“In the university context, traditions are how we instil values into graduates, and make them feel committed to their alma mater.”

PROFESSOR LIM PIN, FORMER NUS VICE CHANCELLOR

TAKING FARMING INTO THE FUTURE
MS DANIELLE CHAN
(ARTS AND SOCIAL SCIENCES ’17)

HEROES IN A TIME OF CRISIS
ALUMNI STEP UP TO SERVE SOCIETY IN THE WAKE OF THE COVID-19 CRISIS

SOMETHING OLD, SOMETHING NEW
AS THE UNIVERSITY’S TRADITIONS EVOLVE WITH THE TIMES, THE COMMITMENT TO ITS CORE VALUES REMAINS

FACING UP TO POST-PANDEMIC REALITIES
ALUMNI SHARE THEIR VIEWS, FEARS AND HOPES ABOUT LIFE IN THE ‘NEW NORMAL’
Dear alumni and friends,

Please join me in congratulating the Class of 2020 and welcoming them into the NUS Alumni family! To the Class of 2020 — you have done it! You have crossed the finishing line and are now ready to move on to the next exciting phase of your lives. We applaud and celebrate with you, your academic achievements, among your other accomplishments.

2020 started with great promise as it heralded the start of a new decade. Unbeknown to us, a black swan was lurking in the background. Before we knew it, COVID-19 swept down on us and spread across the globe, and literally brought lives and livelihoods to a standstill. Closer to home, this pandemic forced Singapore into a Circuit Breaker, resulting in many event cancellations and postponements. The postponement of this year’s Commencement Ceremony — which is rich in traditions and significance — is one example. With the rapidly evolving situation, my team and I, at the Alumni Office, have had to think of alternative ways to continue engaging and interacting with you, our alumni. When it became clear that physical gatherings were not going to be possible for a while yet, we turned to cyberspace, and began exploring new ways to ensure that you remain connected to one another and to your alma mater. Two of our signature annual events — Bukit Timah Homecoming and Kent Ridge Alumni Family Day — will be taking place virtually on 4 July and 15 August respectively. We look forward to meeting you all in cyberspace!

In this issue, we delve into cherished University traditions and look at how they continue to help bring the NUS family together and strengthen our community spirit. As the pandemic has tossed us into social and economic turbulence, it gladdens the heart to see many of you coming forward to offer assistance in mentorship, jobs, internships and donations towards the NUS Students Solidarity Fund. To support graduates from the Class of 2020, NUS has launched the Resilience and Growth Initiative, so that they may acquire new skills, develop professionally and, in time, secure good employment.

We are also deeply proud of our alumni, many of whom are contributing to the fight against COVID-19 in their personal and professional capacities. Dr Sudesna Roy Chowdhury (Medicine ’20) was behind the creation of a translation portal that has aided medical professionals in their communication with migrant workers, and Dr Zhou Lihan (Science + USP ’07) and his team in MiRXES have been producing diagnostic test kits for COVID-19 for Singapore and other countries worldwide.

Indeed, there are many heroes among us. Our heartfelt thanks to all who have stepped up to serve humanity and community during this trying time. To all fellow alumni, set your sails and know that you are not alone. Together, we will ride out this storm as #OneNUS.

Stay Connected, Stay Safe and Stay Strong!

Warmest wishes,
Mr Bernard Toh
(Architecture ’84)
Director, Alumni Relations
EMPOWERING THE PEOPLE OF TOMORROW

NUS Business School launches new Centre to promote human-centred mindset in AI use.

We hope to develop insights that will inform policymakers, the industry and the public on how AI technologies can be advanced while still maintaining a focus on humans.

Prof David De Cremer, AITH’s Founder and Director

named one of the world’s top 30 management gurus and speakers by research organisation Global Gurus.

The research projects will seek to cover topics such as how AI-empowered business models should be employed in trustworthy and ethical ways; how AI can be used to enhance human well-being as well as what the enhanced relationship between man and machine means for the future of work specifically, and the development of future society more generally.

The centre was launched virtually on 23 April. In conjunction with the launch, the Asia’s AI Agenda report was released, a research project in collaboration with MIT Technology Review Insights. In this report, which surveyed more than 1,000 senior executives from a wide variety of businesses in Asia and around the world, researchers examined companies’ technological savviness, their use of and challenges with AI in business today, as well as foreseeable challenges with AI in the next three years.

The establishment of AITH was made possible because of a generous contribution from Cornerstone International Education Group, which has strong expertise in AI and education. AITH is also collaborating with several academic institutions and industry partners to develop insights that may help shape future practices and policies.

The AlumNUS clinched the following awards at APEX 2019:

AWARD OF EXCELLENCE

Home-ground Advantage
8h Woon Ten Yuan (Business ’12)

FORUM

Facing Up to New Realities
24

PANORAMA

Post-COVID-19, How Will We Be Better?
Professor Danny Quah

PURSUIT OF EXCELLENCE

30

CHANGEMAKER

Taking Farming into the Future
Ms Danielle Chan (Arts and Social Sciences ’17)

SPOTLIGHT

Picture This
Mr Darren Soh (Arts and Social Sciences ’00)

FRONTIERS

41

Solutions for a Brighter, Post-Pandemic Future

ALUMNI HAPPENINGS

44

PARTING SHOTS

Staying Mentally Healthy
Dr Dale Fisher

SPECIAL FEATURES

Resilience in Action
Here to Inspire
Heroes in a Time of Crisis
From Classroom to Frontline
THREE NEW NUS BOARD MEMBERS APPOINTED

These distinguished individuals will help to guide the University’s efforts in its quest to become a leading global institution.

Three new members were inducted into the NUS Board of Trustees on 1 April — corporate veteran Mr Chiew Geok Khuim (Law ‘84), experienced banker Ms Jeanette Wong (Business ‘89), and renowned academic Professor Timothy L. Killeen. Ms Chew Geok Khuim is Chairman of The Straits Trading Company Limited. She is also Executive Chairman of Tectus Group, and Chairman of Malaysia Smelting Corporation Berhad and ARA Trust Management (Suntec) Limited.

Ms Jeanette Wong is Board Director of UBS Group AG. Prior to this, Ms Wong held various senior appointments in DBS Bank and JP Morgan locally and regionally, including Chief Financial Officer of DBS Group (2003–2008), and head of JP Morgan for Singapore (1997–2002).

Professor Timothy L. Killeen is President of the University of Illinois System. He previously held leadership positions at various institutions of research and higher education, including a dual appointment as Vice Chancellor for Research and President of the Research Foundation at the State University of New York.

Mr Hsieh Fu Hua (Business ‘74), Chairman of the NUS Board of Trustees, said, “We are delighted to welcome Geok Khuim, Jeanette and Timothy to our Board. Their expertise in their respective fields and rich experience will benefit NUS immensely as we pursue our aspiration to be a leading global university. We look forward to them joining us in this exciting journey at NUS.”

As part of planned Board renewals, Ms Kay Kuok from the Kuok Group of Companies stepped down from the Board on 31 March, after 12 years of service. She will continue to serve as Chair of the Yale–NUS College Governing Board.

“We also want to extend our deepest appreciation to Kay for her many outstanding contributions to NUS. She has served on numerous board committees, including chairing the nominating committee. She also strongly supported the University through various challenges,” said Mr Hsieh.

Members of the Board of Trustees are appointed by the Minister for Education. The Board is made up of eminent leaders from academia, the public service and private sector, and works with the University’s management and stakeholders to define NUS’ vision and collectively shape its future.

Their expertise in their respective fields and rich experience will benefit NUS immensely as we pursue our aspiration to be a leading global university.

Mr Hsieh Fu Hua, Chairman of the NUS Board of Trustees.

NEW ADVANCE@NUS PATHWAY LAUNCHED

Extending lifelong learning opportunities to non-graduates.

WORKING ADULTS with rich professional experience but who do not possess a university degree will now have an opportunity to gain admission into selected full-time undergraduate degree programmes offered by the National University of Singapore (NUS). Under a new admission pathway called Advance@NUS, an applicant’s work experience will play an important part in the selection process. This initiative aims to encourage adult learners to improve their future career prospects by broadening and deepening their knowledge base.

Administered by the NUS School of Continuing and Lifelong Education (NUS SCALE), Advance@NUS launched its inaugural admission cycle on 2 March 2020. This new pathway will admit suitable adult learners for full-time undergraduate degrees in Business, Engineering and Arts and Social Sciences.

Adult learners admitted under Advance@NUS will take classes alongside other NUS undergraduate students. Advance@NUS is a new initiative by NUS to encourage working adults to complement their practical work experience with academic rigour. We envisage a positive multiplier effect from Advance@NUS — adult learners can fulfill their personal aspirations of getting a degree, and the younger undergraduate students will have much to gain from our adult learners’ rich industry experience, maturity and motivation,” said Professor Susanna Leong (Law ‘89), NUS Vice Provost (Masters’ Programmes & Lifelong Education) and Dean of NUS SCALE.

TIPS TO BEING A HIGH-PERFORMING REMOTE EMPLOYEE

For some of us, working from home may have been the dream! Now that the dream has become our new reality, it may not be as easy as it was thought to be. Emotional disconnect and the loss of work-life balance are some common challenges faced.

Join us to learn how to better adapt to this sudden shift in work arrangement and be productive as a remote employee.

Speaker:
Mr Jasbir Singh
Head of Learning & Development at the Centre for Future-ready Graduates

Date: 14 JULY 2020, TUESDAY
Time: 7.30PM
Platform: ZOOM
Join us online at: alumnet.events/FRjul20
LEARNING TO GET BACK ON HER OWN FEET

It was no easy feat to get back into the workforce after a hiatus of more than a decade, but Ms Peng Wan Joo (Arts and Social Sciences ’99) didn’t let the challenges hinder her success.

THE DECISION TO LEAVE HER NETWORK MARKETING BUSINESS wasn’t an easy one. But for Ms Peng Wan Joo, having time to spend with her newborn was her top priority. So, at 28, she left the corporate world. But it certainly wasn’t an easy road. She recalled not having any days off and felt defined by how well she took care of her child and home.

When her son entered upper primary, Ms Peng decided it was time to rejoin the workforce. To help her on her career journey, a friend recommended that she enrol in a Workforce Skills Qualification course on Career Development Facilitation. From there, she found out more about how to get back into the workforce and the services they offered. Eventually, she got in touch with a WSG career coach.

During her coach, Ms Peng was advised to attend a resume workshop, where she learnt the importance of highlighting her skills in her cover letter and CV. Within a couple of weeks of sending out her revised resume, she was offered a job at a multinational corporation.

“Speaking to a career coach gave me the courage to do what I would not have done,” she says. “My coach’s guidance and encouragement gave me a confidence boost, which helped me take action and make decisions quickly. It feels great to be earning my own keep again.”

ON 19 MAY, NUS ALUMNI RELATIONS brought Tech Talk – a popular series that discusses the impact and disruption of emerging technology – online. Ms Angela Huang (Science ’85), Principal Lecturer and Consultant, Digital Strategy and Leadership Practice, at the Institute of Systems Science (ISS), gave an overview of AI and the security of AI systems, potential AI-powered attacks, and how AI is used in managing cybersecurity. Attendees gained insights into various real-world examples that were shared in Ms Huang’s presentation.

JOIN US ONLINE

Speaker: Ms Huong Tran (Business ’07)
Executive Director, Payments & Platforms
DBS Consumer Banking Group
18 August 2020 (Tuesday)
7.30pm
Register at alumnet.events/TSaug20

Winning in a world of Digital Banking & Digital Payments
In a fast-changing digital landscape, and especially with the COVID-19 situation, scaling up digital capabilities becomes a matter of survival. The speaker will share some insights in value generation through digitally active customers, the increasing use of customer data to provide a differentiated value proposition, and embedding banking in customers’ daily lives with seamless customer journeys.
JUL—SEP 2020

RESILIENCE IN ACTION

Alumni-led firms step up to back the NUS Resilience and Growth Initiative

JOBS REPORT

FACTSHEET

21,000
Traineeships to be added in 2020 via the Fortitude and Resilience Budgets

11,000+
Traineeships available now under the SGUnited Traineeships Programme

What kinds of companies are offering traineeships?
A mix of large firms such as Singtel and DBS, and SMEs such as Cameron's and BQAG Media.

ABOUT THE RESILIENCE AND GROWTH INNOVATION CHALLENGE

Three categories of projects:
1. Make Our People Better
2. Make Our Society Better
3. Make The World Better

The kind of projects NUS is looking for
The preference is for interdisciplinary approaches, including those from arts and culture, health, social work, sports and technology.

Submission period: 1 June to 31 December 2020

AMID REPORTS THAT JOB VACANCIES ARE FALLING IN anticipation of the global economic downturn due to the COVID-19 pandemic, the situation for fresh graduates remains critical. In a recent address to the nation, Prime Minister Lee Hsien Loong said as much, but he followed up with the assertion that the nation can emerge stronger and better. “I believe we can still secure a bright future for ourselves,” said Mr Lee in televised remarks. If the efforts of local universities and alumni are anything to go by, there is already a strong sense of solidarity and stoicism, unparalleled in the contemporary era.

In particular, NUS alumni-led firms are taking the initiative in supporting University-created programmes to give fresh graduates a much-needed boost in the COVID-19 era. The response to the NUS Resilience and Growth (R&G) Initiative has been heartening, with firms such as Singtel, BeeX, Carousell and others lining up to offer their support. Make no mistake about it though, these offers amount to more than charity. “I believe in the power of investment, especially when it comes to students,” said Mr Jeffrey Tiong (Engineering ’07), CEO and Founder of global patents database platform, PatSnap. “I started PatSnap as a fresh graduate, so I value the insights and unique perspective that students can bring. Creating opportunities for graduating students to share, nurture and grow these insights is important to me, and is the reason we have decided to take them on.”

This sits well with the aims of the R&G Initiative to help graduates “skill up, develop professionally and secure good employment,” according to NUS Senior Deputy President and Provost Professor Ho Teck Hua (Engineering ’85). In his letter to alumni, Prof Ho added that the R&G Initiative offers 1,000 full-time positions and paid internships in a variety of fields. “Aim to break the Class of 2020 will find themselves graduating in a challenging job market. As a university, it is paramount that we look after the well-being of our graduands and support their journey during this difficult time,” he wrote.

GREAT EXPECTATIONS
The companies making the R&G Initiative happen have a variety of expectations for the graduates they are taking on. Businesses such as 2359 Media and 99.co will be looking for trainees to help them grow — with all the opportunities and challenges that entails. Some see NUS graduates as the ideal fit. One such company is BeeX Autonomous Systems, which comes as no surprise since 70 per cent of the company got their start as part of the NUS undergraduate competitive robotics team Bumblebee. “NUS has been supportive of BeeX even before we were a company,” said BeeX Co-Founder and CEO Ms Grace Chia (Engineering ’14). “I myself benefited from a wide range of NUS programmes — the NUS Overseas Colleges (NOC) experience in Beijing, Bumblebee, Lean LaunchPad Singapore (LLP), the Graduate Research Innovation Programme (GRIP) — and condensed these experiences to help build BeeX. I have always believed that the world could be made better if everyone gives back a little, and that job creation is one of the most direct ways to do so. We also see this as a good engagement opportunity with our alma mater, to continue the gruelling but exciting journey of translating R&D into value for the commercial world.”

GETTING, AND GIVING IN RETURN
On the subject of innovation, it is not only the Class of 2020 that has the chance to pursue opportunities with the R&G Initiative. Grant 2020, for example, is also open to graduates from the Classes of 2018 and 2019. Now subsumed under the R&G Initiative’s Innovation Challenge, it asks how we can make the world a better place by addressing specific problems. It offers up to $50,000 for a team of up to five people, to work on a six-month project — this includes a stipend of $1,200 per month for each team member. “The NUS R&G Initiative supports our students during the COVID-19 pandemic. We are not only helping students from needy backgrounds but also providing development opportunities to the graduating cohort in this difficult time. The R&G Innovation Challenge is an excellent opportunity for our graduates to contribute to the greater social good by making our people, our society, and the world better, with support from NUS,” said NUS President Professor Tan Eng Chye (Science ’85). The recent numbers, with regard to the situation with fresh graduates, show that there are opportunities out there. The government’s SGUnited Traineeships Programme has a bank of more than 11,000 traineeships from more than 1,000 companies. It has been accepting applications since 1 June. With all these initiatives in place, and more developing, the case can be made for an optimistic outlook, if everyone gives back a little, as Ms Chia said.
To the Class of 2020 – the road ahead may be uncertain and difficult. To cheer you on, here are some pearls of wisdom and words of optimism from alumni who also graduated in challenging times such as the Asian financial crisis in 1997 and the SARS outbreak in 2003. When the real world knocks on your door, a little direction and tradition will help you navigate your journey into the unknown.

As you embark on your new journey, be open to any opportunity that comes your way. Be open to learning, rehearsing and unlearning every day. Sometimes, learning opportunities in your job do not present themselves in ways you expect them to, so having an open mind and a growth mindset are important as these open doors for you to hone your skills to be agile, adroit and adaptable. These are important traits to keep, especially during times of crisis. Never be afraid to try or to fail. Failure is nothing more than feedback for one to do better the next time round. So never stop being curious and being hungry to learn. But most of all, be grateful, be humble and be kind. Find ways to give back to the community when you can because what you get in return are life’s lessons that money cannot buy.

Ms Deborah Chew (Arts and Social Sciences ’97)
Chief Operating Officer, Emergenetics APAC
Co-Founder, Project Happy Feet

Setting sail in the stormiest of seas may look daunting and challenging, but this is also the best opportunity to bring out your very best oars to ride out the storm. Take heart, grit and a positive mind and spirit to sail with you. The most profound journey of your life will build and grow you to become the very best of YOU! Know you can do it! From a survivor who graduated in two crises – the Asian financial crisis and global financial crisis – what doesn’t break you, makes you stronger. Set your sails and all the best!

Ms Valerie Chow (Arts and Social Sciences ’97)
Assistant Manager, AXA Insurance Pte Ltd
President, NUS Economics Alumni

Opportunities abound during times of crisis. Incumbent business models and practices are put to the test. However, being innovative and adaptable will enable you to emerge from these difficult times. Being new graduates, don’t be afraid to use your youth to try non-traditional jobs and ideas. Good luck – and as history has shown, we will survive this.

Mr Xavier Chew (Business ’03)
Founder, PHVillage Pte Ltd and C-Mart

University traditions reveal a great deal about the character and values of an institution. Even as NUS’ traditions have evolved and adapted to keep up with changing times and extraordinary events, its core values are unshakeable.
This news has dealt a big blow to graduates as well as the University, which is marking its 115th anniversary this year. With such a long and storied history, NUS has accumulated many traditions and signature events. While COVID-19 has recently disrupted some of these, different generations of students and alumni have also adapted existing traditions or invented new ones of their own accord. But no matter what shape or form these traditions take, they all reflect and reinforce the University’s values – innovation, resilience, excellence, respect and integrity.

ROOTED IN GIVING

Traditions are, by definition, handed down from one generation to the next. That said, an event or practice does not become a tradition merely because it has been done for a long time. “In the university context, traditions are how we go about instilling values into graduates, and making them feel loyal and committed to their alma mater. University traditions are grounded in the belief of what we are supposed to be doing,” says Professor Lim Pin, NUS’ longest-serving Vice Chancellor from 1981 to 2000.

Going all the way back to 1905, NUS was founded as a “by the community, for the community” medical school. Its raison d’être was to produce medical professionals to ensure the health and well-being of Singaporeans. More than a century later, NUS has grown into a world-class institution with talent across varying disciplines, and has not lost this tradition of service to country and society.

One of the oldest and best-loved manifestations of this spirit of giving is the NUS Students’ Union’s (NUSSU) Rag & Flag, an annual event to raise funds for those in need. NUSSU, then called the University of Malaya Students’ Union (UMSU), organised the first-ever Rag & Flag in November 1957, in conjunction with the inaugural Student’s Welfare Week. Some 100 student volunteers fanned out across the island with tin cans to collect donations from the public; while others put on a float parade and performances on the same day as a way of thanking the public for their contributions. “I remember working late into the night with three other students as we cut open the tin cans and counted the money, in the safety of the Central Police Station at Beach Road,” recalls UMSU’s then-General Secretary, Mr Donald Wyatt (Arts ‘63). “Together with another student leader, I also presented the Causeway way to present a cheque to one of the beneficiaries, the Johor State Welfare Committee’s Project for Crippled Children. It felt satisfying to have done something meaningful.” He would go on to become the UMSU President in 1959.

Little did Mr Wyatt, now 85, know that what had been conceived as a one-time fundraising activity would carry on to this day — with some modifications. Split into two sub-events, NUSSU’s Rag & Flag involves the whole University and is a highlight of the Freshman Orientation Programme. The floats and performances have become more elaborate. The amount raised has also increased, with thousands of students raising more than $266,500 to benefit 22 charity programmes in 2019. “Last year, a stronger emphasis was placed on community engagement with our partner social services,” says Mr Muhammad Syazwan Bin Juma’at, a 2019 Rag & Flag project director. “NUS students are conscious of their links to community and country,” he says. “In times like these, when COVID-19 has left many people both within and beyond our borders in need of help, drawing on this tradition of community service is all the more important.

HOME AWAY FROM HOME

Not all students live on campus during their time at NUS. But for those who do, memories of Hall life — and participating in the co-curricular activities (CCAs) and traditions unique to each Hall — are just as meaningful. “Each time we attend some sort of pro bono appreciation event, it is like an NUS reunion because we meet so many former students,” says Assoc Prof Lim adds that it is not uncommon to see NUS Law graduates volunteering at free legal clinics and other similar schemes. “Every time we attend some sort of pro bono appreciation event, it is like an NUS reunion because we meet so many former students.”

While Rag & Flag is a University-wide event, the various faculties and schools each have their own initiatives for giving back to the community as well. For example, the NUS Business School Alumni Association has an annual fundraiser, the Bizz Charity Run. The Mandatory Professional Bono Programme also requires all Singapore law students to perform at least 20 hours of pro bono work prior to graduation. “This allows students to experience how they can harness their legal skills to help the community,” says Associate Professor Ruby Lee (Law ‘94), who is the co-director of the Centre. The Centre runs a wide range of pro bono programmes in tandem with the activities of the NUS Pro Bono Group and the Criminal Justice Club, both led by students. This exposes them to a broad cross-section of people including migrant workers, individuals with criminal history, persons with disabilities and their caregivers, and the public at large.

TO EACH OTHER'S

Above: NUS students pulling on an emergency performance on Rag Day. Left: An NUS student collecting donations from the public on Flag Day.

I never imagined Rag & Flag would continue as long as it has. It shows that NUS students are conscious of their links to community and country.

Mr Donald Wyatt, senior alumnus and founding member of Rag & Flag

one day. Online payment through QR codes was also implemented to expand donation options for the public,” he adds.

On the Rag side, there has been greater interest in hosting Rag Day off campus and closer to the general population. Previous venues have included the Padang (2007), The Promontory on National Day (2011), and the Floating Platform as part of SG50 celebrations (2015). For the first time, Rag Day was held in the heartlands at Bishan—Ang Mo Kio Park last year. “Rag & Flag has always been about engaging with Singaporeans from all walks of life. What better way to engage residents than to host Rag Day in a place easily accessible to them, at their doorstep?” says Arts and Social Sciences Year 3 student Ms Kimberly Aw, who served as NUSSU Rag Day 2019 Project Director.

The fact that Rag & Flag has flourished through the decades fills Mr Wyatt with pride. “I never imagined Rag & Flag would continue as long as it has. It shows that NUS students are conscious of their links to community and country,” he says. In times like these, when COVID-19 has left many people both within and beyond our borders in need of help, drawing on this tradition of community service is all the more important.

Home away from home

In 2009, the DRH/SH Alumni Bursary Fund was set up by older Shearites to enable financially- challenged students to stay in the Hall. Twice-yearly visits by former students, led by Professor Lawrence Chia (U97) and his wife presenting a DRH/SH Alumni Bursary certificate to student Mr Danny Han on 21 September 2018, have encouraged the students to meet so many former students. “It’s a good feeling to have so many former students turn up for this event each year,” says Mr Han, who was presented with his DRH/SH Alumni Bursary certificate in 2018. It shows that NUS students are conscious of their links to community and country. 

In the university context, traditions are how we go about instilling values into graduates, and making them feel loyal and committed to their alma mater.

Professor Lim Pin, former NUS Vice Chancellor

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blood donation drives are still kept up, and the DRH initials are preserved in Sheares Hall’s motto, “Dare to Reach the Highest.”

Likewise, Eusoff Hall — which originally opened in 1958 as Eusoff College at Bukit Timah Campus — is the site of many fond memories for generations of student residents. “Off the top of my head, I can think of our dance and drama productions, high-table dinners, annual NUS Rag performances, Inter-Block and Inter-Hall Games, Orientation activities, and Gathering of Eusoff Leaders camp,” says former Hall President, Mr Yang Sheng (Arts and Social Sciences ’18).

Being a Eusoffian has certainly left a mark on Mr Yang, 29, who now chairs the Eusoff Hall Alumni group. Says the senior financial consultant: “During my stay there, I attempted almost all categories of CCAs that the Hall offered. I tried a bit of everything and worked with all sorts of people. It provided a safe environment to practise my leadership skills. Had it not been for Eusoff Hall, I would not be as confident or eloquent as I am today.”

These days, NUS’ housing options have expanded to also include Student Residences and Residential Colleges. The former may not be jam-packed with CCAs, but there are plenty of opportunities to befrend peers from diverse backgrounds at residence-based social events and communal facilities. Residential Colleges offer a different experience altogether, as students live and learn alongside professors in a model that combines on-campus living with a multidisciplinary academic programme. What these campus accommodations all have in common is the chance to explore new interests and forge close-knit bonds that are likely to last a lifetime.

COMING ‘LIVE’ TO AUDIENCES

In the wake of the COVID-19 pandemic, universities have had to either cancel, postpone or reconfigure mass events. The third option was taken by a number of NUS staff earlier this year as they collaborated with faculty, students and alumni, at short notice, to turn signature events such as NUS Open Day and NUS Career Fest into digital experiences.

Nothing quite beats the scale of NUS Open Day, which NUS Chief Communications Officer Ms Ovidia Lim-Rajaram (Arts and Social Sciences ’89) describes as “the single largest outreach event that showcases the University’s rich academic offerings and vibrant student life.” To maximise the reach of this year’s edition, the Office of University Communications (UCO) not only moved it online but lined up activities stretching from 26 February to 5 March — hence, NUS’ very first nine-day e-Open House.

Training was provided to the hundreds of participating faculty, staff, students and alumni. They experimented with different approaches and platforms to produce content such as videos and e-brochures, and also hosted live sessions and attended to online queries. With no geographical restrictions, prospective students in Singapore and overseas had more time to explore NUS’ programmes at their convenience and take part in the myriad virtual tours, live chats, “Ask Me Anything” sessions, and webinars.

I attempted almost all categories of CCAs that the Hall offered. I tried a bit of everything and worked with all sorts of people.

Mr Yang Sheng, Chairperson, Eusoff Hall Alumni
Yale-NUS’ Virtual Graduation Ceremony.
contributed a musical performance for graduands at
keyboard performance of Singapore’s national anthem by
Ms Ovidia Lim-Rajaram, vital in a post-COVID-19 world.
and responsive. This ability to swiftly
staff and students are also nimble and responsive. This ability to swiftly adapt, and to stay resilient, will be vital in a post-COVID-19 world,” says Ms Lim-Rajaram.

KEEPERS OF TRADITION
Without someone to keep a tradition going or adapt it to modern life, it will die out. For universities, this responsibility falls not only on students and staff, but also on alumni, young and old. Prof Lim Pin’s contributions in bringing alumni back to the University during his tenure as NUS Vice Chancellor thus cannot be overstated: “When I came onto the scene, I placed importance on strengthening relations between alumni and their alma mater. We set aside land on the Kent Ridge Campus for alumni to build their own Guild House, and established the Alumni Affairs Office in 1989,” he says.

Those initial engagement efforts laid the foundation for the multitude of alumni-centred traditions that have emerged in the decades since. Every year, graduands collectively contribute to the Commencement Class Giving campaign, which supports juniors in financial need. Annual traditions that have emerged in the decades since.

While we clearly treasure the special traditions that make us distinct as Singapore’s flagship University, our traditions that make us distinct as Singapore’s flagship University, our staff and students are also nimble and responsive. This ability to swiftly adapt, and to stay resilient, will be vital in a post-COVID-19 world,” says Ms Lim-Rajaram.

MY FAVOURITE THINGS
Alumni from different areas share their favourite “traditions” with The
AlumniNUS. Although, strictly speaking, these are personal rituals rather than full-blown traditions, the impact these have on their lives is no less significant.

“I used to run around the campus two or three times a week. One of my running buddies was Associate Professor Tan Lai Yong (Medicine ’85), a Resident Fellow at the College. Even nowadays, I meet up with him occasionally for a run!”

Ms Alyson Rozells, Yale-NUS’ Associate Director (Alumni Affairs & Strategic Events). A tribute put together by the graduating class, "traditions” with The AlumniNUS. Although, strictly speaking, these are personal rituals rather than full-blown traditions, the impact these have on their lives is no less significant.

“No doubt the in-person camaraderie and energy typically felt at these large gatherings were sorely missed. Despite that, the event organisers and participants made the most of the online format and put on a good show. “While we clearly treasure the special traditions that make us distinct as Singapore’s flagship University, our staff and students are also nimble and responsive. This ability to swiftly adapt, and to stay resilient, will be vital in a post-COVID-19 world,” says Ms Lim-Rajaram.

KEEPS OF TRADITION
Without someone to keep a tradition going or adapt it to modern life, it will die out. For universities, this responsibility falls not only on students and staff, but also on alumni, young and old. Prof Lim Pin’s contributions in bringing alumni back to the University during his tenure as NUS Vice Chancellor thus cannot be overstated: “When I came onto the scene, I placed importance on strengthening relations between alumni and their alma mater. We set aside land on the Kent Ridge Campus for alumni to build their own Guild House, and established the Alumni Affairs Office in 1989,” he says.

Those initial engagement efforts laid the foundation for the multitude of alumni-centred traditions that have emerged in the decades since. Every year, graduands collectively contribute to the Commencement Class Giving campaign, which supports juniors in financial need. Annual traditions that have emerged in the decades since.

While we clearly treasure the special traditions that make us distinct as Singapore’s flagship University, our staff and students are also nimble and responsive. This ability to swiftly adapt, and to stay resilient, will be vital in a post-COVID-19 world.”

Ms Ovidia Lim-Rajaram
Chief Communications Officer, NUS

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Chief Communications Officer, NUS
A GLOBAL RESET

Beyond the fatalities and human suffering, the COVID-19 pandemic may change the very ways we live, work and interact with others. This group interview — conducted via social conferencing app Zoom — alumni share how this great disruption has affected them, and their hopes for the society that re-emerges from it.

How have you been personally impacted by the COVID-19 situation?

JOCELYN CHNG: The Circuit Breaker period has been the busiest time of my life! Our company Sin Hwa Dee started a central kitchen in 2001 to produce ready-to-cook, ready-to-eat meals. Since the start of the Circuit Breaker, many people have contacted us to provide meals for healthcare workers and the foreign workers in the dormitories. During the Hari Raya weekend, we produced 10,000 meals just for foreign workers. That said, this has been a very tough time for the F&B industry. I have seen a lot of my industry friends closing their companies. Many of our tenants also wound up their businesses and declared bankruptcy during this period. While we have been busy, our business has been negatively impacted too. With the global lockdown, I couldn’t even ship my products to fulfill overseas orders from China and the Philippines. Everything was stuck in the warehouse and the orders were subsequently cancelled. In China, where we are running a social enterprise that brings dance, theatre and different performance arts to underserved communities — such as those struck by poverty, or physical and mental illness. I was working in Paris and was supposed to be there for a few months. However, due to the pandemic, I came back to Singapore and have been pretty much living in my room since March 16 — my Stay Home Notice (SHN) ended just a couple of days before the Circuit Breaker measures were implemented. I realise there is no way of going back to my original work plans — all our filming and performance jobs have either been cancelled or postponed. The gig industry is badly hit, and I have had to retrain the entire company, which was really hard to do. I did what I could to write letters for them to get funding as artists freelancers, but for myself, I feel as if I have just graduated and am starting all over again. My parents — who have their own company in the education and training sector — have also had their business badly hit. So they went into the essential services sector to help out with logistics. I hardly see them now as they are very busy — we are all trying to make ends meet.

JOEY ERR: I was pursuing my master’s at the London School of Economics (LSE) — it is something I had wanted to do after working in the government sector for a few years, as it would be beneficial to my career progression. When COVID-19 hit the UK, most of us in school thought it wouldn’t be so bad and I thought I could just self-isolate and stay on in London. But within days, things changed dramatically — schools and libraries were shut, and Singapore’s Ministry of Foreign Affairs called for all students to come home. This has resulted in the disruption of my studies — from exams to classes, everything is now conducted at our own pace. It is not quite the same as learning in a school setting, but we will just have to see what happens.

LASITHA WICKRAMASINGHE: As a doctor in a voluntary welfare organisation, I would visit my patients at their homes prior to the Circuit Breaker. When DORSCON Orange was announced, we were totally taken out of our comfort zone — we didn’t even have enough Personal Protective Equipment (PPE) initially! It took a lot of flexibility and innovation to arrive at the new work arrangement we have now, which involves using digital platforms a lot more to communicate between staff and with our patients. But there are many limitations — it is not like we can give someone a hug virtually. I also miss the small things that I never knew were so precious, such as being able to sit down for a meal at a coffeeshop! Thankfully, my family and I are doing relatively well. My parents in Sri Lanka are hunkering down and my younger sister is in New York completing her studies.

JOHANN ANNUAR: Engineering Good was founded in 2014 as a non-profit organisation that empowers disadvantaged communities through humanitarian engineering. When Home-Based Learning (HBL) started, I realised my kids — who are 8 and 11 years old respectively — are lucky because they have a hoarder dad who can fix laptops! But that wouldn’t be the case for everyone. We spoke to the Central Singapore Community Development Council, which requested for a donation of 54 laptops. I thought I would be done in two days, but within 10 days, our cause drew more than 100 volunteers, and the donation of 600 laptops. To date, we have collected over 3,000 laptops and given out more than 1,800 units. The pandemic has highlighted the disadvantages faced by the lower-income families and the digital divide in Singapore. Yes, it is a ‘rich country’ problem, but digital inclusion is very important to ensure that everybody has access to online resources, and has a laptop to work or study on.

Do you all observe certain groups being impacted more severely than others?

LASITHA: We started offering telemedicine and it has worked quite well. However, not all the elderly folks have access to digital devices, so we are looking to get donations of phones and SIM cards for them. Our biggest concerns are those from the low-income bracket whom we work with, as our services are free to anybody — the cost is for medication. For some, having their many children all crammed into small flats during the Circuit Breaker, or even getting daily meals, is a problem. Being isolated has also impacted some of the elderly patients negatively.

JOEY: While I have a job waiting for me, some of my friends from LSE have not found a job and are extremely concerned about entering the workforce at this juncture. Among those who have had to defer their studies and graduate next year, some aren’t even sure if they would be able to go back to the UK because certain visa applications require a certificate of completion. Many international students are really not sure how things are going to play out for them.

JOCELYN: Those getting rehired while in their 50s have it particularly tough. Compared to younger people just coming out to work, they generally have bigger financial commitments and more to lose. I have seen some friends slip into depression from the weight of their worries. This pandemic has also put the spotlight on the plight of migrant workers — especially those who have been abandoned by their former employers and are left helpless in a foreign land.

The pandemic has highlighted the disadvantages faced by the lower-income families and the digital divide in Singapore. Digital inclusion is very important to ensure that everybody has access to online resources, and has a laptop to work or study on. — MR JOHANN ANNUAR

COVID-19:

FACING UP TO NEW REALITIES

Five members of our alumni meet — virtually — to share their views and thoughts on the new realities of a world under siege by a pandemic.

SHANICE STANISLAUS: I am an independent performing artist running a social enterprise that brings dance, theatre and different performance arts to underserved communities — such as those struck by poverty, or physical and mental illness. I was working in Paris and was supposed to be there for a few months. However, due to the pandemic, I came back to Singapore and have been pretty much living in my room since March 16 — my Stay Home Notice (SHN) ended just a couple of days before the Circuit Breaker measures were implemented. I realise there is no way of going back to my original work plans — all our filming and performance jobs have either been cancelled or postponed. The gig industry is badly hit, and I have had to retrain the entire company, which was really hard to do. I did what I could to write letters for them to get funding as artists freelancers, but for myself, I feel as if I have just graduated and am starting all over again. My parents — who have their own company in the education and training sector — have also had their business badly hit. So they went into the essential services sector to help out with logistics. I hardly see them now as they are very busy — we are all trying to make ends meet.

MS SHANICE STANISLAUS

AHLA MU’IIN, FOUNDER AND DIRECTOR ENGINEERING GOOD

MS JOCELYN CHNG

ARTS AND SOCIAL SCIENCES ’89, MANAGING DIRECTOR SIN HWA DEE FOODSTUFFS, EXO JG GROUP

MS JOEY ERR

ARTS AND SOCIAL SCIENCES ’02, MASTER’S STUDENT LONDON SCHOOL OF ECONOMICS

DR LASITHA WICKRAMASINGHE

MEDICINE ’11, RESIDENT PHYSICIAN NOVA HOSPICE CARE

MR JOHANN ANNUAR

ENGINEERING ’12, EXECUTIVE DIRECTOR ENGINEERING GOOD

JUL-SEP 2020 - 19
 LASITHA: In Sri Lanka, there was a civil war that started before I was born. The older generation has this mentality that, if they leave home and perish in a bomb blast, then so be it. That old mentality has come back during this pandemic. I focus on how I can contribute to the situation, and don’t worry about things beyond my control. I also cut down on my exposure to the media, because they do tend to catastrophise the situation. I also meditate and find time for personal reflection.

JOCELYN: Having a supportive community is very important. I had so many people send care packs over to encourage me during this period. It touches me greatly and spurs me to go on.

What are the silver linings of this global pandemic?

JOHANN: There are other groups collecting old computers for distribution, but from corporations, which is the more efficient way of doing things. When I started collecting donated devices from individuals to close the digital divide, my sneaky goal was to bring Singaporeans together and get everybody to play a part. Sure, there are those who would donate fax machines and even historic laptops with floppy disk drives, but we have had more good people giving us good stuff than bad. The positive response we have seen has far outweighed the number of internet commenters and doomers, and I am very happy.

JOCELYN: This global lockdown has been the push my company needed to take our business online — now, every single brand under our company is available online. It has also brought about a shift in our mindset in terms of business operations. This pandemic has reminded us that, even as a business goes global, it should still stay local. Where we have been sourcing raw materials overseas, we are now looking at buying local. It might be a bit more costly but at least I have certainly of supply. In fact, the local suppliers whom we have been working with over the years have really stepped up to help us during this period, and it has made me realise the importance of these relationships. This pandemic has also given many the opportunity to spend more time with their family. Now I get to have meals with my kids who are in their twenties whereas previously they would always be out with friends. I hope we can all keep some of the good habits post-pandemic.

JOHANN: I hope everybody can use this as a cultural mindset shift and start embracing a new way of being. Yes, gatherings are never going to be the same without sharing prata and kopi, but I hope we can accept the new normal. It will be interesting to see the new powers of the global economy when they emerge, and realise how much of the “head” in our heads were artificially created — such as degrees or even jobs. This is a chance for everybody to sit down and reset.

The local suppliers whom we have been working with over the years have really stepped up to help us during this period, and it has made me realise the importance of these relationships. — MS JOCELYN CHNG

THE COVID-19 outbreak could cost the global economy up to US$2 trillion this year, and is expected to wipe out 6.7% of working hours globally in the second quarter of 2020. The International Labour Organization also predicted that nearly 25 MILLION JOBS would be lost by the end of 2020.

SHANICE: Now that I have more time to think and really create, rather than just go from one gig to another, I can reflect and deep dive into my true purpose as an artist, and also the meaningful interactions that I want to have. That said, I do want to go back to the old ways! It has been an insightful and reflective period, but I really crave a concert or a stage show. I hope that we will move forward, thoughtfully.

What do you think is a key quality a young person should have, in order to thrive in this new world order?

JOEY: Adaptability would be key. To be able to accept the situation and see how you can move forward from there — and know that more obstacles will pop up in the future.

JOCELYN: Adaptability is very important. Some of my industry friends are fixed in their ways and most that they cannot do anything else. But I cannot think that way, as I also have to think about our staff. If I can’t do business overseas in a lockdown, then I will look for local opportunities. I also teach this to my children. My eldest is graduating this year and he and a lot of his peers are unable to find jobs. I tell him he is lucky for this to be happening while he is young and can afford to take a few punches. I also told him to change his mentality: don’t just think about getting a dream job, or one with a good pay package. Accept whatever is available and get the most out of it as a learning experience.

SHANICE: Resilience has always been an important quality. When my cohort graduated, it seemed that nobody wanted to hire us, so I just had to figure out how to create my own work. Now, I will have to find out how to approach the new obstacles presented by the pandemic. Many Singaporeans are unwilling to take risks and might be fearful, but you have to get thrown into a situation to learn resilience — it is a very embodied experience.

LASITHA: We have been experiencing a lot of changes in the way we work — and discovering that there are ways to work more efficiently. Innovation has been important during this period, and will remain so, moving forward.

THE BIG HIT

Understanding and Managing Obstructive Sleep Apnea

Do you always feel lethargic despite sleeping a full 8 hours the night before? Obstructive Sleep Apnea is associated with snoring, choking and daytime somnolence. Good quality sleep keeps you healthy and leads to optimum performance at work and school. Join us for this informative webinar and learn how you can take charge of your well-being.

23 July 2020 (Thu), 7.30pm
Online via Zoom
Register at alunmet.events/HW-jul20
Bukit Timah Homecoming [Online] Organised by NUS Alumni Relations, and co-hosted by the Faculty of Law and Lee Kuan Yew School of Public Policy, this year’s reunion, themed Blast from the Past, will take place in cyberspace! Gather online with alumni in Singapore and around the world to reminisce about the good old days.

Sat, 11am - 5.30pm
Register: Join us and register for e-celebration activities at alumnet.events/BT20
Contact: Ms Josephine Chng
jochng@nus.edu.sg

Understanding and Managing Obstructive Sleep Apnea Health & Wellness [Online]
Speaker: Dr Paul Mok (Medicine ’91) Senior Consultant & Medical Director, My ENT Specialist Clinic, Farrer Park Hospital Visiting Consultant, Tan Tock Seng Hospital & Khoo Teck Puat Hospital
Obstructive Sleep Apnea is linked to snoring, choking and daytime somnolence. If left untreated, it can lead to cardiovascular morbidity, diabetes, stroke and dementia. Join us for this informative webinar and take charge of your well-being.

Sat, 7.30pm
Register: Join us at
alumnet.events/HWjul20
Contact: Mr Samuel Tan
samuel.tan@nus.edu.sg

Tips to Being a High-Performing Remote Employee Future-ready Workshops [Online]
Speaker: Mr Jasbir Singh Head of Learning & Development, NUS Centre for Future-ready Graduates
Emotional disconnect and the loss of work-life balance are some common challenges faced when working from home. Join us to learn how to better adapt to this sudden shift in work arrangement and be productive as a remote employee.

Tue, 7.30pm
Register: Join us at
alumnet.events/FRjul20
Contact: Mr Kenneth Phang
kphang@nus.edu.sg

NUS Alumni KENT RIDGE ALUMNI FAMILY DAY [ONLINE] Kent Ridge Alumni Family Day is NUS’ annual reunion for alumni to stay connected to the entire NUS community. This year’s reunion puts a Twist on the annual homecoming Tradition. Stay home and tune in to our online channels for non-stop entertainment, lifelong learning workshops and online gatherings.

15 Aug, Sat
10am – 6pm
Register: Join us at
alumnet.events/KR20
Contact: Mr Samuel Tan
samuel.tan@nus.edu.sg

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Information is correct at the time of publication and is subject to change without prior notice.
**POST COVID-19, HOW WILL WE BE BETTER?**

Professor Danny Quah looks at the hard truths that confront us in a world changed by the pandemic, and how we need to alter the way we think, work and live to navigate these new realities.

For Singapore, Hong Kong, and other parts of East Asia, the 2003 SARS outbreak shared these features: in these places, political and social systems changed as a result. But for the rest of the world, the SARS pandemic ended too quickly. Thus, its policy lessons were muted and change was not deep. Living through a pandemic changes people and political systems.

Other kinds of crises are different. Certainly, the 2008 Global Financial Crisis (GFC) has had substantial impact on individuals. But individual empowerment and responsibility in a financial crisis have levels that are diminished or delayed in time. In terms of responsibility, individuals might see a link from a reckless investment decision years ago. But the causal mechanism is shrouded in financial collateralisation, other obscure innovations or a misalignment of expectations. More importantly, a financial crisis is not the fault of an individual but that of something bigger: big banks, big corporations, big institutions. Reform coming out of a financial crisis is needed but individuals hand that responsibility over to others and, often, without genuine change taking place. Big banks remained intact post-2008 GFC and many institutions continued to engage in behaviour not profoundly different from before. Asking for the system to change without deep individual engagement does not produce the same kind of real reform that a pandemic engenders.

With COVID-19, too, there will be institutional accounting. But the personal considerations matter for a pandemic in ways that other crises don’t press. Coming out of COVID-19, terms like ‘social awareness’ and ‘solidarity’ will no longer just be intellectual or political ideas, but will be things that ordinary people can see and feel vitally. Abstract tradeoffs such as privacy and individual rights-versus-authoritarian control will no longer be just what academics and ideologues debate. Instead, they will become concrete choices that people, post-COVID-19, routinely face in trading off increased bio-surveillance in return for elevated health security. Based on observing Singapore’s coronavirus responses, my guess is economic life — among many other things — will need change.

**ECONOMIC LIFE — THE TRADEOFFS**

On economics then, here are my conjectures for the world post-COVID-19. Post-COVID-19, societies will engage in behaviour not profoundly different from before. Asking for the system to change without deep individual engagement does not produce the same kind of real reform that a pandemic engenders.

With COVID-19, too, there will be institutional accounting. But the personal considerations matter for a pandemic in ways that other crises don’t press. Coming out of COVID-19, terms like ‘social awareness’ and ‘solidarity’ will no longer just be intellectual or political ideas, but will be things that ordinary people can see and feel vitally. Abstract tradeoffs such as privacy and individual rights-versus-authoritarian control will no longer be just what academics and ideologues debate. Instead, they will become concrete choices that people, post-COVID-19, routinely face in trading off increased bio-surveillance in return for elevated health security. Based on observing Singapore’s coronavirus responses, my guess is economic life — among many other things — will need change.

**GLOBALY, THE JOB LOSS DUE TO COVID-19 IS ESTIMATED TO BE OVER 200 MILLION, WITH 40% OF THE GLOBAL WORKFORCE EMPLOYED IN SECTORS THAT FACE HIGH RISK OF DISPLACEMENT AND HAVING LIMITED ACCESS TO HEALTH SERVICES AND ANIMAL PROTECTIONS.**

**PHOTO: GETTY IMAGES**


**If society is no longer about obsessively and incessantly raising material living standards, then it can certainly tolerate spare and idle capacity with built-in redundancies.**

**PHOTO: GETTY IMAGES**
In protecting that new way of work and life, societies might have to build an entire second mirroring Internet to run parallel and be back-up to the first. But that is still a lot cheaper and less wasteful than building an entire second mass transit system to operate alongside the first.

A GLOBAL BURDEN OF DISEASE STUDY
The Lancet (2017) estimates that only half of all countries have the requisite health workforce needed to deliver quality healthcare services. For instance, the US requires 1 million nurses and Japan 2.5 million by 2020 and 2025 respectively, and India faces a shortfall of over 3.9 million doctors and nurses. Without timely action, a shortfall of 18 million workers is predicted by 2030.

THE WEIGHTLESS ECONOMY
Across the world, cities and other urban agglomerations are dense with humanity and value creation. No other humanity-constructed economic scaffolding aside from cities light up the night sky when you view our planet from outer space. The greater the concentration, the higher the population and economic densities, and thus the higher the efficiency in producing material wealth. That higher efficiency from concentration makes for inequality across space, regions and geographies. But that higher concentration also makes for speed in transmitting viral infection. Post-COVID-19, social and economic systems will learn not to be maximally efficient in producing material wealth through urban concentration, when doing so only makes your society ever more susceptible to epidemic transmission.

Efficiency through concentration is no longer what economies seek, commercial real estate will lose its historical sparkle. The need for mass transport systems will wither. Decades ago, when the Internet was first being used for commercial purposes, writers noted that the so-called ‘weightless economy’ entailed a shift in economic activity away from moving physical molecules to flipping 0–1 bits of logic. Telecommuting during COVID-19 over the Internet infrastructure has driven home to workers and businesses how such a weightless economy is not just feasible but actually life-saving. In protecting that new way of work and life, societies might have to build an entire second mirroring Internet to run parallel and be back-up to the first. But that is still a lot cheaper and less wasteful than building an entire second mass transit system to operate alongside the first.

HEDGING ANCHORS
Maximal global efficiency in production calls for cross-country specialisation. Post-COVID-19 societies need to balance global efficiency with local resilience. As a proposition in logic alone, not every nation can be the best in the world at producing medication, personal protective equipment, rice and instant noodles, eggs or toilet rolls. A lesson from COVID-19 is that societies will want to have some production capacity in all these. But nations need not refer to these industries as ‘strategic’ — suggesting something geopolitically sinister — but instead as ‘hedging anchors’. Every nation should foster their own hedging anchors: it is okay to tolerate a bit of global inefficiency if doing so raises local resilience. A cross-nation network of semi-independent hedging anchors is no longer a supply chain and is not globally-efficient but will make the entire world more resilient.

THE STATE AND MARKET SHORTCOMINGS
Finally, COVID-19 has made clear how economic externalities are more widespread than previously thought. The key implication from this is that public policy needs to look out for and repair market shortcomings. Two cases illustrate this. First, in a world of externalities, you help yourself by helping others, because spillovers are rife. In Singapore, many foreign workers live in crowded dormitories because these workers are poor. COVID-19 cases in these clusters have accounted for over 70% of all new cases in the past weeks. A national healthcare system is strained the same way from an additional patient — whether rich or poor. Isolating infections in vulnerable concentrated groups would have gone a long way to helping the entire nation in its COVID-19 battle. We help ourselves by helping others, through alleviating crowded unhealthy accommodations and uplifting the vulnerable. For COVID-19, those vulnerable can be rich seniors living in crowded nursing homes; vacationers holidaying on a cruise ship; detoxes crammed together in prisons; poor families densely huddled in shanty-towns, slums and decrepit public housing; or, in Singapore’s case, foreign workers jam-packed in dormitories.

In a world of spillovers, individual rights are immediately social. COVID-19 has shown how our economic life is rife with externalities, where we will ourselves rise only by lifting others around us.

Second, decreasing returns in vaccine production mean that profit-seeking pharmaceutical companies hardly ever find it worth their while to engage sufficiently in vaccine-making, with or without them acquiring monopoly over intellectual property rights. Producing vaccines entails large fixed costs; intensive testing on human subjects typically takes up to 18 months. While that is still a lot cheaper and less wasteful than building an entire second mass transit system to operate alongside the first, it is everywhere, once you start looking. This article was originally published at www.dannyquah.com on 23 April 2020. (An edited version was published on Quiet, 3/2020. “Should it be time to swap fast car for slower, sturdier one?”, The Straits Times (23 April 2020))
Mr Woon Tien Yuan, 33, is the Director of Killiney Kopitiam. A Singapore icon, the brand began life as Kheng Hoo Heng Coffee Shop in 1919. In 1990, the eatery at 67 Killiney Road was bought over by the Woon brothers, who turned it into a successful chain across Singapore, and has branched out overseas. The son of one of the founders, Mr Woon — who married a daughter — now looks after the expansion of the brand.

HOME-GROUND ADVANTAGE

Mr Woon Tien Yuan (Business ’12) is the Director of Killiney Kopitiam, a family business that is one of Singapore’s most-recognisable brands. He talks to The AlumNUS about taking a traditional enterprise into the future.

What are your earliest memories of the business?

I fondly remember helping my mother at our former Turf Club outlet on weekends — I was probably about 16. It was a memorable time — I witnessed horse racing events, and also got to serve older customers. When those unruly won their bets, we would be treated with huge smiles, but when they lost, they would get upset and impatient. But it was fun, and it taught me how to handle good and difficult customers.

At the time you were in university, did you already know that you would be taking over the business?

Honestly, no. On the contrary, I faced no pressure to join Killiney and my family elders did not raise the topic. In fact, my father used to discourage me from doing so, citing the huge challenges that F&B businesses typically face. However, I could see the effort put in by the elders to build the brand and that they would love for it to be carried on as a family business. As such, I always made myself available for the challenge to join Killiney one day.

How did your university education influence the way you run the business?

I had always wanted to pursue a Business degree because I looked up to successful entrepreneurs and aspired to become one. I witnessed how my father and uncles worked hard to set up the businesses, and it was rewarding to see how we became stronger through working together.

At NUS, there were two modules that had a lasting impact on me. One was called Social Entrepreneurship which was taught by Professor Albert Teo (Arts and Social Sciences ’80), and I did my final-year project with a Malaysia-based social enterprise, eHomemakers, under the guidance of Professor Wu Pei Chuan. These professors taught me the importance of marrying business with social responsibility. It has inspired me to transform my business by adopting technology practices to provide affordable food to customers while reducing wastage.

Tell us about your progression through the ranks.

After graduation, I joined the family “business”, the Woon Brothers Foundation, which promotes art and culture and assists the needy. Throughout, I helped with the Killiney business — as with family businesses, things are not always “official”; we just help when there is a need. I officially joined Killiney in 2019 as a Director. It was a twist of fate that led me to officially join Killiney, and it was linked to Hoow Foods, a foodtech startup. One of its founders, Yau Png, was my primary school classmate and neighbour. In mid-2018, we met for lunch, and I happened to share that Killiney was facing some supply issues for our instant beverages. Yau Png said his team could help us out — within three months, they created an improved formula that won over our family elders. Our previous formula had taken three years to materialise. From this, our family realised the advantages of utilising food technology. This led to Killiney and Hoow Foods forming a joint venture in early 2019 to set up Killiney’s own instant beverage manufacturing facility in Singapore. It also led Killiney to invest in Hoow Foods. Because of this partnership, it made sense for me to join both firms as Director. We launched our first new product, Killiney Premium Milk Tea, just before Chinese New Year this year, and have received very positive feedback. In early May, we launched the Killiney-e-commerce store — reception has been very encouraging and we have plans to expand our product offerings. We are also in talks with several online platforms to extend the reach of the Killiney brand.

What are the most important lessons you have learned from your family elders?

One would be the value of long-term investing. I appreciate this even more so now that Killiney’s survival lies in owning its properties, akin to McDonald’s, whose success is strongly tied to its growth and acquisition of property assets. Also, when I first joined, my father advised me not to spend too much time doing the jobs that are already being done. For example, our outlets are mostly self-sustaining, and at our headquarters, we have a general manager who runs the show well. So, I was told to explore new avenues to expand the business.

I’ve always been inspired by this Gloria Steinem quote: “Rich people plan for three generations; poor people plan for Saturday night.”

I think beyond just the traditional brick-and-mortar stores” were the golden words told to me. Our family elders also taught me the importance of being decisive. For example, they made the bold decision to set up our own manufacturing facility to produce our premium beverages. We wanted to ensure quality products, so we decided right away not to outsource production. Next, we had to decide where to set it up — Malaysia would have been cheaper cost-wise, but we decided to set it up here because that would give us full quality control, and allow us to build our Singaporean brand heritage.

What is your vision for Killiney in the next five years?

I wish to keep the brand a family business for as long as we can. My vision is to look beyond our outlets; we have already taken to expanding online, which will allow us to penetrate overseas markets in a quicker manner, complementing our plan to grow our physical presence overseas. We also have a series of products in the pipeline, such as healthier versions of our beverages and sauces. These are being created through our R&D collaboration with Hoow Foods. Ultimately, our vision is to grow Killiney into an international brand, while maintaining our Singaporean heritage.

How do you define excellence and how does it apply to Killiney and other areas of your life?

I’ve always been inspired by this Gloria Steinem quote: “Rich people plan for three generations; poor people plan for Saturday night.” When I joined the family foundation, I gave up the opportunity to enter the lucrative field of commodities trading. I saw my friends having fun on weekends while I worked tirelessly with my uncle on our first art monograph. But it was worth it.

The tough years of training have allowed me to better appreciate our family’s art collection, and how the elders have worked so hard to plan for the next generation. All these have inspired me to do the same for the generations to come. At Killiney, the plans we effected gave us the opportunity to stay ahead of competitors and put ourselves in a position to grow beyond brick-and-mortar eateries.

I believe that long-term planning should be applied to philanthropy too. Giving back should not be done only when one becomes rich, established or has retired. I recently set up a bursary at NUS Business School to provide support for needy students going on student exchange programmes. By doing so, I hope to encourage my peers to give back to society as soon as they can.

Finally, what is your favourite meal at Killiney?

It has to be our Curry Chicken – the gravy is on point. Over the years, it has proved to be one of Killiney’s classic meals and it can be eaten with either toasted bread/baguette or rice.
Running a commercial farm that coexists with the community was a brand new thing, and it worked because we were able to unlearn what we knew of the farming processes and rethink them.

For granted. Even while growing Citiponics now, this taught me that to create any real breakthroughs with innovations, I need to be able to unlearn what I know of the world and to be aware of existing biases.

Running a commercial farm that coexists with the community is a brand new thing, and one of the reasons why this model could work is because we are able to unlearn what we know of the farming and food consumption processes and rethink our processes.

Prof Lu also impressed upon her the importance of going back to basics when solving problems. “We first need to question if it can be resolved in another way – what looks right may not necessarily feel right. Solutions for technological problems may not come in the form of robots or complex software. We have to go back to basics and ask ourselves if we can resolve a problem in an efficient, simple and frugal manner.”

A SUCCESS ‘STOREY’ IN THE MAKING

After graduating in 2017, Ms Chan served a stint at IBM as a business transformation consultant to gain corporate experience before focusing on Citiponics full-time. Citiponics’ venture into building rooftop farms began with a testbed project at an under-utilised rooftop carpark in Taman Jurong, which was solely used for community purposes. With the experience from running the prototype farm, they were able to pitch for a pilot commercial carpark rooftop farm, Citiponics@Ang Mo Kio. “Our proprietary ‘Aqua Organic System’ belongs to a solid-based, soilless culture – it is a different farming method from both hydroponics and traditional soil farming,” explains Ms Chan. “This is a different farming method from both hydroponics and vertical farming technology, Aqua-Organic System (AOS).”

AOS is a zero-waste system – every component is recyclable, unlike traditional farming. “It is an environment that lets coexistence with the community was a brand new thing, and it worked because we were able to unlearn what we knew of the farming processes and rethink them.

Visitors to the farm are encouraged to get a hands-on feel of the processes involved.
**Who He Is**

One of Singapore’s foremost architectural photographers, Mr Darren Soh’s cityscapes have been exhibited around the world. The winner of several photography prizes, he has also published a number of books, the most recent being 2018’s Before It All Goes – Architecture from Singapore’s Early Independence (which has been shortlisted for the President’s Design Award 2020, the results of which will be announced in July).

**H is PHOTOGRAPHIC SUBJECTS UTER WIT A WORD, YET THEY SPEAK VOLUMES TO HIM.**

And while they stay completely still, he takes delight in discovering their divergent moods in various light. Welcome to the world of architectural photographer, Mr Darren Soh. Now 44, Mr Soh dabbled in photography as a teenager and shot for The Straits Times throughout his university days. When he found himself without a job upon graduation (“the world was in the throes of the Asian financial crisis,” he recalls), working as a freelance photographer “shooting everything and anything” became the means to earning a living.

Then, in 2006, Mr Soh experimented with large-format cameras typically used for landscape, architectural, and fine art photography, and started shooting buildings. “The meticulousness that it called for and the solitude that it accorded appealed to me,” says the Sociology graduate, who is the father of an eight-year-old boy. He fell in love with the process and found his niche in architectural photography. That same year, he was invited by Singapore’s then-Ministry of Information, Communications and the Arts (MICA) to contribute to Canavas, an anthology of photographic works that would be presented to delegates at Singapore 2006, the 61st Annual Meeting of the Boards of Governors of the International Monetary Fund and World Bank Group – the biggest global event Singapore had ever organised at that time. He went on to contribute pictures of what he called “Singapore scapes” such as the inside of Mustafa Centre and the facade of his old HDB block at Commonwealth.

Since then, Mr Soh has shot for international magazines such as Wallpaper and Monocle. His works have been acquired by the National Museum of Singapore and the Urban Redevelopment Authority (URA) as well as by corporate and private collectors from around the world. Building Blocks – a folio of his architectural work on public housing façades in Singapore – has been on display at the Kay Ngoe Tan Architects Gallery since 2007. In 2017, his photographs of public housing in Singapore were showcased at the Singapore Pavilion of EXPO 2017 Astana (now Nur-Sultan) in Kazakhstan, as well as at the Sh-Art Urban Art Festival in Mumbai, India. His now-famous picture of the reflection of an HDB block also made him the only photographer from Asia among the 10 global winners of Apple’s inaugural #photography Challenge in 2019.

Though the images are still and their subjects are inanimate, Mr Soh’s photographs of the spaces Singaporeans work, live, and play in tell multilayered stories of the country. His pictures also serve to document the rapid changes in our local landscape, brought about by urban growth and redevelopment.

**What would you consider the milestones in your career?**

Apart from finding my niche in architectural photography in 2006, the publishing of my first book, While You Were Sleeping, in 2004 was also a highlight. This collection of nocturnal landscapes from Singapore showed my transition from street, to landscape, to formal architecture photography.

The 2019 release of For My Son – a collection of images of threatened and demolished vernacular spaces in Singapore – was another milestone. When I was putting images together for the book, my son was only a year old. I realised there were all these places getting demolished which he would never see places of significance to me which I will only be able to show him through photographs. It was then that I started to question why we were not able to save more old buildings, and why ‘new’ is always perceived as better than ‘old’. It was also then that I realised that what I was doing could be used to further a cause. Prior to For My Son, I usually told people – only when asked – about how I documented old buildings because of our country’s rapid redevelopment. After 2013, I couldn’t just sit around and be an observer any more.

You have been active in educating the public on the merits of post-Independence Modernist structures in Singapore, and are also an advocate for their conservation. Why is conservation such an important topic to you?

Less than 15 buildings built after Singapore’s independence have been gazetted for conservation. After For My Son, I started working with architects and historians and am very much involved in the modern conservation movement in Singapore now. Photography as a means of helping us remember things is still a big and important part of my work, but now I also use photography to educate and raise awareness. I understand not all buildings can be saved, but what I want is to start a debate, and not for everything to just be determined by market forces. Currently, the market decides the fate of all commercially- and privately-owned buildings. If we don’t start debating about this, and accept the demolition of old buildings as the norm, we will lose many of them. The topic is important to me because, in the grander scheme of things, it is hard for a country to find its identity if its landscape is forever new and changing – we will always be strangers in our own land.

**You are working on a large-scale, self-initiated project documenting 60 years of public housing in Singapore. Why the particular focus on this?**

Singapore has possibly the most successful public housing programme in the world, and over 80 per cent of Singaporeans happen to live in public housing. This did not happen by accident; there were a lot of people and policies that made it what it is today. This is a story that needs to be told.

In fact, I am happy that my picture of the reflection of an HDB block won Apple’s #photography Challenge, and has been circulated worldwide.

**How else has a background in Sociology shaped your professional growth?**

Sociology is the key to everything. It tells you why people do things in groups or as a society, and that has shaped my decision to keep taking photographs. It allows me to reason with myself as to why things are the way they are, and examine the role my images have played, and will play, in this ever-surprising world.

**Picture This**

Internationally-acclaimed photographer Mr Darren Soh (Arts and Social Sciences ‘00) has sought to tell his own ‘Singapore story’, as seen through his lens, and also uses his work to draw attention to social issues ranging from conservation to the plight of migrant workers.

Left: Mr Soh’s winning entry from the Apple #Photography Challenge in 2019. Right: His photo of the S11 Dormitory @ Punggol.

Left: Mr Soh’s winning entry from the Apple #Photography Challenge in 2019. Right: His photo of the S11 Dormitory @ Punggol.

PHOTO OF DARREN SOH: CY KONG

**Left: Mr Soh’s winning entry from the Apple #Photography Challenge in 2019. Right: His photo of the S11 Dormitory @ Punggol.**
NUS pushes forward in the fight against COVID-19 with 10 new projects that have received seed funding to investigate a broad range of issues related to the virus.

**SOLUTIONS FOR A BRIGHTER, POST-PANDEMIC FUTURE**

In the wake of the ongoing COVID-19 pandemic, experts in different fields from across the world are working round the clock to deal with various aspects of the virus. On its part, NUS has invested $1 million in seed grants disbursed to 10 shortlisted projects. The seed grants are part of a $4 million NUS research fund to initiate and boost interdisciplinary research and innovative approaches in the detection, treatment, and prevention of COVID-19. These projects see NUS researchers, some even collaborating across disciplines, working on approaches for the detection of COVID-19 – and possibly finding ways to make the world a better event in the future outbreak. We learn about these projects and what their lead researchers have to say about them.

1. **Project 1:** Aggregation-induced emission, nanoparticle-based lateral flow immunoassay

   During the incubation period, infected patients may spread the virus to the community, increasing the difficulty for disease control. Hence, there is an urgent need for an early-stage detection kit to quickly diagnose and identify COVID-19 infected patients. However, current nucleic acid amplification-based tests – in sight of their high rate of adoption – have limitations in terms of detection time and availability of sample preparation kits, which also require complex instruments and professional operators.

   This project will develop an early-stage COVID-19 detection kit that is highly-sensitive and easy-to-use for frontline professionals. Through binding highly-emissive fluorescent nanoparticles with aggregation-induced emission – a unique phenomenon in which organic fluorescent dyes show brighter emission in the aggregate state than in solution – on a test chip, the presence of specific viruses will cause a linear signal to be read directly by the naked eye, simply with the help of a mini LED torch.

   **Q:** Overcoming the shortcomings of current testing kits is vital in containing the spread of the infection. How fast and how sensitive is the proposed test?

   **A:** Most of the existing kits on the market are based on detecting antibodies, which can only capture patients after their symptoms appear for several days. We focus on direct virus detection, which should promptly capture the status of infected people before they even show any symptoms. Under optimal conditions, it will take only around 10 minutes to generate the signal.

   **Did you know?** Fluorescent nanoparticles with aggregation-induced emission is an NUS patented technology. This technology won Prof Liu the 2016 President’s Technology Award. It has been commercialised via an NUS spin-off, Luminicell.

2. **Project 2:** Field deployable sample-to-detection microfluidic lab-on-chip system for nucleic acid testing

   The effective containment of infectious diseases requires a rapid and accurate detection of the pathogens. However, most tests are carried out in laboratories with specialised equipment. This delays detection and hinders containment.

   This project proposes a modular microfluidic pipeline for nucleic acid detection, e.g., SARS-CoV-2, that can be deployed without the need to send samples to centralised laboratories. The targeted time from sample to result is 90 minutes.

   **Did you know?** Envision made its debut in 2018 as a quick, sensitive, and cost-effective test kit for the detection of infectious diseases. Asst Prof Shaor’s work in non-invasive disease detection won her a President’s Science and Technology Award in 2019.

3. **Project 3:** Multiplexed molecular switches for rapid and sensitive detection of COVID-19

   For accessible and prompt detection assay platforms that can bring testing for the SARS-CoV-2 virus to the patient level are urgently needed. The project team recently developed molecular switches – a phenomenon in which a single molecule switches controllably between two stable states – to enable the rapid and visual detection of viral nucleic acids. Tandem enzyme-assisted nanocomplexes for visual identification of nucleic acids (enVision), the technology employs enzyme-DNA nanostructures as molecular switches for the direct and sensitive detection of pathogen nucleic acids. The technology is fast, sensitive, and operates entirely at room temperature to generate visual and quantifiable signals.

   “These molecular switches are both a frontier science and a robust technology to industrialise. We have found that the switches can be rapidly designed and engineered to develop new assays against emerging diseases such as COVID-19. They are also robust for direct clinical detection, bypassing many cumbersome steps of conventional testing and delivering superior diagnostic performance in as little as 30 minutes.”

   **Principal Investigator**

   Professor Lim Cheow Teck (Engineering ‘79)

   iHealthtech, Department of Biomedical Engineering (BME), FOE, says:

   **Did you know?** enVision made its debut in 2018 as a quick, sensitive, and cost-effective test kit for the detection of infectious diseases. Asst Prof Shaor’s work in non-invasive disease detection won her a President’s Science and Technology Award in 2019.

4. **Project 4:** Evidence-based psychosocial mobile health application intervention for frontline healthcare workers

   This study aims to examine the experience of – and need for – psychosocial support among frontline healthcare workers involved in the response to the COVID-19 epidemic in Singapore. The larger goal is to collect foundational data to develop an evidence-based psychosocial mobile health application intervention for frontline healthcare workers in times of public health emergencies.

   The project calls for a qualitative study based on focus groups and in-depth interviews with frontline healthcare workers from the Singapore General Hospital who are involved in the response to the COVID-19 pandemic. All interviews will be audio-recorded and transcribed verbatim, with the resulting data being directly fed into the development of an adaptive and personalised mobile application intervention that mitigate burnout and acute stress.

   “Our solution will require far less manpower resources and time to meet the psychosocial needs of frontline healthcare workers as compared to the current episodic contact model. Supporting one’s mental wellbeing requires timely motivation and constant monitoring. Through the app, we will be able to deliver personalised feedback through an iterative tracking of self-monitored psycho-emotional states.”

   **Principal Investigator**

   Assistant Professor Sungwon Yoon; Health Services and Systems Research, Duke-NUS Medical School
5 PROJECT: The impact of risk-perception on precautionary behaviours towards COVID-19 among healthcare workers and the general population in Singapore and globally

The project assesses the knowledge, risk-perceptions, information-seeking and precautionary behaviours of healthcare workers and the general population towards the COVID-19 outbreak globally. An anonymised, self-administered, theory-based questionnaire will be validated by psychometric testing prior to implementation, and made available via the Internet to the general population (aged >21) and to healthcare workers worldwide. The data will examine the first four months (containment phase) and the subsequent three months (mitigation phase) of the COVID-19 outbreak.

Partners from at least 20 different countries will be engaged to achieve about 1,000 surveys from each country. This online approach is likely the more effective approach than face-to-face interviews during an outbreak.

“Our study will provide health policymakers with an estimated baseline of the risk perception of individuals (with regard to COVID-19) in different countries from different socio-economic and political backgrounds. This can guide current COVID-19 containment and mitigation measures and overcome identified gaps and barriers due to misperceptions among the community to prepare for potential future pandemics.”

6 PROJECT: Facile fabrication of reusable nanofibre surgical face masks

The COVID-19 outbreak ramped up Singapore’s push for resilient supply chains for healthcare essentials such as surgical masks. This project uses a facile production technology to prepare reusable nanofibers with a high filtration efficiency and good filtration resistance for good breathability.

The technology is based on a high-rate electrospinning process, which can deposit anti-viral hydrophobic nanofibres on cloth (non-woven or cotton fabric) with high production rates. The non-wovens/ functional nanofibre membrane hybrid cloth can directly serve as lining and filter, simultaneously. The nanofibres can be disinfected with 84 disinfectants or alcohol without any loss of filtration efficiency or efficiency of the surgical mask for intended purposes.

Principal Investigator
Dr. Vincent Pang Junxiong
Department of Mechanical Engineering, FOE

7 PROJECT: Impact of high-flow nasal oxygen on airflow in negative pressure rooms in COVID-19 patients

Many critically ill COVID-19 patients receive high-flow nasal oxygen (HFNO). In treating patients with viral infections like COVID-19, negative pressure isolation rooms are used to prevent the spread of infectious pathogens within the hospital. A negative pressure of 2.5 Pa below atmospheric pressure is generated by removing air from exhaust ducting at a higher rate than it enters the room. However, it is unknown how the use of HFNO in these patients will impact the airflow pattern in a negative pressure room.

This project aims to address this knowledge gap by carrying out a computational modelling study of COVID-19 patients’ rooms, incorporating the exact dimensions of the rooms. It combines various parameters such as the room’s air pressure and velocity, temperature, and the patient’s HFNO device air flow rate.

Principal Investigator
Dr. Leo Hwa Liang BME, FOE, elaborates: “The project involves...the development of a comprehensive computational modelling study that investigates how positive pressure high-velocity nasal oxygen interacts with negative air flow and air pressure, in both the isolation room and the adjacent anteroom. We will also investigate how human movement within these rooms could potentially influence air mixing. Ultimately, we want to predict the distribution of airborne pathogens within the confined environment and provide recommendations for the design of isolation wards. This will be relevant in future disease outbreaks, beyond the current crisis.”

8 PROJECT: Aerosol infection control in buildings: temperature, humidity, airflow and ventilation

Air conditioning and mechanical ventilation (ACMV) systems have an impact on the transmission of airborne diseases. This project will study the dispersion of bio-aerosols in a novel ACMV system comprising a dedicated outdoor air system used in conjunction with ceiling fans with higher indoor temperature setpoint (27°C – 28°C) and humidity (65%). This hybrid system has been installed in NUS SDE4 – Singapore’s first net-zero energy building – and has been proven to be energy-efficient. It also provides better indoor air quality and control of particle levels compared with conventional ACMV systems.

Although every building is unique due to the complex interactions between different components and subsystems, we aim to generalise the application of the findings through modelling, simulation, and calibration with data from experiments conducted at real buildings. Computational fluid dynamics modelling will be used to simulate bio-aerosols on a larger scale. The results will not only change the way we cool and ventilate buildings during an outbreak, but also provide guidance towards the design of buildings that are ecologically resilient.”

Principal Investigator
Dr. Adrian Chong (Design and Environment ’10)
Department of Building, School of Design and Environment

9 PROJECT: Modelling the spread of infectious disease in public transport networks and development of algorithms to enable contact tracing

This project aims to model the spread of infectious diseases in public transport systems and enable contact tracing for travellers, and thus investigate potential strategies for disease control and management. With smart card data, human mobility and travel patterns in public transport systems are identified. The possible travel routes of commuters are reconstructed using shortest path algorithms. Then, the choice probability of routes is derived with choice modelling. After dividing routes into several parts, the interaction of travellers is studied and the possible travellers with close contact are identified. Telco and Wi-Fi data may be explored to improve the resolution of the algorithm.

With these results, risk planning, operators, and communication strategies can then be implemented to mitigate the spread of communicable diseases in public transport systems, thus increasing public confidence in ensuring public health.

“We envision a generic model that can be applied to all major cities. Transferability of our algorithm is something that is top of mind and it is important that Singapore, and NUS specifically, can contribute to the world in developing fast-tracing tools in the event of a rogue traveller, or provide public confidence in the use of public transport systems.”

Principal Investigator
Dr. Ong Gek Ping Raymond (Engineering ’02)
Department of Civil and Environmental Engineering, FOE

OUTLOOK: Intelligent data science for contact tracing and outbreak investigation

This project aims to develop intelligent data science methodologies and applications for contact tracing and outbreak investigation.

As a proof of concept, the research team will explore mining large-scale digital traces based on Wi-Fi access points to infer a weighted contact network based on devices connected to the same access point (within NUS) at the same time. The variations in the strength of a tie (recorded as weights) in the network indicates the possible flow of the infections along the path such that the potential spread of the disease within the population can be traced in a location-specific manner.

Q&A with Principal Investigator
Prof. Ng See Kiong
Institute of Data Science

Q: How can the results demonstrate that contact tracing can be effective while preserving a degree of privacy?
A: “As the check-in/check-out data contains only coarse-grained co-location information, the inherent uncertainties in the data provide a degree of privacy as it is very difficult to pinpoint actual contact between two specific persons. That said, we still want to ensure the dataset is handled with proper privacy protection. In this project, instead of attempting to identify actual contact between two individuals, we want to develop algorithms that can make use of the data to map out the overall location-specific disease spread, to develop better-informed screening and immunisation strategies for stopping the spread of the disease.”

Q&A with Principal Investigator
Dr. Ng See Kiong
Institute of Data Science
SPECIAL FEATURE

Heroes in a Time of Crisis

COVID-19 has disrupted our world in myriad ways, yet the NUS spirit of giving continues to shine through our alumni community. Many are working tirelessly at the frontlines and sidelines, displaying acts of volunteerism, courage, selflessness and compassion. Here are our alumni who have stepped up in different capacities to serve the community. #OneNUS #SGUnited

Ms Kow Weiman
(Arts and Social Sciences ’10)
I have always loved comics since I was young, and read a breadth of inspiring, journalistic, autobiographical, scientific and indie comics, on top of the usual local, Japanese, and Western comics. I created a comic on how coronaviruses spread as a fun side project and personal reminder to myself of the simple steps that could be taken to protect against respiratory illnesses. It has since been translated into over 40 languages and used in schools, governments, and hospitals globally. I felt that the speed of the translations was due to me taking inspiration from the technology sector, where I work as a User Experience designer, and open-sourcing the comic translations to the public. Facts are important in the battle against the disease, which is why I sought out doctors to vet new comics that I create. I have since started up a social initiative, comicsforgood.com, where I continue to publish COVID-19 comics while encouraging other artists to produce comics to explain difficult topics on social good to the public, with stringent vetting by subject matter experts.

Dr Sudesna Roy Chowdhury
(Medicine ’20)
In early April, Singapore saw a sharp rise in cases as well as a seismic shift in the demographics of new cases, from our citizens to migrant workers. I still remember the exact moment I felt compelled to create a translation tool for frontliners – it was a gov.sg Telegram message on 13 April, at 11.58pm, and the first day that foreign workers in gazetted dormitories became the significant majority of the cases. I was devastated – especially knowing the difficulties they face in the local system given its unfamiliarity and a heavy communication barrier. It was that burst of emotion that drove me to create a website of English-to-Bengali medical history questions overnight, ready before a new batch of doctors were about to enter the dormitories the next day. Since then, a small community of volunteers has come together to dedicate its efforts towards document translation, phone interpretation and website development. These efforts spilled into other minority language communities as well, and the next step forward is to apply these concepts to dialects for the elderly Singapore population. Still, the greatest challenge yet is to create long-term, sustainable change for demographics that we otherwise have little incentive to fight for. In the future, I hope to continue being a health advocate for such minorities in our country.

Dr Zhou Lihan
(Science + USP ’07)
MiRXES was founded in 2014 by three like-minded NUS faculty and alumni to develop accurate, affordable, and actionable cancer early detection solutions. The team (with key functions led by 15 fellow alumni) now operates five R&D laboratories, as well as two ISO13485-compliant manufacturing sites with strong regulatory and commercial capabilities in Singapore, USA, Japan, and China. These capabilities enabled us to respond quickly in late January to collaborate with A*STAR in the mass production of the Fortitude RT-PCR test kits. Fortitude, the first COVID-19 test approved in Singapore, is now one of the most widely-deployed tests globally, and is used in more than 20 countries. Four months on, the team is still on an adrenaline rush to develop even more effective solutions to address the evolving COVID-19 diagnostic needs, but all of us look forward to returning to our day job of revolutionising the early detection of cancer.

Kudos to fellow alumni who make us so proud with their selfless contributions in the fight against COVID-19. For more stories, please go to nus.edu.sg/alumnet/community/NUS-Alumni-Covid-19-Heroes.
FROM CLASSROOM TO FRONTLINE

The disruptions caused by COVID-19 have been widespread. Graduates from the Yong Loo Lin School of Medicine Class of 2020 were deployed earlier than expected to work in hospitals islandwide to meet the nation’s call for healthcare professionals, and most faced a heavy workload from the get-go. Hear from some of our newest Class of 2020 were deployed earlier than expected to work in hospitals islandwide to meet the nation’s call for healthcare professionals, and most faced a heavy workload from the get-go. Hear from some of our newest

Dr Joshua Chia
(SGH Internal Medicine)
Initially, most of us were understandably disappointed when our grad trips were cancelled, but it has been an honour to be able to contribute to society in such a time of need. Adjusting to life as a doctor is never easy. The pandemic makes doctoring a little more challenging, but I have been privileged to work with great seniors who are always looking out for us and lending a helping hand to help us cope.

Dr Sarah Tham
(SGH Internal Medicine)
While there are many new protocols in place, the hospitals have made a lot more effort to integrate us this year. Unlike our seniors, we had a one week orientation and one more week of overlap with the senior house officers (HO), as well as “tag on” calls when we would be attached to a senior HO. Our seniors also conducted Zoom lessons to teach us the ropes. I am reminded that every day is an opportunity for us to offer love where there is none, comfort where there is despair, and hope where there is uncertainty.

Dr Amanda Chia
(SGH Obstetrics and Gynaecology)
I was nervous at first, but also, the seriousness of the situation sank in and seeing so many of my seniors giving so much of themselves made me want to do the same too. I think the difference is that our department’s manpower is halved and all of us have to step up to cover multiple stations. The learning curve is really very steep. However, no matter how long the night might seem, the sun will rise tomorrow!

Dr Thaddeus Cheong
(KKH Paediatrics)
I think we were all surprised when we were told that we would be starting work earlier than usual and nervous about starting work in such uncertain conditions. There was a lot of self-doubt about whether we would be up to the task but what struck me most has been the dedication and encouragement of our seniors and colleagues. The nurturing and resilient attitude they modelled for us is something I hope to one day carry as well. So as we continue in our first steps of this journey, we owe a huge thank you to all who have guided us along!

Physically Distant Yet Socially Connected

On 2 May, more than 40 Lee Kuan Yew School of Public Policy (LKYSSP) alumni across the world got together at the ‘Physically Distant, Socially Connected – LKYSSP Alumni Virtual Get-Together’ event, where seven alumni shared their personal experiences of managing the COVID-19 pandemic. Alumni also discussed the long-term implications of the pandemic. The virtual get-together proved that although travelling in the near future seems unlikely, connections can still be forged and strengthened regardless of distance.

BEMA’s Pledge of Solidarity

The Building and Estate Management Alumni (BEMA) has stepped forward to offer their support to undergraduates during the COVID-19 pandemic.

“As one of the university alumni organisations, BEMA will support and stand alongside our undergraduates during this trying time. In our small way, BEMA has donated $10,000 to the NUS Students Solidarity Fund and collectively as an NUS community, we hope that this contribution will go a long way to alleviate the financial difficulties of our undergraduates’ families who are affected during this period,” shared Dr Teo Ho Pin (Building ‘85), President of BEMA.

Keeping the Music Alive

On Monday, 30 March, some members of the NUS Alumni Sing-Along (ASA) ukulele group came together to keep the music alive via weekly sessions on Zoom. Led by Dr Lim Thou Tin (Business ‘81), members learned fingerstyle picking on their ukuleles. Over the weekly sessions, the fingerstyle melodies were combined with strumming and singing. Thanks to technology, members of the ASA are still able to connect, learn and have fun!

NUS Economics Alumni’s First Virtual Networking Event

The NUS Economics Alumni held their first Virtual Networking Event on the evening of 13 May. It was a great turnout of 30 people with Professor Satoru Takahashi, Head of the NUS Department of Economics, joining too. For the majority of attendees, it was their first time networking online. Overall, it was a great evening spent connecting with other Economics alumni!

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-122/community/alumni-happenings.
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Ang Lip Chor is an advocate of nursing. Having seen nurses toil on the frontline, he felt compelled to support their education.

With that in mind, he reached out to NUS to bequeath a fund for aspiring nurses at the Alice Lee Centre for Nursing Studies, NUS Yong Loo Lin School of Medicine. The fund will be used to establish the Ang Lip Chor Prize for top graduating nursing students.

“Nursing is a tough profession. On top of their clinical duties, like administering injections and taking blood samples, they also have to take care of patients’ daily needs,” said Mr Ang, who has built a stellar 37-year career in the property business.

Mr Ang feels that the situation is even more dire during pandemics, like the current COVID-19 crisis - “These frontline staff put their lives at risk, and have to bear spending less time with their loved ones.”

Still, there is a looming shortage of nurses.

Part of the reason is the public’s perception of the profession.

“Many good students would prefer to enrol in faculties like Medicine or Law,” shared Mr Ang.

With this contribution, Mr Ang hopes to imbue a stronger sense of identity for the future Florence Nightingales of the world. “The prize is a recognition of the importance of nursing and I hope it will encourage nursing students to strive to achieve their best.”

If you would like to know more about making NUS a beneficiary of your CPF, or if you would like to enquire about making a legacy gift to the University, please email legacygift@nus.edu.sg, call +65 6516 6529 or visit nus.edu.sg/nusgiving.
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