Uni NEWS

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THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

SUSAN MORTON

How Covid-19 will add another dimension to the Growing Up in New Zealand study of 6,800 children

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TALKING ABOUT TIKANGA

Marama Muru-Lanning is leading a team of researchers asking how Covid-19 will affect tikanga – will we ever hongi again?

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ADJUSTING OUR THINKING

Ralph Cooney writes that the Covid-19 lockdown and beyond could allow us to pause long enough to consider our priorities.

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VOICE OF REASON

Siouxsie Wiles has been one of the University's scientific voices who have come to the fore. But who is she?

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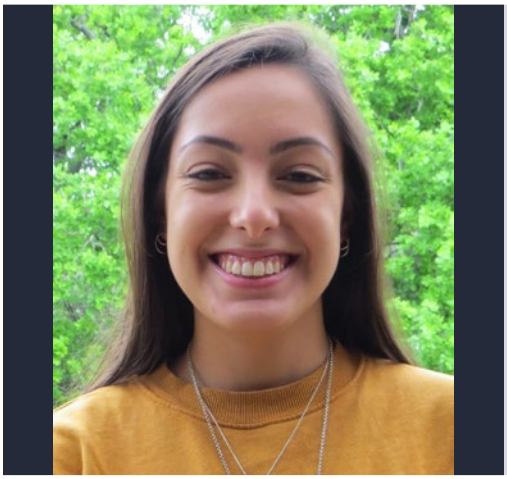
VIRTUAL RAISING THE BAR

The popular Raising the Bar event, usually held in pubs around Auckland, is online this year (register for updates at **rtbevent.com/auckland**). Up to 500 people will be able to watch the University's experts talk about their favourite subjects, in Zoom events. Confirmed so far are Olaf Diegel, Siouxsie Wiles, Tracey McIntosh, Darl Kolb and Richard Easther. Speakers will give their talks twice a day, at 8am and 8pm. Also online, the Auckland Writers' Festival, hosted by Paula Morris. **auckland.ac.nz/AWW-online**

RAISING the BAR Auckland

THE HOME EDITION



KUPE LEADERS HEAD ONLINE

The 2020 Kupe Leadership Scholarship programme is taking an innovative approach to challenges posed by Covid-19. Four of the 16 scholars are postgraduates in health and during lockdown had the chance to meet and debate online with well-known medical leaders on Covid-19. (Pictured is Samantha Menezes who is doing a postgraduate diploma in public health.) The scholars' mentors include Sir Richard Faull, Dr Innes Asher, Des Gorman and Dr Nikki Turner.

■ See: auckland.ac.nz/2020-Kupe-Scholars

INTERNATIONAL HONOUR

Professor Martyn Nash, of the Auckland Bioengineering Institute (ABI) and Department of Engineering Science, has been recognised as one of the world's best. He has been inducted into the College of Fellows of the American Institute for Medical and Biological Engineering (AIMBE), one of the highest professional distinctions accorded to a medical and biological engineer. Martyn's research career focuses on bioengineering analyses of the heart.

■ See: **auckland.ac.nz/Martyn-Nash-ABI**

Professor Martyn Nash (left) and fellow researcher Dr Prasad Babarenda Gamage.

'CURVE CRUSHING' FOR A CAUSE

University of Auckland alumnus Dr Ashley Bloomfield, Director-General of Health, is now a household name thanks to Covid-19. He also has his face on a tee-shirt, sweatshirt and tote bag designed by Dunedin company The Bold and sold as part of a campaign called 'Keep a Good Thing Going' by another Dunedin company, printroom.co.nz. All profits from the sale of 'The Curve Crusher' merchandise are going to Women's Refuge New Zealand. These are indeed strange times!

THIS ISSUE

THE IMPACT RANKINGS 2020 NUMBER 1

EDITOR: Denise Montgomery
denise.montgomery@auckland.ac.nz
PHOTOGRAPHY: Elise Manahan, Billy Wong
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This edition of *UniNews* was created during Covid-19 lockdown. It is published as a PDF and online stories only as a result.

Dr Louis Tremblay is researching how microplastic pollution affects food chains. Below: Professor Kevin Simon with Nadia

HEADS WELL **ABOVE WATER**

Auckland has again topped the Times Higher Education University Impact Rankings.

At least one piece of good news came out during lockdown – that the University has been ranked No 1 for the second year running in the University Impact Rankings by Times Higher Education (THE).

The rankings measure the performance of 850 universities in 89 countries against the United Nations' 17 Sustainable Development Goals (SDGs) developed in 2016. The University's success in the Impact Rankings reflects a pragmatic focus on the SDGs. The aim is to 'walk the talk' when it comes to Auckland's fundamental role to provide life-long learning and high-calibre research that responds to grand challenges faced by Aotearoa and the globe.

Professor Simon Thrush, Head of the Institute of Marine Science, says the rating result "gives global recognition to our contribution to sustainability, and in particular to our efforts to help save our unique forests and restore our magnificent oceans".

"Work in marine sustainability and land protection have long been a particular focus for our research teams, independent of the SDGs, and we gained especially highly in goals relating to SDG 14, Life Below Water (2nd globally) and SDG 15, Life on Land (joint 3rd)."

He said it was encouraging to get international endorsement for the University's research. "Because although we often have community support for it, the options for government funding for ecological research are limited."

An example of Life Below Water research is being undertaken by doctoral candidate Nadia Dikareva (Faculty of Science). She's one of the most knowledgeable people in the country on the quantity and types of microplastics lurking in Auckland's streams and waterways, and their path from land to sea. Nadia's research project involved spending a fortnight in waders, collecting water and sediment samples in 18 streams from Slippery Creek in Papakura to a stream in Shakespear Regional Park in the north. She spent months sifting plastic particles from organic matter for microscopic analysis and then used a spectrometer to assess their composition. The result, *Microplastic Pollution in Streams Spanning an Urbanization Gradient*, was published in the journal *Environmental Pollution*.

Her study was undertaken before the ban on microbeads in New Zealand in June 2018 but as it turns out microbeads, from facial scrubs and cleansers, are not the major source of micro-plastic pollution in Auckland's waterways.

Nadia's analysis revealed mostly fragments of plastic, almost 80 percent, followed by fibres and films. She isolated 3,309 particles through her microscope that were mostly acrylate polymers used in paints and coating materials, and polyethylene and polyvinyl chloride (PVC), found in common plastics and used in everything from construction materials to cars.

Worryingly, the concentration of microplastics in Auckland streams matched that found in much more densely populated northern hemisphere cities. On average, Auckland's waterways have between 17 and 303 particles of micro-plastic per cubic metre of water and between nine and 90 items in each kilogram of sediment.

Nadia's research points to microplastic pollution in streams we might consider pristine which may be due to 'localised' impacts, such as run-off from rubbish left by people using parks. Another factor might be plastic fibres carried in the atmosphere and settling on regional parks. Her research is supervised by Associate Professor Kevin Simon, an environmental scientist, who says there's still work needed on the impact of microplastics. "There's now more work focused on the effects of plastics on organisms," says Kevin. "Some studies say nothing happens. Others point to some effects. Certain types of plastics will be a problem in some situations."

That's why microplastic pollution analysis is a burgeoning field and the University has a number of researchers working on the subject. Another example is a five-year study led by toxicologist Dr Louis Tremblay in Nelson that's testing what happens when an animal, called a copepod, eats microplastic – with potential implications for the rest of the food chain, including humans.

Louis works for the Cawthron Institute as well as the University, and is zeroing in on chemicals leaching out from microplastics that float around in our rivers and oceans. He'll check whether the chemicals disrupt basic functions such as moulting and reproduction.

In a related field, marine scientist Associate Professor Nick Shears from the University's Leigh Marine Research Laboratory, is investigating how healthy forests of kelp seaweed can reduce acidity in the Hauraki Gulf, Tikapa Moana.

The Hauraki Gulf used to be home to unharmed underwater forests of golden-brown Ecklonia radiata kelp, which acted as building blocks of biodiversity, provided food for paua, shelter for young crayfish and baby snapper, and protected the coastline from erosion. Nick says that's not the case these days. "We have to turn the gulf around now. It's been too many decades of 'let's see what we can get away with'."

Research fellow Caitlin Blain is conducting experiments in the ocean and the laboratory to also measure Ecklonia radiata's effect in reducing levels of ocean acidity. The need to boost kelp stocks was highlighted by the *State of the Gulf* 2020 report, which revealed declines in numbers of dolphins, sharks and snapper, along with devastation of the seabird population.

Caitlin says kelp is the key: "Kelp forests can potentially provide areas of refuge for species which are very vulnerable to acidification."

■ Online: auckland.ac.nz/SDGRankings
auckland.ac.nz/TheChallengePlasticLeachate
auckland.ac.nz/TheChallengeAucklandWaterways
auckland.ac.nz/kelp-forest-ally

TALKING ABOUT TIKANGA

At a hui held in Kāwhia several weeks before lockdown, Dr Marama Muru-Lanning, director of the James Henare Māori Research Centre, first noticed a change in tikanga (protocol) that was a warning of challenges that lay ahead.

"I was in Kāwhia for my Marsden research, doing what are called the poukai rounds, getting some engagement there," she says. "I was in an all-Māori environment and for the first time ever in a poukai (King movement hui) you weren't allowed to hongi or kihi (kiss) at the end of the pōwhiri, you were only allowed to harirū (shake hands).

"They said 'there's this virus called Covid-19 and it affects kaumātua badly'."

Marama says although the directive was observed in the official line-up after the pōwhiri, it was looser in interpretation for the rest of the event. "When people were coming through the gates and seeing relatives and friends, they're all kissing and cuddling and shaking hands, sitting in seats next to their aunties and other whānau."

Between 300 and 400 people were at that gathering and Marama says, in hindsight, it was sheer luck that no one had the virus. "So, so lucky," she says. "That was my first instance of seeing this play out … where we weren't officially allowed to hongi, handshake or breathe the same air. A few days later, there was the Tūrangawaewae poukai … staying at our largest Waikato marae.

"It was then we became fully aware of the situation, so all that changed. There was no hongi or kiss allowed but plastic gloves were given out to allow harirū at the pōwhiri."

When a colleague from James Henare told Marama about the Health Research Council call for research in this area, she knew it was vital.

"I'd already seen the impact with my own eyes."

The six-month study, *Harirū, Hongi and Hau in the Time of Covid-19*, is giving voice to kaumātua experiences and recommendations on how older Māori will interpret regulations around personal distancing and gatherings now and in the future.

Dr Marama Muru-Lanning.

The hongi is part of life at the University. This is Raniera Harrison, lecturer in Māori studies, with Tui Makoare-Iefata from the Business School.

'Will people still want to hongi? What I've learned talking to kaumātua is tikanga is a fluid thing and has to change to fit the times.' – *Dr Marama Muru-Lanning*

Marama, who is the principal investigator on the project, says the qualitative study is talking to ten kaumātua in Tai Tokerau and ten in Waikato, but there will be no face-to-face interaction. The research is considered essential for the future health of Māori so the usual processes for research have been expedited.

"We're fast-tracking the technology so our researchers and the kaumātua have to use online technologies, iPads and phones. We're talking to them about whether they have a computer or are in a bubble where another member of the family has a computer they can use."

Marama says it's hard to know if the impact of Covid-19 will affect tikanga in the future and that's one of the issues they will be exploring.

"Will people still want to hongi? What I've learned talking to kaumātua is tikanga is a fluid thing and has to change to fit the times. So it will be interesting to see how, going forward, people will feel about the hongi and harirū."

Professor Ngapare Hopa, a researcher on the project, says the pandemic is challenging the foundations of Māori well-being and cultural practice as we know it. "We are being forced to think about old practices and beliefs."

Marama is also working with other researchers including project manager Dr Tia Dawes, and medical and policy experts such as aged-care expert Professor Ngaire Kerse and Dr Suzanne Woodward (Public Policy). Marama says kaumātua already face health inequalities that stem from poor housing, health conditions and living in communities that lack resources. The concern is that Covid-19 will exacerbate those inequalities. History has shown pandemics hit Māori hard.

"The end goal is to inform those with the power to make changes. We already know there are inequalities in the health system, but what can we do to assist kaumātua living in isolated remote areas, for example? How can we get them to hospital without having to rely on a family member … a lot of kaumātua and kuia don't drive or have cars."

She says many don't have the finances to go into retirement villages and that raises questions.

"Iwi need to think harder about investing in affordable kaumātua villages and aged residential care for Māori, rather than economically driven commercial property developments.

"Maybe they can flip some of their thinking and invest in assets or resources that will actually uplift our most vulnerable people."

She says it's already been hard for marae, at the heart of many communities, as they've not been able to enjoy their traditional social engagement or provide services for older Māori.

The James Henare Māori Research Centre has ten projects running, many of which involve face-to-face contact, so researchers are having to incorporate contactless research.

"I'd just finished what we call noho wānanga with people from Ngātiwai and our research team stayed for two days in Tutukaka with 16 kaumātua. We stayed overnight to do focus groups.

"At that point, Covid-19 was a virus that was somewhere else. We did hongi, kihi and harirū there because at that time there was no official government policy or kōrero about Covid-19, it was just news happening overseas.

"We actually have interviews with people talking about what was happening over in Italy, and asking will it come here? They were thinking about it. We were lucky to gather that data at that time."

She says now they might be able to incorporate some of that research into the new HRC study.

Covid-19 has thrown a spanner into the works for researchers needing to get into the field.

"I'm working through planning for variations to contracts now, and some will have to be extended. But this period of Covid-19 that's seen us trapped at our desks and kitchen tables has allowed us to do a lot of other things that we couldn't do if we're racing around the country. So there is an upside."

TE KŪAHA **APP** A TOOL TO **LEARN**

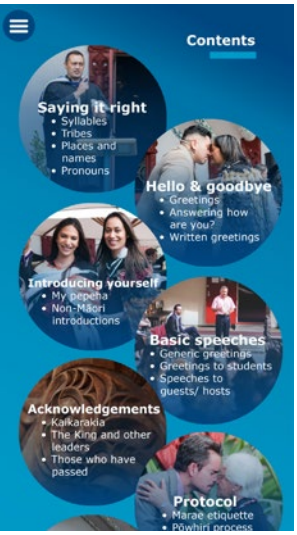
In April, the University launched its University Language Plan for the Revitalisation of te reo Māori.

Pro Vice-Chancellor Māori, Professor Cindy Kiro, told a Zoom meeting of staff that the Language Plan is "our plan and I'm asking your full commitment to achieving the three very ambitious goals in it" adding that "we have lots of tools to champion the work we are doing in te reo Māori".

One of those tools is the creation of a new free app called Te Kūaha (meaning 'the doorway'), which will be launched this month.

Te Kūaha has been five months in development but it's something Kaiarataki Michael Steedman, Deputy Pro Vice-Chancellor Māori, and Dr Andy Shenk, CEO of UniServices, have been thinking about for some time.

"It made sense for it to be implemented under the commitments within the new Language Plan," says Michael. "Te Mātanga Reo, the University Māori Language Advisory Committee, provided content expertise for the customisation of the app. UniServices CEO Andy Shenk was very keen, so UniServices funded its purchase."



Andy says he'd personally wanted something that could assist his own language growth.

"I'd been pestering Geremy Hema (the UniServices Kaiārahi) to help me find an engaging way to learn the basics of te reo Māori pronunciation and protocol.

"I wanted to learn how I could appropriately and respectfully participate in welcoming and working with my Māori guests and colleagues.

"When I heard about the Māori Language Plan, I realised this was the perfect opportunity for UniServices to contribute the funding for the app so that everyone across the University could get the type of benefit I was seeking for myself."

Geremy says the app, "is a great storehouse of resources, the kind that so many in the University community have been enthusiastically seeking".

The app features pronunciation guides for every word and a syllable-by-syllable breakdown. All of the content is playable by audio, including the University and UniServices waiata being sung, and other popular waiata. There's also a pronunciation song of the sounds in the Māori language.

"What we're hoping is this will support staff and students to develop basic te reo skills. Our overarching goal with this whole plan is that, by 2040, 50 percent of staff will demonstrate a basic level of competency in te reo Māori."

In the more immediate future, it's hoped all existing staff will have participated in professional development for te reo Māori learning by 2024. "And all new staff will be offered a course."

Staff and students alike are expected to be keen to use the app, which differs from the popular online Maori dictionary (maoridictionary.co.nz) in a number of ways.

"The app allows you to practise pronunciation, record and play back your attempts to pronounce words correctly," says Michael.

"It supports sentence-building and basic introductions, greetings, speeches, karakia and waiata, which are all customised for relevance to the University of Auckland and UniServices such as greetings for teaching staff to students, and academics introducing themselves or responding to greetings when in a meeting or conference.

Kaiarataki Michael Steedman was one of those behind the creation of the Māori language app.

"Staff new to New Zealand will likely find it useful as they come to grips with te reo Māori pronunciation and tikanga, particularly marae and pōwhiri protocol. It could also be useful to researchers at the University for its content about the tribes, tribal authorities and marae of the Auckland, Waikato and Te Tai Tokerau regions."

Project manager for the app's development, Liane Penney, says one feature people might like is to play the app's content as audio. "You can Bluetooth your phone to your speakers or stereo and play the app in full or just parts of it."

That's something to do in the lunch break when working from home or pacing the streets.

Te Kūaha (pictured left) can be downloaded from the Google Play, Apple and Windows stores from 6 May. See auckland.ac.nz/te-kuaha for the download links.

■ **Read more: University Language Plan for the Revitalisation of te reo Māori (Te taonga nō tua whakarere, he taonga mō āpōpō/A treasure from ancient times, and for tomorrow) at auckland.ac.nz/revitalisation**

SPEED **SHIELDS**

In just over two weeks, the Auckland Bioengineering Institute (ABI) and MedTech CoRE researchers designed a re-usable face shield for medical staff treating patients infected with Covid-19.

Around 20,000 shields were manufactured to mid-April. The design is simple but effective, comprised of a plastic frame and transparent plastic sheet. Importantly, both components can be disinfected and reused. It was developed by Dr Paul Roberts at ABI with support from MedTech CoRE collaborators and industry partners. They sprang into action after a meeting with local clinicians in late March, who'd expressed concerns about the lack of Personal Protective Equipment (PPE) in healthcare. Paul used plastic glasses used in the emergency department of some hospitals as a starting point. He cautions the shields "aren't perfect", and further consultation with users would have enabled design refinements, but it was an effective response to a fast-evolving situation. The shields are worn over surgical face masks as an extra layer of protection.

Professor Peter Hunter, director of ABI, says the shield was designed in consultation with clinical staff. "It's been manufactured locally in sufficient quantities to be able to provide a secure supply. So much has been achieved in a short time."

Professor Olaf Diegel in Engineering has also been creating a prototype ventilator, and a door handle opened by foot. The team has made their designs open-source so others working in this area can print it, test it and improve on it. "We are all in this together," says Olaf. "This is why we are making all our design open-source so others can adapt them to suit their particular circumstances and manufacturing capabilities."

■ **Read more at auckland.ac.nz/ABIFaceShields**

MINDSETS MATTER

Professor Keith Petrie says a change of focus has been good.

A group of FMHS students recently visited Stanford University, in the nick of time.

Professor Keith Petrie, a psychologist in the Faculty of Medical and Health Sciences, has done a lot of research over the years on the subject of compliance.

That compliance relates to people with an illness and how well they follow their doctor's guidance on taking their medication. So would the kind of psyche that doesn't follow a doctor's instructions be the same kind that didn't stick to lockdown?

"It's a different sort of health behaviour," says Keith. "For people to adhere to lockdown, they had to see themselves as personally vulnerable or know people personally who are vulnerable.

"People could see from the statistics in other countries that Covid-19 is a very contagious virus. If people see positive benefits from their behaviour, they're more likely to continue it and that increased people's acceptance of the lockdown."

Keith is also known internationally for his work on placebo and nocebo processes. The placebo effect is well known; the nocebo effect less so. It's when people report negative side effects after hearing other people report the same negative side effects, for example after a change in their drug to a generic form. "The nocebo effect is essentially a self-fulfilling prophecy. If you have negative expectations, either you'll think you have those side effects or will look for those side effects."

In February, Keith took Auckland student researchers to Stanford University as part of collaborative research with its psychology department, some of which relates to the nocebo effect. "Assistant Professor Alia Crum is a principal investigator in the Mind & Body Lab at Stanford," says Keith. "Her research also focuses on how changes in our mindsets can alter our objective reality. For example, if you believe stress has a negative effect on health, that seems to have a worse outcome than if you believe stress can be a positive thing. Her work on mindsets overlaps my work on placebo and nocebo processes so we'd decided to align some of our research projects. We also have graduate students who are collaborating on research projects together."

The University of Auckland group arrived home from their ten-day Stanford visit not long before things turned ugly with Covid-19. "We were just ahead of when San Francisco went into lockdown," says Keith. "A few of us had gone to a conference in New Orleans after Stanford and that was just after Mardi Gras. Many of the New Orleans problems came from Mardi Gras because there are about a million people going into New Orleans at one time."

One of those who spent time at Stanford was doctoral student Kate MacKrill, whose thesis is on the nocebo effect. Kate had won a 2020 Bagnall Doctoral Student International Mobility Scholarship. "The trip was an amazing opportunity and a highlight of my PhD," says Kate. "Our labs do quite similar research, so we had fruitful discussions that sparked new ideas. Having met at a conference last year, it was great to get to know the Stanford researchers better and gain some new collaborators for future research projects."

Keith says the students gained knowledge and motivation from the trip. "They found it pretty inspiring to be in that environment and also to see how the research we do here is well regarded."

He says they also 'got a kick out of' being at the site of one of Stanford's controversial experiments in the 1970s. "It's a top psychology department and has a lovely campus. It's also where the Stanford Prison Experiment was conducted in a famous study by Philip Zimbardo. He assigned students to live in the basement of the psychology department – some were 'prisoners' and some were 'jailers'."

Irony then, that they should return home to find themselves locked down shortly after.

"At least we could get outside for a walk, which has been the best thing you can do for mental health. There have been pluses and minuses – people have had more time to exercise."

Kate says one aspect of her research turned out to be timely. "My PhD study investigated the effect of symptom tracking apps on symptom reporting. We had developed a new scale that measures people's beliefs about the cause of symptoms.

"After presenting the research at Stanford, they're now actually using the symptom scale for a study they're conducting to investigate people's perceptions of Covid-19."

Kate was due to attend an event in London as part of her Scholarship. "Ironically I was meant to be attending a meeting on health scares and had been accepted to present at the International Congress of Behavioural Medicine in Glasgow. They've been postponed until 2021."

Keith says research has had to change focus. "Data-gathering has paused, but there are always papers to write up on new studies and people to meet on Zoom. It's a good chance to get all those papers finished that you had lying around."

L–R: Kate MacKrill, Mel McKenzie, Stanford's Assistant Professor Alia Crum, Professor Keith Petrie, Walter Bierbauer, Sarah Rankin, Rachael Yielder and Brooke Reeves at Stanford in February.

"We need to understand what shapes resilience."
– Professor Susan Morton

Professor Susan Morton runs the Growing Up in New Zealand study.
Below: One of the 6,800 children taking part.

NOW THEY **ARE EIGHT**

Professor Susan Morton and her team of researchers will soon release their latest data from the Growing Up in New Zealand study.

Professor Susan Morton is the type who sees the silver lining in challenging situations. Take the Covid-19 lockdown and subsequent disruptions to life as we know it.

The epidemiologist and specialist in public health medicine in the Faculty of Medical and Health Sciences, has been leading the largest longitudinal study in the country, *Growing Up in New Zealand*. Every two years the researchers undertake more than 6,000 interviews over a year to collect information from the children and their families. Rather than panic that her team's efforts of the past 15 years would be disrupted, she says lockdown prompted researchers to focus on speeding up the process of modernising the technology and techniques used in interviews.

"We have been planning the development of online/digital data collection as a primary method rather than a complementary one for the future so this has accelerated the process. We need to consider how we will engage with the children aged 11, currently being planned for 2021."

Growing Up in New Zealand has been following its group of families since 2009/10, before the birth of the children. One of the challenges researchers were already looking at was finding ways to engage appropriately with the children as they grew older.

"All over the world in similar studies, as children move into adolescence, challenges increase in terms of connecting with them rather than their parents," says Susan.

"Our children are coming up to 11 years old and they're digital natives. So we've been constantly thinking about methodological innovations; how to do things differently and engage in a way that will ensure the children feel valuable by contributing their voice to inform policy."

It's a study their parents bought into more than 12 years ago and the families agreed for their children to be followed through until adulthood.

"We brought families on board with the parents' knowledge that we wanted to engage with these children until they were 21," says Susan.

"The way we collect information needs to change over time as the children become more independent and have their own voices.

"So even before Covid-19's challenges, we had set up a parallel project funded by the MBIE Endeavour Grant. That project, worth $6 million over five years, is to set up a process to co-design innovative digital methods and platforms to engage with the children as they move into adolescence. We need to recognise that researchers and academics are not very well connected into the world of 11-year-olds or 14-year-olds or 17-year-olds. We're going to be working with technology partners and with the cohort members themselves to come up with ways they would like to engage."

Covid-19, therefore, has been a reminder of the need to front-foot the technology needed.

Growing Up in New Zealand was launched in April 2008, after several years in the planning. The Government's Well-being Budget in 2019 recognised its contribution by providing a further $17 million of funding to continue following the children into their adolescent years.

The aim of the study has been to gather information about the children in the context of their families, to chart their challenges and successes, in health, education, social and peer relationships – everything that's part of life.

In the next few months, Susan and the team of researchers will release their latest report through the Ministry of Social Development, based on the data collected at the eight-year interviews.

"What we are gathering at the coal face are stories and evidence that can inform policy. This year, our approach to the report has been to tie it to the Government's Well-being Strategy, which aligns exactly with the framework that we put in place for the study when it began 15 years ago."

Families' circumstances will almost certainly change in the coming months so the next data collection will be important to track changes and their impact on well-being.

"We always try to understand what shapes resilience in the face of hardship," says Susan. "We look at what helps families to move out of situations of hardship. The information the children and families share with us allows us to provide evidence to help inform strategies to assist them and all families in New Zealand."

■ Denise Montgomery

Read more online at growingup.co.nz

ZOOMERS, RUN!

Staff in the Design Programme are drawing on the principles of gamification to teach students during lockdown.

Dr Zac Fitz-Walter (below) says games like 'Zombies Run!' are motivational and their methods can translate into online teaching.

We shouldn't be surprised that gamers could be one step ahead of the game.

The University's new Design Programme says its online teaching sessions, using the principles of gaming, have seen around 90 percent attendance, at least in the first few weeks.

"Lectures on campus don't typically get anywhere near that level," says Associate Professor Deb Polson, who heads the programme and has extensive experience in gamification at both an academic and professional level.

"But we're not teaching gaming. We're using the mechanics and principles of successful game design, to teach and motivate students."

Games take many forms, from online multiplayer to single-player mobile games, each designed for different player styles and interests.

"All of them present new rules to learn and activities to master, with a balance of difficulty and fun to keep it challenging and motivating. They encourage social interaction, a bit of competition and collaboration among students."

A well-designed game is a great motivational tool and offers insights and ideas on how to motivate students engaged in online learning.

Dr Zac Fitz-Walter, who lectures at the school, is the author of *An Introduction to Gamification*. His PhD on gamification looked at why games are so motivating, and how a well-designed game can motivate us to do things we should but don't always do "such as eating well, learning another language, or getting enough exercise," he says.

He cites 'Zombies, Run!' as an example of a game that has been particularly effective at motivating people to go for a run, including him.

"It has a narrative written by novelist Naomi Alderman, so you put it on and listen to the narrative, but you can also turn on 'zombie chases' and at times during your run you'll hear zombies breathing down your neck. If you don't run fast enough, they'll get you. It's so much fun."

Zac leads Design 100, a studio-based introduction to design methods and processes. While he and colleagues have had to adjust the programme, in many ways they were well-prepared. "Much of our teaching and learning is was what is called 'flipped classroom' or 'blended learning', which combines pre-recorded and online lectures.

"So we were already trialling different ways of teaching, which meant we had a lot of useful teaching methods ready to use when we transitioned to Alert Level 4."

■ Read more: auckland.ac.nz/GamingPrinciplesOnlineLearning

Dr Ethan Cochrane and Pena of Falevao Village in Samoa take a research break.

DNA CLUES TO SAMOAN ANCESTRY

A new study has found Samoa experienced an exponential jump in its population around 1,000 years ago.

The study, which included Associate Professor Ethan Cochrane from Anthropology, analysed modern DNA from more than 1,100 Samoans, collected as part of an earlier study which involved several US universities and the Samoan Ministry of Health. While the earlier study uncovered links between particular genetic profiles and increased risk of heart disease, the latest study, published in *Proceedings of the National Academy of Sciences (PNAS)*, analysed the same data to estimate the degree of shared ancestry of present-day Samoans with other human groups, the degree of shared genetic similarity within Samoan people and then estimated changing population size over time.

"Despite the prevailing archaeological opinion that the initial population size of Samoa would have been relatively similar to nearby Tonga and Fiji, our genetic results indicate that the founding population of Samoa was actually quite small, between 800 and 3,300 people and stayed quite low until about 1,000 years ago," says Ethan.

He says the study also found that modern Samoans come largely from Austronesian lineage (people in Taiwan, Island Southeast Asia, Micronesia, coastal New Guinea, Island Melanesia, Polynesia, and Madagascar) and share only 24 percent of their ancestry with Papuans, the descendants of the people who settled Papua New Guinea.

This is markedly lower than neighbouring Polynesian groups which, on average, share about 35 percent Papuan ancestry. The unique mixture of Austronesian and Papuan ancestry in Samoans is possibly related to the initial settlement of the islands and suggests that groups with somewhat different ancestry settled Samoa, compared to nearby Tonga, Ethan says.

"What we are learning now from this study, and others like it, is that there may have been different migrations with different mixes of people and unique demographic histories that have contributed to modern cultural, biological and linguistic diversity in the Pacific."

■ Read the full story at auckland.ac.nz/SamoanDNAStudy

IF YOU KNEW SIOUXSIE

Dr Siouxsie Wiles needs no introduction. She's been at the forefront of an information campaign about Covid-19. But who is she?

You've been a voice of reason over Covid-19. Was it hard to be heard through all the Kevins and Karens of Facebook?
It's certainly hard that social media treats valid information the same as conspiracy theories and bad science. It's fascinating as well as depressing. It's not like we would want someone who wasn't a mechanic offering advice on how to fix our car. Yet when it comes to our health, we'll accept advice from all sorts of people peddling all sorts of dubious things. Rather than get involved in fights on Facebook, I've focused on explaining the evidence and working with Spinoff cartoonist Toby Morris to make shareable easy-to-understand graphics of important stuff people need to know.

We rely on science to beat viruses like these. If I was going to university next year, what would be a good subject to study?
We may rely on scientists to develop treatments or vaccines but beating a pandemic like this takes all of us. Yes, we need people to study science. But we also need people who have studied history, mathematics, policy, arts and medicine. So study what you are passionate about. But be the kind of person who uses your skills to make a difference in the world.

What did you study at university and how did you come to study it?
I majored in medical microbiology which is the study of bacteria and viruses that cause human disease. As a teenager, I was fascinated by nasty microbes and I wanted to know how they could make people sick and how pandemics like the one we are experiencing could change the course of human history. I never actually thought I'd see a pandemic play out in real life though!

Were you always good at science?
I grew up in South Africa and the UK so went to a few different schools. In South Africa, we took tests that determined what subjects we studied so I did science and engineering subjects. When I moved to the UK as a teenager, I was given more of a choice of what to study but ended up going down the biology path thanks to an inspirational biology teacher called Mrs Roberts.

Do you have any siblings?
I have a younger brother. He's the sporty one and also studied maths at university. He now works in finance and he and his family live in Australia.

Who were or are your mentors?
I've had, and continue to have, so many mentors. My parents are incredibly influential. As mentioned, my high-school biology teacher nurtured my love for biology. I am also privileged to work with incredibly supportive colleagues in Te Punaha Mātatini – one of the Centres of Research Excellence – many of whom I consider mentors. There are too many people to list, but special mention has to go Kate Hannah, Professor Shaun Hendy, Dr Dan Hikuroa and Associate Professor Cate Macinnis-Ng. I also have some incredible informal mentors – Professor Laura Bennet and Associate Professor Simon Swift are two that spring to mind.

What do you teach now at the University?
I mainly teach about various infectious diseases and antibiotic drug discovery.

A few years ago, you had to resort to crowdfunding to raise money towards your research into antibiotic resistance. Why?
My research is still funded by donations and crowdfunding as I've not been very successful in getting funding through more traditional routes. It's not necessarily that governments are reluctant to fund infectious disease research. Rather, it's that the decision of what gets funded is made by the academics and researchers who get to sit on funding panels. The sad reality is that success rates here are low compared to other countries. I'm not sure whether my lack of success for this traditional type of funding is because my research ideas aren't considered fundable, or whether my CV isn't good enough to compete with everyone else. Whichever it is, I've taken matters into my own hands!

You made a prediction in 2017 that resistance to antibiotics would create a major problem for public health by 2050.
A growing number of infectious diseases experts, myself included, have been warning of the growing problem of antimicrobial resistance. In 2017, I turned a talk I'd been giving for a few years into a small book called *Antibiotic Resistance: The End of Modern Medicine?* It's clear that resistance is already affecting many people. Infectious diseases that were once easily treated now need more expensive drugs or injections rather than tablets.

But like climate change, resistance is a slow-burning problem and it will still be a few years before we realise just how bad it can be.

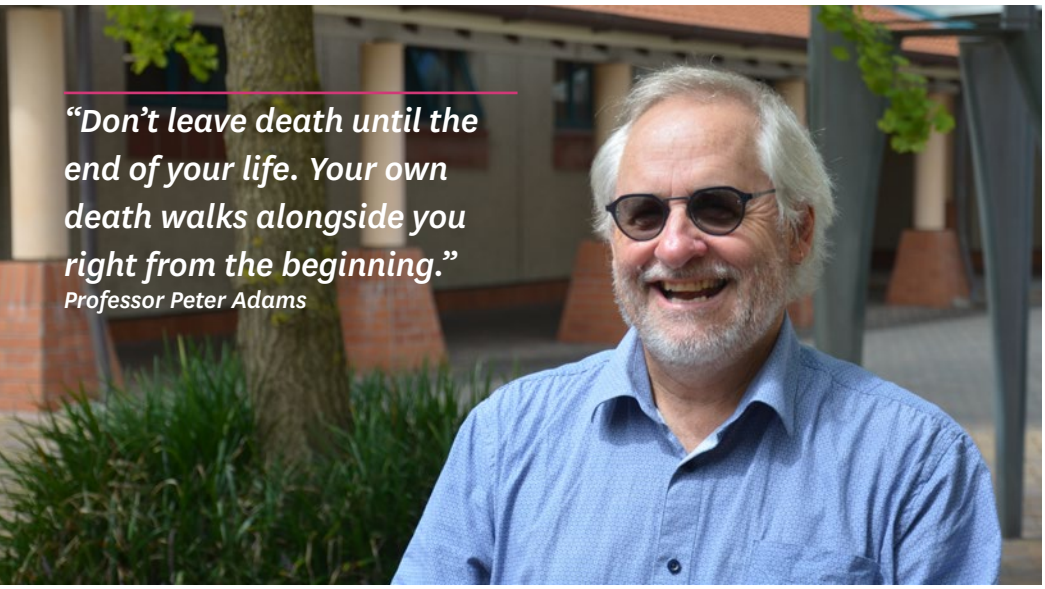
You've been very busy with media. What did you do in your lockdown downtime?
I haven't had a lot of downtime. I've tried to make sure I get some exercise – cycling is what I enjoy. I also love baking so I've been squeezing in a bit of that. I would love to be spending time playing with Lego but I've not managed to do much of that.

Do you have any hobbies?
Lego!

Did you have to dye your own hair while in your bubble?
I get my hair done at the hairdresser so it's getting more and more the colour of candy-floss with each passing day!

What was the biggest loss of freedom to you?
I haven't had time to really think about this much. But I'm sad it'll likely be a long time before I get to see my parents in the UK again.

What was the inspiration for the name Siouxsie? Is it your real name?
My name was Susanna, but everyone called me Susie. Or Suzy, Suzi, or Suzie. When I was a teenager, my best friend was a big fan of the punk-rock band, Siouxsie and the Banshees. He started spelling my name that way and it stuck.



THINKING ABOUT YOUR DEATH

Death. It's something we may have been thinking about a lot in recent months, thanks to the ominous influence of Covid-19.

Usually, our concerns focus on the death of loved ones rather than our own mortality. But Professor Peter Adams has been thinking about his own death for some time. He's written about it in his latest book: *Reflecting on the Inevitable: Mortality at the Crossroads of Psychology, Philosophy, and Health*.

In it, he describes the topic of his own mortality as "my-death", and says shuffling off this mortal coil should be a subject we discuss openly, rather than it being taboo.

"Don't leave death until the end of your life," says Peter. "Your own death walks alongside you right from the beginning. Why not embrace a relationship with one's own death throughout life?"

Easy enough to say. But how? *Reflecting on the Inevitable* uses conversations between four characters to present the challenges we face in thinking about our death, in different circumstances and at different stages of life. In reality, the conversations in which the four characters engage are effectively discussions going on inside Peter's own mind.

"A long time ago, I was very interested in how important it was to look at my own death as an integral part of my being alive. It goes right back to when I was first studying philosophy in the 1970s.

"I don't consider the actual process of dying has much to do with death as an event in life. The death of other people is a sad and scary topic, particularly of loved ones, and is well covered in all sorts of literature.

"But this book says you can't think about your own death as you think about the death of other people. I use these characters to explore these concepts."

A number of Peter's books have been written in this style, using dialogue between characters to convey concepts. "But what's different [in this book] is a lot of the key content comes through these dialogues. Usually, I use the dialogue as a way of supplementing or complementing the main points of a book. But in this one, the characters are actually developing key ideas."

The aim is to tease out strands of personal mortality from their confused entanglement with other aspects of death, such as the process of dying, the death of other people, and death's representation in concepts and images, such as skeletons, graveyards and the grim reaper.

Peter works in the School of Population Health in the Faculty of Medical and Health Sciences and is best known for his work on addiction and gambling. Previously he spent 13 years working as a clinical psychologist and the book aims to integrate some of these experiences and to link them up with broader goals in public health and various aspects of medicine.

He has written several books that make use of illustrative dialogues, and this latest one, published by Oxford University Press, is written in a way the average person will understand and relate to. "The conversations are created to be representative of conversations we might have with our own friends or family.

"The primary target would be someone with an interest or curiosity about their own death, because there's very little written in this way, as an overview of the topic. The second audience could be those working in palliative care … as well as social workers, psychologists and students."

He says it's important for people to have "a reasonably worked-out position" on the subject of their own death.

"Most of my books start conceptually and finish pragmatically. Because of my background in health, I'm interested in whether an awareness of my-death is useful and the book concludes with a discussion of ways in which we might promote such my-death awareness more generally.

"There have been various movements in health and in sociology, and even grassroots movements such as the 'Death Cafes', to try and promote death awareness. But no one's explicitly explored it using the same strategies for my-death awareness, which I'm arguing is different."

In Death Cafes you sit around, have coffee and cake and chat about death.

"The 'death awareness' movement is an interesting development. It recognises we need to normalise conversations about death. But I'd like 'my-death' awareness to be included, particularly in learning, for those working with the dying, such as doctors, undertakers and nurses, and those working with people in general, such as counsellors, lecturers and lawyers.

"The ultimate goal of this book is to promote a lifelong relationship to your own death. That's separate from one's relationship to one's dying and the death of other people. To recognise it as a territory in its own right, and how important and vibrant life is for me and how valued it is. It's part of how I construct my values around my life.

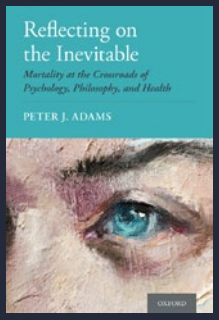
"I'm hoping the reader starts to think there are strong positive reasons to establish a relationship with death. It's troublesome to ignore it.

"It prepares you for the final period of life because that time is full of so many other things to do, like saying goodbye to people."

While in lockdown, Peter had a birthday but far from contemplating being one foot closer to the grave, he lit himself a candle on a cupcake, sang himself happy birthday, and played 'When I'm 64' on the clarinet, posting the video on YouTube. It reflects his attitude to life.

Peter has another book out soon that looks beyond death, *How to Talk About Spiritual Encounters*, written entirely in the style of café conversations. It explores why people find it hard to talk about their spiritual and religious experiences, then examines ways in which language can best be used to express them.

■ Denise Montgomery



■ *Reflecting on the Inevitable: Mortality at the Crossroads of Psychology, Philosophy, and Health*
Oxford University Press
(Book and ebook)

LOCK US DOWN IN THIS BACH

Two lecturers at the School of Architecture were recognised in the Home of the Year Awards.

Senior lecturer Aaron Paterson and Dr Sarosh Mulla have had the light shone on one of their designs created in their private practice, with architect, Steven Lloyd.

They're directors of the collaborative PAC Studio, and the house they designed on the outskirts of Wanaka was a series of courtyards, all inside a neat rectangular frame.

Wanaka Crib was described in *Home* magazine as having an intriguing, late-modernist feel with accents of mustard and green against timber, and detailing that exaggerates the aesthetic of southern green roof sheds.

"It's a masterclass in detail and colour," said *Home* editor Simon Farrell-Green. The Wanaka Crib design won 'Best Colour and Detail' in the awards announced in the magazine the same week Bauer Media closed all its publications.

Sarosh completed his PhD in Architecture by Practice in 2015. In both practice and teaching, he says he likes to create "immersive architectural experiences that improve people's lives". His research focuses on enabling people to create architecture in unusual ways and collective/community design with volunteers and community groups. This was an area he explored in his PhD project, in the Waikereru Ecosanctuary at Longbush in Tairāwhiti/East Coast.

Aaron graduated with first-class honours in architecture and arts in 2002. His research areas include post-digital media, extended reality (XR) and a commitment to realising ideas in the built world, and in architectural installations.

The pair's architecture practice PAC Studio informs all parts of their teaching and research.

"Our practice is where we test out ideas we have learned from our teaching and our installation-based research, and in turn, we use that to feedback to the students," says Aaron.

The studio also has scholarship students working for it "which adds to the tight connection between practice and academia".

Both Aaron and Sarosh are committed to sustainable design, as was their client for the Wanaka Crib. They used recycled materials such as native rimu flooring from an old hall in Clyde repurposed as a ceiling, kauri timber made into cabinet fronts and shelving, and leather, pendants and table tops from the owner's old restaurant.

The pair say online teaching has resulted in useful learning opportunities. "One example of an unexpected innovation is recording Zoom meetings in which architects talk about their drawing practice," Aaron says.

"Hearing architects unpackage their techniques is fantastic for students."

RUFF RUFF **DANCE**

Dr Mark Harvey, senior lecturer in Dance Studies, is an artist whose works explore big world issues, often through humour and a touch of the absurd.

And what could be more absurd than a video in which "the idiot guy goes crazy in the backyard", featuring Mark and his dog wearing 'Elizabethan' ruffs fashioned out of rolls of toilet paper. "We appear to have spread this virus from the animal kingdom, so I wanted to explore the lives of animals around us, in this case, the life of my dog – to follow my dog, to see things from her perspective."

Read the full story and click on the video link of the canine-human dance of Covid, at **auckland.ac.nz/DanceWithDogRolls**

JASON BAE **STAYING UPBEAT**

Maestro pianist Jason Bae has been making the best of a bad situation while in lockdown.

The Korean-born Kiwi pianist was due to take up two new roles in March – one in the University's School of Music taking performance piano classes and the other wielding the baton with the New Zealand Symphony Orchestra.

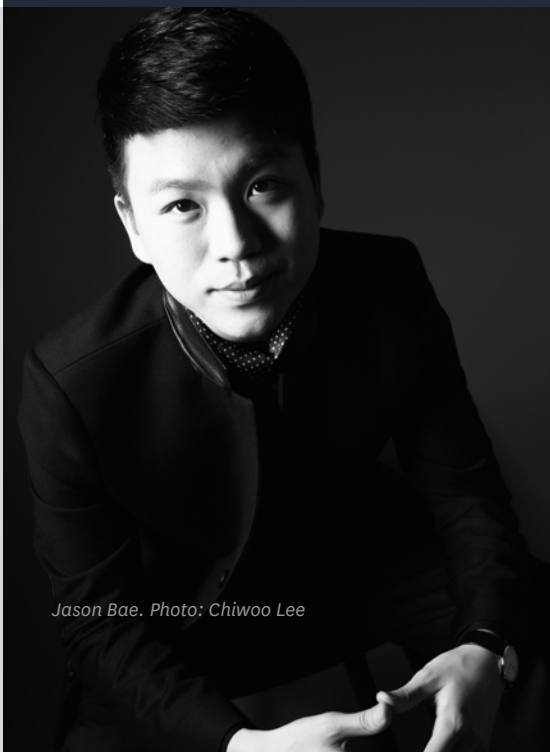
Jason, who has spent the past eight years studying and performing overseas since graduating from the University of Auckland, had been named a conductor for the NZ Symphony Orchestra Fellowship Programme.

Instead, he's been holed up in an apartment in Auckland teaching students via Zoom.

"The disappointment was quite huge initially, but in the back of my mind I knew that so many other people were going through much harsher realities dealing with Covid-19 directly."

He had landed in the country 36 hours before Korea was put on the banned arrival list and not long before Level 4 lockdown was introduced. Fortunately, his relationship with Lewis Eady Ltd allowed him to get a digital piano delivered to an apartment, one he was lucky to find in just over a day. "So I could still do my teaching with my University students online."

He was also supposed to be involved in the Graduation Gala concert. "I remember winning that competition in 2010, so it would have been nice to return to the gala and be on the podium."



Jason Bae. Photo: Chiwoo Lee

'Humanity has learned that the heavy machinery of our political, economic and social systems can be paused long enough to reconsider and adjust our climate priorities.'

LEARNING FROM CORONAVIRUS

People and governments have the chance to learn from Covid-19, and build a new sustainable climate future with a watchful eye on our Sustainable Development Goals (SDGs), writes Professor Ralph Cooney.

At the time of writing, Covid-19 had already caused the deaths of about a quarter of a million human beings. This is a disaster for most communities around the world. The impact on economies, businesses and jobs, and hence the well-being of families, is immense. For poorer countries, for those at war and for refugees, the scale of this disaster is certain to be far greater. Globally, about 700 million people live in poverty and about half of them are children – the impact of the virus on these most vulnerable populations will certainly be a lingering dark legacy for humanity. Yet within about a year, a vaccine will have been developed against the virus and global immunity may eventually become a reality.

What then has the global community learned from this tortuous experience? Humanity has learned that the heavy machinery of our political, economic and social systems can be paused long enough to fundamentally reconsider and adjust our climate priorities. Perhaps most fundamentally, the anti-science thinking promoted by populist political leaders in recent years has been largely replaced by science-informed strategies during the response to Covid-19. Human society has learned that humans can contribute independently, positively and idealistically as individuals, in small intimate groups, as families, as small and large organisations, as communities, as cities and as countries. International cooperation and support have been evident. It has learned that a pause in industrial development even for a few months has had clear benefits for the planet: reduced greenhouse gases, and lower levels of toxic gases (such as nitrogen oxides) from combustion of fossil fuels and reduced levels of carcinogenic carbon particulates.

The virus has led to a massive reduction in travel by vehicle, plane and ship. This has given us a privileged glimpse of a very different global future where climate change is not such a threat to the health of the planet, to the future of our species and to the many other species stripped of habitat and threatened with extinction.

Prior to Covid-19, the community of nations had reached a consensus that climate change was real (majorities in 40 countries, Pew Global Poll, 2016). However, the ambiguity of empirical evidence meant that climate change as an existential challenge was often displaced in public priorities and government policy by other serious environmental concerns that were more apparent and explicit (such as plastics in the oceans).

The stepwise evolution of climate change has now clearly influenced public opinion: exceptional temperatures leading to droughts and then to mega-fires, intensive storms and flooding, are clearly shaping international opinion. So what are the prospects that the trauma and development hiatus of Covid-19, coupled with the learnings from this microbiological disaster, might trigger an enhanced global political-economic response to climate change? It is too early to say for certain, but this brief 2020 glimpse of a different future must surely enhance the prospects of converging towards a more sustainable climate.

What are the practical steps underway that support the move towards zero-carbon economies? The single most important step is to replace fossil fuel technologies, especially coal, with renewable power sources. This replacement is very advanced in automotive and aeronautical sectors with a system-wide shift from internal combustion engines to electric cars (EVs), trucks and buses expected to be largely complete by 2030 and to electric airliners by 2040.

The Scandinavian countries lead the world in this electric transport revolution, with Norway already having 50 percent of its car fleet as EVs. It plans to have all its domestic flights using electric airliners within 20 years. The UK government recently signalled a ban on internal combustion vehicles by 2035. The new CEO of BP has set a zero-carbon target by 2050.

The majority of oil and gas companies are now investing massively in renewable energy technologies. Statoil (Norway) has developed the world's first large-scale wind energy farm that floats on the ocean. Following the success of class-action litigation decades ago against major US companies producing CFC agents, which caused the polar atmospheric ozone hole, similar litigation is now an increasingly effective mechanism against fossil fuel companies. The High Court in the Netherlands has instructed the government to strengthen its zero-carbon targets, which demonstrates that governments are not immune to climate litigation.

Science and universities have played a profound ongoing role in helping the world avoid the worst effects of Covid-19. What role can universities now play in helping the world move towards zero-carbon economies and all 17 of the UN's SDGs to ensure human survival and well-being? Researchers and teachers across all faculties and disciplines now need to work with governments and the private sector in practical interdisciplinary partnerships to create this safer, greater future.

■ **Professor Emeritus Ralph Cooney recently retired from the School of Chemical Sciences after 34 years.**

This article reflects personal opinion and is not necessarily that of the University of Auckland.