

The

ALUMNUS

issue #126 JUL-SEP 2021

"Our new programmes will help students in a competitive job market that is increasingly multidisciplinary, diverse and fast-changing."

PROFESSOR AARON THEAN, DEAN, NUS FACULTY OF ENGINEERING

SNAPPING INTO PLACE

MR JEFFREY TIONG
(ENGINEERING '07)

THE COMFORT OF A CALL HOME

MR DAVID CHIA
(YALE-NUS '17)

SEARCHING FOR A NEW SENSATION

ASSISTANT PROFESSOR
BENJAMIN C. K. TEE:
TURNING SCI-FI DREAMS
INTO REALITY



REIMAGINING

THE WAY FORWARD

THE EVOLVING STUDENT AND ALUMNI EXPERIENCE IN THE WAKE
OF COVID-19 – AND WHAT IT MEANS FOR THE VALUE OF A
UNIVERSITY EDUCATION IN THE YEARS AHEAD.



NUS

Day of Service

4 SEPTEMBER 2021

COVID-19 has amplified many pressing needs in our communities. In these unprecedented times, we need to rise above our fears and take action to make the world a better place.

FROM COMPASSION TO ACTION

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Celebrate Stories



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FIRST WORD

Dear alumni and friends,

Please join me in congratulating the Class of 2021 and welcoming them to the NUS Alumni family! To the Class of 2021 – your resilience and agility in navigating through these challenging and unprecedented times are evidence of your ability to adapt and thrive as you embark on the next phase of your lives. Our hats off to you!

Plans for a new normal were laid out at the beginning of 2021, as the number of COVID-19 cases eased and Singapore's national vaccination programme was progressively rolled out by the government. However, the unfortunate spike in cases in May has set us back somewhat. It is a stark reminder that we must remain vigilant and prepared for any re-emergence – and respond swiftly in a calm and united manner in that event. The University has had to make the difficult and judicious decision to move Commencement online. We are aware that many of you were disappointed but the health and safety of everyone remain our utmost priority, even as we continue to observe this hallmark tradition of celebrating and recognising your academic achievements and accomplishments.

Our cover story looks at the evolving student and alumni experience in the wake of the pandemic. While the situation still looks grey, it has proven to be an opportune time for our various faculties, schools and departments to reframe, redesign and revitalise the value proposition of a university education to meet the demands of a fast-changing and digitalising society. I am confident that these cross-collaborations, innovations and platforms – such as the enhanced *Career+* phone app, the upcoming conNectUS and others – will equip the NUS family to navigate these disruptions well.

Elsewhere in our pages, we invited graduands from different backgrounds to share their youthful aspirations, as well as deep concerns of plunging into a COVID-fraught world, as part of this issue's Forum discussion. I am encouraged by the tenacity and grit of our newly-minted alumni, as they regaled us with their coping strategies, hopes and dreams for the future in this new normal.

Fellow alumni, it has been more than a year since the pandemic cramped our style; my team and I at the alumni office have fully pivoted and are eager (and ready) to engage you digitally. It is heartening that the virtual arena allows us to connect with many more alumni across different time and geographical zones. While we are still not out of the woods, we look forward to your active participation in our upcoming signature events – the *Bukit Timah Homecoming* and *Kent Ridge Alumni Family Day*. Until it is safe to meet and connect with you in-person, my team and I will continue to provide an array of programmes, in cyberspace, to cater to your interests and needs. Please continue to keep well, stay safe, stay healthy and – whenever possible – stay home.

Warmest wishes,

Mr Bernard Toh
(Architecture '84)
Director, Alumni Relations



SUBMIT YOUR STORIES TO US!

Read The *AlumNUS* online at
nus.edu.sg/alumnet/TheAlumNUS!

If you have submissions for the following, let us know at alumnihelpdesk@nus.edu.sg:

- Lifelong Learners Highlight
- Book Corner





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KICKSTART YOUR CAREER INTO HIGH GEAR

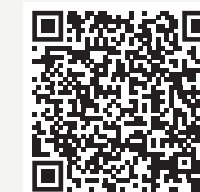
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For more information or to read The *AlumNUS* online, please visit nus.edu.sg/alumnet/TheAlumNUS.

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The ALUMNUS

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IT IS THE TWENTY-FIRST CENTURY, AND IN THIS ERA OF RELENTLESS ADVANCEMENT, technology has pervaded every aspect of modern life, including gender dynamics at the workplace.

Putting the spotlight on the dynamic interplay between women, leadership and technology, a recent webinar brought together four women in top positions globally to share their insights on their respective journeys in leadership in the technology industry, and what they see as the way forward to promoting gender diversity at the upper management level.

The 21 April event, *HERoes in Leadership*, was the first instalment of the *NUS Dream Big: Ideas that Change the World* series. It was organised by the NUS Centre on AI Technology for Humankind in collaboration with the NUS School of Continuing and Lifelong Education (SCALE).

"Technology is here. Technology is changing the world," asserted event

THREE WAYS TO NURTURE FEMALE LEADERSHIP IN A TECH-DOMINANT FUTURE

The *HERoes in Leadership* event saw women at the forefront of the innovation sector sharing their insights on the way forward.

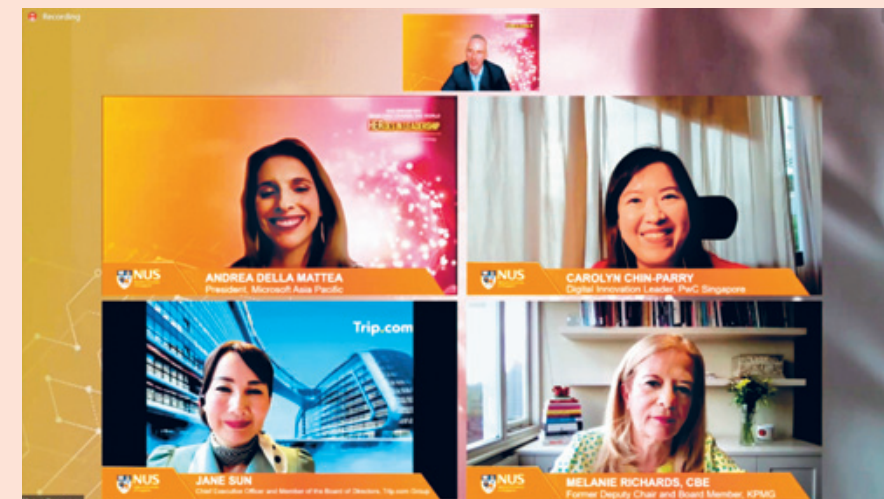
moderator Professor David de Cremer, who is Founder and Director of the Centre and Provost Chair and Professor in Management and Organisation at NUS Business School. Dr Mahak Nagpal, Postdoctoral Research Associate at the Centre, shared her research findings, which showed that tech-savviness is imperative to helping women be recognised as leaders, more so than for men. "Technological innovations are disrupting how organisations function," she said. "Leaders today need to be tech-savvy enough to

facilitate these digital transformations, ensuring that all have a tight enough grasp of technology to be able to leverage it to develop a competitive advantage for their companies."

Three key strategies to nurture and empower female leaders in a technological era emerged from the spirited discussion that followed.

FACILITATING DIGITAL INCLUSION

The first strategy is to facilitate digital inclusion, democratising access to tech



The webinar's distinguished panel of guests examined various issues pertaining to equality at the workplace.

training and education to narrow the digital divide and make sure nobody gets left behind in the digital space.

"We need to ensure that a digital world is not going to be less diverse and inclusive," Ms Carolyn Chin-Parry, Digital Innovation Leader at PwC Singapore and IT Woman of the Year for Asia, stressed. "I believe that through the right type of technology, as well as people's willingness to help out, this can be done."

An avid proponent of digital upskilling, Ms Chin-Parry capitalises on her technological experience as a leader to offer courses pro-bono to charities and non-profit organisations, as well as mentor people from less-developed countries to counter poverty levels. Within PwC, she has also spearheaded the digital upskilling initiative for its 84,000 employees around the Asia-Pacific region, including data literacy skills, visualisation, analytics and automation skills.

Ms Melanie Richards, Former Deputy Chair and Board Member of KPMG, and founding member of the 30% Club steering committee — a UK-based initiative promoting gender diversity and leadership — concurred. She underscored the importance of mindful intervention, "to make our organisations stronger, to make them more creative, more collaborative, and most importantly, more inclusive."

ENCOURAGING WOMEN TO ENTER STEM COURSES AND PROFESSIONS

The second strategy is to embolden girls and women to venture into STEM — science, technology, engineering and mathematics — courses and professions. Referring to a *Straits Times* article, Ms Chin-Parry observed how there is some leakage in the talent pipeline, where girls in STEM disciplines do not necessarily go on to STEM professions upon graduation.

The importance of encouraging females into STEM disciplines and careers was taken up by Ms Jane Sun, Chief Executive Officer and Director of Trip.com. "We need to really make the extra effort to encourage female students from the beginning to learn as many STEM classes as possible," she shared, highlighting the immense opportunity for students who specialise in tech-driven disciplines. "You don't have to be a coding engineer, but knowing some technology will really widen career options and open doors for you in the future."

Ms Sun's words echoed NUS President Professor Tan Eng Chye (Science '85) in his opening address, in which he pledged the University's commitment to supporting and drawing women into academia. "Gender should



In his opening address, NUS President Professor Tan Eng Chye reaffirmed the University's commitment to gender diversity in academia.

not be an issue; as an inclusive employer, we want every staff to fully realise his or her potential and not be constrained by role or gender stereotyping," he stressed.

Some examples include progressive policies such as giving female faculty members a reduced teaching workload for a semester after returning from maternity leave, as well as initiating the Rising Stars Women in Engineering Workshop in 2018.

FEMALE LEADERS AND ROLE MODELS IN TECHNOLOGICAL INDUSTRIES

Finally, it is essential that girls have successful female leaders in STEM professions to look up to and emulate. "If we don't have enough women visible regularly in every industry, whether it's sports or business, science, tech engineering, or leadership for that matter, then girls don't feel they have someone like themselves to role model," said Ms Andrea Della Mattea, President of Microsoft Asia Pacific. "As leaders in organisations, we have the opportunity and frankly the responsibility, to really make that happen."

This was echoed by Ms Chin-Parry, who noted the importance of girls identifying with, and being inspired by, top female leaders in STEM sectors. "It's great for them to hear different stories and perspectives of how other women have thrived in what appear to be very male-dominated industries," she said.

Her concluding words sum up the spirit of the webinar: "Find your passion, find your purpose and create the legacy that you can be very proud of."



This article was first published on 26 April 2021 on NUS News at news.nus.edu.sg/three-ways-to-nurture-female-leadership-in-a-tech-dominant-future.

MEETING THE NEEDS OF SOCIETY: HOW UNIVERSITIES SHOULD TRANSFORM AND INNOVATE

Adapting to change is key in order for tertiary institutions to stay relevant and maintain their edge.

UNIVERSITIES NEED TO CONSTANTLY TRANSFORM AND INNOVATE TO MEET THE EXPECTATIONS OF SOCIETIES WORLDWIDE FOR GREATER CONTRIBUTIONS – especially during troubled times such as the current COVID-19 pandemic.

According to NUS President Professor Tan Eng Chye (Science '85), some of the fundamental changes required are the shifting to a model of continual lifelong learning and ensuring that research can seamlessly benefit society. "The impact of COVID-19 has demonstrated how interconnected our world has become. As the world recovers and rebuilds from the pandemic, there is growing public support that issues such as sustainable development, equality of opportunities, and the well-being of individuals and the community should take priority," he said. "Societies firmly rooted in such aspects will have greater inclusivity, cohesiveness, sustainability and equitability. They will be more resilient and adaptable, offering

continuous opportunities for their members to thrive and grow."

Universities will need to carefully consider how to meet the new expectations of society. One way is to move from a model of pre-employment training to continuous lifelong learning, said Prof Tan. "We also need to consider how research advances can be seamlessly integrated into holistic and comprehensive frameworks to solve complex challenges."

To meet these challenges, universities will have to transform and innovate successfully. "By doing so, we will increase our dynamism and raise our contributions to society," he said.

Prof Tan was speaking at the Global Forum of University Presidents 2021, which was held in conjunction with the 110th anniversary celebrations of China's Tsinghua University. About 25 university leaders from around the world attended the event on 24 April. The event was moderated by Professor Yang Bin,

Vice President and Provost of Tsinghua University.

Speaking at the event, Tsinghua's President Professor Qiu Yong said that international collaboration is vital to overcome global challenges such as climate change and social inequality. "Even closer collaboration will be needed to overcome future challenges," he said.

Universities are among the longest surviving institutions in human history and carry the hopes and expectations that they will benefit society, he said.

Mr Siddharth Chatterjee, United Nations Resident Coordinator in China, delivered a message from UN Secretary-General Mr António Guterres. Universities have a central role to play in addressing the world's challenges by nurturing new generations of young leaders and global citizens – by promoting digital cooperation and by helping to ensure access to quality education, said Mr Chatterjee.



Above: From left: Prof Yang, Prof Qiu and Mr Chatterjee.

Left: Prof Tan discussed how COVID-19 has led to evolving expectations from society – and how universities worldwide will need to transform in order to meet them.

This article was first published on 27 April 2021 on NUS News at news.nus.edu.sg/meeting-the-needs-of-society-how-universities-should-transform-and-innovate.



Left: Greetings between His Excellency Periasamy Kumaran, High Commissioner of India, Singapore, and Mr Tan Kian Woo (Business '88), NUS Senior Vice President and Chief Financial Officer.

Below: A guest collecting her goodie bag, courtesy of the High Commission of India.



INDIAN FILM FESTIVAL 2021

Due to current pandemic restrictions, this year's showcase took the form of a hybrid event.

JOINTLY ORGANISED BY THE HIGH COMMISSION OF INDIA, SINGAPORE AND NUS ALUMNI RELATIONS, the *Indian Film Festival* returned for the sixth time to bring the best of Indian films to NUS alumni. In the year of Celebrating SG Women, this year's festival featured the stories of three women who embrace life's challenges in different ways. Held from 17 to 19 March at the Shaw Foundation Alumni House (in accordance with safe management measures), the festival featured critically-acclaimed films *Badrinath Ki Dulhania*, *Kahaani* and *Queen*.

Distinguished guests to the Opening Night on 16 March were treated to a screening of *Hindi Medium*. This light-hearted comedy sheds light on the education system in India, as a couple goes through extraordinary measures to enroll their child into a prestigious school. Guests also brought home an abundant goodie



His Excellency Periasamy Kumaran, High Commissioner of India in Singapore, addressing the crowd of distinguished guests.

bag courtesy of the High Commissioner of India in Singapore, which included Indian traditional snacks, tea leaves and a practical sanitising kit with antibacterial wipes, facemasks and a few bottles of hand sanitiser.

In attendance for the evening were His Excellency Periasamy Kumaran, High Commissioner and Mr Shri Siddhartha Nath, Deputy High Commissioner from the High Commission of India in Singapore; Mr Tan Kian Woo (Business '88), NUS Senior Vice President and Chief Financial Officer; and Mr Edward D'Silva (Architecture '75), NUS Alumni Advisory Board Member.

Films were also screened virtually and alumni who signed up enjoyed watching the films in the comfort of their homes. Stay tuned for upcoming film festivals and film screenings happening later this year!



LUNCH DIALOGUES

MASTERING E-COMMERCE AND CONQUERING RETAIL

ON 19 MARCH, A GROUP OF 90 ALUMNI JOINED

Ms Priscilla Shunmugam (Law '06), founder and designer of fashion label, Atelier Ong Shunmugam, in a casual and interactive *Lunch Dialogues* session. Organised in partnership with the NUS Society and moderated by Dr Sean Kuan Thye (Arts and Social Sciences '84), Ms Shunmugam shared anecdotes of her journey, her climb to success and how she pivoted during the pandemic to digitalise her business and found new ways to both connect with regular customers and win the hearts of new fashionistas.



Ms Priscilla Shunmugam
(Law '06), Founder & Designer,
Ong Shunmugam



Dr Sean Kuan Thye
(Arts and Social
Sciences '84), Moderator

FUTURE-READY WORKSHOPS

ADVANCING YOUR CAREER IN THE DIGITAL ERA



ON 13 APRIL, IN A SESSION ORGANISED IN PARTNERSHIP with the NUS School of Continuing and Lifelong Education (SCALE), *Future-Ready Workshops* welcomed young alumni Mr Victor Zhu (Science '20), Founder and CEO of Hatch, and Ms Charmain Tan (Science '12), Founder and CEO of QuickDesk. In this engaging session, Mr Zhu shared how one could jumpstart a successful and fulfilling career in the digital era, while Ms Tan highlighted how digital transformation could be achieved from both top-down and bottom-up. More than 160 alumni tuned in and gained insights on how individuals and leaders can ensure that they keep up with today's rapidly digitalising world.



Mr Victor Zhu
(Science '20), Founder
and CEO, Hatch



Ms Charmain Tan
(Science '12), Founder
and CEO, QuickDesk

NUSS
The Graduate Club

Lunch Dialogues
— ONLINE —



Office of
Alumni Relations



Breeding Unicorns

Mr Jeffrey Tiong (Engineering '08)
Founder and CEO, PatSnap

Ms Guan Dian (Computing '10)
Co-Founder and Senior VP (Asia-Pacific), PatSnap

17 September 2021 (Friday), 12.00pm to 1.00pm, via Zoom

JOIN US ONLINE!

Register at:
alumnet.events/LDsep21



PROGRAMME

- 12.00pm - Introduction of Speaker
- Sharing by Mr Jeffrey Tiong (Engineering '08) & Ms Guan Dian (Computing '10), Co-Founders, PatSnap
- 12.30pm - Q&A Session moderated by Mr Tong Hsien-Hui (Engineering '98)
- 1.00pm - End of Programme

Founded in 2007, PatSnap - short for patents in a snap - provides data and analytics on intellectual property to more than 10,000 customers including Spotify Technology and Xiaomi Corp.

Today, PatSnap is NUS's pride and joy, having attained Unicorn status after securing US\$300 million in Series E funding - a first for NUS-supported start-ups.

Join Mr Jeffrey Tiong and Ms Guan Dian in this illuminating talk on how they got started, becoming a global patents database platform, expanding to China and joining the list of global technology unicorns - gained from a surge in research and development spending.

MULTILINGUALISM - OPENING NEW DOORS

In today's world of globalisation and internationalisation, learning a new language is a very valuable economic and social resource to future-proof ourselves.

Join Associate Professor Titima Suthiwan, Director, NUS Centre for Language Studies as she shares how we can begin the journey to multilingualism and the opportunities available at NUS.



Speaker:

Associate Professor Titima Suthiwan
Director, NUS Centre for Language Studies



DATE : 13 JULY 2021, TUESDAY
TIME : 7.30PM - 9.00PM
PLATFORM : ZOOM



Join us online at:
alumnet.events/FRjul21

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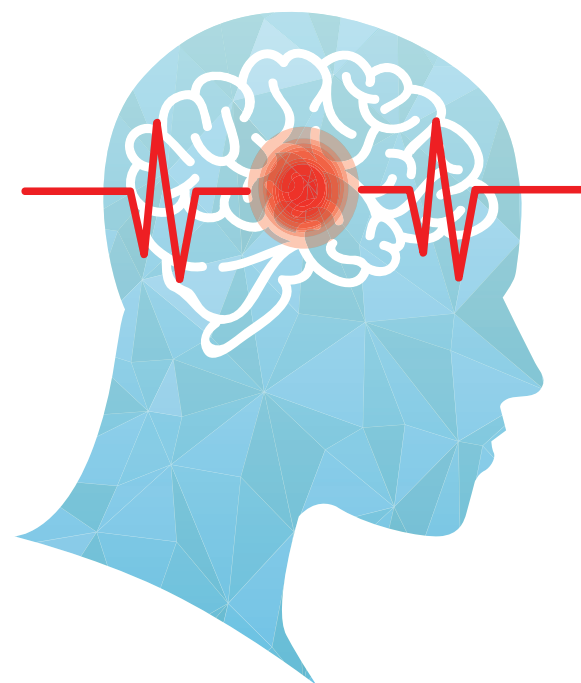
HEALTH & WELLNESS

All You Need to Know About Strokes

THE 22 APRIL SESSION OF HEALTH AND WELLNESS, organised with Farrer Park Hospital, featured Dr Chou Ning, who gave an illuminating talk to over 200 alumni via Zoom on the different types of strokes, risk factors for strokes, and ways to prevent them. Stroke is the fourth-leading cause of death and one of the top contributors to adult disability in Singapore. Attendees were able to tap on Dr Chou's expertise to gain a better grasp of the dangers and burdens of strokes, as well as clarify their pressing medical concerns.



Dr Chou Ning
(Medicine '93),
Senior Consultant
Neurosurgeon and
Director, CHOU
Neuroscience Clinic,
Farrer Park Hospital



TECH TALK

IoT & 5G Security for the Future

ON 18 MAY, THE SECOND SESSION OF TECH TALK [ONLINE] FOR 2021, held in collaboration with the Institute of Systems Science (NUS-ISS), featured Dr Nicholas Ho (Engineering '13), Lecturer and Consultant for Artificial Intelligence Practice, and Mr Ng Kok Leong (Computing '99), Senior Lecturer and Consultant for Digital Strategy and Leadership Practice. Dr Ho and Mr Ng talked attendees through the various use

cases of 5G in IoT technology and autonomous systems, and security considerations to enhance IoT security, which are salient emerging technologies to note in today's fast-moving world of digitalisation.



Dr Nicholas Ho
(Engineering '13), Lecturer
and Consultant, Artificial
Intelligence Practice, Institute
of Systems Science, NUS



Mr Ng Kok Leong
(Computing '99), Senior Lecturer
and Consultant, Digital Strategy
and Leadership Practice, Institute
of Systems Science, NUS

Catch up on all
our webinars at
[alumnet.events/webinars!](https://alumnet.events/webinars/)

Managing Wellbeing – The NUS Experience and You

The pandemic has led to increased anxiety about the future of work and livelihood, with more people seeking help for mental health issues. Join Dr Andrew Tay (Medicine '07) and Dr Kinjal Doshi from the NUS Health and Wellbeing Team in the Office of the President, who will share their insights from the #AreuOK campaign, roles of employers and managers in employees' health and wellbeing; and how these relate to you.

Dr Andrew Tay
(Medicine '07)



LIFELONG LEARNERS HIGHLIGHT

A BLESSING IN DISGUISE

Ms Teresa Pang (Design and Environment '96), a practitioner in the field of Architecture and Urban Planning, recounts how COVID-19 gave her the opportunity to learn again.

"I am a self-directed and self-motivated learner. Over the last two decades, I have studied and explored widely, cutting across disciplines. To me, it is as important to be a specialist as it is to be a generalist.

I believe that the ultimate purpose of knowledge is not merely to become rich, but to use it to contribute to society, serve humanity and make the world a better place.

This has shaped my learning attitude and appetite which is fuelled by passion, love and joy.

When COVID-19 brought me back to my alma mater through the SGUS Programme in *5D BIM for Built Environment Professionals*, I welcomed the new learning opportunity with excitement. I looked forward to having my ideas, ideologies and

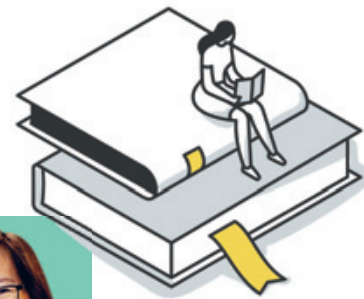


world views challenged and pushed to new heights by my professors and instructors.

The professors in the university are like shepherds; they provide guidance and direction to continuously lead their students forward. In the last six months, under their guidance, I have lived, expanded and grown my love for learning. The exchanges I had with them

were priceless. They have also become my role models to look up to and emulate as I go back to the industry. Education has re-entered my heart because of their guidance and support, and helped me grow wings, to enable my new dreams of flying.

COVID-19 has turned out to be an unexpected season of new growth and a pause to recalibrate — from within and without — for my next career and direction in life. I left the course with many relationships that I will treasure for a very long time. To me, COVID-19 has proven a blessing in disguise.

UNPRECEDENTED:
TO THE BEAT OF HER OWN DRUM

Edited by Ms Nadia Yeo (Law '09, Public Policy '18) and Ms Erliana Zaid
Young Women in Leadership Dialogue, Mendaki Club

Resilience. Courage. Compassion. Commitment. These are values that women have embodied in the pursuit of excellence and progress. Challenging norms and breaking barriers, the 20 young women from the Malay/Muslim community featured in this book have expressed leadership over not only their own lives, but also those of others. Read about their inspiring journeys in this commemorative volume conceptualised and written by a team of 50 youth volunteers from Mendaki Club.

"This book profiles 20 stories of courage and resilience. It captures the compelling voices and realities of young women from the Malay/Muslim community determined to overcome hardships to achieve their dreams and aspirations on their own terms."

~ Dr Noeleen Heyzer,
United Nations Under-Secretary-General (2007-2015)



Available at the **NHB Malay Heritage Centre** or online at: tinyurl.com/YWILDUnprecedented.



PHILIPPINE EMBASSY
in
SINGAPORE



Office of Alumni Relations



A young, female writer gets teamed up with a male writer to create the perfect romantic movie. Their clashing personalities and different perspectives on relationships lead them through a journey of self-discovery, as they ultimately find out what it really takes to *write about love*.

write about love
Film rating to be advised.



30 July 2021 (Friday)
7.30pm - 9.30pm



Auditorium, Shaw Foundation Alumni House*

Please register at alumnet.events/FFjul21

*Limited seats due to safe management measures

Supported by:



Event Partners:



中华人民共和国驻新加坡共和国大使馆
Embassy of the People's Republic of China in the Republic of Singapore



新加坡—中国(新中)友好协会
Singapore China Friendship Association



Office of
Alumni Relations

第十届中国电影节
China Film Festival 2021

Please register online at alumnet.events/CNFF21

Dates | 15 to 17 September 2021
(Wednesday to Friday)
Time | 7.30pm to 9.45pm
Venue | Auditorium,
Shaw Foundation Alumni House



Limited seats due to safe management measures.
Film ratings will be advised on our website.



无双
Project Gutenberg
15 September
Wednesday

阿拉姜色
Ala Changso
16 September
Thursday

明月几时有
Our Time Will Come
17 September
Friday

ADAPTING TO AN ALTERED REALITY

COVID-19 has made life within and beyond the classroom virtually (pun intended) unrecognisable. Stripped of the in-person interactions so vital to the student experience, some might say that universities have lost their value and become yet another casualty of the pandemic. But institutions of higher learning still have legs — if they dare to re-imagine themselves.

TEXT BY WANDA TAN

TRYING TO PREDICT THE FUTURE THESE DAYS — EVEN MERE MONTHS DOWN THE LINE — MIGHT BE A FOOL'S ERRAND. This year's NUS Commencement presents a case in point. Having postponed the event in 2020 due to the ongoing pandemic, NUS was gearing up for in-person Commencement ceremonies for both the Class of 2020 and the Class of 2021, from 17 June to end-July 2021, with safe management measures in place. However, the spike in community cases in late April and the reimposition of restrictions on large gatherings forced the University to make an about-turn. On 20 May, NUS President, Professor Tan Eng Chye (Science '85) announced "with a heavy heart" that the event would be held online instead.

Many more examples abound of changes to the university experience in the wake of COVID-19 — both in terms of the academic curriculum and mode of delivery, as well as campus life. The pandemic has prompted higher education institutions all over the world to reassess and redouble their efforts to help students continue to learn and prepare for an as-yet-undefined future. On the social side, students

and administrators are reinventing campus events and activities to suit the current situation, without sacrificing conviviality. Universities are also re-examining their alumni engagement strategies to ensure that, despite the crisis, alumni ties are not broken.

At NUS, faculty and staff were already making moves to adapt to the new economy well before the pandemic, such as launching new degree programmes and focusing on lifelong learning initiatives. COVID-19 has upped the pace of change, and made undeniable the fact that universities cannot stay still if they wish to stay relevant.

REMOTE YET CONNECTED

In the immediate aftermath of the COVID-19 outbreak in Singapore, one of the first things on people's minds was how to facilitate a smooth transition to home-based learning. NUS' previous forays into technology-enhanced learning — such as massive open online courses (MOOCs) and 'flipped classrooms' — proved fortuitous as classes went fully online, and video conferencing software like Zoom was adopted en masse.

Faculty members got creative in thinking of ways to keep students engaged during online classes. In one example, Professor Sow Chorng Haur (Science '91), Head of NUS' Department of Physics, came up with the idea of sending shoebox-sized kits containing lab

apparatus to students' homes so that they could conduct experiments together during Zoom tutorials. One such kit — made up of a compass, magnet, ruler, metal plates and other items — allowed students to measure magnetic fields with the aid of a mobile app. In another kit for a module on solid state physics, ping pong balls were used to create 3D arrangements of atoms. A small number of kits were even shipped to international students in Indonesia, Sri Lanka and China, who chose to stay in their home countries amid this global health crisis.

Although it was not possible to conduct certain experiments at home for safety or practical reasons — such as those requiring the handling of chemicals or bulky lab equipment — the kits livened up online classes by bringing in a hands-on component. "Instead of just logging in and listening to me explain or demonstrate concepts, students could conduct the demos themselves. It made lab sessions more interactive," says Prof Sow. Having observed that students could better see demonstrations involving small items via Zoom compared to in a large lecture theatre, he is even considering blending online and face-to-face instruction when things eventually return to normal.

Other digital innovations that have made a big splash in the past year — and boosted experiential learning — include virtual reality (VR) and augmented reality (AR). Associate Professor in Practice Stella Tan (Science '98), Academic Director of NUS' Forensic Science Programme, had already introduced both technologies in one of her modules in 2019. With VR, her team set up simulated crime scenes based on true cases for students to conduct investigations. AR, on the other hand, enabled students to 'hold' and manipulate 3D virtual evidence seized at the crime scene, and inspect blood spatter, fingerprints and small items of interest up close. "When the COVID-19 situation worsened, it was a logical move to incorporate these technologies into more modules to create an immersive experience for our students, even with remote learning," says Assoc Prof Tan. Students could borrow the VR headsets, carry out investigations at home, and post the results online for group discussion. Not surprisingly, these technologies have gone down a treat with the students. VR and AR do away with the laborious physical process of setting up a mock crime scene and "bring an element of fun to serious topics", she says. Given that courts such as those in Beijing have begun using VR to walk judges and juries through a crime scene or to see things from an eyewitness' vantage point, familiarity with such tools may prove useful once students start their careers too.

NUS Yong Loo Lin School of Medicine is also using VR to revamp its curriculum. With medical students on surgical rotation unable to go on clinical



Contents of the shoebox-sized kits sent to Physics students' homes.



Assoc Prof Stella Tan (right) teaching a student to navigate through a crime scene with VR.



Medical students donning VR goggles and wielding hand-held controllers for the PASS-IT session.

rounds due to COVID-19, the School debuted a new VR gaming system last year called *PATient Safety aS Inter-Professional Training* (PASS-IT). It instantly transports users to a simulated hospital environment to teach them about patient safety in the operating theatre. NUS Medicine has, in fact, a number of digital transformation projects under its belt. These include *Create Real-life Experience And Teamwork In Virtual Environment* (CREATIVE), a virtual simulation programme developed in 2017, where students from different health professions utilise online avatars to take part in a multidisciplinary ward round; and *Virtual Integrated Patient* (VIP), an artificial intelligence (AI) chatbot piloted in 2020, which employs a random patient generator to hone students' communication skills and competency in medical history-taking and diagnosis.

Associate Professor Alfred Kow (Medicine '03), Assistant Dean (Education) of NUS Medicine and one of the educators spearheading PASS-IT, believes the pandemic is a "major catalyst" in driving innovations in medical education. "Digitalisation enables the uniform implementation of training content and methods, which can be tracked objectively, and the milestones recorded accordingly. In addition, it allows students to practise in a safe environment before they enter the clinical setting," says Assoc Prof Kow, who is also a surgeon at the National University Hospital. "Advanced technology will not replace human interaction; indeed, the sacred relationship between doctor and patient must be preserved," he stresses. "However, technology can fill in the training gaps by reducing variability and allowing repeatability, thus enhancing competency in the long run."

BLURRING DISCIPLINARY BOUNDARIES

The widespread adoption of digital technologies is not just a tactic to enhance remote learning, but also emblematic of a longer-term trend underway in higher education: the shift to interdisciplinary learning. The Fourth Industrial Revolution has blurred the boundaries

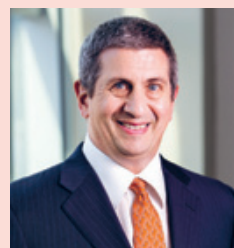
between the physical, digital and biological worlds, with technological advances such as AI, robotics and the Internet of Things fundamentally altering the way we live, work and relate to one another. Nowadays, at least some digital know-how is needed to hold down a job — just about any job, in any industry — and ensure career mobility.

Yet, if anything, cherishing that which makes us human is more important than ever. As NUS President Prof Tan wrote in an opinion piece for *The Straits Times* on 8 January 2021: "[L]earning takes time and patience — not just in picking up the skills or content, but in the making of meaningful connections. These connections can be across domains and topics, across space and time, and across changing societal perceptions. But these connections are essential to make the learning personal for an individual. ... The traits of curiosity, creativity and connecting the dots, as well as understanding oneself in society, will help people learn to be human, as well as earn a living."

Within NUS' Department of Communications and New Media (CNM), a curriculum review has been ongoing since 2017 to reflect rapid changes in media, including the rise of ubiquitous computing and AI, the datafication of society and culture, and the digitalisation of markets. The result is an integrated, interdisciplinary curriculum that balances depth with breadth. It imparts job-specific skills and domain

→ AN OFFLINE/ONLINE APPROACH

While wholly online learning remained the default for some faculties and schools at the start of Academic Year 2020/2021, NUS Business School opted instead for a hybrid model that combined face-to-face teaching (with safe management measures, such as no more than 50 students in attendance) and online classes. NUS Business School Dean, Professor Andrew Rose, talks to *The AlumNUS* about it.



Why the move to hybrid learning?

Prof Rose: Face-to-face instruction is more effective than online teaching, so some face-to-face time is better than none. Many key interactions ought to be face-to-face, particularly networking. That's far easier if students attend classes in person.

What challenges did you face when it was first implemented?

Prof Rose: The list was long. There were teething problems with the technology. The pace of teaching was disrupted and slower, as faculty members had to monitor students who were both watching 'live' and in the classroom. Many students didn't have access to a quiet space with good bandwidth. Different time zones were also an issue.

Hybrid teaching wasn't easy, but it served the community well under the circumstances.

How else have you sought to raise the School's teaching standards?

Prof Rose: It was important for us in 2020 to send a credible signal to students that we take instruction seriously. Releasing student feedback scores on courses and instructors was an obvious one. We're also expanding our BIZCareers group to ensure that students have more job opportunities by the time they graduate. And we're creating high-quality learning and study spaces by renovating parts of the NUS Hon Sui Sen Memorial Library. We will continue to work hard to improve the experience for our students.



knowledge, as well as transferable meta-skills such as creativity, teamwork and agility. Work-integrated learning is embedded through a 20-week Compulsory Internship Programme for third-year students. Moreover, at the state-of-the-art CNM Studio: Multimedia Production Makerspace, students from different disciplines can collaborate on game design, prototyping, video production and post-production, crisis communication simulation and other activities.

"The CNM major now integrates cultural studies, critical media studies, mass and computational communications, communication management and interactive media design," says the Head of Department, Professor Audrey Yue. Popular modules include the revised *Learning Innovation in the Digital Age* and a new one called *Sex in the Media*. "Engaging the intersections of humanities, arts, social sciences and computing, we are the only department and

Top to bottom:
Exploring the unique interaction techniques available in VR at the CNM Studio: Multimedia Production Makerspace.

CNM students working on incorporating the Arduino microcontroller into their design prototype for a project on critical design.

CNM lecturer Dr Jaime Hsu (Arts and Social Sciences (PHD) '19) conducting a lesson on creativity, culture and media at the NUS Museum.

The traits of curiosity, creativity and connecting the dots, as well as understanding oneself in society, will help people learn to be human, as well as earn a living.

Professor Tan Eng Chye, NUS President

programme in the Asia-Pacific region to focus on critical, creative, qualitative, quantitative and computational research and pedagogy." Prof Yue adds, "In our post-pandemic world, digitalisation and communication will underpin all aspects of industry. Most importantly, the future of jobs will be hybrid — for example, hybrid media professionals with a broad range of skills in digital writing and production, online content creation, and social media marketing and analytics." The revised curriculum will thus equip students to take on emerging job roles across the media and non-media sectors.

A RADICAL REIMAGINING

Perhaps the boldest step to date in NUS' shift to interdisciplinary learning is the major restructuring of its faculties and schools. In December 2020, a new College of Humanities and Sciences (CHS) was established, bringing together the Faculty of Arts and Social Sciences (FASS) — which CNM is part of — and the Faculty of Science (FoS). Set to admit its inaugural cohort this August, CHS provides a carefully-curated Common Curriculum covering the humanities, social sciences, mathematics and sciences, following which students can choose any major, double major or minor, as well as elective subjects offered by either FASS or FoS.

By expanding their learning horizons, CHS students can gird themselves for a future of change and complexity, as reinforced by COVID-19. Speaking at CHS' launch event, NUS President Prof Tan commented: "Through interdisciplinary education, students will learn to harness and integrate knowledge, insights, skills and experiences across disciplines and environments. They will



FoE and SDE have a lot in common. Therefore, our training for engineers, designers and built environment professionals must evolve.

Professor Ho Teck Hua, NUS Senior Deputy President and Provost

not be afraid of taking on new disciplines, fresh challenges or unfamiliar environments. Our students will be able to understand various perspectives and be more proficient in presenting informed solutions to multifaceted problems."

Likewise, starting in Academic Year 2021/2022, incoming freshmen at the Faculty of Engineering (FoE) and the School of Design and Environment (SDE) — except Real Estate students — will undergo a new Common Curriculum that bridges the two domains. Professor Ho Teck Hua (Engineering '85), NUS Senior Deputy President and Provost, voiced excitement about the news when it was announced in February: "FoE and SDE have a lot in common. In our everyday life for instance, we are witnessing a convergence of engineering and design — sleek smart phones and consumer electronics, electric vehicles, as well as current net-zero and emerging net-positive energy buildings Therefore, our training for engineers, designers and built environment professionals must evolve."

For FoE Dean Professor Aaron Thean, this curriculum upgrade will put students in a better position to address thorny issues relating to sustainability, liveability and — especially in a post-COVID world — healthcare. "Societal, environmental and technological challenges are clearly growing in complexity. There is a need for savvy engineers who have not only sound technical domain skills but also a good appreciation of design, communication and project management," he tells *The AlumNUS*. "Our new programmes will help students in a competitive job market that is increasingly multidisciplinary, diverse and fast-changing." Prof Thean does not rule out the possibility of one day establishing, like CHS, a College of Design and Engineering.



Behind the scenes at a live panel discussion with professors and students at the FoE e-Open House 2021.



WHERE DISCIPLINES MEET

Other new highlights coming students' way in Academic Year 2021/2022:

✓ An enhanced General Education curriculum for undergraduates with the addition of a 6th pillar, **Communities and Engagement**

✓ 10 cross-disciplinary degree programmes that pair complementary disciplines and focus on their integration

KEEPING CAMARADERIE ALIVE

Outside the academic sphere, COVID-19 has also dramatically changed the student experience. Perks associated with campus life, such as meeting new people and taking part in different clubs and activities, have been significantly curtailed. Large-scale events have had to be postponed, scrapped or moved online. This year, NUS held an e-Open House — the online equivalent of NUS Open Day, one of the University's biggest events — for the second time in a row from 27 February to 6 March 2021, during which the various faculties and schools took turns promoting their courses to prospective students.

Naturally, the new FoE–SDE Common Curriculum featured prominently at FoE's e-Open House. "Our new curriculum attracted significant interest from prospective students during the department sharing sessions, as well as the live panel discussions where professors and students took questions from the public," says Ms Amelia Lim (Arts and Social Sciences '18), an Assistant Manager (Communications & Outreach) at FoE, who was part of the event organising committee. "It was tough to ensure a smooth transition between the Zoom webinar platform and the live-streaming of panel discussions in the lecture theatre. But the sessions went smoothly."

CHS recently held its own Open House as well, though not without some last-minute hiccups. Due to the rise in COVID-19 cases, organisers had to cancel the Open House physical tours scheduled on 11 and 12 May, but the virtual talks on 14 and 15 May went ahead as planned. CHS faculty members hosted Facebook Live webinars to talk about the College's curriculum and programmes. Student leaders from both FASS and FoS also shared their experiences and advice on how to make the most of campus life. "To ensure as much one-to-one engagement



Students from FASS and FoS took part in filming videos to promote CHS' interdisciplinary curriculum.

as possible, we set up small-group sessions with our Dean, Vice Deans, Heads of Departments, and faculty, as well as live chats with our Student Ambassadors. We also created platforms to showcase our students who have pursued unique paths overseas, with industry, in sports and outside the classroom," says Mr Nisar Keshvani, Head/Associate Director (Strategic Outreach & Communications) at FASS. His co-lead Ms Janice Quah, Head/Associate Director (Corporate Communications) at FoS, says, "Given the COVID climate, we had to pivot and design opportunities for creative engagement. Our Faculties were fortunate to have had prior experience running last year's Open Houses online. This enabled our teams to join forces to organise an impactful CHS Open House."

Those living on campus, who might be isolated in their dorm rooms and fighting loneliness, may be hit the hardest. At NUS' Tembusu College, every effort was made to give students some semblance of residential college life amid the pandemic. Wherever possible, events such as the Tembusu Forum were held in hybrid format rather than completely online. This gave up to 50 students — especially first-year residents — a chance to attend the flagship event in person, while others tuned in via Zoom and posed questions to the guest speakers via Pigeonhole Live. For the most part, students could still enjoy daily activities such as meals with friends, late-night chats in the lounges and playing their favourite team sports, provided they adhered to the safe management measures.

There has been one upside to all this, according to Dr Kuan Yee Han (Engineering '10), Senior Lecturer and Residential Fellow at Tembusu College. "While life on campus definitely took on a



The pandemic did not stop students from putting on a Tembusu Arts Week this year, with musical performances and art activities.



What is heartening is their creativity, positivity and determination. Going through this period together has given them an opportunity to bond through this unique experience.

Dr Kuan Yee Han, Senior Lecturer and Residential Fellow, Tembusu College

'new normal', it encouraged students to think out of the box in planning events and activities." For example, the bi-annual Tembusu Arts Week was conducted via Zoom or Twitch, with live-streaming of student performances. Students also produced virtual campus tour videos for the College's e-Open House. Dr Kuan adds, "What is heartening is their creativity, positivity and determination. Going through this period together has given them an opportunity to bond through this unique experience."

Such esprit de corps is also evident at Yale-NUS College, with its fully residential programme. "This has been a hard year, particularly for our international students who could not travel home to see their families. What has so impressed me is how the Yale-NUS community came together to make sure everyone felt cared for. The pandemic has brought out the best in them," says Dr Trisha Craig, Vice President (Engagement) of Yale-NUS. For instance, one student volunteered to organise early-morning, socially-distanced yoga sessions at the courtyard of Saga College, as a way of supporting the community's physical and mental health. New student organisations were also formed, such as the environmentally-minded Yale-NUS Farming Collective. Alongside this peer support, Yale-NUS staff have come up with ingenious ways



TEMBUSU TURNS 10!

No physical Homecoming? No problem! Tembusu College has special activities in the works to celebrate its 10th anniversary this year. One is a video documenting the experiences of Tembusians past and present. Another is a mural within the College premises, with both alumni and students involved in the conceptualisation of the design.

MIX 'N' MATCH

In a nutshell, the **Common Curriculum** — both at CHS and the one jointly developed by FoE and SDE — leverages synergies between the respective fields while allowing students to chart their own educational journeys. It gives students the flexibility to develop broad-based or specialised competencies, based on their individual interests, aptitudes and career aspirations. Real-world exposure is also incorporated through internships, fieldwork and other experiential learning opportunities.





Top: A student-led yoga session at Yale-NUS College.

Above: Student members of the Yale-NUS Farming Collective tending to a rooftop farm atop one of the residential colleges.

to make virtual events more fun. The latest Yale-NUS Global Affairs Lecture in March 2021, which was held online and featured guest speakers from the United States, included an in-person viewing party for a small number of faculty and students. Snacks were also delivered to other watch parties hosted by Global Affairs alumni. "By putting our events online, we have massively increased our audience and global reach," Dr Craig adds.

THE TIES THAT BIND

Last but not least, alumni connections to their alma mater have been tested during this period. The NUS Office of Alumni Relations (OAR) responded by moving events online, such as its many workshops and talks, the popular *Thirsty Thursdays* and its annual Chinese New Year (CNY) Appreciation Dinner. As restrictions eased towards the end of 2020, OAR brought back its *Film Festivals* physical event series, albeit on a much smaller scale. In March, the *Indian Film Festival 2021* took on hybrid form as each on-campus screening accommodated up to 50 guests, while many more watched the films virtually from the comfort of their homes. "The main challenge was ensuring the same level of engagement and interactivity that one would gain from physical events," says OAR Director Mr Bernard Toh (Architecture '84), citing "Zoom fatigue" as an ever-present concern.

What has so impressed me is how the Yale-NUS community came together to make sure everyone felt cared for. The pandemic has brought out the best in them.

Dr Trisha Craig, Vice President (Engagement), Yale-NUS College

For the virtual CNY Appreciation Dinner 2021, guests had festive meals delivered to their homes and were treated to pre-recorded performances. Another worry was that senior alumni might be left out of the digital world. OAR linked the NUS Senior Alumni group with the Computing Alumni Association, who conducted physical workshops (with safe management measures) to teach them how to use Zoom. NUS Senior Alumni members were thus able to continue their monthly Tea & Chat and Sing-Along sessions via the platform.

That said, there have been some positive takeaways as well. "As a bonus to using Zoom as a medium of engagement, we were able to better engage with alumni based overseas. We are especially thankful for dedicated alumni who, despite the time difference, volunteered their time and expertise to speak at our educational and enrichment workshops," says Mr Toh. "The Chairpersons of our Overseas Chapters also gathered online every six months to exchange best practices, discuss common issues, network and lend one another support."

In fact, there is much more to be said now for maintaining the alumni-university relationship. The global jobs crisis wrought by COVID-19 has shone a brighter light on the importance of lifelong learning, as upskilling or reskilling oneself through continuing education and training (CET) is the only way to remain in the workforce. Learning does not, and should not, stop after graduation; it should be embraced all through life. "COVID-19 has accelerated the digitalisation of business processes and financial transactions, requiring individuals to be trained for new job scopes. At the same time, the downtime in many industries has allowed organisations to send their staff for retraining,"



Guests engaged in an online toast to mark the end of the first virtual CNY Appreciation Dinner 2021.



OAR Director Mr Toh greeted a scaled-down crowd on the opening night of the Canadian Film Festival in December 2020.

says Mr Suresh Punjabi, Associate Dean (Executive & Professional Development) of NUS' School of Continuing and Lifelong Education (SCALE). "Those who have been made redundant also need new skills and knowledge so that they will be eligible for roles at companies that are hiring."

Interest in SCALE's lifelong learning programmes has increased in the past year, notes Mr Punjabi. Some predate the pandemic, including the *NUS CET500* catalogue of skills-based, industry-relevant courses for the public, and the alumni-only *NUS Lifelong Learners* programme. SCALE now also offers extra support to professionals and fresh graduates affected by COVID-19. Under the *NUS Resilience & Growth* (R&G) initiative, both the Class of 2020 and the Class of 2021 are given vouchers to offset the cost

of CET courses. Meanwhile, *NUS SGUnited Skills* (SGUS) is a full-time training programme, launched in collaboration with SkillsFuture Singapore, to help jobseekers improve their employability.

It is anybody's guess how long the pandemic will last. Staff, students and alumni all miss gathering in person and being in each other's company. Nonetheless, the changes we have witnessed — the proliferation of tech-enabled learning, the cross-cutting of disciplines, the increased attention on lifelong learning, etc. — will certainly figure in the future of higher education, long after COVID-19 has ended. As long as NUS keeps up its change momentum and makes sure that students and alumni can handle whatever life throws at them, the University will continue to stand on firm ground. **A**

COVID-19 has accelerated the digitalisation of business processes and financial transactions, requiring individuals to be trained for new job scopes.

Mr Suresh Punjabi, Associate Dean (Executive & Professional Development), SCALE



JUST A DOWNLOAD AWAY

To help students and alumni find jobs and achieve their career goals, NUS has led the development of two new tech tools:

NUS career+
Leveraging AI and big data, this mobile app is designed to help students and alumni in their lifelong career journeys. Features include a personalised skills profile, which is autogenerated based on the user's academic records, and provides real-time access to job postings that are filtered to match the user's skills profile. For students, the enhanced app also has a 'Career Readiness' progress bar, which recommends modules that they may take to bridge the skills gap in their career domains of interest; a 'Talent Future

Index', which predicts the skills likely to be in future demand; a 'Skills Graph', which visually maps out the user's skillsets and identifies adjacent skills aligned to market demand; and a 'Resume Drop' feature to boost job-search effectiveness.

conNectUS
Set to launch in the second half of 2021, this social/professional networking platform connects graduating students and alumni. It allows them to build and maintain professional networks, seek or share career advice, and

access or post available jobs. Users can also participate in mentorship programmes and get updates on NUS news and events. The platform has been developed in collaboration with NUS Information Technology and OAR.

These tools may just provide that extra competitive edge needed to help users in their job search. For example, mid-career alumni can use *NUS career+* to acquire additional skills to remain relevant at work, or join the *conNectUS* platform to mentor or hire younger graduates.

WHITHER THE UNIVERSITY?

And not just where is it, but when is it?

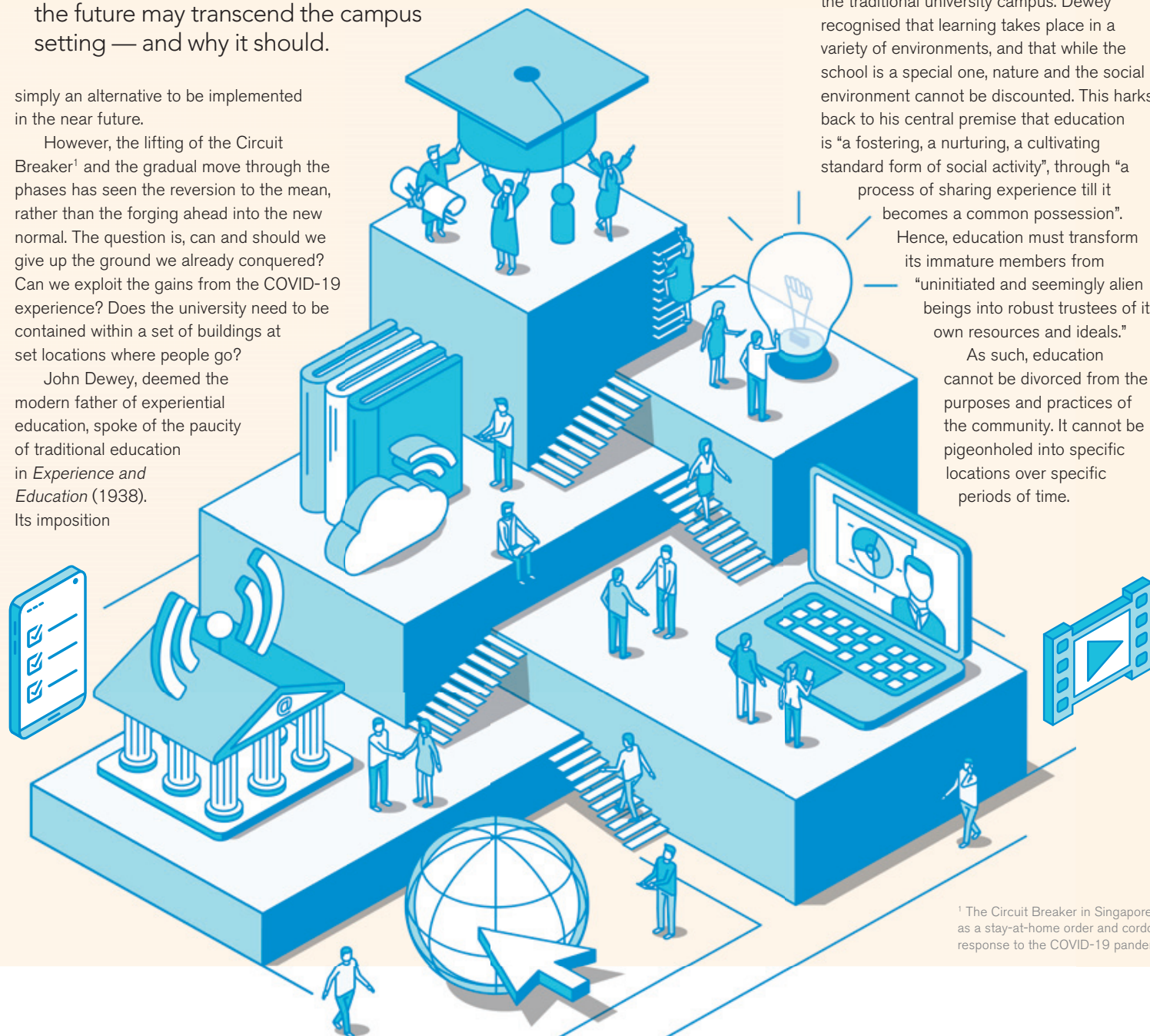
I MAgINE THIS. TEN YEARS FROM NOW – MAYBE 20, MAYBE SOONER – A VISITOR TO SINGAPORE ASKS A LOCAL FOR DIRECTIONS TO

THE NATIONAL UNIVERSITY OF SINGAPORE. She is met with a quizzical look, as though the question makes no sense. The local gestures expansively around him at the cityscape and replies, “NUS? But all this – all of this – is NUS!”

Lower Kent Ridge Road. College Avenue West. College Road. Bukit Timah Road. These are the locations of the campuses of the National University of Singapore. But more than merely places on a map, for those who have spent any length of time in them, they are edifices far larger than their physical buildings. They hold meaning, memories and experiences that go beyond their stated objectives – a place for learning, a place of work. For many, they are where we went to school; a physical location where we dutifully trotted off to for four years to get an education. The “university”, for all its self-flattery that it is an institution that transcends the prosaic and the quotidian, has always been bounded by space and time. The language we use reflects that: “Where did you go to school?” And many of us refer to those years in our early 20s spent in a particular place as “the college or university years”.

But perhaps that will soon change. COVID-19 has shown us that it is possible to learn, take exams, hold discussions and get work done outside this container of the university campus. Instead of going to university, the university came to us, however remotely (in all senses of the word). We saw the opening of more access routes to learning, a greater focus on student engagement and motivation, a higher level of trust and reliance on self-directed learning (home-based learning, synchronicity and asynchronicity in teaching and learning), the provision of space and time for students to explore their interests outside the curriculum, etc. We saw what could be done when edutech became a necessity and not

Dr Adrian W. J. Kuah and Ms Katrina Tan (Arts and Social Sciences '98) reflect on how the higher learning experience of the future may transcend the campus setting — and why it should.



from above, external discipline, learning from texts and teachers, rote learning of skills, preparation for a remote future, and static aims and materials, all fail in preparing the young for future responsibilities, but instead inculcate “docility, receptivity and obedience.” Instead, he offered a progressive education based on his view that the social nature of mankind means that education is in itself a social process. As such, when education is treated as “intelligently directed development of the possibilities inherent in ordinary experience” — its potentialities are vast.

Where then, does this ordinary experience take place? Everywhere — within and without the traditional university campus. Dewey recognised that learning takes place in a variety of environments, and that while the school is a special one, nature and the social environment cannot be discounted. This harks back to his central premise that education is “a fostering, a nurturing, a cultivating standard form of social activity”, through “a process of sharing experience till it

becomes a common possession”.

Hence, education must transform its immature members from “uninitiated and seemingly alien beings into robust trustees of its own resources and ideals.”

As such, education cannot be divorced from the purposes and practices of the community. It cannot be pigeonholed into specific locations over specific periods of time.

By sheer dint of locating the learning outside the classroom, the complexity we expect to see in real life is built into the learning environment. Multidisciplinarity and complex problem-solving segue seamlessly from knowledge acquisition.

LEARNING FOR REAL LIFE

Technology has allowed the outside to be brought into the university — think of drone flights videotaping human and traffic flows in a city, or animations of volcanic eruptions. How about bridging the outside and the inside, beyond brief sojourns on learning journeys or that mandatory fieldwork exercise?

Think instead of students setting up citizen science projects to track how light reflecting off an adjacent building at different times of the day affects the liveability of a space? Or student-community projects to identify and track the movements and roosting locations of migratory birds? Or co-opting bands of cyclists to report the location of potholes in roads, so that data can be used to predict failure or as a reporting mechanism, or as sites where new materials can be tested?

We have the technology that allows us to catch a Pokemon in the zoo. What if we could layer such augmented and virtual reality on a patch of green space and see how adding a lake, a path, or a playground can impact the space? Or using anthill destruction to anticipate behaviour during a fire in Marina Bay Financial Centre Tower 3? Or having students and researchers doing something with the 774 geocaches² stashed across the island?

Such situated learning, expounded by Jean Lave and Etienne Wenger in 1991, where knowledge is delivered in an authentic context, has been shown to be more effective, engenders communities of practice due to the high levels of social interaction and collaboration, and results in learners becoming engaged in more dynamic and complex activities. By sheer dint of locating the learning outside the classroom, the complexity we expect to see in real life is built into the learning

environment. Multidisciplinarity and complex problem-solving segue seamlessly from knowledge acquisition.

But more than that, in bringing the students with our researchers out, we are also bringing the community into the university. Including the community in the learning and research demystifies research, puts a face to the scientist, allows parents a peek into what their children are doing, and encourages the young to be curious, dream and aspire. It builds a more common ownership of the university and its work. It creates a bond which goes beyond the time spent there personally, or the money spent on sending a loved one there. It creates meaning and a sense of pride. It creates that “I am putting a man on the moon” moment.

In a country with mountains and seas, forests and urban areas, and a captive audience looking for different forms of engagement and ownership, never before has the time been so ripe for the university to leverage what it has on its doorstep. As one of the last stops in preparing our young for society, the university can and should embed itself in the community. Not only in companies and through internships, but in the lived experience of learning and living, so that we can continually seek to understand, improve and share.

The university does not stop at its invisible boundary line. The city is our campus; the campus is our city. **A**



Dr Adrian W. J. Kuah is Director of the Futures Office, National University of Singapore.



Ms Katrina Tan is Associate Director of the Futures Office, National University of Singapore.

¹ The Circuit Breaker in Singapore ran from 7 April to 1 June 2020. It was implemented as a stay-at-home order and cordon sanitaire by the Government of Singapore in response to the COVID-19 pandemic. ² Geo Caching, www.geocaching.com/play

CALENDAR OF ALUMNI EVENTS

JUL. AUG. SEP

JULY



Rollin' Good Times

Bukit Timah Homecoming 2021



Organised by NUS Alumni Relations and co-hosted by the Faculty of Law and the Lee Kuan Yew School of Public Policy, join us to reminisce Rollin' Good Times at Bukit Timah Homecoming 2021!

3 JUL

📍 Sat, 11.00am - 5.30pm

Register: alumnet.events/BT21
Contact: Mr Roystonn Loh
lohjwr@nus.edu.sg



Multilingualism - Opening New Doors

Future-ready Workshops

Speaker:
Associate Professor Titima Suthiwan, Director, NUS Centre for Language Studies



In today's world of growing globalisation and internationalisation, learning a new language

is a very valuable economic and social resource to future-proof ourselves. Join Associate Professor Titima Suthiwan as she shares how we can begin the journey to multilingualism.

13 JUL

📍 Tue, 7.30pm - 9.00pm

Register: alumnet.events/FRjul21
Contact: Mr Kenneth Phang
kphang@nus.edu.sg



Managing Wellbeing - The NUS Experience and You

Health & Wellbeing

Speakers:
Dr Andrew Tay (Medicine '07), Director (Health & Wellbeing), Office of the President, NUS



Dr Kinjal Doshi, Lead Psychologist (Health & Wellbeing), Office of the President, NUS



In this instalment, Dr Andrew Tay and Dr Kinjal Doshi will share insights and the learning experience from NUS' #AreuOK campaign, as well as examine the roles of employers and managers in employees' health and wellbeing, and how these relate to you.

22 JUL

📍 Thu, 7.30pm - 9.00pm

Register: alumnet.events/HWjul21
Contact: Ms Tan Li Hui
lhtan@nus.edu.sg



Write About Love

Feature Films (Philippines)



A young, female writer gets teamed up with a male writer to create the perfect romantic movie. Their clashing personalities and different perspectives on relationships lead them through a journey of self-discovery, as they ultimately find out what it really takes to *write about love*. (film rating to be advised).



30 JUL

📍 Shaw Foundation Alumni House, Fri, 7.30pm - 9.30pm

Register: alumnet.events/FFjul21
Contact: Mr Kenneth Phang
kphang@nus.edu.sg

AUGUST



The Future of Money - Decentralised Finance

Tech Talk

Speaker:
Mr Victor Liew (Computing '12), Co-Founder and CTO, Xfers



Discover how the latest technologies impact or disrupt our lives, and stay abreast with the breakthroughs and developments of today.

17 AUG

📍 Tue, 7.30pm - 9.00pm

Register: alumnet.events/TSaug21
Contact: Mr Kenneth Phang
kphang@nus.edu.sg

14 AUG

Kent Ridge Alumni Family Day

REIMAGINE

NUS' annual homecoming for alumni to stay connected to the entire NUS community. In view of the current restrictions on social gatherings, this event will be conducted online.

In the new normal, let us together redefine engagement, interaction and activity. Join us from the comfort of your home and participate actively as we *REIMAGINE* how to reconnect at this year's Homecoming.



14 Aug (Sat)

📍 Online, 10.00am - 9.30pm

Register: alumnet.events/KR21
Contact: Ms Tan Li Hui
lhtan@nus.edu.sg



SEPTEMBER



WoW: Ignite

Speakers:
Ms Janet Ang (Business '82), Nominated Member of Parliament



Ms Goh Yiping (Design and Environment '05), Partner of Quest Ventures



Ms Trisha Suresh (Public Policy '11), Public Policy and Economic Graph Manager of LinkedIn



Moderator:
Dr Intan Azura Mokhtar (Science '98), Member of NUS Alumni Advisory Board and Founding Chairperson for WoW



Targeting young alumnae and female students, *WoW: Ignite - TIES* (Technological, Informational and Educational Sharing) hopes

to ignite new ideas and inspire women in the NUS community to expand their horizons, enhance their ties and networks, unlock their potential and scale greater heights.

1 SEP

📍 Wed, 7.30pm - 9.00pm

Register: alumnet.events/WoWsep21
Contact: Ms Josephine Chng
jochng@nus.edu.sg



NUS Day of Service 2021



Now in its 6th year, *NUS Day of Service* continues to make a difference to those in

need through community initiated projects ranging from animal welfare and the environment to caring for children and the elderly.

4 SEP

📍 Sat, Various timings and locations

Register: nus.edu.sg/alumnet/DOS
Contact: Mr Roystonn Loh
lohjwr@nus.edu.sg

第十届中国电影节
China Film Festival 2021

China Film Festival 2021



Jointly organised by the Embassy of the People's Republic of China, Singapore China Friendship Association and NUS Alumni Relations, China Film Festival returns to bring you the best of Chinese films.

15-17 SEP

📍 Shaw Foundation Alumni House, Wed - Fri, 7.30pm - 9.45pm

Register: alumnet.events/CNFF21
Contact: Mr Ng Shan Jun
ngshanjun@nus.edu.sg



Breeding Unicorns

Lunch Dialogues

Speakers:
Mr Jeffrey Tiong (Engineering '08), Founder and CEO, PatSnap



Ms Guan Dian (Computing '10), Co-Founder and Senior VP (Asia-Pacific), PatSnap



Join Mr Jeffrey Tiong and Ms Guan Dian in this illuminating talk on global patents database platform, PatSnap's journey to becoming the first NUS-supported unicorn.

17 SEP

📍 Fri, 12.00pm - 1.00pm

Register: alumnet.events/LDsep21
Contact: Ms Josephine Chng
jochng@nus.edu.sg



➔ INTO THE GREAT UNKNOWN

What is it like to graduate in the midst of 'the crisis of a generation'? A group of final-year NUS students and soon-to-be alumni hoping to begin the next chapter of their lives talk about how they are responding to the challenges that have surfaced in a world turned upside down by COVID-19.

DISRUPTED, BUT NOT DERAILED

Six soon-to-be alumni share stories of interrupted dreams, adjusted aspirations, and the resilience to move forward in uncertain times.

What were your goals and aspirations when you entered NUS as a freshman?

AQIL HALIFI AMINUDDIN: I initially focused on academic achievements, but naturally progressed to thinking about my career. A lot of my peers in Psychology are very passionate about our field of study and prefer to be practising psychologists. But our major requires us to attain a Masters degree or beyond in order to be one. Do I want another two years of Zoom classes? For Psychology students, conducting research, observing behaviour and gauging micro-expressions online is very challenging. So while I am interested in Childhood Psychology, I adjusted my goals and aspirations and am now turning to my backup plan for a career in HR. I also had to readjust my plans as my overseas exchange was cancelled and I was held back for a term. I am currently interning with a HR consultancy that allows me to transition into a full-time role upon graduation.

SHAUN TAY WEI JUN: The first year in university was really all about joining activities to have fun! But by the

second year, I grew to think more strategically to build upon my field of expertise in marketing, and began to actively take on internships and side jobs. The degree is just a piece of paper: the training, exposure and insights I gained through my NUS experience are what allows me to find my direction in life.

CLAIRE McCOLL: I chose my degree out of interest rather than for practical or strategic reasons. Unless you are doing a professional degree and going into a field that requires the technical background, adapting and learning in the workplace is going to play a big part in your career, rather than just your paper qualifications. What I wanted out of my time at NUS were connections that can help me open doors and widen my horizons, and programmes that I could leverage on upon graduation.

JOTHINADAN PILLAY: I took the practical route for sure, and admit to not being super-passionate about computer science in the beginning — though I grew to love it. Even so, it was never just about the academic stuff, and I always wanted a holistic

OUR PANEL



MR AQIL HALIFI
AMINUDDIN
(YEAR 4, ARTS AND
SOCIAL SCIENCES)



MS CLAIRE McCOLL
(ARTS AND SOCIAL
SCIENCES '21)



MS CLARYL HO JIA LE
(YEAR 4, ARTS AND
SOCIAL SCIENCES)



MR JOTHINADAN
PILLAY
(COMPUTING '21)



MS LE KHUC
HOANG UYEN
(YEAR 4, BUSINESS &
COMMUNICATIONS
AND NEW MEDIA)



MR SHAUN TAY
WEI JUN
(BUSINESS &
COMMUNICATIONS AND
NEW MEDIA '21)

university experience. Staying in King Edward VII Hall for all four years (Jothi has been nominated as King Edward VII Hall Class Ambassador 2021 and has served in leadership roles at the hall) provided a good counterpoint against the intensity of the academic side of things.

LE KHUC HOANG UYEN: A holistic college experience was very big for me too. I am very practical, and being on scholarship, I was focused on my academic results. However, I also wanted to see what I can get out of a university education: which is the ability to learn independently, rather than from textbooks or through a class.

CLARYL HO JIA LE: Indeed, it isn't just about the degree, but also getting to experience campus life, and going on exchange overseas — these are also important, formative parts of university life, which I looked forward to. I was very excited to enroll in an exchange programme to Seoul National University together with a good friend — I have always been very interested in Korean culture and even studied the language at NUS. Yet just one week after we arrived in Seoul, we were told to return to Singapore because of the COVID-19 pandemic. At that point, I really felt like my dreams were shattered.

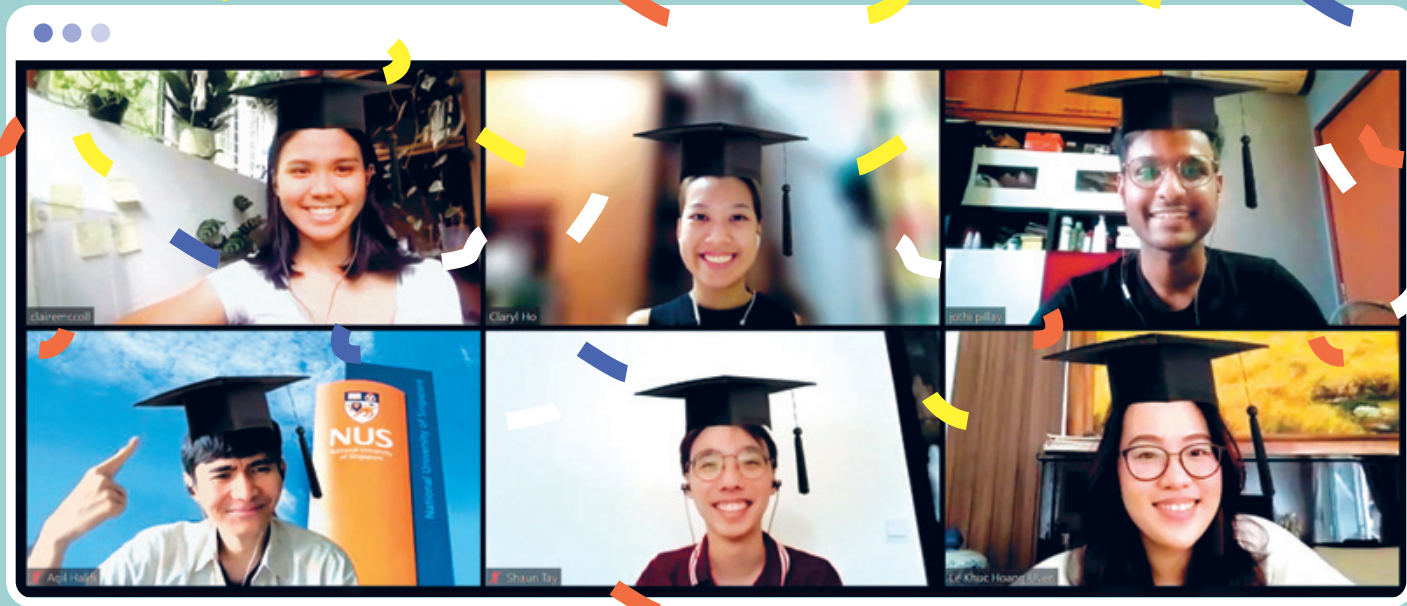
Career-wise, what had you hoped to find — and what cards have you been dealt with in reality?

CLARYL: Being on scholarship, I already have a job upon graduation. However, some of my friends have not been able to get the jobs they want, while others settled with traineeships. That said, the demand for social workers is quite high now and there are many opportunities out there in the market — though often at a lower starting pay than it would be for say, Engineering graduates. It is a physically and psychologically demanding job and we do feel like we deserve more.

SHAUN: I have been preparing myself to get into a marketing or communications role and have sent out 100 applications since last November, ahead of my graduation. However, I have only been called for three interviews so far! The way I see it, the batch of Business graduates before me had to take the brunt of the pandemic as the world was grappling with such rapid change — we, on the other hand, had one year to

One week after we arrived in Seoul, we were told to return to Singapore because of the COVID-19 pandemic. At that point, I really felt like my dreams were shattered.

MS CLARYL HO JIA LE



WHAT ARE THE PROSPECTS?

A 2020 joint employment survey of

11,800

FRESH GRADUATES
from NUS, Nanyang Technological University, Singapore Management University and Singapore University of Social Sciences showed that:

Overall,

69.8%

of fresh graduates found permanent full-time jobs last year, down from 81.7 per cent in 2019.

.....
Graduates from information and digital technologies, health sciences and business clusters registered the highest percentages of permanent full-time employment.

Source: CNA,
19 February 2021

“prep” for it! However, this means that many of my seniors from the 2020 batch who took up temporary jobs are still looking for entry-level roles, and I am now fighting with them for the same positions in a space oversupplied with Marketing graduates. This, however, is a role-specific observation, for most of my friends in Engineering have already secured jobs. Also, while the pandemic has impacted the economy, I feel that one should be ready to face such challenges anyway, and I am now considering pivoting into product management, in hopes of finding employment.

CLAIRE: I secured a job two weeks ago but had an experience very similar to Shaun. While a lot of my friends in Sociology only started applying after they finished their last paper, I started my search last October, when my friends in the Business faculty started taking the associate programmes that were open for application. Since then, I have been going for interviews — some which went pretty far, but eventually fell through. But you cannot be discouraged and have to just keep going forward. Pandemic or not, we are a graduating batch, and we have to work!

UYEN: I do feel like we have a lot of uncertainties to deal with, but I think it also trains our graduating batch to be more open-minded. Your first job is a big milestone for sure, but my seniors and mentors also tell me that a lot of things can change in the course of one's career. Not securing your first job as you had envisioned doesn't mean that the story is over.

What about hopes of working abroad?

JOTHINADAN: A friend applied for, and secured, a position in Sweden and will be heading over in July. The Singapore Government has also been

supportive in fast-tracking his vaccination appointment, which helped to facilitate things abroad. I would say that while working overseas is more difficult now, it is not impossible.

CLAIRE: My friend is also starting a consulting role in Copenhagen. It depends on luck in some parts, and your access to opportunities — which is not equal for all. We just have to deal with the cards that we are dealt with.

AQIL: I have always wanted to work in Japan, and am now doing my internship with a Japanese HR consultancy. That said, I would say the earliest I might be able to go back to Japan would be in... five years? (*Laughs*) But I am focusing on gaining more experience, and looking for as many opportunities as possible to learn about business practices in Japan while I am in Singapore, so that I can be prepared when the opportunity finally comes. And if it never comes, I could still stay in Singapore and continue to do what I am doing. It's about constantly managing expectations and aspirations, but still working towards what you really want.

UYEN: I am bonded to work in Singapore, but had originally hoped to get a more regional role — I am guessing that won't happen anytime soon! But what Aqil said makes sense: when the laws of maximising gains are not applicable, one should aim to minimise loss by gaining as much experience as possible — be it through internships, signing up for courses and mentorship programmes, or building your network online. When things are moving at a slower pace, it is a good time to build yourself.

Do you feel that you are facing unprecedented challenges as a graduating batch?

CLARYL: There were certainly “Why me?” moments, such as when the exchange that I had looked forward

to was cancelled. But you have to take stock and realise that there are still opportunities, and that we as university students are already in a position of privilege compared to many others.

CLAIRE: The expectations of our generation are pegged to the current state of social and economic progress. We look at the playing field now and set our own benchmarks based on it. Similarly, the older generation would have had their own benchmarks in their time.

SHAUN: Different generations face different challenges: it is hard to say who has it easier or harder. The older generation had more bread-and-butter considerations, but for us, it is more about personal aspirations, and societal and family expectations. Failure is not acceptable! (*Laughs*) For graduates today, it's not just about seeking a job, but a *good* job.

UYEN: As much as our generation has our “Why me?” moments, we move on and learn to deal with what we have. Resilience isn't just about hardcore strength, but adaptability and flexibility. Prior to the pandemic, I had been a typical type-A personality and a planner. This period has taught me that there are many external factors that you cannot plan for: you can only prime yourself to be ready for change. If anything, the challenges we face make us better and stronger — we certainly are not ‘snowflakes’.

Do you see the shift towards working and studying online a pro or con?

JOTHINADAN: Working from home is a new challenge that I am concerned about. As a new team member in a company, you need to build relationships with the people you work with in order to have rapport, to align, or even just to call in

a favour. The move towards virtual communications in the workspace makes building strong relationships quite difficult. This is what I found, contrasting the two internships I did — one in my second year, when it was still business as usual, and one at the end of Year Three which started off with WFH arrangements and ended during Phase 2 last year, when we could finally go into the office on certain days.

AQIL: As a Psychology student, online learning and research is a con. But as a member of the workforce, I have observed that while my company used to conduct annual trips to the different markets to hold learning sessions, transferring our operations online has allowed teams from different markets to be in closer communication than before. It has also allowed for better consolidation and sharing of knowledge.

UYEN: During my six-month internship at IBM, I enjoyed a very good learning environment with a pipeline of projects. Yet when the pandemic hit, we had to cancel some of these campaigns and projects, and it limited my scope of work. That said, being in a MNC meant that we were able to shift our attention and jump into other markets that I previously wasn't handling. I ended up liaising with the APAC team a lot, which opened up new opportunities too.

Amid grappling with uncertainty and dealing with new norms, is there a silver lining that you see?

AQIL: While I had to stay back for a term due to my cancelled exchange, the leave of absence felt like a long vacation and made me reflect on what I want in life. For so long I was fixated on a future in Japan, but then I realised that there's more to life.

UYEN: As an international student, I am thankful for being able to stay at home with my family! I am an extrovert and staying at home is not something I expected to love, but this period of time has allowed me to think about the relationships I have and put more effort into nurturing the ones that are important to me. So while the past year might have been unstable on the career front, it was mentally and emotionally pleasant to have time for myself and those around me.

JOTHINADAN: I am glad that the importance of mental health has really come to the fore since the pandemic. It's a topic people knew about, but never placed a lot of emphasis on previously. Since the Circuit Breaker last year, I find more people actively checking in on those around them. It should not have taken a pandemic for mental health to be highlighted, but it certainly has helped, especially in terms of getting the campus and the administration to put an emphasis on mental wellness. That to me is a great silver lining. ▲



Resilience isn't just about hardcore strength, but adaptability and flexibility. If anything, the challenges we face make us better and stronger — we certainly are not ‘snowflakes’. MS LE KHUC HOANG UYEN

▶ If you'd like to join our Forum panel, do write to us at alumnihelpdesk@nus.edu.sg to express your interest.

➔ WHO HE IS

Mr David Chia is part of the team that developed Call Home, an award-winning tech solution that helps migrant workers stay connected with their loved ones. The Yale-NUS graduate serves on the 'Alumni Giving Committee' and is currently based in Ireland.

The Comfort of a Call Home

How empathy drove
Mr David Chia (Yale-NUS '17)
to find a solution for a problem
he had never experienced himself.



Left: The Call Home team with former Minister for Manpower Ms Josephine Teo (Arts and Social Sciences '90) (in yellow) and current Minister for Manpower, Dr Tan See Leng (Medicine '89). Far left: Mr David Chia.

a fund-raising campaign on GIVE.asia, which hopes to raise \$100,000 for their service. This sum will allow 10,000 workers to access Call Home for free throughout the year. Given the large sums of money they were raising, they valued accountability. "Better.sg, which is a non-profit volunteer-run organisation that promotes tech-for-good, approached us and offered to adopt us, which we readily agreed to," he recalls.

DISCOVERING COMMUNITIES

Though he is no longer heavily involved in the day-to-day running of Call

Home, Mr Chia still gives the occasional input. The experience, he says, has been an enriching one. "At Yale-NUS, I was exposed to many people who had ideas about making a difference. Yet your priorities change when you start working," he reflects. "But this experience has put me in touch with other people around my age who are as passionate in bringing about change as I am."

It is not just the do-good community that Mr Chia has been exposed to. He has also learnt a lot about the migrant workers who have toiled thanklessly to build today's Singapore. Recalling one of the most memorable moments of the project, he says, "One of my teammates was going to meet some of the workers for the first time and she told me that she was a little nervous. At that point, I wore my 'anthropology major' hat and told her to blend in and they would welcome her more than she thought they would. And they did just that! At the end of the session, she told me, 'I can't believe how welcoming they were. They did not see me as 'the other'; they just offered me food and received me with open arms.'" **A**

➔ You can donate to the Call Home fundraiser here: give.asia/campaign/help-migrant-workers-call-their-family-back-home-sg-united#



A member of the Call Home team with a user of the service.

FOR MANY OF US, VOICE AND VIDEO CALLS WITH FRIENDS AND FAMILY HAVE BEEN A LIFELINE THROUGH THE COVID-19 PANDEMIC. But for Singapore's migrant workers, it is a luxury that they sometimes cannot afford. The problem is made worse by the low internet penetration in rural Bangladesh, where many of these workers' families are based. "They can't call their loved ones through web-based services like WhatsApp," explains Mr David Chia, a product manager with Facebook. "Instead, they rely on calls via prepaid IDD cards."

Accessing these cards during last year's Circuit Breaker was a challenge as the workers' movements were restricted. When they could get their hands on the cards, they would end up paying about a tenth of their monthly salary just to hear the voices of their loved ones. "The comfort of a loved one's voice was especially important as case numbers in the dormitories kept going up and people were living in fear," shares Mr Chia. He continues, "It's a comfort that a lot of us take for granted." He admits that he was no different in this respect. "I'm from Malaysia so I spent 2020 away from my family, who are still there. In some ways,

I took it for granted that my family would know how to pick up my WhatsApp call or join a Zoom link. But there was a sense of empathy that drove me to act. What if we couldn't reach them? How would we feel?"

ADAPTING AN IDEA

Thankfully, Mr Chia did not have to devise a solution from scratch. Realising that they could help alleviate the migrant workers' challenges, he and three friends decided to adapt a tech solution they had developed during a hackathon earlier that year to the present situation. This initial solution had targeted another demographic often underserved by tech: Singapore's large community of seniors. But the group of four quickly pivoted their idea — and along came Call Home. Powered by cloud communications platform Twilio, the app allows 3G-to-landline calls. This means that workers can use the internet to call landlines back home. "To make a call, they go to a website on their phone and log in with a Facebook or Google ID.

This experience has put me in touch with other people around my age who are as passionate in bringing about change as I am.

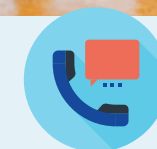
Then they can upload contacts and hit 'dial' to talk to their families," says Mr Chia. An hour-long conversation on Call Home takes up just 1.5MB of data.

To tailor their solution to the needs of migrant workers, the Call Home team embarked on a series of consultations with these workers. These were made possible with the support of organisations like JTC, the COVID-19 Migrant Support Coalition and Transient Workers Count Too. These consultations eventually resulted in a two-month pilot programme for about 60 workers.

KEEPING IT SUSTAINABLE

Despite the enthusiastic response, the team faced some challenges. For one, Twilio is not a free platform: each call has a fixed cost. Mr Chia and his team have tapped on their personal networks of friends and contacts to help build a sustainable funding model for Call Home so that the costs passed on to the migrant workers are minimal. Twilio.org, the social impact arm of Twilio, supports the initiative by offering a heavily-discounted rate for its services, bringing down the costs of calls by more than half.

The remaining amount is covered through partnerships with corporates and voluntary welfare organisations. For instance, a partnership with Facebook pays for all the calls made by workers constructing the tech giant's data centres in Singapore. The Call Home team has also started



SUCCESS CALLING

Call Home has caught the eye of the *Singapore Business Review*, which conferred the **MOBILE AWARD FOR TELECOMMUNICATIONS** on the service.



It was praised by Deputy Prime Minister Heng Swee Keat at the *Smart Nation & U* conference in March.



More than **1,000** USERS use Call Home every month.

EVERY JUNE TO AUGUST – JUST BEFORE THE START OF THE ACADEMIC YEAR – the NUS campus bustles with life as

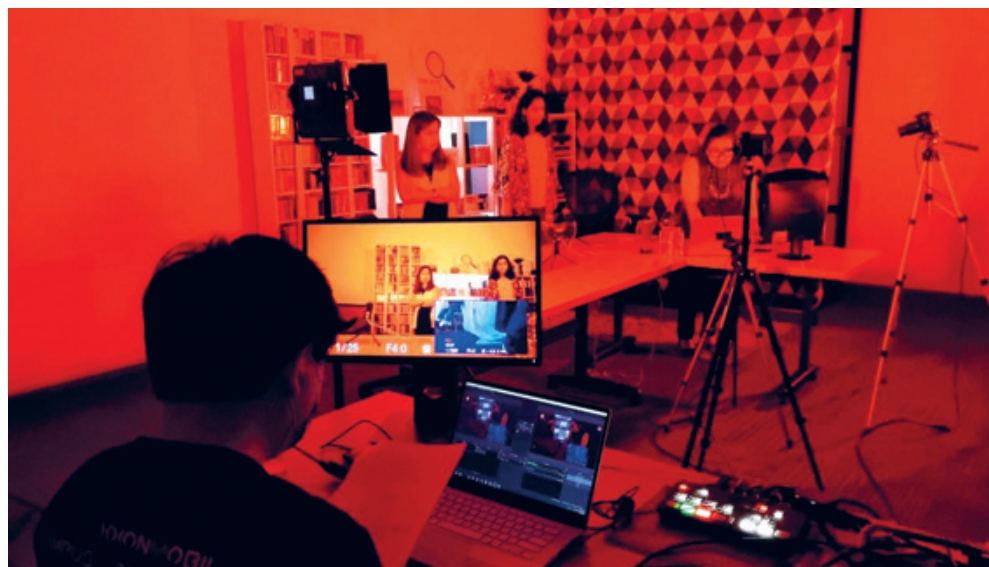
it welcomes newly-matriculated freshmen through orientation camps, hall activities, the Student Life Fair and the annual *HERE! Arts Carnival*. Organised by NUS Centre For the Arts (CFA), the carnival is where freshmen are introduced to the arts offerings on campus. All this changed with the onset of COVID-19. In February 2020, the *NUS Arts Festival* was cancelled as social distancing measures were implemented, and live performances ceased, while student artists were not allowed to rehearse together. All at once, the vibrant roar generated from the University's arts scene was dampened to a whisper.

Yet, the passion for the arts, backed by the power of the internet, has found ways to rise above the challenges. Led by Ms Jobina Tan from CFA, with the support of seven students who were part of the CFA Ambassadors Programme, the *2020 HERE! Arts Carnival* went digital with a slew of exciting online offerings. The opening event was a virtual performance of 'When You Believe' from *The Prince of Egypt* by a music, drama and dance ensemble, featuring all 21 CFA Arts Excellence Groups. The project was wholly owned by the students, who arranged the work, choreographed the dance, and performed a tapestry of 200 separate elements. In essence, it served as an expression of the solidarity among student artists with different talents and proved inspiring to their audience.

This initial foray into digital presentation has since led to new and exciting ways for the students to surmount the challenges of performing in these uncertain times. The play *Blindspot* was originally programmed as part of *NUS Arts Festival 2020*. When the festival was cancelled, the students decided to present the show online. They were forced to review what 'accessibility' meant as the

A Digital Transformation of the Performing Arts

In the light of social distancing restrictions caused by the pandemic, creative expression on campus gets a new lifeline in the virtual space.



A look behind-the-scenes at members from the EMCC Crew with their audio-visual equipment as they support a video recording for an online production.

audience was no longer physically present. The other challenge was that cast members had become scattered across the world. Using only Zoom to rehearse and film their individual parts, the students then edited and pieced the footage together on Adobe Premiere. To aid hearing-impaired viewers, they also translated speech to text and included closed captions. An audio description version was separately prepared to cater to the visually-impaired. While the students were not new to the use

of technology – in video editing, for example – the extent to which their skills were creatively interwoven into their productions has increased tremendously in the last year. *Blindspot* thus marked the first accessible online production to be virtually staged by a Chinese-language youth theatre group in Singapore. This same ingenuity was seen in *NUS Arts Festival 2021: A Question of Time*, where a combination of 18 live performances and 27 digital shows blurred the line between physical and virtual arts experiences through hybrid performances, online video games, interactive presentation of text, and an augmented-reality (AR) installation.

Left: A snippet from *Blindspot*, a live theatre production by NUS Chinese Drama. Far left: A screenshot of *When You Believe*, a collaborative montage by students from the CFA Arts Excellence Groups.



Past. Presence. Future.

BLURRING THE BOUNDARIES

Among the Opening Night performances of *NUS Arts Festival 2021* was *Past. Presence. Future.* by the NUS Dance Ensemble (NUSDE). Choreographed by Artistic Director Mr Zaini Mohammad Tahir (Arts and Social Sciences '89), it featured an original composition by Mr Tan E-Reng, a current English Literature major and President of NUS Electronic Music Lab. The performance fused elements of dance theatre, film and photography into the narrative of a family's journey through time and memories.

Filmed during Singapore's Phase 3 of safe management measures, the challenge was to create a work which could be viewed either solely as a virtual performance or a live work that integrated the cinematic elements into an experience that would resonate with audiences, regardless of the space they occupied. But first, the technology had to take in the human factor of the performers investing themselves into the work.

Ms Erika Goh, a current Engineering student and NUSDE's President and Dance Captain, shared, "It was definitely a challenging piece, given how previous productions involved more artistic interactivity through elements such as body contact and *pas de deux*, to culminate in a single performance on stage to a live audience. For *Past. Presence. Future.*, however, we had to recreate the same energy without contact on stage and perform with that energy repeatedly when filmed. It was crucial that our facial expressions were projected well and accurately, given how close the camera was to us. We also needed to maintain clean lines in our movements to accommodate whichever angle the camera approached with, across many takes."

Ms Goh found the experience a very rewarding one. "In a year of disconnect from NUS, I found *Past. Presence. Future.* a great outlet for me to really dig deep into my emotions to reflect on the time we have

Our foray into the digital sphere has brought onboard a new subset of students keen on supporting their performing arts peers through their own digital skills.

Ms Mary Loh, Head of Talent, Development and Programming at CFA

with our loved ones and on reconnecting with ourselves – concepts which were universal to those affected by the pandemic,"

she said. "I felt more connected with NUS through this production as it helped me reflect on my NUS experiences and bond with other performers and NUSDE dancers."

Another unique collaboration involved CFA with the NUS School of Computing in an AR installation titled *A Mo(ve)ment in Time*. Set up as a photo exhibition at UTown's Stephen Riady Centre, the installation invited viewers to view still pictures of productions using an app created by Computing students which brought the photos to life. "In a time when audiences are robbed of engaging with performance arts physically, it served as a window through time, showcasing artistic performances from the past," explained Mr Jonathan Heng from CFA. "When ideating this installation, we explored the possibilities of AR with Dr Anand Bhojan (Computing (PhD) '13) from the NUS School of Computing. We saw an opportunity for synergy, and he was happy to integrate our programme into the coursework for his module." The integration of arts with technology is an important step for CFA and an evolving part of future education, echoing NUS President Professor Tan Eng Chye's (Science '85) call to transform the NUS educational experience through an interdisciplinary approach where students "[integrate] knowledge, skills and insights from different disciplines."

DEVELOPING THE NEW ARTISTIC SKILL SET

Echoing this sentiment is Ms Mary Loh (Arts and Social Sciences '86), Head of Talent, Development and Programming at CFA. "Over the past year, our students have grown to realise that a digital performance is not merely a video rendering of a live show but an opportunity to experiment, collaborate and create something larger than the sum of its parts," she said. "Although the students begin with their chosen art form, they often quickly discover that they require different creative

skills and the support of different partners to create this entity on a virtual stage. Whether or not they are conscious of the milestones, our student artists are evolving new forms of work that defy strict classification in any one genre." She added that to support these students, CFA conducts regular training in digital media skills like video-making, digital broadcasting and digital marketing.

The members of one of CFA's Arts Excellence Groups, the ExxonMobil Campus Concerts (EMCC) Crew, have further developed technical competencies and adapted their learning to present the concerts and support the artistic fraternity. President of EMCC Crew, Ms Siow Yun Jing, an Arts and Social Sciences student, shared, "Due to the COVID-19 restrictions, there were more considerations when planning production support, such as having to work within the five-person limit. With shows moving online, we also introduced new roles in production support such as livestream operator and camera operator. Remote roles were introduced such as livestream moderators – similar to Front-of-House roles – where crew members operated the livestream chat remotely from home."

On the whole, the process of digital transition has opened up many possibilities for the NUS arts community. "We cannot be more proud of the students in the CFA groups for rising above the many constraints and challenges, to continue to pursue their passion and to express their creativity," said Ms Sharon Tan (Arts and Social Sciences '88), Director of CFA. "We have seen them take greater ownership of their learning and observed their growing confidence in embracing other disciplines. They have not only taken on board the theme of this year's Arts Festival, *A Question of Time*, but have also cleverly optimised the new hybrid presentation to reflect the many dimensions of time-space. It is this ability to wade into the unknown and to make meanings out of it that will put them in good stead for the future." ▲

Watch the NUS Arts Excellence Groups' montage of *When You Believe* at bit.ly/cfa-wyb



➔ WHO HE IS

Mr Jeffrey Tiong is the Founder and CEO of PatSnap, one of the world's leading innovation intelligence platforms. With a passion for IP and R&D, he has scaled PatSnap into an organisation that currently serves over 8,000 customers globally. Named a Top 50 SaaS CEO of 2020 by The Software Report, Mr Tiong was awarded the SCS IT Leaders Award in 2019 and Ernst & Young's Entrepreneur of the Year Award in 2018.

When I was younger, I thought businessmen just spent a lot of time drinking and entertaining — stuff that you would see in old Hong Kong dramas. Then I attended the University of Pennsylvania on the NUS Overseas Colleges (NOC) work-study programme, and it opened my eyes to tech entrepreneurship, which went beyond the usual buying-and-selling, to creating something almost out of nothing through research and development. Meeting tech entrepreneurs at Wharton Business School during my NOC stint also made me realise that building a business is not just about making money, but making an impact on the world. If you have an idea and a product that generates value for others, and put in the hard work to develop it, the revenue will eventually come.

To quote Robert Frost's poem: "I took the one less travelled by, and that has made all the difference." I was offered a student exchange in Washington, but chose to take up the NOC programme because I felt that the business aspect of it was something different from what I had been exposed to as an Engineering student. I was also among the first batch of Engineering students to choose biomedical engineering as a specialisation, and it was really fun. I would be doing signalling class with the Electrical and Electronics Engineering students, anatomy class at the School of Medicine, and pharmacology classes with Life Science students — all in one day! This penchant for going down the lesser-travelled path has also guided my business decisions later on, such as deciding on which new markets to enter.

Snapping into Place

You've read about IP analytics platform PatSnap's elevation to unicorn status after raising US\$300 million in its recent Series E round. Now read about its humble beginnings — and the pivotal role played by the University in its rise — through the words of its founder **Mr Jeffrey Tiong (Engineering '07)**.



Some might say that my Biomedical Engineering degree has no relevance to what I am doing now, but biotech and life sciences is one of the key verticals of PatSnap's business today — and having that foundation helps me to handle this sector of our business. More importantly, my bioengineering background was how I got to this space in the first place.* (see sidebar)

NUS has supported me since day one. When I decided to venture into China in 2009, we leveraged the connections of the NUS Suzhou Research Institute. When the facility was set up in 2013, we moved in too. Also important was NUS Enterprise's investment in PatSnap in 2010, which was a breakthrough for us. We wouldn't have survived without that injection of funds then.



*CUTTING THROUGH THE NOISE

The idea for PatSnap came to Mr Tiong during NOC: while working at a medical device start-up in Philadelphia, he had to conduct due diligence on registered intellectual property. He had to search through massive sets of public information using legalese and technical terms. The tedious task — which was often expensive to execute especially if companies wanted to access private databases — inspired him to create a cost-effective tool that was simpler to use. He founded PatSnap with \$55,000 from MDA's student start-up grant through NUS, and in 2012, the PatSnap Global Patent Database was officially launched.



The latest round of fundraising might have pushed us to unicorn status, but internally, it is business as usual. Other than more cash on our balance sheet, nothing has changed, and we still need to work harder. With or without the funds, our plan remains to grow and increase our presence globally and innovate our products. One of these helps to serve financial institutions, such as banks, so that they can identify high-value tech companies through our database. Traditionally, banks would evaluate a business based on its asset balance sheet or cashflow. This makes tech companies without physical assets harder to evaluate. Our model helps by consolidating information, such as the patents held by the company, to give an indication of the business' performance and standing.

PatSnap has been on the same path since day one, which is to grow into a global company and eventually lead to IPO. But how we arrived at different junctures has been very different from what I had in mind. In fact, at some point I am not even sure how we got to a certain point in our journey! It's full of surprises. For example, we gained global presence much sooner than expected. While it is a very good 'problem', managing an international team spread across the world means dealing with a lot of cultural differences. In my leadership team alone, we have people of many nationalities.

Dealing with human relations has been consistently difficult for me, but it is something that I need to work hard on. I believe in the Chinese saying “天时地利人和” (to be at the right place, at the right time, with the right conditions, and with the right people). We now enjoy market leadership advantages and a favourable international and domestic environment with the increased need for market intelligence; we also have the resources and capital. Now it's up to us to achieve harmony between the right group of people so that we can all help each other and head towards the same direction.

Did I pay a personal price for my success? To a certain extent. Because I am so busy at work, I spend less time with my wife and three daughters

(who are aged five, three and one). But I believe anybody who is passionate about their craft or work would have to sacrifice something.

I don't really get a huge sense of achievement from building PatSnap. My mind is simply focused on moving from one milestone to another, and each day I am still putting out fires, each bigger than the last as the company grows! Yet if I can serve as an inspiration to others, that's something I can feel good about. I read a lot of biographies while I was growing up: from Benjamin Franklin and Thomas Edison to Zheng He and Yuefei. And as a youth who loved basketball, I would learn all about Michael Jordan. People need role models, and if people can look at me and say, “Wow, if a normal dude like Jeffrey Tiong can do this, maybe I can, too!”, then I would have contributed to the local landscape.

A curiosity to learn and an excitement about all things new keeps me going, and my education at NUS has equipped me with the skills to continue my lifelong learning. One of the professors I interned with in NUS told me that the university is a place to learn *how* to learn. Indeed, while we might forget what has been taught once we pass our exams, the critical thinking skills — from how to identify and solve a problem, to ways of gaining relevant, reliable information — stay with us for life.

NUS also taught me the value of relationships. When I was rejected for NOC at the end of my third year, one of my tutors, Professor Casey Chan, noticed that I was down and asked me what the matter was. I told him about the situation, how I would soon have to start on my Final Year Project, and would thus have no further opportunities to go for the NOC programme. This was pivotal as Prof Chan made a personal recommendation to the NOC director and eventually helped get me into the programme. I realised the impact one can make on the lives of others — this is why I continue to work hard. The company is a collective — if I can look back and say that I built meaningful relationships, and we had a good fight, then it's worth it.

I always say that PatSnap goes around with a “Made in Singapore” stamp. But there's a “Made in NUS” stamp on it too. From giving me the skills to lifelong learning, opening my eyes through the NOC programme, to investing in PatSnap in the nascent stages, NUS has played a critical role in the evolution of this company. I dare say that PatSnap would not have existed without NUS. **A**

➔ *Hear more from Mr Jeffrey Tiong at Lunch Dialogues on 17 September 2021*

If you have an idea and a product that generates value for others — and put in the hard work to develop it — the revenue will eventually come.

➔ **MORE THAN SKIN DEEP**

At NUS, Assistant Professor Benjamin C. K. Tee leads the Sensor.AI Systems Labs at the Department of Materials Science and Engineering. He earned his PhD in Electrical Engineering from Stanford University in 2013, and was a Stanford Biodesign Global Innovation Fellow in 2014. The winner of the Singapore Young Scientist Award in 2016, he received the NRF Fellowship the following year, and in 2019 was recognised as the WEF Young Scientist of the Year. Asst Prof Tee has more than 10 patents to his name, and serves on the IEEE Electron Devices Society Flexible Electronics and Displays committee and the Materials Research Society Singapore Committee.

WE HAVE ALL BEEN THERE: A MOMENTARY LAPSE OF CONCENTRATION THAT EXPOSES YOUR MOBILE PHONE TO A

DAMAGING FORCE OF IMPACT. The results, depending on the angle of contact, could range from an innocuous scratch to a cracked screen. What has never happened before, is discovering later that the damaged screen has magically fixed itself. Welcome to the world of Assistant Professor of Materials Science and Engineering Benjamin C. K. Tee where the third law of science fiction writer and futurist Arthur C. Clarke (that states: "any sufficiently advanced technology is indistinguishable from magic") is in full effect.

Self-healing materials have made the news in recent years — including widely-publicised experiments in creating new kinds of more sustainable and resilient concrete — but this barely scratches the surface of their potential. In fact, what drives Asst Prof Tee is an abiding interest in emulating our skin's ability to feel and generally provide us with feedback about the environment.

A powerful demonstration for this potential is in a video he uses and discusses often. In it, a man can be seen struggling to get out of a wheelchair, though there is nothing visibly wrong with him and it appears to be a demonstration for the cameras. After a brief struggle, the man fails to rise from his seated position, instead falling to the ground. Asst Prof Tee

explains that the man has lost the ability to feel, meaning that he cannot even tell how much pressure he is exerting on the ground — which is why he falls. "We use our skin from the cradle to the grave...What we are doing is looking into how skin works and then recreating that in artificial devices," says Asst Prof Tee, neatly summarising his most famous work to date. How famous exactly? Well, aside from being featured in prestigious journals such as *Nature Materials*, *Nature Electronics* and *Science Robotics*, the artificial skin that Asst Prof Tee and his team pioneered has been covered regionally by CNA and internationally by CNN and *The Wall Street Journal*. There are a lot of dimensions to this innovation, ranging from self-healing materials to an artificial nervous system. Asst Prof Tee notes that these developments are truly on the cutting edge of what is practically possible with today's technology — and some of tomorrow's too. The team is hard at work refining their concepts, even during the COVID-19 pandemic, with news breaking in May this year on their new soft material that mimics our sense of touch called artificially innervated foam (AiFoam).

FROM SCIENCE FICTION TO FACT

Asst Prof Tee's own adventure in the area of engineering artificial skin began years ago, when he pioneered self-healing material while working on his PhD. Then again, the story perhaps goes back further. Thanks to all the media attention, we know that he was inspired by a pivotal scene in *Star Wars*:



What drives Asst Prof Tee is an abiding interest in emulating our skin's ability to feel and provide us with feedback about the environment.

The Empire Strikes Back. The scene in question of course is tied to the film's shocking climax, when the hero Luke Skywalker loses his hand in a duel with the villainous Darth Vader. He receives a prosthetic replacement, which the film's creator George Lucas showed us allows him to feel, exactly as if the robotic limb was his own hand. Asst Prof Tee cites this as his eureka moment; he was seven at the time. He later realised that there was an opportunity there. "When you lose your sense of touch, you essentially become numb...and prosthetics users face that problem," he told journalists at CNA. "So by recreating an artificial version of the skin, they can hold a hand, and feel that it is soft and warm. They can feel how hard they are holding that hand."

Continuing on the theme of turning science fiction into science fact, Asst Prof Tee explains that artificial skin can actually move into "superhuman" territory,

because it is not limited by biology. There is even a sustainability angle, which is where that example of the smartphone touchscreen comes into the picture. "Your phone's touchscreen is essentially like an artificial skin," says Asst Prof Tee. "If we can engineer it to repair itself, we can cut down on electronic waste." This is a useful reminder that artificial skin and its related technologies that Asst Prof Tee is developing at NUS cut across multiple disciplines, offering benefits to robotics, medicine and even consumer goods.

In the example of prosthetics, the challenge remains how artificial skin connects with the human nervous system. Asst Prof Tee says that he and his team are riding the wave of improvements in neurotechnological interfaces to offer an advantage in terms of speed. For the record, the artificial skin developed by Asst Prof Tee is already capable of transmitting information more efficiently than anything in our own

I want to see the research that I do have an impact in the world, and prosthetics was quite obvious.

biology. The hurdle remains at the level of integrating all that potential with our nervous system, but that does not mean the artificial skin will not have an immediate practical impact. "Think of it this way: we are now at the stage of the 56kbps dial-up modem," he says. "It will take maybe 10 years (for the human-machine interface), but we already have practical applications in robotics."

ACING THE TOUCH TEST

While some artificial skin applications, such as the self-healing mobile phone screen, remain fictional, Asst Prof Tee's work at NUS has made the news for its real-world applications. In the area of robotics, he and his team integrated an artificial nervous system with the electronic skin to enable a machine to perform what would be a simple task for a human — pick up a soft drink can. He tells us that this was done by linking the electronic skin to an emulated biological neural network, which runs on an energy-efficient neuromorphic Intel Loihi chip. Again, efficiency is one the hallmarks here, with the Asynchronous Coded Electronic Skin (ACES) only needing one wire to send information to the processing system.

ACES is also more sensitive than human skin in some ways, transmitting

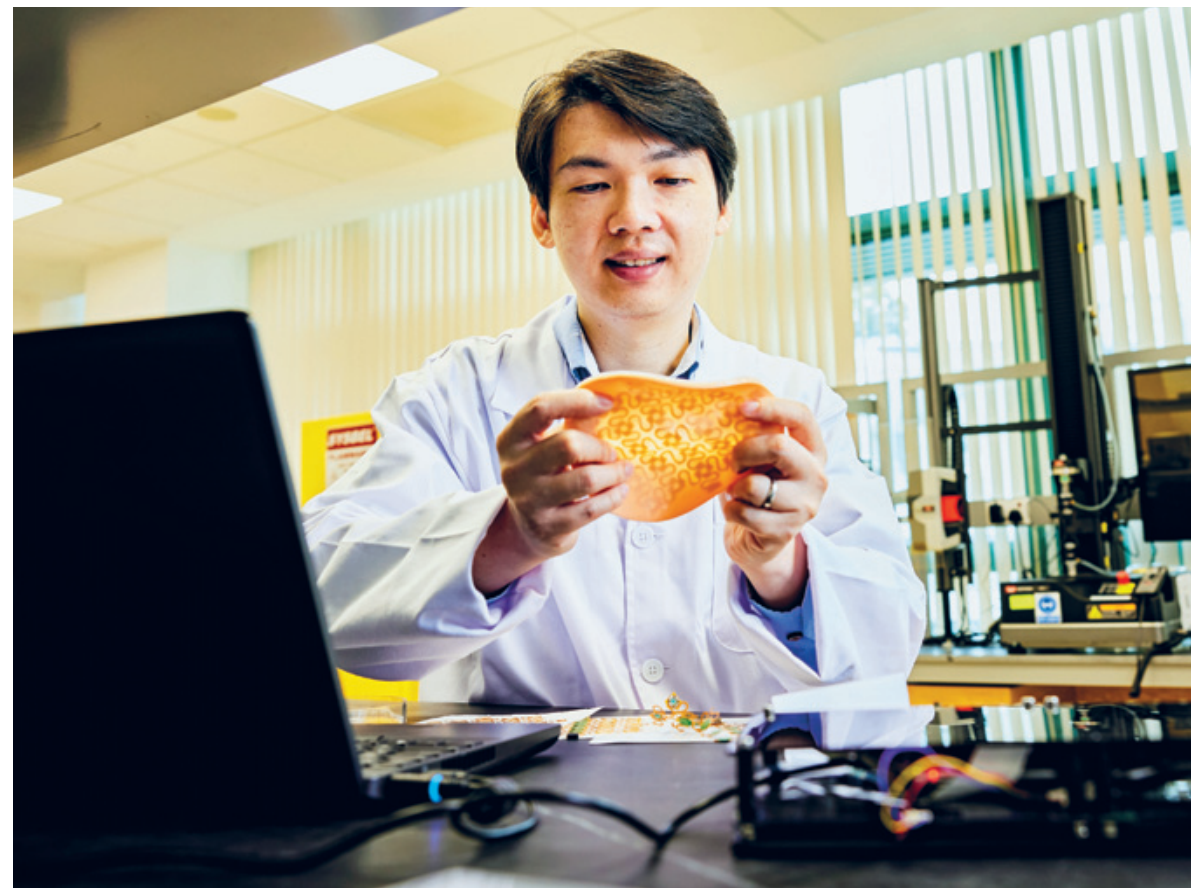
information more than 1,000 times faster. For some context, it can identify shape, texture and hardness 10 times faster than the blink of a human eye. This is all possible thanks to the system being uninhibited by the limits of biology, as Asst Prof Tee alluded. In the published reports on this latest application of ACES, it is noted that robots previously relied only on visual senses to perform actions, with the application of pressure being programmed into the device. Asst Prof Tee and Asst Prof Harold Soh combined seeing and touching, pairing them to great effect with the neural network; both professors are members of the Intel Neuromorphic Research Community (INRC).

REACHING OUT TO CONNECT

All of the different applications — both current and potential — illustrate why the multi-disciplinary approach in the sciences is so important. "Today's types of problems are no longer well defined, because of the interconnectedness of technology," says Asst Prof Tee. "I want to see the research that I do have an impact in the world, and prosthetics was quite obvious (*in shaping how he bridged the gap between electrical engineering and the fields of biology and medicine*)."

It is for this reason that Asst Prof Tee hopes more students will consider the broad range of engineering disciplines. Computer science may be the popular choice, but the world still needs specialists in materials science and electrical engineers too. Showcasing his keen concern for real-world application, Asst Prof Tee asserts that no matter what technology one develops in a particular field, one needs to rope in experts from other fields to realise the practical benefits. One thing is for certain: there are plenty more multidisciplinary innovations on the way from Asst Prof Tee and his team, as they strive to take the 'fiction' out of science fiction. **A**

The artificial skin and its related technologies that Asst Prof Tee is developing cut across multiple disciplines, offering benefits to robotics, medicine and even consumer goods.



Searching for a New Sensation

Assistant Professor Benjamin C. K. Tee from the NUS Department of Materials Science and Engineering, and Institute for Health Innovation & Technology, regularly makes the news with his innovations — which range from self-healing electronic skin to a foam that emulates the human sense of touch.

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Don't worry, you'll be okay because you're vaccinated. You can go home when we're confident you won't spread it to others.

Guess I'm lucky I got vaccinated.

Thanks, Dr Somani!

Yep! You'll be fine!

Though the vaccines are not a guarantee against infection, they offer protection against severe forms of the disease. Let's get vaccinated when our turn comes, so we can protect ourselves and everyone around us.

Dr Dale Fisher is Professor in Infectious Disease, NUS, and Chair of the Global Outbreak Alert and Response Network, WHO.

Dr Jyoti Somani is an infectious disease specialist at NUH who set up COVID-19 vaccine clinics for staff and high-risk patients.

SPECIAL THANKS TO NUS YONG LOO LIN SCHOOL OF MEDICINE



The welcome address by Professor Aaron Thean, Dean of NUS Engineering.

NUS Engineering Alumni Award Ceremony



On 5 February, the NUS Engineering Alumni Awards Ceremony took place at the NUSS Kent Ridge Guild House. While typically held as part of the annual NUS Engineering Gala Dinner, the event was scaled to meet current safe distancing restrictions.

Despite the novel arrangement, guests had fun catching up with one another and with faculty. Professor Aaron Voon-Yew Thean, Dean of NUS Engineering, shared his appreciation to all who joined in to celebrate the achievements of esteemed alumni from the Faculty of Engineering.

Recipients of this year's Awards include:

- Distinguished Engineering Alumni Award recipient, Mr Ngien Hoon Ping, Chief Executive Officer (Supply Chain Business) of FairPrice Group, who graduated with a Master of Science in Industrial and Systems Engineering in 2004.
- Outstanding Engineering Young Alumni Award recipient, Ms Eng Se-Hsieng, Senior Vice President (Business Development) of SkyLab Services Pte Ltd, who received her Bachelor's (with a Minor in Technopreneurship) and Master's degree in Electrical and Computer Engineering in 2002 and 2003 respectively as part of the NUS-French Grandes Écoles Double Degree Programme.



www.linkedin.com/school/nus-engineering



Mr Ngien Hoon Ping (Engineering '04) receiving the Distinguished Engineering Alumni Award from Professor Aaron Thean, Dean of NUS Engineering.



Mr Tai Xu Hong (Engineering '10) receiving the Outstanding Engineering Young Alumni Award from Professor Richard Liew, Acting Head for the Department of Civil and Environmental Engineering.



Ms Eng Se-Hsieng (Engineering '02) receiving the Outstanding Engineering Young Alumni Award from Associate Professor Daniel Chua, Director of Alumni Relations and Development.

- Outstanding Engineering Young Alumni Award recipient, Mr Tai Xu Hong, Director & Co-founder of Momentus Research Pte Ltd and WOW Kampung Pte Ltd, who received his Bachelor's degree in Environmental Engineering from NUS in 2010, with a Minor in Technopreneurship as part of NUS Overseas College Stockholm which he joined in 2007.

➤ **More about their accomplishments can be found at NUS Engineering website.**

E7 – Engineering's New Home of Tech-Driven Healthcare



09 February

In the heart of South-East Asia's leading university, a new home for tech-driven healthcare is taking shape. Having opened in early 2021, E7 is a state-of-the-art building in the centre of the NUS campus that is set to become a world-leading hub for the development of affordable and accessible medical technology.

Spread across 8 storeys and more than 16,000 square metres, E7 bridges the fields of engineering and medicine. Combining technology and innovation, it is poised to be a hub for high-impact collaboration between top researchers and industry. It will also drive the invention of pioneering healthcare technology, from early concept ideas through incubation and on to commercialisation. Students, researchers, scientists and engineers will work in what will be some of the most technologically-advanced labs in the world. Here in E7, NUS will be bringing together a formidable team, ready to take on the world's biggest healthcare challenges.



Faculty members share their thoughts on the new facility:

"In E7, we are bringing together the expertise of NUS faculties from the schools of Engineering, Medicine and Business. With this diversity of expertise, we are not only making cutting-edge technologies of today; we are also empowering patient care for tomorrow."

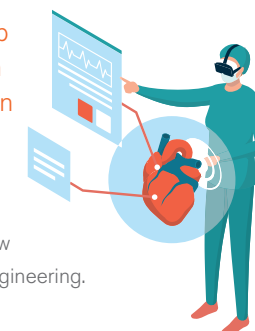
– Assistant Professor Shao Huilin, Biomedical Engineering.

"For me, innovation in healthcare is more than just about creating ideas. We have to talk to patients and understand their concerns, and work with stakeholders like policymakers, regulators and clinicians. Getting an innovation all the way to the finish line involves everything from behavioural sciences to healthcare economics, and Singapore is the ideal ecosystem to facilitate these interactions."

– Professor Dean Ho, Head of Department, Biomedical Engineering.

"The key mission of E7 is to drive a paradigm shift in healthcare, from a focus on symptom-based treatment to one that encompasses disease prediction, early diagnosis and intervention. To achieve this, we will focus on key technology areas such as digital medicine, theranostics and robotics. With this deeper connection with our clinical partners, we will look at their pain points across multiple levels, and develop and translate needs-driven holistic innovations that can advance the healthcare sector both locally and globally."

– Associate Professor Raye Yeow (Engineering '05), Biomedical Engineering.



NUS Geography Majors Tea 2021



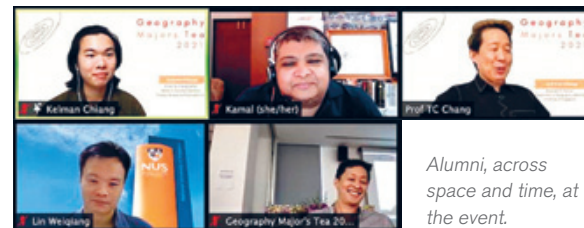
19 February

“Across Space and Time” was the theme for the NUS Geography Majors Tea 2021 as two alumni from the Department of Geography, spanning both space and time, were invited as guest speakers. Mr Christopher Soh (Arts and Social Sciences '14) returned to the department to talk to students about his career achievements in both the public and private sector in Singapore, while Mr Kelman Chiang (Arts and Social Sciences '16), currently based in San Francisco, joined the audience via Zoom.

Physical distance notwithstanding, the students and faculty members who attended the event were enlightened by Mr Soh and Mr Chiang's insights on

working in Singapore and abroad; as well as the differences between the civil sector and the corporate world. Mr Soh is currently a Senior Associate at KPMG Singapore dealing with Sustainability Services, while Mr Chiang is a Product Analyst with Postmates Inc.

Since the late 1990s, the Department of Geography has invited outstanding alumni to speak at either the Geography Career Talk or the Geography Majors Tea. After the 2021 Geography Majors Tea, an undergraduate commented, “it is most inspiring to hear alumni talk about how their [education in geography] has literally brought them across space and time.”

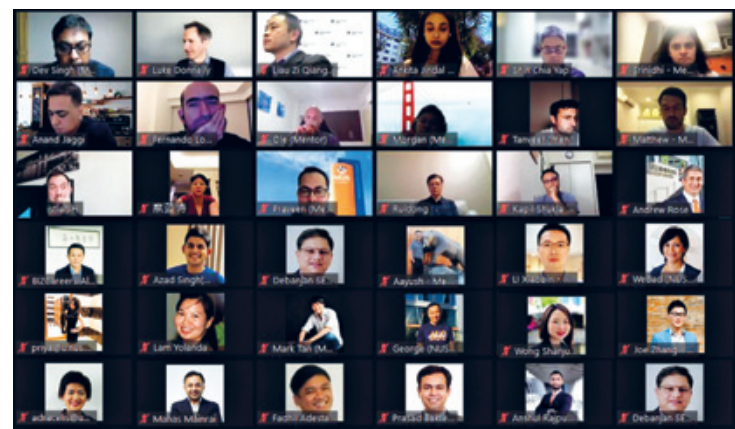


Alumni, across space and time, at the event.



Geography Majors Tea 2021, featuring Mr Christopher Soh (Arts and Social Sciences '14) and Mr Kelman Chiang (Arts and Social Sciences '16)

NUS BIZAlum MBA Mentorship Programme Launch 2021



➔ **The six-month NUS MBA Mentorship Programme for the January 2021** intake officially launched on 26 March 2021, as Professor Andy Rose, Dean of NUS Business School, kicked off the event with his welcome address. Mr George Heng, Director of NUS BIZAlum, Mr Tan Soo Jin, Executive in Residence, Mr Arnaud Pallini (MBA-C '19), Ms Maria Katrina Volante (MBA-C '21), Mr Akshay Bajpae (MBA-C '15) and Mr Anand Jaggi (MBA-C '08) also shared their insights on the importance of alumni connectivity and engagement, and emphasised the strengths and benefits of the mentorship programme.

Held virtually via Zoom, a total of 132 mentors and 157 mentees from 13 countries participated in this MBA Mentorship programme.

LIVING THE DREAM

Newly-minted physician Dr Aida Eliza Binte Abdul Majid (Engineering '00) recounts her journey to fulfil a childhood ambition of becoming a medical practitioner — one that was made possible through the help of generous fellow alumni.

Ever since I was a child, I have always dreamt of being a doctor. I was inspired by my parents who were both dedicated nurses. At age 17, despite meeting the requisite requirements, I was not accepted into NUS Medicine. I went ahead to pursue a degree in Chemical Engineering in NUS. After graduation, I held on to my desire to help others through my career as a secondary school Chemistry teacher and through charity work which included a volunteer mission to build a tuberculosis ward in Cambodia.

Despite enjoying a very fulfilling teaching career, I still held on to my dream of being a physician. At the age of 38, I decided to leave teaching and move to New York City as the first step towards my journey to becoming a doctor. I started a post-baccalaureate pre-med programme at Columbia University and used my life savings to fund my education. In 2017, I was accepted into the Keith B. Taylor Global Scholars Program at St. George's University School of Medicine, in Grenada in the West Indies.

The cost of attending medical school is very high. My parents actually sold our family home to help fund my first two years of the course. However, at the end of my second year, I faced a significant funds deficit after multiple loan and scholarship applications failed. I reached out to friends back home in Singapore, and started a Gofundme campaign. I received many generous donations from friends and family from all over the world. My friends, Mr Kelvin Eu (MBA '12) and Ms Serena Wan Shi Mei, through their involvements with NUS alumni, introduced me to Mr Yeo Keng Joon (MBA '85), the Founding President of NUS Business



My journey to become a doctor was fraught with many challenges; however, through each obstacle, numerous individuals have helped me.

School Alumni. Mr Yeo graciously agreed to extend a personal loan to me to fund my last 2 years of medical school. With his generous contribution, I was able to graduate with my MD at age 44, and fulfil my lifelong ambition to be a doctor. I am now about to embark on my Family Medicine Residency Program at Rutgers Robert Wood Johnson Medical School – CentraState Hospital in New Jersey, USA.

There is a saying that “it takes a village to raise a child”. I believe it takes a village to raise a doctor. My journey to become a doctor was fraught with many challenges; however, through each obstacle, numerous individuals have

helped me. I am very thankful that I am an alumna of NUS as I have received help from fellow NUS Alumni who have believed in me and my determination to change my career from that of a chemical engineer to one of a medical doctor. The NUS community is truly the village that has helped to raise me up to be the doctor that I have longed to be. Mr Yeo once shared with me that “We should share our blessings when we are able”. I will pay it forward by contributing to the NUS Alumni Bursary Fund to help other needy students in NUS. My sincerest wish is that other students will be able to fulfil their dreams just as how I was able to fulfil mine.



The *AlumNUS* thanks all contributors for the articles and photos in Alumni Happenings, showcasing our vibrant alumni community. For the full stories, please go to nus.edu.sg/alumnet/TheAlumNUS/issue-126/community/alumni-happenings.

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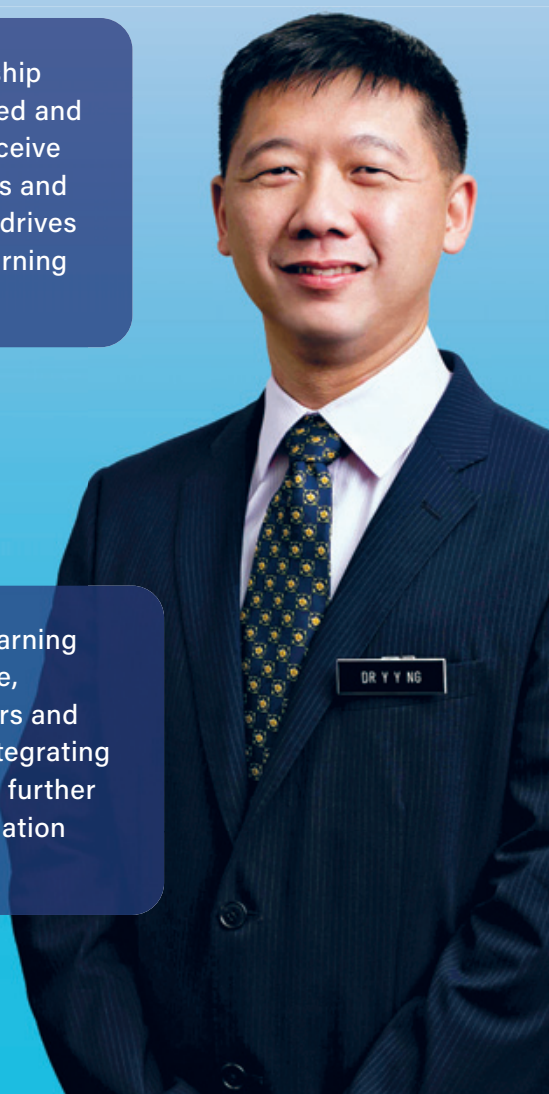


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Dr Ng Yih Yng
Participant, Class of 2021
Lead, Digital and Smart Health Office,
Tan Tock Seng Hospital



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WHEN ALL PLAY IS WORK

His time at the University has put **Mr Jensen Goh (Engineering '17)** on track to becoming a highly sought-after coach in the world of esports.

BY KEENAN PEREIRA

GOING GLOBAL

OVER THE YEARS, MR GOH HAS COACHED

9

PROFESSIONAL LEAGUE OF LEGENDS TEAMS

ACROSS 7 COUNTRIES.



Mr Goh has a knack for making complicated gaming concepts easy for laypeople to follow.

THE MOTTO OF THE UNIVERSITY'S TEMBUSU COLLEGE, "HOME OF POSSIBILITIES", has stuck with Mr Jensen Goh (Engineering '17) all these years. In fact, it propelled him to a career that he never thought was possible: as the head coach of an American esports team. "Right before I entered NUS, I told myself that it was time to get serious and stop esports," says the 28-year-old, who had been playing games like *Starcraft* and *League of Legends* competitively as a teen. "Since I wasn't making much progress, I decided that maybe an esports career wasn't for me."

That would have been the end of his esports journey — had he not stumbled upon a tournament organised by Tembusu College for *Dota*, a popular strategy video game. "I knew I was pretty decent at public speaking so I decided to try my hand at being a commentator for the tournament," he recalls. His decision proved to be the right one, as he

Mr Goh (standing in grey suit) is a popular shoutcaster, which is a commentator of esports.

found he had a knack for making complicated gaming concepts easy for laypeople to follow. His popularity as a commentator, known in esports circles as a "shoutcaster", grew after he won a commenting competition later that year. Armed with this win, Mr Goh started raking in serious money, earning up to \$1,000 for each commentary session. He then ventured into coaching amateur esports teams and struck gold in 2017, when he was asked to coach a professional Taiwanese *League of Legends* team, Fireball. For the first four months of that year, he stayed in Taiwan, where he juggled coaching commitments with his final-year project. "My parents were worried that I wouldn't be able to graduate," he admits. "But my priorities were (in this order): family, school and then esports. So I wasn't about to mess up school for the sake of esports."

Fortunately, Mr Goh completed his project on designs for a smart dustbin and graduated that year. Recognising his passion, his parents supported his decision to enter the arena full-time and he has since coached teams across the world. Currently based in Los Angeles, he is believed to be the first Singaporean head coach of a professional US *League of Legends* team.

What has helped him become the coach that he is today? He credits two *Ideas & Exposition Modules* he took at NUS for expanding his horizons. The first was on sports and society, which encouraged him to study the science behind coaching. Another, on *Public Persona and Presentation*, has also shaped his approach to commenting. "In most instances, people trying to become commentators will be fixated on the technical aspects of speaking — how to enunciate better, for example. But this module took a more holistic approach and made me consider the elements of my commenting and how that translated to a personality of sorts." A



These pictures were taken before the announcement of the Circuit Breaker in 2020



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