

CITATION ON
UNIVERSITY OF SOUTHAMPTON HONORARY GRADUAND
PROFESSOR TAN ENG CHYE
BY PUBLIC ORATOR DR DAVID DUNN
UNIVERSITY OF SOUTHAMPTON
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Professor Tan Eng Chye is President of the National University of Singapore (NUS). Appointed to serve from 1 January 2018, he is NUS's fifth president, and the 23rd leader to head Singapore's oldest higher education institution.

Eng Chye comes from a modest background: his parents received only a rudimentary education, and earned their living as school bus drivers. Being the oldest of six children made Eng Chye resilient and resourceful and, after primary school (grade 6), he obtained a place to study at Raffles Institution, the oldest pre-tertiary school in Singapore. By 1985, he had graduated from NUS with a First Class Honours degree in Mathematics. He was made a faculty member of the University in the Department of Mathematics before setting off to America to study for a PhD at Yale University. Returning to NUS in 1989 with a doctorate, Eng Chye held various positions of administrative leadership at Department, Faculty and University levels. In 1999, he was appointed Deputy Head of the Department of Mathematics. From 2000 to 2003, he was Vice Dean (Academic Affairs) at the Faculty of Science, and in 2003, he became Dean of the Faculty of Science until 2007. Thereafter, for the next decade, he served as NUS's Deputy President (Academic Affairs) and Provost.

Commenting on the development of his leadership style, Eng Chye confides that it was not his 11 years as a University Provost that prepared him for senior academic management. Rather, it was his National Service. All men are required to undertake two years of national service in Singapore. He became a Second Lieutenant in the military where he led a platoon, and then joined the police force to continue his national service. Engagement with soldiers and members of the public while in uniform, as well as coordinating and working with military and police officers, has taught Eng Chye most about successful management.

He likes long walks and appreciates the time of measured reflection that hiking provides. He also regularly walks around campus — a beautiful site with many spectacular buildings and lush greenery of which he is intensely proud. Two or three times a week, he invites colleagues to walk and talk with him so that he can keep in touch with middle management and better understand what is happening on the ground.

Beyond NUS, Eng Chye has held visiting positions at various universities overseas: in the USA, at Rutgers University (the State University of New Jersey), the University of Washington at Seattle, the University of California at Berkeley and the University of Maryland; in Japan, at the Universities of Tokyo and Kyoto; and at the Hong Kong University of Science and Technology. Eng Chye also sits on a number of boards and committees including the International Advisory Council of the Southern University of Science and Technology in China, Singapore's Future Economy Council, the Agency for Science, Technology and Research, the Defence Science & Technology Agency (under the Ministry of Defence), and the NUS High School of Mathematics and Science.

Eng Chye's research interests are in the Representation Theory of Lie Groups and Lie Algebras; and Invariant Theory and Algebraic Combinatorics. He has been invited to speak at numerous leading conferences overseas, and has published more than 20 articles in top, internationally-refereed journals and conference proceedings. He has also co-authored three books on mathematics, including a well-known graduate text on non-Abelian harmonic analysis.

Active in promoting mathematics, Eng Chye helped establish the Singapore Mathematical Society Enrichment Programmes in 1994, revamped the Singapore Mathematical Olympiad in 1995 to allow more participation from students, and initiated a series of project teaching workshops for teachers in 1998. He served as President of the Singapore Mathematical Society from 2001 to 2005, and as President of the South East Asian Mathematical Society from 2004 to 2005.

Eng Chye is a passionate and award-winning educator. Highly regarded in the classroom, Eng Chye received University Teaching Excellence Awards from NUS in 1998 and in 2004/2005. He was a pioneer architect of the current academic system in NUS, championing the importance of a broad-based education through a redesign of the University's general curriculum so that students study Science, Technology, Engineering and Maths subjects alongside Humanities and Social Sciences. He has seeded many initiatives such as the Special Programme in Science, the University Scholars Programme, the University Town Residential College Programme, the Grade-free Year, and Technology-enhanced Education.

One of the key directions that Eng Chye is now steering NUS towards is the integration of lifelong learning into its framework. In Singapore, graduates typically leave university in their early twenties (women at 22 years of age and men at 24 after military service). They currently expect to retire at 67. With rapidly-changing work and social environments, the skills that graduates will need for the next 45 to 50 years of their lives may no longer be the ones that they had acquired in their early years at University. They will have to adopt a lifelong learning mindset, and so NUS has ambitiously launched a new model of education that strategically transforms graduate entitlements. Every alumnus' enrolment is now valid for 20 years from the point of first admission as an undergraduate student, with an automatic eligibility for them to pursue new competencies and skills at NUS after graduation.

The close relationship between the NUS and the University of Southampton began some 15 years ago. As Singapore started to reinstate itself as an International Maritime Centre with maritime and off-shore knowledge clusters, it was logical to invite the Southampton Marine and Maritime Institute to become a partner. This led to the opening of a joint laboratory in Singapore which involves A*STAR researchers and NUS professors, focusing on maritime and offshore engineering research and development. The University of Southampton's research into fast-fluid structure interactions, and NUS's interest in hydrodynamic applications to offshore structures, have led to many meaningful collaborations including underwater robotics. Among recent developments are an auto-sub that will explore under the Arctic sea-ice and other autonomous vehicles that can help with deep-water oil exploration without damaging the environment. We are delighted that Professor Chan Eng Soon, who continues to advance the cooperation between our two institutions, is accompanying Eng Chye and is in the audience today.

Eng Chye has four children: the first born son was followed by triplets (two girls and a boy). When asked 'how ever have you managed?' He replies: 'I have a very capable wife'. We are delighted also to welcome Ng Lo Mun who is accompanying her husband, and to acknowledge the major role that she has played in the development of his career.

In an outstanding career spanning over 30 years, Eng Chye has made his mark first as an innovative and exceptional teacher, and then as a distinguished and respected leader in academia. In 2014 he was awarded the prestigious Public Administration Medal (Gold) at Singapore's National Day Awards, and earlier this year he received the Wilbur Lucius Cross Medal from Yale University which honours exceptional alumni in the areas of scholarship, teaching, academic administration and public service.

Pro-Chancellor, I have the honour to present Professor Tan Eng Chye as eminently worthy of the degree of Doctor of Science, *honoris causa*.