

Speech by Prof Tan Eng Chye, NUS President

University Awards 2020

4 Dec 2020, 6.30 pm, Shaw Foundation Alumni House Auditorium

Minister for Defence, Dr Ng Eng Hen

NUS Chairman

Award Recipients

Distinguished Guests

Ladies and Gentlemen

1. Good evening to everyone and welcome to University Awards 2020.
2. My thanks to everyone joining us in person here in the auditorium, as well as those who are watching on Youtube and Zoom. In today's world, being present physically, has taken a whole new meaning. We have all come to appreciate occasions such as these – participating in a shared experience with others, where we can personally engage with the feelings, emotions and energies across the room. Thank you for being here.
3. 2020 has been marked by the Covid-19 crisis. It is said that crises can bring out the best in humanity. At the same time, crises can also accentuate weaknesses, vulnerabilities and cracks. What certainly holds true is that the way we respond to Covid-19 reflects who and how we are, and what we stand for as an institution. On this count, I must say that NUS has held out very well together. When the crisis broke out, more than 1,300 NUS students were overseas on various exchange and academic programmes, all of whom, had subsequently returned to Singapore, or to their home countries, safely.

Even in Crisis - Excellence in Education

4. As a global and highly interconnected university, every aspect of our operations has been disrupted by Covid-19. Yet, on top of the additional work, stress, worries and uncertainties, and in spite of having to implement changes and measures at lightning speed, the University's utmost commitment to excellence has been evident, and shines through. NUS did not let up in our efforts to deliver an excellent education to our students, whose health, well-being and educational experience remain as our priority.

5. Covid-19 is a sudden pandemic that caught the world unguarded, and necessitated the rapid and full adoption of e-learning from March. Even till today, we do not have full knowledge about the disease and its treatment, spread and long-term effects. Invariably, our educators faced real, teething issues, such as communications and network connectivity, that come with having to redesign module delivery. For a candid, first-hand account of what our faculty have had to go through, do read Associate Professor Chris McMorran's commentary, titled '*Online teaching doesn't have to suck for students or educators*'.
6. Through it all, our educators' commitment to delivering excellent education has defined the student experience. I am pleased to share the pleasant and perhaps surprising outcome – in spite of the disruptions faced, student feedback scores were higher, as compared to previous semesters. There is appreciation for the hard work and dedication of our educators.
7. Text analyses of qualitative comments revealed that students had a positive perception of how our academics have handled the pandemic. Students cited well adapted materials for e-learning, excellent use of technology, engagement and care for student morale, and the options for assessment and content delivery, as areas which they are greatly satisfied with.

Even in Crisis – Educational Innovations

8. In these months, NUS educators have honed new skills, experimented with new technologies, and dabbled into new ways to encourage active learning made possible by online teaching. All these, to make students' learning experiences fun, enriching and engaging.
9. Let me share a few examples. With strict safe distancing measures in place, access to teaching laboratories were limited. In place of a lab session, Associate Professor Ho Han Kiat from the Department of Pharmacy adopted a 'Cooking Show' approach using demonstration videos. Students could see how an experiment can be designed to test the hypothesis, that hormesis can occur in a cell-based model. The experiment comprised six

10. distinct snapshots, and each step features a running commentary to describe the process. Data generated from the experiment was given to students; students write up a lab report on their observations, and conclusions derived from their data analysis. Although a physical lab session could not be conducted, Han Kiat's innovative improvisation achieved the intended learning outcome, that is, the theoretical aspects of experiment design and data analysis.
11. As students and professors were home or hostel-bound, Professor Sow Chorng Haur, who teaches Physics, took experiments to students' homes. Through innovative use of everyday materials which we have easy access to, such as matchsticks, Chorng Haur got his students to do experiments as he demonstrated them during his Zoom tutorials. So Chorng Haur's version is a 'Cook with me Cooking Show'! Chorng Haur had even posted some lab apparatus to his students so that together, they could do experiments in their synchronous online tutorials.
12. On this note, I would like to say to all my wonderful teaching colleagues, **well done**, and **thank you!** In spite of Covid-19, you have upped your game, to ensure a high-quality learning experience that is the fitting of an NUS education.

Even in Crisis – Powering Ahead in Research

13. In research, the university's research engines continued to fire, and NUS researchers stepped up quickly to be at the forefront of Covid-19 research, contributing to the national and international fight against Covid-19.
14. cPass, a kit that detects whether someone has antibodies which neutralise the coronavirus, has become the first of its kind to receive authorisation from the US Food and Drug Administration. cPass was invented by a team led by the emerging infectious diseases programme at Duke-NUS, and co-developed with biotech company Genscript Biotech Corporation and the A*STAR Diagnostics Development Hub.

15. Other rapid diagnostics projects are currently underway. The Institute for Health Innovation & Technology, or iHealthTech, developed a fast and portable microfluidic-based micro-PCR point-of-care diagnostic system called 'Epidax', that enables on-site screening for Covid-19 to be completed within one hour. Another project is a point-of-care testing platform known as 'enVision', or enzyme-assisted nanocomplexes for visual identification of nucleic acids, developed by iHealthtech and Yong Loo Lin School of Medicine. enVision is highly sensitive, has the ability to operate at room temperature, and is able to generate signals that are readily quantified by smartphones and other existing modalities.
16. In the quest to develop effective therapeutic treatments, researchers at the NUS N.1 Institute for Health have developed a ground-breaking artificial intelligence platform known as 'IDentif.AI', which is short for Identifying Infectious Disease Combination Therapy with Artificial Intelligence. Pardon the pun - 'IDentif.AI' can identify optimal drug combination therapies at unprecedented speeds.
17. Beyond vaccines, therapeutics and diagnostics, other contributions by NUS researchers include designing nasal swabs, and epidemiological modelling, as well as weekly science reports by the Saw Swee Hock School of Public Health, and combatting misinformation by the new Centre for Trusted Internet and Community. NUS experts also write regular commentaries to the media, and have even developed comic strips, to help the public make sense of the situation.
18. Most notably, Covid-19 has brought about unprecedented collaboration among researchers. NUS researchers have gone beyond their Departments and Schools, to leverage expertise across disciplines, institutions, industry and government agencies, to find solutions. One striking example is the multi-disciplinary team of NUS researchers working with doctors from the National University Hospital to develop a 'shield' known as the Droplet and Aerosol Reducing Tent, or DART. DART is a portable, tent-like structure that can be placed around the patient's head when healthcare staff perform procedures like intubation or extubation. It can lessen the infection risk of such droplet and aerosol generating procedures by providing an extra layer of protection between the healthcare staff and the patient. DART is now being tested and used across hospitals in Singapore.

Research – Shaping the Future

19. The world continues to face many challenges, and NUS research must now evolve and adapt to a post Covid-19 world, where governments and industry are seeking to improve public health, build resilience and self-reliance. Academic researchers are in a unique position to bring about research insights. It is an opportune time for researchers to identify new avenues for high impact, innovative research that will emerge from the pandemic.

Even in Crisis – Scaling new Heights in Administrative Excellence

20. I am also proud of how NUS administration and campus infrastructure have too, stepped up remarkably, in an integrative way, to deliver an excellent, state-of-the-art integrated pandemic suite. This system is the critical component in our efforts to mitigate Covid-19 risks on campus, and to facilitate safe teaching, operations and interactions.

21. By now, many in NUS would be familiar with the NUS digital Safe Pass. It is uniquely, distinctly, NUS. Without which, one cannot buy food, ride the shuttle bus, or enter libraries and sports facilities.

22. The NUSafe system, developed in-house by our very own NUS IT, is one of the most sophisticated, precise and comprehensive Covid-mitigation systems, probably not replicated in any other campus in the world. NUSafe is a seamless application that integrates information feeds from health and travel declarations, class, meeting and visitor registries, people movements and whereabouts on campus, ad hoc approvals for campus access, with management policy decisions governing zoning, shifts, and timetables. This system allows us to have a sensing of population density and facility usage; it generates alerts on health and safety compliance and breaches; it can also trace close contacts expeditiously, should there be a need to do so. Above all,, NUSafe has multiple layers of security provisions, to ensure that the system is cyber-secure.

23. Today, within Singapore, NUS is one of the few places where staff and students can walk in and out of classrooms and buildings without having to lodge each entry and exit with SafeEntry

24. NUSafe is a sterling example of NUS offices coming together, working with NUS IT to harness intelligent tools, the latest technology and infrastructure, to deliver an effective, excellent and user-centric solution that we are all immensely proud of. On this note, I must commend Tommy, Shui-Min and the NUS IT team for their outstanding work.

NUS Education - Continuing in the Path of Excellence

25. Some of you may have read about the adverse impact of Covid-19 on universities around the world. Several institutions have had to resort to drastic measures such as culling programmes and furloughing staff to cut costs. But here in NUS, we are fortunate to be standing on strong grounds.

26. But beyond coping well with the present realities, we in NUS, must take this opportunity to innovate, and position ourselves to continue in the path of excellence for the future. Covid-19 has driven us to search, learn and discover new tools and ways of doing things. This positive momentum of openness and appetite for exploration and change, can be channelled towards scaling the next peaks of excellence.

27. The NUS senior management has been thinking hard about the future of NUS education, and how we can educate and empower our graduates to be adaptable, resilient and innovative, so that they can thrive in a complex, uncertain world. NUS plans to take the lead in spearheading interdisciplinary, integrative university education. Our graduates will learn to harness and integrate knowledge, skills and experiences across domains, so that they can deliver greater value in their future job roles. NUS will thus be reforming our educational model, by moving from a traditional disciplinary approach, towards one that is flexible, broad-based and interdisciplinary.

Proposed College of Humanities and Sciences – A New Model of Education

28. Exciting plans are underway. The first major piece is the proposed College of Humanities and Sciences, or CHS, to be jointly established by the Faculty of Science and the Faculty of Arts and Social Sciences. CHS will admit its inaugural cohort of 2,100 students in AY2021. Students admitted to the College will belong to both FASS and FoS, and will have access to the programmes and facilities in both Faculties.

29. CHS students will read a common curriculum, which will form one-third of the degree programme. They will be exposed to intellectual approaches across the Humanities, Social Sciences, Mathematics and the Sciences, as well as to interdisciplinary elements and connections which are reinforced through field work, internships and experiential learning. The general education component of the common curriculum will also feature modules on Artificial Intelligence, Quantitative Reasoning and Design Thinking – these are highly current 21st century skills that are applicable across all industries.
30. The CHS educational model is a flexible and student-centric one. Students can pursue any combination of majors, second majors, and minors across Science and Arts and Social Sciences, based on their interests, aptitude and career aspirations. Such flexibility is unprecedented in Singapore's higher education context, and this will open many new opportunities for our students.
31. CHS will be a big and bold first step ahead for NUS education. In the near future, NUS will be rolling out further initiatives to deliver an even more excellent and transformative education to benefit all our students. I will share the plans with you when they are ready. Stay tuned!

Concluding Remarks

32. This evening, we are gathered here to recognise the sterling accomplishments of our award winners, and to celebrate with them. To our award winners, the NUS family is immensely proud of each one of you. Your dedication towards honing your craft and reaching for excellence in education, research and service, serves as an inspiration to the NUS community. My heartiest congratulations to all of you.
33. In rounding up today's event, I would like to reiterate that while the world may be changing rapidly, the NUS mission, vision and values have not changed. NUS will always bear the **hallmark of excellence**, as we seek to educate, to inspire and to transform. Together and as OneNUS, we are on a journey to become a leading global university, shaping the future. Thank you.