkins Medicine Singapore and

Professor Hsieh Sen-Yung from Chang Gung Memorial Hospital in Taiwan, first sequenced the DNA of 98 liver cancers from Taiwan.

Using mutational signature analysis on the DNA, they found high numbers of aristolochic acid-related mutations in more than three-quarters of these cancers. The scientists then examined publicly available data on mutations from 1,400 liver cancers worldwide and noted high prevalence of exposure in East and Southeast Asia.

Aristolochic acid, a known mutagen that causes cancer, was previously implicated in kidney and urinary tract cancers in Taiwan. This new study confirmed that the compound is associated with liver cancer as well.



Aristolochia plant is used in herbal remedies

Although aristolochic acid has been banned in many countries, traditional medicine herbs containing the compound are still widely available. The researchers called for greater awareness on the dangers of aristolochic acid in herbal products.

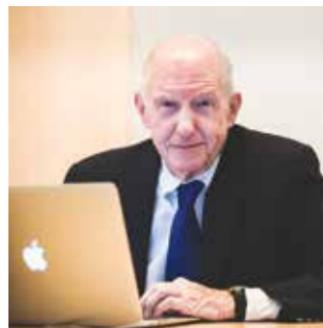
Researchers Receive President's Awards



Mdm Halimah presenting the award to Prof Gan at the PSTA ceremony

NUS Mathematics Distinguished Professor Gan Wee Teck has been presented the prestigious President's Science Award for his outstanding contributions to the field of mathematics. He was bestowed the award on 13 November by Madam Halimah Yacob, Singapore President during the annual President's Science and Technology Awards (PSTA) ceremony, organised by the Agency for Science, Technology and Research (A*STAR).

Prof Gan's work on the Langlands programme and the Gan-Gross-Prasad conjecture which bears his name has helped to link



Prof Holmes received the President's Science and Technology Medal

the mathematical fields of number theory and representation theory.

Number theory deals with the properties of numbers, their patterns and their relationships, while representation theory looks at symmetries in algebraic structures. By linking the two fields, mathematicians could potentially use tools and results from one field to solve problems in the other.

This led to a spike in research activities and helped to resolve several mathematical enigmas, such as proving a 40-year-old hypothesis known as Howe's Duality Conjecture. It could also have real-world implications in technologies like computing, artificial intelligence and precision engineering.

Receiving the President's Science and Technology Medal was Lien Ying Chow Professor of Medicine Edward Holmes from the NUS Yong Loo Lin School of Medicine (NUS Medicine). His pioneering work in developing

talent, programmes and infrastructure galvanised the translational and clinical research in Singapore's health and biomedical sciences sector.

Prof Holmes is also a Senior Fellow at A*STAR and an Advisor to the National Research Foundation and the Ministry of Health. He played a key role in laying the blueprint for creating a research ecosystem supporting translational scientific research, and helped formulate Singapore's health strategies. He was conferred Honorary Citizenship in 2011.

Adjunct Assistant Professor Li Jingmei from NUS Medicine and Senior Research Scientist at the Genome Institute of Singapore was honoured

with the Young Scientist Award in the Biological and Biomedical Sciences Category.

Her research on predicting, preventing and improving care for breast cancer has uncovered new susceptibility markers and mechanisms that identify those at risk of developing the disease.



Asst Prof Li was awarded the Young Scientist Award

Ventus Garners Green Accolades



NUS Ventus incorporates lush greenery in its design

NUS Ventus on Kent Ridge Campus, whose sensitive design incorporates quality environmental features and care for the natural surrounding environment,

has collected two awards given out by the National Parks Board (NParks). It is the only development to be given both accolades this year.

Outstanding Alumni Recognised



Front row: Prof Tan Eng Chye, NUS Deputy President (Academic Affairs) and Provost (2nd from left); Mr Hsieh Fu Hua, NUS Chairman (4th from left); Mr Po'ad Mattar, NUS Pro-Chancellor (5th from right); Prof Tan Chorh Chuan, NUS President (3rd from right); Prof Chua Kee Chaing, Dean, NUS Engineering (far right); and Mr Bernard Toh, Director, NUS Alumni Relations (back row, far left) with the award recipients

Fifteen exceptional alumni were feted at the biennial NUS Alumni Awards 2017 on 23 November for eminence in their chosen fields and contributions to their alma mater, society and the world.

The top honours went to Mr Wong Ngit Liong, Chairman and CEO of Venture Corporation, who received the Eminent Alumni Award for his exemplary service to NUS,

his achievements in industry and his spirit of public service.

Mr Wong was the immediate past Chairman of the NUS Board of Trustees, a position he held for 12 years. Under his leadership and vision, the University transformed into a highly regarded leading global university. Mr Wong was also credited with steering NUS through corporatisation, a complex and challenging process.



Mr Wong received the Eminent Alumni Award

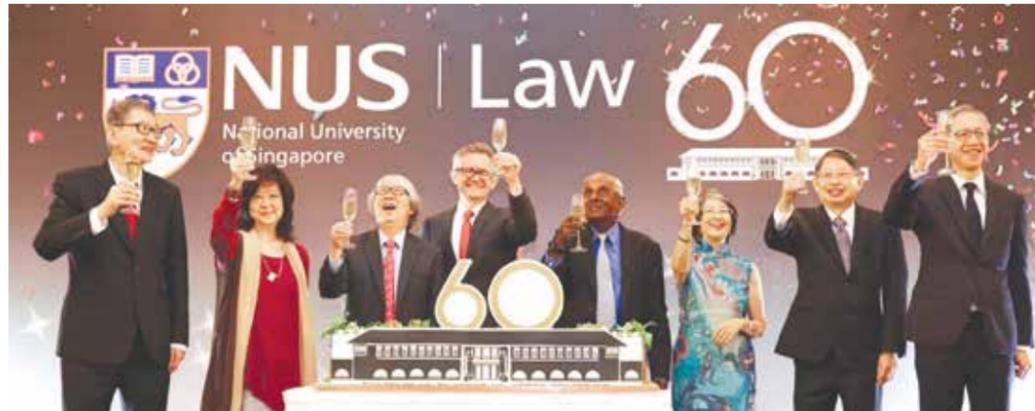
Mr Wong has served on the boards of several key public agencies and high-profile committees throughout his career.

The Distinguished Alumni Service Award was presented to five outstanding individuals for their excellent and sustained service to the University. Recipients included veteran banker and industry leader Mr Peter Seah, Chairman of DBS Group Holdings, DBS Bank and Singapore Airlines; and Ms Chew Gek Khim, Executive Chairman of The Straits Trading Company Limited and well-known philanthropist.

In addition, nine individuals aged 40 and below received the Outstanding Young Alumni Award for their accomplishments.

Among them was trio Mr Quek Siu Ru, Mr Lucas Ngoo and Mr Marcus Tan, co-founders of e-commerce platform Carousell and the first ever team to clinch the award. The NUS Overseas Colleges programme alumni started Carousell in 2012, which is now one of the world's fastest growing marketplaces.

Celebrating 60 Years of Legal Education



NUS Law Dean Prof Chesterman (4th from left) celebrating NUS Law's 60th anniversary with former Law Deans (from left) Prof Tan Lee Meng, Dr Thio Su Mien, Prof Tommy Koh, Prof S Jayakumar, Prof Tan Sook Yee, Assoc Prof Chin Tet Yung and Prof Tan Cheng Han

NUS Law commemorated 60 years of legal education with an anniversary dinner at Shangri-La Hotel on 20 October. *The Lamp of the Law: 60 Years of Legal Education at NUS Law*, a book detailing the growth of the Faculty was launched at the event.

In his welcome speech, Professor Simon Chesterman, Dean of NUS Law, placed people at the core of the Faculty's history, saying, "Yet

even the finest classrooms and the richest body of scholarship would be nothing without the people that pass through those halls and engage with that material."

Guest-of-Honour Mr Sundaresh Menon, Singapore's Chief Justice and NUS Law alumnus, spoke about the challenges and opportunities ahead for the legal profession, such as the internationalisation

of legal practice. He was pleased to note that NUS Law had exposed its students to international and comparative law.

The special anniversary book *The Lamp of the Law* was written by Dr Kevin Tan, NUS Law alumnus and adjunct professor at the Faculty. The legal historian traced the development of NUS Law from initial efforts to provide legal education at

Raffles College, through the war years to its present day as one of Asia's leading law schools. Proceeds from the book sale went towards the NUS Law Student Support Fund set up at the start of the jubilee year.

The dinner was attended by more than 300 faculty members, students, eminent alumni and members of the legal profession, as well as benefactors.

Fun Rocks at Natural History Museum

The Lee Kong Chian Natural Museum (LKCNHM) at NUS was transformed into a festive hub of family fun on 11 November, with exciting game booths, delectable food stalls and lively performances by student bands. The convivial event drew more than 1,400 visitors.

The carnival Fun Rocks, organised by NUS Science and LKCNHM, supported fundraising efforts for the NUS Science Merit Scholarship which helps talented

students achieve their educational and career goals.

Guest-of-Honour Mr Ong Ye Kung, Minister for Education (Higher Education and Skills) and Second Minister for Defence, toured the museum and interacted with young visitors.

The event raised over \$700,000 for the scholarship, while tickets sold benefitted many community groups.



Young visitors fascinated by the carnival activities

New Centre for Pro Bono Efforts

The Centre for Pro Bono & Clinical Legal Education at NUS Law was launched on 31 October by Ms Indranee Rajah, Senior Minister of State for the Ministry of Law and Ministry of Finance.

The Centre brings together the work of the NUS Pro Bono Office and the Faculty's clinical legal education programmes to develop best practices and prepare NUS Law students for real-world practice by exposing them to the challenges of delivering quality legal service while serving the disadvantaged in the community.

"This new Centre will widen and deepen the opportunities for our students to see the law in action, making them



Ms Indranee (centre) and Presiding Judge of the State Courts Justice See Kee Oon (2nd from right) with Year 4 NUS Law students and participants of the pilot State Courts - NUS Clerkship Programme

better lawyers and potentially better people. Such experiences will help improve our graduates in the practice of law but also teach them, we hope, that the value of a lawyer is best measured in people helped rather than hours

billed," said Professor Simon Chesterman, NUS Law Dean.

Ms Indranee concurred during her speech, "Education for young lawyers is broader than teaching the law,

jurisprudence and concepts of justice and rights. It also includes cultivating practical knowledge and skills, and understanding the potential impact of our work on the lives of our clients."

The Centre will develop, manage and oversee pro bono programmes at the Faculty, including the Mandatory Pro Bono Programme for Law Students. It will also support student-led pro bono activities of the NUS Pro Bono Group and the Criminal Justice Club.

The Centre for Pro Bono & Clinical Legal Education is helmed by NUS Law Associate Professor Lim Lei Theng and Associate Professor Ruby Lee.

Private Gift to Global Engineering

"The company's philanthropic reach is extensive. But we come back to education time and time again because that is where the opportunity is — to nurture and develop young minds, and cultivate the next generation."



Mdm Lee Hwee Kwan, Finance and Administrative Director of Super Galvanising Pte Ltd

Super Galvanising Pte Ltd, a leading provider of protection for steel-based projects, is the first donor to the Global Engineering Programme (GEP) at NUS Engineering, designed for undergraduates with a strong interest in solving real-world problems in engineering. The Super Galvanising - Global Engineering Scholarship will be awarded to high-achieving financially needy students on the GEP. The company has also supported the NUS Business School with a bursary.

To find out more about making a gift to NUS, call 1-800-DEVELOP (1-800-338-3567), email askdvo@nus.edu.sg or visit www.giving.nus.edu.sg

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Enchanted Gardens



The natural forest garden beside Ventus allows students and researchers to learn more about nature

Photo: Zi En Jonathan Yue

Singapore is widely known as a City Garden with well-manicured lawns and plants, but an NUS landscape architect envisions to shift this image with a more ecological design approach.

Assistant Professor Hwang Yun Hye from NUS Architecture aims to offer tropical cities like Singapore an alternative management method of urban greenery — natural forest-like gardens simulating an organic ecosystem.

Her pilot project “From Lawn to Forest Garden” offers a glimpse into this ideal. A luscious oasis that has scarcely been

touched in years, the experiment showcases a rare type of landscape in an urban setting.

A 2500m² area beside the Ventus building on NUS’ Kent Ridge campus was fenced up and left to grow without human interaction for two years.

The enclosure had since been removed and minimal maintenance carried out such as weeding to prevent overcrowding, removing a species that attracts mosquito breeding, and protecting fruiting plants as a food source for animals, while leaving most flora to grow.

A 70m boardwalk was later added as an outdoor laboratory space for facilitating accessibility of the garden for students and researchers to develop an understanding of the complexities of urban ecosystems and connect with nature.

The garden also saw a rapid increase in biodiversity. Some 47 plant communities and 51 fauna species were recorded, from an original 21 ground covers and 11 small insects. The new additions included tree seedlings, palms, ferns, creepers and grasses as well as bees, butterflies, moths, birds and mammals. The spot even became a refuge for a

pair of critically endangered spotted owls.

Another project “Nature Refuge on Five Centimetres of Soil” transformed an unutilised roof of a campus building using a 5cm depth of basic soil medium. With minimal maintenance, the green roof boasted 64 species of plants and 69 fauna species after a couple of years.

Both projects recently won accolades at the International Federation of Landscape Architects Asia-Pacific Region 2017 Landscape Architecture Awards and Landscape Institute Awards 2017.

We are going fully digital!

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