

THE UNIVERSITY OF AUCKLAND ALUMNI MAGAZINE

Ingenio

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SPRING 2020
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ALL EYES ON CLIMATE CHANGE *FOCUSING ON THE SCIENCE*

40 Under 40
Wise heads on
young shoulders

Covid-19 models
The weighty task of
predicting pandemic cases

Powerful proverbs
Dr Hinemoa Elder's
whakataukī for a good life

BIG PICTURE





FLASH DANCE

During the rare times students were able to be on campus in 2020, the popular and lively club expos were held. This image of a flash mob was captured during the opening of the Semester Two club expo, held in Grafton Atrium on 30 July. Photographer: Richard Ng

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SUSTAINABLE

The 'plastic' used to wrap *Ingenio* is 100 percent degradable and recyclable. *Ingenio* is also printed on environmentally friendly paper stocks.



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Professor David Noone and the Auckland
scientists using their initiative with climate change

Ingenio

The University of Auckland
Alumni and Friends magazine
Spring 2020
ISSN 1176-211X

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Cover concept: Jacinda Torrance

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Editorial

ACTING WITH URGENCY



If the Covid-19 crisis has taught us anything, it's that it is possible to act swiftly and decisively when faced with an acute threat, and the joint efforts of many matter when responding to mammoth challenges.

We have witnessed this in the way that our own Government and many others have responded to the crisis. Globally, universities have also shown outstanding speed and agility in their responses to the pandemic. At our own institution, staff and students have done an incredible job rising to the challenges brought on by Covid-19. Within a matter of days, teaching moved online ensuring continuity of learning for our students at home and overseas, and our researchers are still contributing to the fight against the pandemic in many ways.

While the current focus is on the immediate consequences of the pandemic, it's imperative that we use the economic recovery to build more resilient social foundations, reduce inequalities and fast-track New Zealand along the path towards a sustainable zero-carbon future.

In the words of European Commission president Ursula von der Leyen: "Sooner or later we will find a vaccine for the coronavirus. But there is no vaccine for climate change."

According to the Intergovernmental Panel on Climate Change (IPCC), we have until 2030 to halve global carbon dioxide emissions if we are to avert irreversible and catastrophic climate change.

We must act with urgency and decisiveness in tackling the climate crisis. Reaching New Zealand's goal of transitioning to a zero-carbon economy by 2050 will require far-reaching

societal change and the collective efforts of all actors in society.

Universities have a critical role to play in driving New Zealand's transition to a low-emissions economy and, as civic institutions, we have a responsibility to do so.

As the cover story in this edition of *Ingenio* illustrates, our research and teaching efforts span widely in producing the knowledge, skills and innovations needed to address this urgent challenge. Through our partnerships and collaborations with government, industry, community organisations and other stakeholders, we have the opportunity to make an impactful contribution to address the defining issue of our time.

Yes, it's a challenge, but 2020 has been all about challenges.

There has been some positive news in other areas in recent months. In September, the Times Higher Education (THE) World University Rankings 2020 showed Auckland had jumped 32 places to sit inside the top 150 universities in the world for the first time since 2011.

Around the same time, Dr Rhys Jones, a senior lecturer in the Faculty of Medical and Health Sciences, received the Prime Minister's Supreme Award in the 2020 National Tertiary Teaching Excellence Awards, the second year in a row an Auckland academic has won the grand prize (see page 15).

What a grand prize it will be for society if some of the University's best and brightest minds can help solve the world's climate challenges as well.

PROFESSOR DAWN FRESHWATER

Vice-Chancellor



“We represent a group where climate is very strongly influencing ways of life, and where the survival of communities is really threatened.”

– Professor David Noone, Climate Science Initiative, University of Auckland

Few countries were ready for the pandemic that’s hit the world. So has the Covid-19 crisis taught us anything about ameliorating the threats of climate change? The world is heading to be 1 degree warmer in 2040, leading to fires, floods, heatwaves and scarcity of water and food. Aotearoa has committed to net-zero emissions of all greenhouse gases, other than biogenic methane, by 2050. But is that enough?

Finlay Macdonald talks to scientists at the University, including those involved in the new Climate Science Initiative, who are committed to Earth’s survival. ▶



Professor David Noone is the Buckley-Glavish Professor of Climate Physics.
Photo: Elise Manahan

EYES ON THE BLUE MARBLE



◀ **W**hen Professor David Noone explains the hydrologic cycle in lectures, he likes to illustrate it with the famous image of Earth, the “blue marble”, taken from space by the Apollo 17 astronauts in 1972. Yes, there are conventional infographics that explain the way water moves in and out of the atmosphere quite well, but that first space ‘selfie’ really has it all.

“I’ve been using it for years and it’s very effective,” says the Buckley-Glavish Professor of Climate Physics.

“I often ask the question, when you look at this thing, what do you see? You see the water cycle everywhere. You see the clouds, Antarctica, the ocean is dark blue, you see the landscape, the brown bits don’t have water, the green bits do. You see all sorts of subtle characteristics.”

More than that, though, you see home.

“When you look at that picture of Earth, you think, yeah, that’s actually where I live. That’s my home. So there is that connection. And I show that because that’s how I feel. I’m delighted to share that with people.”

The image reinforces the sense of fragility the blue marble faces with climate change. The headlines are about global warming and rising seas, but we are belatedly realising that climate change affects every aspect of society. A considered response to climate change requires a multi-faceted, audacious approach that needs to engage researchers across many disciplines.

That perspective is behind the establishment of the University’s new Climate Science Initiative, which David came to Auckland to lead. Not only in the sense that we are all connected to our planet and what happens as its climate changes, but also that many scientific disciplines and fields of research must combine

Professor Richard Easter says riding a bike is “my reminder to myself that the climate is changing”.
Photo: Elise Manahan

“One of the questions we ask ourselves as a department, a faculty and as a university is what are the big questions we’re facing as a society in the 21st century, and where can we make a difference?”

– Professor Richard Easter, Head of Physics, Faculty of Science

and connect for us to understand and mitigate the effects of that change.

The potential to bring scientists and their work together to create something greater than the sum of its parts was what attracted the Australian-born scientist from his previous position in the College of Earth, Ocean and Atmospheric Sciences at Oregon State University. He detects a global shift in the

“It’s just been far too easy to kick the can down the road.”

– Associate Professor Jay Marlowe, Centre for Asia Pacific Refugee Studies, Tāwhārau Whakaumu

climate science community from pure research towards “actionable science” that contributes tangibly to planning and policy.

“There are voices across the Pacific, New Zealand being central to that, that speak loudly together. And we represent a group where climate is very strongly influencing ways of life, and where the survival of communities in the future is really threatened.

“This part of the world is a hotspot for these changes. One of the things I’m really excited about is what we can do here to grow a broad community, a collective alliance that, as well as being science-focused, is evidence-based and rigorous.”

The Climate Science Initiative, underwritten by the Vice-Chancellor’s Strategic Development Fund, aims to foster excellence in research and focused expertise and training in quantitative climate science. It is working to facilitate collaboration, encourage interdisciplinary research, train the next generation of leaders in climate science, and engage the public in climate science that informs public policy.

Professor Richard Easter, Head of Physics in the Faculty of Science, says the University has an essential role in shaping future research.

“One of the questions we ask ourselves as a department, a faculty and as a university,” he says, “is what are the big questions we’re facing as a society in the 21st century, and where can we make a difference? Also, what are the most intellectually challenging questions for us as scientists and researchers?”

“For physicists, climate is very much one of those things ... and using that understanding to predict how [the climate] is going to change as we force it in particular directions is obviously critical in the 21st century. In the longer term, it’s seeing how that knowledge can contribute to the formation of policy by experts, but also by society at large.

“The other part of it, possibly outside of this initiative, but it’s definitely something we have an eye on as physicists, is what can we do to develop technologies that will mitigate the impact of climate change or allow us to move away from the use of fossil fuels?”

The emphasis on research and knowledge that has application in the real world is hardly unique to climate science, of course. But the urgency with which that applicability is pursued is perhaps what distinguishes the field.

The Climate Science Initiative research responds to urgent real-world goals. Aotearoa

has committed to net-zero emissions of all greenhouse gases, other than biogenic methane, by 2050.

“When I was in school back in the last millennium, climate change was a much simpler thing,” says David. “It was going to happen in the future. Now we have almost the reverse problem. It’s vastly more complicated because it’s happening now, and we need solutions now.

“The priorities are shifting towards things that have time horizons, where actions could be taken, policies could be put in place, where solutions can be found quite quickly.”

IMPACT ON ASIA PACIFIC

In the Pacific region, those solutions could be required within three decades. A recent paper in the University of Oxford’s *Forced Migration Review* referenced research that the Pacific Islands’ vulnerability to the impact of climate change could see up to 1.7 million people in the region migrate or be displaced by 2050.

Associate Professor Jay Marlowe is co-founder of the newly established Centre for Asia Pacific Refugee Studies, Tāwhārau Whakaumu, a research centre within the Faculty of Education and Social Work. The centre is looking to develop responses to both conflict and climate-induced displacement across the Asia Pacific region, which he says aren’t necessarily distinct.

“If we think about climate change and the movement of large numbers of people, particularly in cases where there might be scarce resources, it’s often the politics of difference that justifies who gets access to resources and who doesn’t.

“Where it may have been about a lack of arable land due to drought, suddenly access is about your ethnicity or nationality or religion,” he says.

“Social grouping or political opinions put you in certain groups and those groups either bestow particular privileges or make it so you’re effectively excluded from having access. That creates context for conflict.”

He says an example would be the Syrian civil war.

“There was a major drought in the Fertile Crescent that preceded that civil war, likewise recent conflicts within Somalia tell a similar tale.”

Jay says close to 25 million people around the world were displaced last year as a result of severe weather events. Seven of the countries most at risk to such weather disasters were in the Pacific.



Associate Professor Jay Marlowe says we need to examine the contemporary ways displacement in our region could occur as a result of climate change.

Centre for Asia Pacific Refugee Studies

The Centre for Asia Pacific Refugee Studies received set-up funding from Potato Productions, a Singapore-based multi-media company.

This year it also received support from the Vice-Chancellor’s Strategic Development Fund for two masters students in 2021. At the time of writing, another significant investment was being finalised from an overseas donor.



Dr Jemaima Tiatia-Seath says Pacific peoples forced to relocate face a higher risk of mental health and well-being challenges.

◀ He says many of the climate-change hazards that could displace communities in the Pacific Islands are slow-onset events, but mean we should examine the contemporary ways displacement in our region could occur.

“Salinification of the water, rising sea level, drying out of land. We need to consider at what point these things cross the threshold and create a danger to life? What point do we ascertain that there aren’t solutions within a country to respond to it?”

Jay says when people start crossing borders, or even within borders, it creates political tension. He says countries such as Fiji are taking proactive steps to anticipate how, if coastal communities have to move, it can be done in a way that doesn’t create conflict.

In 2019, the United Nations recognised that in situations where sending people back to their own country would violate their lives, receiving states have an obligation to protect them.

“But it’s just been far too easy to kick the can down the road. We’re coming to the point where we can’t just keep kicking the can, there are too many cans in front of us and we need to start picking them up.”

EFFECTS ON MENTAL HEALTH

One issue still being picked up is the effect of climate change on mental health.

Dr Jemaima Tiatia-Seath is Co-head of School, Te Wānanga o Waipapa, School of Māori Studies and Pacific Studies. She began a three-year project in 2019, funded by the Health Research Council, looking at how best New Zealand can help support the mental health and well-being needs of Pacific climate-change migrants.

Jemaima says Pacific peoples forced to relocate face a higher risk of mental health and well-being challenges brought on by the stress of climate-induced migration, including cultural loss.

“If they move to New Zealand, our health system needs to be prepared to deal with that,” she says.

If border restrictions are ongoing as a result of Covid-19, that will add an extra level of stress to those wanting to flee the effects of cyclones, floods or drought.

“Climate change has a direct impact on the mental health of those in the Pacific. With the increased frequency and severity of natural disasters, there’s a compounding effect.

“Natural disasters also disrupt access to public health services and can obstruct access to medication and care.

“Take, for example, Cyclone Heta in 2004, the impact of which is still being felt by Niueans. There’s the historical trauma of loss for some, as well as people’s livelihoods and the infrastructure that was destroyed.”

“It’s also important to frame research in a way that makes sense to Pacific peoples.

“For instance, if there is climate change-induced migration, and a family must uproot, they would be leaving behind their loved ones and the burial grounds of their blood, their being, their everything.

“Their being is completely embedded in the land and with their ancestors ... for most, there’s spiritual and historical connection.

“That’s important to most Pacific peoples and it doesn’t take a rocket scientist to establish that there will be an impact upon people’s well-being in relation to such disconnection and loss.”

“Climate change has a direct impact on the mental health of those in the Pacific.”

– Dr Jemaima Tiatia-Seath, Co-head of School, Te Wānanga o Waipapa, School of Māori Studies and Pacific Studies

WATER RESOURCES

Another issue in the Pacific is access to water. David Noone says there are “a couple of really dominant areas where there’s a critical need for work, and actionable outcomes are needed”.

Climate change is already being felt not just on low-lying islands and atolls of the Pacific region, but also on higher mountainous islands.

“Water availability is remarkably scarce, and the quality of water therefore becomes important,” says David.

“There’s inundation by seawater, which influences water supplies, variability in rainfall and shifting rainfall patterns. There are issues associated with all of that. Ecosystems themselves tend to filter clean water. If those have been degraded by all sorts of different uses or lack of ability of ecosystems to adapt to the new environment, again the water is threatened.”

The other critical area for research is close to home – commercial agriculture and the likely impact of drought and water shortages, at the same time as the population is increasing and, with it, the demand for food.

As with sea-level rise and weather events in the Pacific, we are already witnessing the tangible impact of climate change. David recalls a lake near his hometown of Ballarat, north-west of Melbourne, that dried up a few years ago. Similarly, Cape Town in South Africa essentially ran out of water in 2018.

“These are quite shocking events,” David says. “How we use water has to become increasingly more efficient – despite the fact that as temperatures rise, evaporation rates rise very quickly. There are real challenges there.”

Associate Professor Anthony Fowler, from the School of Environment, agrees but cautions against attributing Auckland’s current water shortage entirely to climate change. He says few lessons have been learned since Auckland’s drought of 1994. (See sidebar, page 13.)

“I’m not saying that we shouldn’t panic at all. I did my PhD on climate change impacts on water resources in the Auckland region some time ago, so it’s been a concern of mine for a long time. The climate-change scenarios are for a decrease in rainfall and the record for the past few decades is consistent with that. In addition, we have increasing temperatures, which increases evaporation. We’re right to be concerned.”

DELICATE CONNECTIONS

David Noone’s research focuses on the water cycle and how land surfaces and the atmosphere work together – a deep connection that he says is still poorly understood.

In turn, there’s a delicate connection between the water moving between land and atmosphere and various other greenhouse gases, including carbon dioxide and methane. Better understanding of these interactions will mean better data on which to base climate models, and therefore our ability to predict and mitigate the impact of change.

Richard Easter points out that climate models are not, as some may believe, simply best guesses about what will happen in the future. They are built on the kind of deep scientific research already underway, and which the Climate Science Initiative and the various disciplines it embraces aim to accelerate.

“What you’re doing is fundamental physics,” he says. “Equations that describe fluids and radiation, the way the radiation impinges on the atmosphere, how it interacts with the molecules it finds there.

“There’s quantum mechanics, there’s thermodynamics, there’s fluid mechanics. These are part of the bedrock understanding of the world that physics provides ... The challenge is being able to implement those as computer code in a way that’s tractable, that allows us to get granular information that’s reliable over a long period of time.”

Take clouds, for instance. We know that as the world heats, water is picked up from the oceans more quickly, which forms clouds, which reflect radiation back into space ... how do these feedback loops affect rainfall patterns, regional temperature variation and sea-level rise? The uncertainties inherent within these interactions, and indeed within the differences between an average 1.5 degrees and 2 degrees Celsius warming, mean the entire concept of climate change must be seen in the round, not as some inevitable linear process.

Working at this crossroads of radiation, clouds, atmospheric and oceanic circulation and the hydrological cycle is Dr Tra Dinh, also of the Physics Department, whose primary fields of research include cloud

Interesting tree fact

Associate Professor Anthony Fowler, from the School of Environment, says kauri trees can tell us a lot about past droughts. “I started looking at kauri tree rings as a proxy for drought in Auckland as a masters student,” he says. “Kauri tend to lay down quite wide rings in dry years, but if the drought goes over two years then you have severe stress. “As well as examining the rings of trees [a field known as dendro-climatology] I look at the anatomy of their cells. Cell structure can reveal a history of drought over the last several thousand years.”



Dr Melissa Bowen says over 90 percent of the heat going into the climate system ends up in the ocean.
Photo: Billy Wong

behaviour – specifically what are known as “cloud-resolving models” or CRMs. These are relatively high-resolution models used to describe cloud properties, and are useful on a regional, but not global, scale.

Global climate models (GCMs) differ in that they are lower resolution but have been invaluable in advancing our ability to understand and predict the Earth’s climate over longer time scales.

Says Tra: “Given that GCMs cannot resolve clouds explicitly, the impacts of clouds on atmospheric radiation remain the largest source of uncertainty across our predictions of global warming.”

Using a combination of both models, Tra studies how atmospheric radiation and circulation affect clouds (and vice versa) at both cloud scales and global scales. Ultimately, her research will lead to improvements in the representation of clouds within the global model. At the same time, she is studying how the water cycle changes in response to global warming – using theoretical and mathematical tools to quantify how atmospheric radiation governs the strength of atmospheric circulation, which drives condensation of water vapour and subsequent precipitation.

“Once such physical and mathematical frameworks are established, they can be used to predict with confidence how precipitation and our water resources will change with warming,” she explains.

Dr Melissa Bowen, from the School of Environment, has been immersed in the Deep South Challenge, a government initiative bringing together physical science, predictive climate modelling and social science to help

guide planning and policy. Melissa has led the oceanographic project, a key component of which is measuring ocean temperatures.

“The ocean is really the flywheel in the climate system because it holds so much heat,” she says. “Over 90 percent of the heat that’s going into the climate system ends up in the ocean, and we’re actually able to measure that now.”

Key to those measurements are robotic floats that can be programmed to descend to depths of up to 2,000 metres – roughly half the overall distance to the ocean floor, and the half that is changing the fastest as a result of global warming. It is also, logically, the section of ocean most in contact with the atmosphere, from where it is drawing the heat. Within ten years, says Melissa, there will be floats that can go to the bottom to measure the darkest part of the abyss, too.

Melissa’s focus is oceanic circulation – the large waves within the ocean, not the kind on top that you surf on – and how they influence the interaction of heat between the atmosphere and the water, and how that affects climate variability. “We focus a lot on trends,” she says. “But actually there are some really big fluctuations that happen too.”

Aside from the oceans’ overall warming, there are specific changes occurring.

“What we’ve seen with the waves is that as they are coming across, they speed up the East Australian Current, which is putting warm water into the Tasman, so preconditioning us for marine heatwaves.

“But we do also think the ocean is modulating the heat transferred to the atmosphere through the dynamics of ocean circulation.”

Melissa says Auckland (and New Zealand in

general) is ideally placed to make significant contributions to the global network of research in the field.

“It’s great because the core group of us can get together and discuss physical climate processes. There is so much climate research going on at the University, everyone has it as a strand within their different disciplines because it is so integral now, and I really see the Climate Science Initiative as a forum to facilitate communication and collaboration.”

Tra Dinh echoes that sentiment.

“Collaboration among scientists in climate science and related fields will allow us to accelerate progress in research and promote our research in New Zealand and worldwide.”

Richard Easter also sees the importance of the centre as a conduit for much-needed expertise as climate science becomes central to planning and management at national, regional and international levels.

“There’s no other big university between us and the equator,” he points out. “As a Pacific country, we engage with a large slice of the world. And so part of our brief is that we generate the people – for example, every local council in New Zealand is going to need people who understand climate science. They’re not necessarily going to be researchers, but we’re going to be generating a deeper pool of expertise to draw on.”

As Richard puts it, we have already “cooked” a certain amount of change into the climate system, so we need to accept the world as it now is and will be. It’s one of the reasons he rides a bike – partly because it makes sense in Auckland and keeps him fit, but also because it’s “my reminder to myself that in fact the climate is changing”.

The more urgent questions now revolve around adaptation and preparation, and what kind of world we want our children and grandchildren to inhabit. One of the dangers, he agrees, is the sense of pessimism – the “doomerism” – that arises from relentless negative reportage about worst-case-scenario predictions.

“Because all of this doesn’t mean there aren’t solvable problems,” says Richard.

Science is innately optimistic, anyway, at least in the sense that seeking solutions to problems is its essence. And, as David Noone suggests, if blanket coverage of climate change inspires young people to stick with science at school and into tertiary study, that would be a good thing.

“It sometimes seems that science is somehow external to the human psyche,” he says. “I think we’re all scientists, it’s just that some people get degrees in it. Everybody is inquisitive. We’re all in this together. That’s one blue marble that we stare at from space. It’s not the scientific Earth and the other Earth. It’s one.” ■

AUCKLAND’S WATER SHORTAGE

From November 2019 to May 2020 Auckland received 40 percent less rainfall than normal. The long-range forecast predicts well below average rainfall for spring and bans on outdoor use of water may remain until mid-2021.

Associate Professor Anthony Fowler says there are a number of factors that have led to Auckland’s water crisis. Climate change is a contributor, but it’s complex.

“I get a little annoyed by people talking about 200-year droughts. Yes, there was an intense drought this summer, but it was about three months. The water supply system is supposed to cope with two years of dryness, not fall over when you have three months of drought.”

He says in the 1980s there was a major study done that presented options on how best to maintain Auckland’s water supply.

“We were going to build another reservoir in the Hunua Ranges, in the lower Mangatāwhiri, but that’s never been built. There was also a scheme planned for the west of Auckland, where riverflows in winter would be pumped into storage for use over summer. That scheme was quite a revolutionary idea for Auckland, but then the 1994 drought came along.”

He says that’s when a lower-ranked option from the study – drawing on the Waikato River – was elevated to the top of the list.

“When you have a water crisis like in 1994, you look for emergency solutions. The Waikato river was the emergency solution.

“Then the drought broke and we had an absolute deluge, yet politicians still wanted to build the pipeline to the Waikato river. It was a fait accompli even though it wasn’t on top of the recommended list previously.”

In 2002, the pipeline to Waikato was put in.

“That’s where Council wants to go again. Summer-time pumping of the Waikato is a bad idea for Auckland as well as Waikato ... and will cause political angst in the future.”

Three years ago Anthony, a hydro-climatologist, warned Auckland could expect a decade of dry summers. He says the care of water requires careful assessment of historical records and the creation of contingency plans.

“Auckland is a growing city. We’re always needing more supplies. You have to build capacity. This city shouldn’t have a water supply problem related to climate change.”

He says if supply keeps well ahead of the demand curve, and people keep conserving water, it partly buys insurance for any future climate surprises.



PRIDE OF THE SOUTH

Head of the South Auckland Campus Rennie Atfield-Douglas says Te Papa Ako o Tai Tonga is a very welcoming place.
Photo: Billy Wong

Fits and starts for Tai Tonga in 2020 but already a lot of love

The opening of the South Auckland campus, Te Papa Ako o Tai Tonga, in Semester One was a big moment for the University. It's the first time it has had a dedicated campus for the community, after offering the Education and Social Work (EDSW) programme on the Manukau Institute of Technology (MIT) campus for 20 years.

Head of the South Auckland campus Rennie Atfield-Douglas says the Manukau location has been great for students, who may struggle

with transport costs and family commitments. "Students are happy to finally have their own dedicated space, which they know is all theirs. Many don't have study spaces at home."

But just as the students were getting to know each other and their lecturers, along came lockdown in March and again mid-August.

"To be honest my new South Campus role hasn't turned out quite how I envisioned it," laughs Rennie. "Covid-19 has meant I can't go out into the South Auckland community, connect with people and host them on campus. But the opportunities will come soon, I hope."

The opening gala planned for April didn't happen, but Rennie is looking ahead to 2021.

"We'll do a one-year anniversary," he says.

As well as EDSW students, Tai Tonga has New Start learners and those doing the Tertiary Foundation Certificate in preparation for university. "The goal is to offer other courses here when the time is right," says Rennie.

He says there's been real benefit in the campus being small, with shared facilities.

"That's been a blessing in disguise because students and staff interact daily in the kitchen space, for example, and it seems to have really helped embed the welcoming culture we have there. We have a very whānau feel."

NEW ROLE FOR JENNY DIXON

A familiar face to many alumni is taking on a new challenge

Professor Jenny Dixon, Deputy Vice-Chancellor (Strategic Engagement) is leaving the University.

Jenny is taking up the role of Provost for Universitas 21, which is a global network of 27 research-intensive universities, including Auckland. The role of Provost is similar to that of a chief executive. Jenny is replacing Professor Bairbre Redmond (University College Dublin), who was the first Provost of Universitas 21.

The aim of the network is to share and collaborate across borders, among the universities' 1 million students and 200,000 staff. Jenny will work closely with the Chair and executive committee of presidents and

vice-chancellors, the senior leaders from each university, and other key groups.

"The Provost is responsible for the secretariat, which is housed at the University of Birmingham, UK," she explains. "There are multiple time zones to navigate for virtual meetings which will be quite a challenge to manage from Aotearoa."

Jenny's role at the University for the past eight years has been to lead international, alumni and development, government and city relations. More recently her portfolio has been extended to include marketing and communications. She has also had oversight of the North Asia Centre for Asia Pacific Excellence and Auckland Confucius Institute. She has represented the University in a number of international networks including the Association of Pacific Rim Universities, and knows Universitas 21 well, having chaired the U21 Senior Leaders' Group for four years. But 2021 will bring a new set of challenges. "It's a very unusual time to be taking over as Provost, given current and likely future restrictions on travel," she says.

"Like its member universities, the operation of the network has been really challenged by recent events. But U21 is engaged in a number of creative responses and looking ahead to facilitating new activities and business."

Jenny takes up the role in January 2021 for a term of three years, based in Auckland.

Professor Jenny Dixon is the new Provost for Universitas 21.
Photo: Elise Manahan



TOP TEACHER 'OUTSTANDING'

Rhys Jones teaches Māori health to Auckland medical students

The Prime Minister's Supreme Award in the 2020 National Tertiary Teaching Excellence Awards went to Dr Rhys Jones (Ngāti Kahungunu) from the Faculty of Medical and Health Sciences in September. It's the second year in a row a University of Auckland educator has won; Andrew Eberhard (Business) did in 2019.

Rhys, Co-Director of Teaching at Te Kupenga Hauora Māori, was described as an "outstanding champion of teaching and learning who weaves values from te ao Māori, kaupapa Māori frameworks, Indigenous peoples' human rights and medicine".

But Rhys says teaching didn't come naturally. "I'm an introvert, so it was a challenge for me in the early days. I'm not someone who likes the limelight."



Dr Rhys Jones won the Prime Minister's 2020 National Tertiary Teaching Excellence Award at an online ceremony in September. Photo: Elise Manahan

ANOTHER HONOUR FOR JANE HARDING

The 2019 Rutherford Medal winner adds Dame to her title

Internationally renowned neonatologist Distinguished Professor Jane Harding became a Dame Companion of the New Zealand Order of Merit in the 2020 Queen's Birthday Honours.

Jane's research at the Liggins Institute has led to paradigm changes in the care and treatment of babies before and after birth, across the globe.

"Jane has always been a trailblazer," says the director of the Liggins Institute, Professor Frank Bloomfield.

"Her reputation means she is in great demand around the world as the leader in her field."

Jane's research on the impact on brain development of low blood sugar in premature babies led to a simple, inexpensive oral treatment with dextrose gel that has kept many babies with their mothers rather than sending them to neonatal nurseries.

It has improved breastfeeding rates, with potential benefits for long-term well-being.

The research has been adopted around the world and Jane now leads a major research programme into the school-age outcomes of babies at risk of low blood-sugar levels. "We're assessing the long-term outcomes after randomised trials of treatments given around the time of birth, from two years to as long as 50 years later."

Jane takes great joy in her work.

"It's rewarding to watch the next generation of researchers grow and develop and, of course, to know that our work will help babies and their families in the future.

"There are many great up-and-coming researchers at the Liggins Institute. I'm sure they will be much better than me."



MORE NEWS & RESEARCH

Keep up to date with University news auckland.ac.nz/all-ua-news-stories

Distinguished Professor Dame Jane Harding: a trailblazer in neonatal health.

PROVEN NURSING QUALITY

University awarded \$18.6m to train nurse practitioners

The quality of the School of Nursing has been acknowledged with a \$18.6 million contract from the Ministry of Health to lead the training and placement of nurse practitioners (NPs) in New Zealand. The contract replaces an existing pilot due to end in December.

The new funding enables the programme to support the transition of nurse practitioners into employment. The programme will be delivered in partnership with the University of Otago, Northland primary health entity Mahitahi Hauora and Auckland Pacific health provider The Fono.

“This is an acknowledgment of the high standard of teaching and calibre of graduates delivered by our School of Nursing,” says Professor John Fraser, Dean of the Faculty of Medical and Health Sciences.

Nurse practitioners work across the health



Dr Julia Slark, Head of the School of Nursing.

sector. They can deliver the full range of primary care services in a similar way to general practitioners (GPs), including prescribing medication and making referrals to medical specialists. Their role contributes to addressing the shortfall of GPs, particularly in parts of rural and regional New Zealand.

“With the additional funding to train more Nurse Practitioners over the next four years, and an emphasis on equity, we expect the opportunity to deliver healthcare back in the community will be particularly attractive to Māori and Pacific students,” says Dr Julia Slark, Head of the School of Nursing. “There are so many employment opportunities in health for anyone with strong connections or a desire to serve communities outside of the main centres.”

Read the full story: auckland.ac.nz/nurse-practitioners-contract

SET TO TACKLE IMPORTANT TASKS

Alumnae both add ‘commissioner’ to their CVs

Two University of Auckland alumnae have been appointed to significant government roles. Professor of Indigenous Studies Tracey McIntosh (Ngāi Tūhoe) has become a commissioner for the Criminal Cases Review Commission (CCRC).

Morag McDowell (LLM, 1997), a coroner in the Auckland region since 2007, is the new Health and Disability Commissioner.

Tracey is co-head of Te Wānanga o Waipapa in the Faculty of Arts and is also the Chief Science Advisor for the Ministry of Social Development. Her research field includes incarceration, particularly of Māori and Indigenous peoples, inequality and social justice. Tracey has been appointed as one of five inaugural commissioners to the CCRC, an independent Crown Entity set up to investigate possible miscarriages of justice and will serve a four-year term. Colin Carruthers QC, also an alumnus,

is the CCRC’s Chief Commissioner.

Morag, whose legal practice has had a strong focus on healthcare law, says being the Health and Disability Commissioner aligns closely with her passion for health and disability law. “I’m excited and privileged to take on the role and I’m fully committed to promoting and protecting the rights of the users of health and disability services.”

She says her past roles sit well with her latest at the Health and Disability Commission. “They’ve taught me the importance of fair, timely, transparent and culturally appropriate processes, where people are engaged and given the opportunity to be heard.”

Professor Tracey McIntosh, left, and former law lecturer Morag McDowell: a focus on justice in their roles.



IN THE DEEP END

Ōtāhuhu opera singer's artistry rewarded with a rare opportunity

Tenor Manase Latu is set to join the Metropolitan Opera's Lindemann Young Artist Development Programme in New York. The School of Music graduate is the first singer of Tongan heritage – and one of just two of New Zealand or Pacific origins – to gain a place on the prestigious two-year programme, which attracts world-class applicants from around the globe.

Manase will be joined on the programme's 2020-21 roster by another former University of Auckland student, New Zealand-born Samoan bass-baritone Samson Setu. The singers have been friends since they met as voice students at the University and performed together in Auckland-based quartet The Shades.

"I was offered the place within an hour of auditioning and ... I was shocked," Manase says. "I took about a month to accept because I was just trying to come to grips with how big this opportunity was. Then I told myself to jump in the deep end."

He has been studying at the Royal College of Music in London, but came home ahead of the borders closing. "My time there gave me the chance to concentrate on languages as well as the singing. It's a demanding course vocally and physically, but so worthwhile. At Auckland there was a lot of academic writing, which is beneficial, but being in a conservatory model at the Royal College hones in on performance, language and diction, and it was great to be immersed in that."

He says he knows this opportunity will open doors. The Metropolitan Opera, aka 'the Met', is North America's largest classical music organisation. Founded in 1883, it brings together leading singers, conductors, composers and musicians and has hosted performances by some of the greatest artists. It established the Lindemann programme in 1980 to identify and develop extraordinary young talent.

He is "excited and nervous" about the opportunity to mingle with leading opera figures and, in his second year, to perform on the Met's main stage. It's the latest achievement for the 24-year-old from Ōtāhuhu, who graduated in 2018 with honours in classical performance (voice) under the tutelage of Dr Te Oti Rakena.

"Manase came to work with me when he was only 16," says Te Oti. "He had a young instrument with a beautiful free quality, but what distinguished him was his artistry, which was mature and refined for his age. It was clear he was on a trajectory to the international stage."

Manase has drawn inspiration from the likes of Kiri Te Kanawa, Jonathan Lemalu and, more recently, alumnus Moses Mackay and Pene and Amitai Pati of classical trio Sol3 Mio.



Manase Latu has been studying at the Royal College of Music in London, but came home because of the pandemic.

"I was going to buy a chicken panini from the school tuck shop and the choir conductor pointed to me and said, 'Hey, you look like you can sing!'"

"I saw these people sing and was inspired to get involved. That snowball effect is driving the next generation of Pacific singers," he says. "Being Tongan, I grew up in the church and music is so embedded in our culture. I grew up in a very musical background without really knowing it."

His first foray into formal singing was joining his school choir at Saint Kentigern College after a chance encounter with the conductor. "I was walking around one lunchtime going to buy a chicken panini from the school tuck shop and the choir conductor pointed to me and said, 'Hey, you look like you can sing!'"

"I thought, ok, why not, lunch can wait. So I went with him into this music room and sang a couple of songs."

That led to an invitation to rehearsals and so began his road to a singing career.

"So that just popped out of nowhere and changed the course of my life," says Manase.

"Just being in the right place, at the right time, with the right people.

"That's what I think about getting into this programme, too; everything aligned. It was luck. But luck is when opportunity meets preparation. A lot of hard work has gone into this, too."

Story: Pete Barnao



DOING THE NUMBERS

The faces of Shaun Hendy and Siouxsie Wiles have become very familiar since March. They're just two names in a national group of dedicated scientists working on the Covid-19 crisis. **Jonathan Burgess** talks to some of those behind the scenes at Te Pūnaha Matatini, a Centre of Research Excellence.

“This has felt very much like living in history and having our team be a really key part of it.”

Kate Hannah, executive director, Te Pūnaha Matatini

The written proposal to set up Te Pūnaha Matatini (TPM) has an eerie prescience to it. The national Centre of Research Excellence, hosted by the University of Auckland, is a transdisciplinary centre whose name means ‘the place where many faces meet’. It was founded to apply complexity science ‘to the critical issues of our time’, with a focus on communication and connection to government and the private sector, and launched in 2015.

“You could have added ‘and then we’ll tackle Covid-19’ to the end of the first paragraph,” jokes TPM’s director, Professor Shaun Hendy. Shaun and his colleague, Associate Professor Siouxsie Wiles, have become household names thanks to their science communication in the media during the Covid-19 pandemic.

But they haven’t been working alone. Around two dozen TPM researchers from this University and around New Zealand have worked across multiple areas in response to Covid-19. That includes PhD students who suspended their studies to be involved in the project and postgraduate students whose employment had been put on hold.

Their models predicting the spread of the virus contributed to the swift initial lockdown in March and informed the alert levels used in response to the outbreak in August. They have also contributed to modelling hospital capacity, genome sequencing and tracking the spread of disinformation.

“This has felt very, very much like living in history and having our team be a really key part of it,” says TPM executive director Kate Hannah.

TPM’s involvement with Covid-19 began early in the year.

“Siouxsie Wiles is one of our superstars, and she’d been talking about Covid-19 in the media since January,” explains Shaun. Siouxsie and Professor Michael Baker of the University of Otago had been fronting the Government’s communication about the pandemic, and Shaun wanted to ensure they had good information.

He put Siouxsie in touch with the Prime Minister’s Chief Science Advisor, Professor Juliet Gerrard (Faculty of Science), and was pulled into the middle of the whole response.

Listening to Siouxsie talk about the epidemic, Shaun started to wonder whether TPM's annual hui planned for April would go ahead.

"I put some data from Italy into a basic epidemic model," says Shaun. "I went 'okay ... we're not going to be holding our hui in April?'"

TPM's catchphrase of "data, knowledge, insight" couldn't have been more relevant.

"At that point I realised this was going to be something really serious. What I'd calculated – if it was anywhere near right – was an important thing to start communicating."

Peter-Lucas Jones from northern iwi Te Aupōuri was present at the TPM board meeting at which Shaun presented his modelling and communicated the decision for TPM to focus its work on Covid-19.

"Peter-Lucas told the story of Te Aupōuri's experience in the 1918 influenza pandemic and the mass graves," remembers Kate. "It was really profound to be reminded of it. We came away from hearing that, knowing this was the only thing we needed to be working on."

Statistician Andrew Sporle (Ngāti Apa, Rangitāne, Te Rarawa) was brought in to co-lead work focusing on at-risk communities.

"This research directly informed the iwi-led pandemic response that kept Covid-19 out of at-risk communities during the first outbreak," says Kate. "Because as soon as Shaun said we could have tens of thousands of people die in New Zealand, I knew it would be vastly more impactful on Māori and Pacific peoples."

This prediction also had big implications

for the healthcare system. Associate Professor in Statistics Ilze Ziedins worked with Dr Mike O'Sullivan and Associate Professor Cameron Walker from the Faculty of Engineering to model the effect on hospitals if the virus spread through New Zealand. "It was this one moment where you bring all your knowledge and expertise to bear," Ilze says.

"More complex models allow you to answer specific policy questions, like what if we shut down Ponsonby?" – Dr Oliver Maclaren, Faculty of Engineering

"We looked at what the loads would be on intensive care units and in wards."

Ilze is thankful that we haven't reached the point where their work has been needed. Intensive care specialists advised the team that the surge capacity that they had modelled was not sustainable for extended periods.

During lockdown, questions were arriving from the Government with one-hour deadlines.

"The first question was around breaking things into waves," says Shaun.

"There had been some work done in the United Kingdom about mitigation versus suppression. Suppression is basically going hard to try to contain things. Mitigation is going

Far left: Professor Shaun Hendy has led the Covid-19 modelling. Below: Members of Te Pūnaha Matatini. Back, from L to R: Dr Emily Harvey, Dr Oliver Maclaren, Associate Professor Ilze Ziedins, Andrew Sporle. Front L to R: Professor Shaun Hendy, Kate Hannah, Associate Professor Siouxsie Wiles, Dr Dion O'Neale.
Photo: Billy Wong



“It was this one moment where you bring all your knowledge and expertise to bear.”

– Ilze Ziedins, Associate Professor in Statistics

◀ just hard enough to keep things within your hospital capacity.

“We got asked if we could produce the New Zealand version of that in an hour. It turns out we could, with about a minute to spare.”

In order to respond to more nuanced questions, a team led by Dr Dion O’Neale, a lecturer in physics in the Faculty of Science, has built a statistical network of everyone in New Zealand, linking people by dwelling, workplace and school, and with attributes such as age, ethnicity and sex. Their data was drawn mainly from the Integrated Data Infrastructure (IDI) research database created by Stats NZ.

“Individuals are different,” says Dr Emily Harvey, an honorary academic in physics who is also part of TPM. “They have quite different ways that they’re getting exposed to things, and different people they’d interact with.”

Dion, Emily, Dr Oliver Maclaren and Steven Turnbull have used the computing power of the New Zealand eScience Infrastructure (NeSI) to run contagion processes on their five-million-node network.

“Network-based models help you answer questions that you can’t address with simple models,” says Oliver, a lecturer in engineering science and the James & Hazel Lord Emerging Faculty Fellow.

“For rapid-response stuff, simple models are very useful, but more complex models allow you to answer specific policy questions, like what if we shut down Ponsonby?”

AUGUST CLUSTER

The call that came on Tuesday 11 August was the one they had been standing by for: a positive case with no known link to the border had been found. TPM was back on the job by 6pm, with Associate Professor Alex James of the University of Canterbury getting the first modelling results back to officials by 7.30pm. Alex’s initial estimates of the size of the outbreak were used directly in the Cabinet meeting that evening.

“We were prepared for this,” says Shaun. “We had recently held a workshop in Wellington between the key government agencies in the Covid-19 response and our modelling teams. There was a period where both Alex and I were hoping it was a drill, because this was one of the worst-case scenarios that we’d considered.”

TPM’s work had previously predicted a much higher infection fatality rate for Māori and Pacific peoples, and a new infection in South Auckland was cause for concern.

Alongside getting prompt projections to the Government, their more complex models were quickly fired up again, and work began on genomic sequencing to see whether community transmission was from the same or different strains of the virus.

Shaun says TPM’s involvement in the Covid-19 response demonstrated the value of having a rapid-response team of scientists ready to go at short notice. As a New Zealand-wide centre, it was equipped to handle a complex and fast-moving national challenge.

“On the one hand, you can tell the sort of Forrest Gump-like story of how we just had the right conversations at the right time and then found ourselves in this position,” reflects Shaun.

“On the other hand, we’ve been building a national community at Te Pūnaha Matatini to do exactly this and we’ve put emphasis on communicating our work and working with policymakers.”

Shaun says the Covid-19 crisis has shown the Government and its agencies need to have access to trusted expertise.

“Some of us will be working on Covid-19 until March 2021 and beyond, so we’ll keep the models active and going.

“I’m hoping that’ll be in perpetuity so that if in the next 20 years we have another pandemic, there is a set of New Zealand-specific modelling tools. We didn’t have that when we started this time round.” ■

UNI-WIDE EFFORTS

As well as the significant work done by scientists at Te Pūnaha Matatini, there are many others at the University helping battle the pandemic. For example, thousands of Covid-19 tests have been conducted in partnership with the Auckland District Health Board as part of the Auckland Academic Health Alliance.

Seven projects from the University were also awarded funding from the MBIE Covid-19 Innovation Acceleration Fund, one of which was to Professor Shaun Hendy. Others include Dr Yvonne Anderson in the Faculty of Medical and Health Sciences (reuse of PPE), Dr Nikki Moreland for Covid-19 antibody testing, and Associate Professor Nick Gant for monitoring large groups of people, such as in rest homes. Read more: auckland.ac.nz/MB-Covid-projects

FUTURE OF LEARNING

In seven months, our world has been transformed by a global pandemic – a threat that was previously the stuff of science fiction. More than 33 million cases of Covid-19 have been recorded around the world, and the number of deaths globally by early October was 1 million. Many more are probable.

Informed by Taiwan and South Korea's reaction to the virus, the Government here applied restrictions directly, closing the borders and restricting movement to protect the population. This approach had an immediate effect on more than half a million students in tertiary education, 40,000 of whom were from overseas, and three-quarters connected with university courses around the country.

As we know, by the time Semester One was under way, restrictions at the border meant overseas students couldn't gain entry to the country, and the ability of universities to deliver face-to-face learning programmes was affected by the restrictions imposed to break the chain of Covid-19 transmission.

As a result, coronavirus catalysed a rapid reinvention of New Zealand universities' teaching and learning programmes. Tertiary institutions quickly shifted learning online for students and planning began to support robust assessment processes for coursework.

Sectors of the economy were placed on life support through the Government's unprecedented wage-subsidy scheme. The Director-General of Health became a celebrity in his own right, championing a view that "leadership is a call to collective action". We became familiar with the new language of epidemiology, and the action undertaken by New Zealanders in order to keep vulnerable communities safe from Covid-19 has been remarkable, and this includes the efforts of the Student Volunteer Army assisting communities.

As restrictions have eased, New Zealand has found itself able to return to something resembling normality while the pandemic rages elsewhere. But many people have lost employment, with tourism, retail and hospitality hit hard. Unemployment in young people has risen, with young women making up a disproportionate number of those affected.

The need to provide retraining opportunities for people repositioning themselves in a rapidly evolving economy is a crucial national challenge facing New Zealand.

People have spoken about the need for a reset and reimagining of a knowledge economy,

moving beyond the primary industries into the greener areas of design, healthcare innovation and technology. Universities can be a fundamentally important player in this reset – potentially forming hybrid relationships with employers to create experiential learning opportunities for students retraining.

But the university sector continues to face two key challenges posed by Covid-19. First, a need to adapt and innovate with learning programmes that provide students with safe, high-quality outcomes. The second is the challenge to adapt university business models that have relied heavily on income from international students.

The eight New Zealand universities generated nearly \$500 million in aggregated revenue in 2018, and the university sector provides the largest amount of international student fee revenue within the New Zealand education sector. Black ink will be replaced by red in more than one institution in the times ahead, and universities need to shift their business models to respond to this new operating environment, along with every other affected sector.

There is a need for action at a number of levels. First, the Government could collaborate with universities to plan to welcome international students back to Aotearoa, including such strategies as proactive quarantine on top of students' pre-clearance before travel here. Secondly, all universities need to keep working on plans to provide entry and managed isolation for incoming students so that we can assist them into study – whether new or resumed – at the first available time. Thirdly, the community needs to see students as stakeholders in new systems of high-quality learning and pastoral care, that blends *kanohi ki te kanohi* or face-to-face engagement with digital channels.

With the pandemic likely to increase inequity and inequality, many students will face greater academic, social and financial obstacles to tertiary study. In the course of a week, universities proved they could be agile by finding ways to enable staff to work remotely, teach students online, provide pastoral care for mental health via technology and financial support for students experiencing hardship.

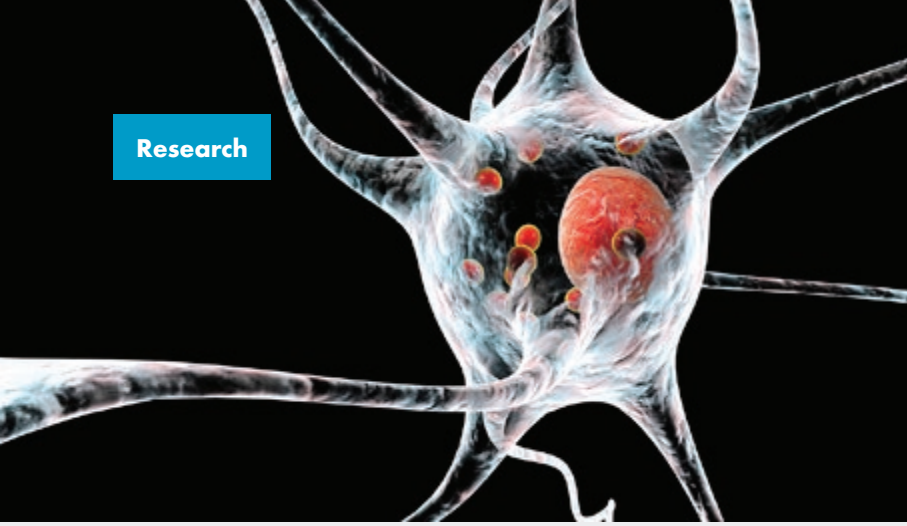
But the work is not yet complete. Around the world, universities are talking about the hybrid flexible, or HyFlex, course format that combines face-to-face (F2F) and online learning. Hybrid and HyFlex are words and ideas that must be added to all universities' lexicon.

2020 has changed everything.



Sir Anand Satyanand, GNZM, QSO, is an alumnus of the University (Law), former Co-Patron of the University of Auckland Society and former Governor-General. He is Chancellor of the University of Waikato.

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



Brain cells affected by Lewy Bodies or protein clumps in a person with Parkinson's disease.

PARKINSON'S PUZZLE PIECES

Genetic clues could lead to treatment or delay of disease

Liggins Institute researchers are part of a group who have decoded a gene that plays a major role in regulating and delaying the onset of Parkinson's disease. Working with the Garvan Institute of Medical Research and the University of Otago, they discovered that components of the gene GBA have a significant role in regulating and delaying the onset of Parkinson's disease, the world's

Research into GBA's role in Parkinson's was made possible by funding from the Michael J. Fox Foundation for Parkinson's Research and the Silverstein Foundation for Parkinson's with GBA.

second most common neurodegenerative disorder. The leading journal on Parkinson's disease, *Movement Disorders*, has highlighted the findings.

"We believe we've come up with a plausible understanding of how GBA contributes to the disease, that opens new approaches to treating Parkinson's and delaying its onset," says Associate Professor Justin O'Sullivan.

Justin and his colleagues, who specialise in research into gene control, looked closely at the gene GBA, which is associated with a higher risk of developing Parkinson's and is used as a biomarker for the disease. "The question we are asking is why do some people with GBA mutations develop Parkinson's and others don't?"

PhD candidates Sophie Farrow (Auckland), Oscar Graham (Otago) and Dr William Schierding from Liggins looked for answers in the non-coding parts of the GBA gene, once thought of as 'junk DNA'. The team screened 128 sites and found that if they had a particular combination of three short non-coding DNA sequences, the result is a delay of the onset of Parkinson's by five years. They also identified six other regions that act as 'switches' to control how the GBA gene is turned on or off in the brain.

The idea is to discover the molecular basis for the delay in Parkinson's onset, which could provide a target for therapies to delay its progression.

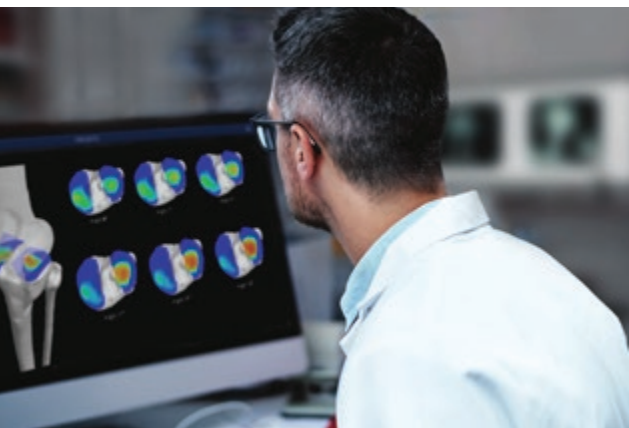
Full story: auckland.ac.nz/parkinsons-key

THE AI KEY TO KNEE OPERATIONS

Modelling software creates greater precision for orthopaedic surgeons

Surgeons are using ground-breaking software based on research by the Auckland Bioengineering Institute (ABI) to greatly improve knee operations. Associate Professor Paul Monk, an orthopaedic surgeon at Auckland Hospital who also works at the ABI, says the operation-planning software is "game-changing". The technology arose from years of research by the ABI's Musculoskeletal Atlas Project (MAP), which creates computational models to show and predict the form and function of a person's musculoskeletal system. This has led to a cloud-based software platform

Surgeons can perform 'virtual osteotomies' using models of the patient's actual knee.



by FormusLabs, a spinout of ABI. It's an AI-automated 3D planner for joint-replacement surgeries that creates fully interactive models of a patient's joint ahead of the operation.

ABI modelling shows that one degree or one millimetre makes a difference, and the software allows for a level of precision that can't be achieved with the naked eye. After being used for hips, the prototype is now being used in high-tibial osteotomies (HTO), a realignment of the knee that involves cutting the tibia and shifting the weight of the leg away from worn tissue on to healthier tissue. It's a procedure undertaken on people showing early stages of arthritis, as an alternative to a knee replacement.

"It has revolutionised our approach to this operation," says Paul. "Our first few patients were back walking independently within a few weeks. Usually, this procedure requires six weeks on crutches before a patient is able to walk."

"We use MRI scans and x-rays of the patient and the software creates a clear picture of an individual patient's loading pattern – where pressure passes through their knee. Based on their loading pattern, we perform 'virtual osteotomies' first to identify the optimal correction," says Paul.

"Then we 3D-print patient-specific instruments, creating a bespoke wedge that we insert into a patient's leg, and then apply a fixation plate. The process realigns the leg and takes the weight off the area of worn cartilage, moving it to a better part of the knee, taking the pain away."

See more: youtu.be/yNQ7govm1rs

New eruption alert system

A system that analyses past data could have saved lives at Whakaari

Scientists have developed an alert system that could have given 16 hours' warning of the fatal 2019 eruption at Whakaari White Island. It was created by Drs David Dempsey and Andreas Kempa-Liehr (Engineering) and Professor Shane Cronin (Science) with funding from the Ministry of Business, Innovation and Employment.

In line with international best practice, GNS Science operates a Volcano Alert Level (VAL) system, which reports the status of a volcano every few weeks or months. It relies on human judgement and consensus among scientists to spot activity that could signal a pending eruption. Three weeks before the eruption at Whakaari, the VAL was lifted to Level 2, indicating heightened unrest. Post-eruption it was Level 4.

But David says Whakaari was preceded by a strong burst of seismic energy 17 hours earlier.

"This was a sign that fresh magmatic fluid was rising, pressurised water was trapped in shallow rock and loose deposits were filling the vent. The



Whakaari White Island erupted on 9 December, 2019, killing 21 people. Photo: Professor Shane Cronin

resulting explosion was like a pressure cooker blasting its lid off. The early seismic burst is the most common indication of imminent eruption. It's a warning sign that could have been detected almost instantly by our new forecasting system."

The new system uses algorithms to 'teach itself' from data fed into it. It learns from patterns in that data so it can signal almost instantly when a pattern matches that of a build-up to a previous eruption. With data from the past ten years at Whakaari, the system has 'predicted' four out of five past eruptions, missing only one, in 2016, that showed a different data pattern.

The development team is working with GNS to implement it alongside its systems and 'teach' the new system about the eruption history of volcanoes including Tongariro and Ruapehu.

Full story: auckland.ac.nz/whakaari-alert

Lockdown creates the quiet Earth

With no buzz of normal life, seismologists say Earth was stilled

As noisy activities came to a halt during Level Four lockdown, the Earth itself became quiet. Seismologists analysed datasets from more than 300 international seismic stations – including several in New Zealand – and found the "buzz" of human activity, called anthropogenic noise, dropped dramatically. They dubbed this period the 'anthropause' – the longest, most prominent anthropogenic noise reduction on record.

University of Auckland seismologist Dr Kasper van Wijk (Faculty of Science) was busy looking at seismic data from the tragic eruption at Whakaari White Island when colleague Dr Thomas Lecocq of the Royal Observatory of Belgium got in touch. "I used the computer code for White Island to analyse Auckland's seismic data and within an hour could confirm that Auckland was not only quiet above ground but also underground," he says.

Traditionally, measuring seismic waves is focused on detecting earthquakes and volcanic

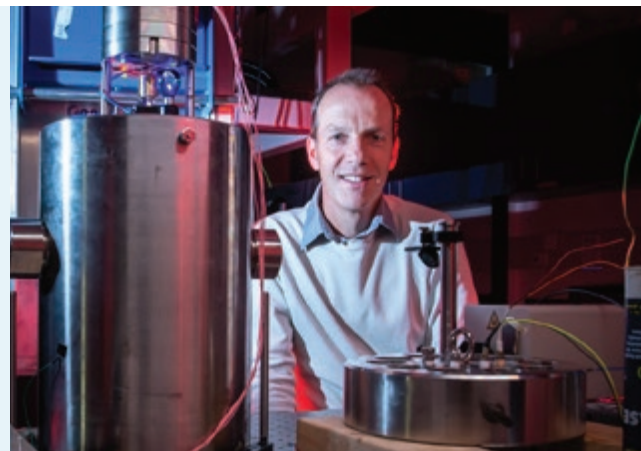
activity, but because seismographs are so sensitive, they can also pick up vibrations from humans at the surface as we drive cars or simply walk around. Heavy industry and construction work also generate seismic noise. Lockdown meant a lack of anthropogenic seismic noise was

detected at places like Eden Park where a seismograph is buried 380m beneath the sports grounds, and even on Motutapu Island.

There are 12 seismographs around Auckland, monitoring for even the weakest signs of earthquakes or volcanic unrest. "One day a volcano in Auckland's volcanic field will erupt, but it will create seismic signals beforehand and this study reminds us that if humans made less noise, we'd get an earlier warning," Kasper says.

The findings, published in *Science*, show 50 percent less seismic noise around the world from early to mid-2020. Lead authors were based in New Zealand, Belgium, the UK and Mexico and 76 scientists from 27 countries were involved.

Full story: auckland.ac.nz/the-quiet-earth



Dr Kasper van Wijk in his lab at the University.



LESSONS FROM HISTORY By Denise Montgomery

Dr Felicity Barnes and her husband, Michael Whitehead, hope their History Innovation Fund will strengthen history research.
Photo: Elise Manahan

Political journalist Norman Cousins once said: “History is a vast early warning system.” Historian Dr Felicity Barnes would agree with that and hopes to help more academics shed light on the present.

Dr Felicity Barnes says she was the kid picked last for school sports teams. “If I was playing netball and you threw the ball at me, it would likely smack me in the head,” she laughs.

Now, in the Faculty of Arts where she is a senior lecturer in New Zealand history, she’d very much be considered a good sport and certainly a team player.

Felicity and husband Michael Whitehead have gifted \$500,000 to set up the Barnes Whitehead History Innovation Fund, aimed at improving the research outputs of the University’s history department, especially for New Zealand history.

The fund will start by paying for a postdoctoral fellow in New Zealand history for 2021.

Felicity has taught at her alma mater, the University of Auckland, since 2012. The former Avondale College student had started out mixing science and arts before settling on English and History to complete her BA. She then worked outside academia, returning to complete a Diploma in Management at the Business School, before completing her PhD in history.

Michael, who did a BCom at Auckland in management studies and computer science, went on to co-found global software company WhereScape and New Zealand services firm Now Consulting. A Prime Minister’s business scholarship winner, he has also been a category winner in the EY Entrepreneur of the Year Awards, and WhereScape was the supreme winner at the 2016 NZ International Business Awards. He sold two of his companies in 2019.

“The sale is the background to the gift,” says Felicity. “It was around that time we decided to think about the whole idea of philanthropy and giving back. We have other work to do, but the first thing that came to mind was to support learning. We’re aware that we’re both products of the old-fashioned free education system.”

Felicity had taken time off teaching in 2019, and part of that was spent doing research.

“Because I work in the history department, I understand where a bit of money might make a lot of difference in boosting research,” she says. “That’s really what we’re hoping the fund will help – supporting great research outputs – and that also aligns with the University’s goals.”

The gift was a joint decision. “In a long-term relationship, it’s what you both put in. Michael’s international business meant he was away a lot and we’ve worked around it, raising two daughters for 20 years,” says Felicity. “He’d be the first to say it’s been a mutual effort.”

Felicity says as well as this funding to her pet subject, Michael gives in other areas. “He gives a lot of time to IT start-ups through his organisation Tap-In Ventures, and works with some companies pro bono to get them on track.”

She says he’s also been a great support to her while she’s been researching or writing books.

“It’s fair to say this gift to fund history was an initiative I was particularly enthusiastic about and he just gladly joined in with it.”

Michael says there was good reason.

“Having spent years as an employer, the thing we most looked for in employees was the ability

to problem-solve and communicate. So, while it may look counter-intuitive for me to back the arts, actually they're directly relevant to the kinds of things I think will make New Zealand, and New Zealand business, better."

Felicity says the goal is to fund five postdoctoral fellows for one academic year each as well as allow academics to get on with research by paying students to help with marking.

"Research is affected when you're juggling the workload, so someone who could be writing a paper is marking stage-one essays. Let's get them back to producing research. That's my thinking."

Felicity says one of the research areas close to her heart is New Zealand history.

"There is so much more to learn about it. For example, there's terrific new work on the New Zealand Wars. Our history is still being written – it's nowhere near complete – and that provides huge scope for research.

"Many of the best-known historians had the luxury of time to do their research and the result has included books that are essential reading. So, hopefully our fund can help with this a little."

She says New Zealand has a wealth of accessible historians. She was taught by the likes of Keith Sinclair and James Belich.

"New Zealand is extremely fortunate in the quality of its historians, and they're high-calibre writers. Even though the Sinclair and Belich books are older now, those general histories are terrific reads. As are Vincent O'Malley's 2016 landmark book *The Great War for New Zealand: Waikato 1800-2000* and *Dancing with the King: The Rise and Fall of the King Country, 1864-1885* by Michael Belgrave. They're accessible, lively and full of ideas."

Her own book was released in 2012. *New Zealand's London: A Colony and Its Metropolis* (AUP) was based on her doctoral thesis, which had won the University's best doctoral dissertation.

Although New Zealand has always had more prominent male historians than female, Felicity points to some change.

"As far as general histories, there's Philippa Mein Smith's *A Concise History of New Zealand* and Giselle Byrnes edited the *New Oxford History of New Zealand*, which collected together some very innovative essays on our past. And there's *Tangata Whenua: An Illustrated History*, in which two of the three co-authors are women, Aroha Harris and Judith Binney. If you're interested in the history of New Zealand, it's a must-read."

When she and Michael had children, study seemed like a good alternative to full-time work, so she began her masters. "I thought I was just going to do my masters and when the kids got older, I'd go back to work. I tried to do contract work, but it was too hard to juggle young children and meetings. I thought, if I could do anything in the world now what would I do? The one thing I wanted to do was read. And learn."

When she won a doctoral scholarship, she never looked back. "What the scholarship told me was 'we've got faith that you'll do a good job'. When you're studying with twentysomethings who are focused and determined, you kind of think 'am I in the right place'? You have self-doubt. The scholarship helped me overcome that."

Felicity would like to raise the profile of historians and says Covid-19 is a good opportunity. "We've heard from scientists about Covid-19 but few historians. Chief historian Neill Atkinson and people like Linda Bryder and Charlotte Bennett can tell us a lot about past pandemics. For example, how did people deal with the impact of the 'flu pandemic in 1918? We can learn a lot from how humans behaved in similar circumstances in the past."

She also highlights how ideas about teaching history have changed, from remembering significant dates to exploring stories.

"The old-fashioned way of teaching history was that it was a memory game. You were good at history if you could recall the order in which the kings ruled. If that's what makes a good historian, I'm a terrible historian!"

"For me, it's about questioning. History isn't about dates so much as telling stories that enlighten us as to how people lived their lives in the past. People would be a lot more interested

"Our history is still being written. That provides huge scope for research." – Dr Felicity Barnes, history lecturer

if they thought about history not so much as a series of facts but a series of stories to interpret, understand and shed light. That sparks curiosity."

She says the Covid-19 pandemic may have one silver lining. "It has given us a greater sense of empathy and insight into the way events like war completely disestablished people's lives.

"I'm thinking about my kids who are in their twenties and trying to transition study and work and suddenly there's this global catastrophe.

"When we look at events such as WWII, we sometimes forget people put their lives on hold for five or more years! So when I read stories of people saying 'it's so hard, our family can't just jump on a plane and see each other', I think about the people through the ages who went to war or migrated with no real prospect of returning. It's our version of that past and it makes me understand it more.

"There is a tendency for us to treat people in the past as somewhat lesser beings. They call it the condescension of posterity. 'People foolishly thought this in the past.' Well, now we really get a sense of how a disaster affects lives, don't we?"

TIPS ... TO LEARN TE REO

The University has a language plan to revitalise te reo Māori. It aims to have 50 percent of staff demonstrate basic competence by 2040. Recent initiatives include the launch of an app, Te Kūaha, and a glossary of te reo Māori terms used on campus, the Kuputaka.

Raniera Harrison offers seven tips to assist everyone in their Māori language acquisition.

1 Start small
There's a misconception that we have to learn the most complex of sentence structures and the most elaborate verbs, nouns and adjectives – but that'll come in due course. Consider learning te reo as a lifelong marathon rather than a 100-metre sprint. Every marathon starts with one step – make that one step count! You could begin by translating everyday objects you have at home or in the office. How about tēpu (table) or tūru (chair) or pouaka whakaata (television) and, of course, my favourite – wā kai, literally time to eat, or lunchtime!

2 Build your community
They most certainly weren't pulling your tail when they told you there is strength in numbers. Surround yourself with people on the same journey or who understand yours. It's like when you begin going to the gym – it doesn't take long and you find yourself hanging out with gym bunnies talking about bench press, seated row and calisthenics.

Te reo Māori is exactly the same. We are a reflection of the people we choose to surround ourselves with. Even if it's for an hour a week, make time to connect with like-minded te reo Māori soldiers in the battle for language revitalisation.

3 Check your pronunciation
'Keke' means cake in te reo Māori, while 'kēkē' means armpit. 'Wētā' is the Māori classification for the New Zealand invertebrate, and weta, well, weta is one word for faeces. The macron is a clue to short or long sounds. What's important to understand is that pronunciation is king when it comes to te reo. There are numerous resources online that can take your pronunciation from zero to marae hero in the comfort and safety of your own home. The Māori vowels – a, e, i, o, u – are a good starting point. The University has also created an app called Te Kūaha that will talk you through the sounds.

4 Challenge yourself
Don't be scared to put a bit of pressure on! Whether you challenge yourself to learning a new Māori word a day, a new kīwaha (idiom) a week or you're going all the way and committing to things such as the Mahuru Māori initiative (speaking only te reo for all of September), you'll be sure to hit some language 'personal bests' when you put yourself 'outside the warmth of that all-too-familiar comfort zone.

5 Boost your job chances
It's well known that learning another language is good for your brain, but studying te reo Māori could also improve your chances of finding a job in a variety of industries. Upskilling online or in classes could help you find an exciting role in education, health, government, social services or, of course, the 'booming Māori economy'.

6 Enter a new world
No, that's not a reference to *Aladdin*, it's a reference to a direct quote from the revered Lieutenant Colonel of the 28th Māori Battalion, Sir James Henare, who said "Ko te reo te mauri o te mana Māori" meaning "the language is the life force of Māori prestige". Consider your newly acquired language the 'window' to the Māori worldview or te ao Māori. You begin to understand a lot more about Māori culture once you've attained a certain level of Māori fluency. Enjoy the journey, grasshopper!

7 Fly!
There's a saying in Māori: "mā te kahukura, ka rere te manu", literally "the feathers allow the bird to soar to lofty heights". Consider your newly acquired vocabulary the 'feathers' to reach new heights of your own. Learning te reo Māori will give you – and ultimately our country – a competitive advantage. Haramai tētahi āhua!

Raniera Harrison is a lecturer in the School of Māori Studies, University of Auckland.

2020 group**Business Leaders****Sara-Jane Elika**

Nurain Janah

Sean Molloy

Michael Quirke

Ivan Ravlich

Bridget Snelling

Talapo Uivaa

Disrupters/Innovators**Tan Copsey**

Mahmood Hikmet

Natalia Palamo

Jimmy Chih-Hsien Peng

Dmitry Selitskiy

Arash Tayebi

Kanaway Yusingco

Entrepreneurs

Hamish Elmslie

Hannah Hong

Lydia Hascott

Alex Kendall

William Lockie

Mike Moka

Julia Suh

Humanitarians**Carl Adams** (see pg 35)

Edith Amituanai

Howard Hunt

Rosalie Stephens**Shana Malio-Satele**

Shruthi Vijayakumar

Influencers

Melissa Ansell-Bridges

Kate Boylan

Anand Chordia

Isuru Fernando

Jessica Pearless

Tupe Solomon-Tanoa'i

Ane Tonga

Performers

Jane Arthur

Emma Foy

Malcolm Lakatani

Emil Mcavoy

Tyla Amy Vaeau

Luke Versalko

bold = featured in *Ingenio***Nominate more**

Know an Auckland graduate who's doing great things? Let us know for the next list.

alumni.auckland.ac.nz/40under40



Shana Malio-Satele leading Pacific Youth Navigators at South Seas Healthcare Pacific.

40 WISE HEADS

Engineers and artists, doctors and entrepreneurs, musicians and youth workers – so much talent in our 40 alumni under 40. *Ingenio* profiles five.

SHANA MALIO-SATELE

Humanitarian: Youth well-being worker

Every weekend Shana Malio-Satele leaves Wellington, where she is a Partnered Delivery Manager with ACC, and returns to her home community in Auckland. There she works alongside a collective of Pacific youth who use their stories and experience to mobilise other rangatahi around pressing issues.

When Covid-19 hit Auckland in August, she and South Seas Healthcare Pacific Youth created the ‘Bubblegum – Let’s Stick Together’ campaign. They set up a call centre in Otara, as well as a digital platform to support young people. Among the helpers were University of Auckland students packing up food parcels.

When Shana is out working in the community, she always has at least one of her family’s three grandchildren with her. “I want them growing up knowing what is possible,” she says. “For them to understand that as Pacific children they can be trail-blazers in New Zealand.

“I know in my life I have benefited from having someone invest in and encourage me,” Shana says. “That’s why I do this work.”

As a first-generation Samoan New Zealander, Shana was encouraged to go to university. She remembers a critical moment at Auckland Law School when an aunt suggested she take time out every Wednesday, away from the library and lecture theatres, to go to Rosary Service at the Good Shepherd Catholic Church in Balmoral.

“She said I needed to keep my spiritual cup full if I was going to be successful.”

Shana completed her Arts and Law degrees and then masters in both Anthropology and

Pacific Literature at the University in 2008. She was admitted to the Auckland High Court as a registered solicitor and barrister the same year.

“As much as learning at university is about using your head, it’s also about having the heart for it when things get challenging. It’s your heart and the unteachable things you grow up with that help you get through.”

In 2012, Shana joined the Great Potentials Foundation, a charity helping children, young people and families to realise potential, reduce disparities and break the cycle of disadvantage. She was appointed the Mentoring and Tutoring Education Scheme (MATES) programme manager. In 2015, she received a NZ Vodafone Foundation World of Difference Award, which was extended to 2016 and enabled her to lead the expansion of MATES nationally.

Shana is also a committee member of the J. R. McKenzie Trust’s Peter McKenzie Project, which is working towards reducing the number of children and whānau living in poverty. As the recipient of a NEXT Foundation Scholarship, she’s working on more youth-led community initiatives. “Young Pacific people know their potential and are mobilising themselves as a community,” Shana says. “They’re asking themselves: ‘what does collective success look like for my family?’ It’s a more informed outlook and with it they are empowered to succeed.”

Shana’s ACC role in Wellington is to lead the development of Child and Youth Wellbeing strategies in primary and injury prevention. “The choice to take up a management role in a crown entity was to enhance my knowledge so I could be of more value to the community, based on what I learn and experience. I hope that in a couple of years, I’ll be able to come back to serve in a community-based role again.”





TAN COPSEY

Disruptor/Innovator: Climate Nexus

◀ **T**an Copsy’s interest in the impact of climate change began at university, where he did his masters on New Zealand’s climate change policy.

“It was 2005 and I got a real sense that it was interesting, very vibrant and an area that would be absolutely essential and, frankly, full of lots of jobs for the next 20-30-40 years.”

Tan was right. Now he’s a senior director at Climate Nexus, a US organisation focused on communicating the effects of climate change. He has been in meetings with global leaders, CEOs, two former US secretaries of the Treasury, one former president, billionaire philanthropists and politicians. After the Trump administration withdrew from the Paris Agreement, Climate

Nexus created ‘We Are Still In’, signing up politicians and business leaders across the US. He says it’s possible to feel positive in the US because “what’s happening at the federal level isn’t always what’s happening at the state level”.

As head of communications for the Global Commission on the Economy and Climate, he sat down with economists Jeremy Oppenheim, Michael Jacobs and Nicholas Stern to write the influential report *Better Growth, Better Climate: The New Climate Economy*. Tan has also worked with former New York City mayor Michael Bloomberg, former US Secretary of the Treasury Hank Paulson and billionaire philanthropist Tom Steyer on the Risky Business Project, which examined the economic risks and opportunities of climate change in the US.

He says his masters research was a great foundation. “Getting to know who thinks what and ringing them up or going to see them was crucial for everything I did afterwards.”

“I got a sense that it was an area that would be absolutely essential.”



SARA-JANE ELIKA

Business leader: Media consultant

Sara-Jane Elika’s consultancy ECG specialises in Indigenous leadership, the Pacific economy and media management. She draws on her practical and creative strengths in music, business, community, faith and leadership for all that she does. With a foundation in music, Sara-Jane was able to give full expression to her passions while studying a law and arts conjoint degree, then postgraduate honours in ethnomusicology. She says it made her ‘the different one’, but she wanted to do what she enjoyed and the University was able to accommodate her when there were clashes.

Sara-Jane won Best Pacific Island Album at the 2003 NZ Music Awards and also Best Pacific Female Artist at the inaugural Pacific Music Awards in 2005, with the first of her three solo albums, *Sara-Jane*. Other achievements include managing an international sports agency and a stint as production manager for TVNZ news and current affairs.

But it wasn’t just her career keeping her busy. “Being a mother to four children, including twins, certainly built my resilience,” she says.

As interim CEO of the Pacific Media Network, she negotiated to have the network’s Pacific Divas tour, the best of Pacific female artists, screen on mainstream Prime TV. She also led a team of 70 through lockdown. “It was very, very intense, so I’m really glad I’ve had the opportunity to be able to come through that.”

She is chair of Community Law South Auckland and a director of charitable trusts Good Shepherd NZ and Failoa Famili, which both have a focus on women and girls. Her advice: “Put yourself out there and be prepared if opportunities come along.”

Sara-Jane says she would also like to have an *Oprah*-style TV show one day.

“I’d love to be involved with like-minded people discussing global thought leadership with those in Indigenous spaces.”



ROSALIE STEPHENS

Humanitarian: oncologist, medical researcher

Oncologist Dr Rosalie Stephens pushed for immunotherapy drugs to be funded for melanoma patients and advocates for treatments in New Zealand that are widely available overseas. The School of Medicine graduate (2004) has studied tumour biology and evolution, achieving a Doctor of Medicine from the University of London. She works with cancer patients at the Auckland DHB and in her private practice, and is a Melanoma NZ board member.

“We need to focus on what we can do about the numbers of melanoma patients in New Zealand,” she says. “Avoiding sunburn in childhood is key.”

She says medicine’s sense of vocation and lifelong learning appealed. She also fondly remembers her time at the University.

“They took great care of us as people, as 18-year-olds; they were really kind. It set an example to us of compassion and kindness.

“There were also top scientists, so the academic side of things was very strong. A sound academic learning experience gives you confidence when you go into jobs.”

Completing her MD through the University of London in 2015 is her proudest achievement, because by then she had returned home for a 50-hour per week consultant job.

“I didn’t think I’d finish. I’d lost motivation, but I persisted, so I’m proud of that.”

Another achievement is her private oncology practice, established with colleagues in 2017, which integrates services such as physiotherapy and exercise into patient care.

Rosalie was drawn to her career after observing oncologists with their patients and realising it would allow her to have enduring relationships and be part of something significant for an individual and their family.

“The privilege of being part of something so important, not fleeting, is what drew me to it, even though it’s the worst and hardest bit, too.”



MIKE MOKA

Entrepreneur: Indigenous Growth Ltd

When Michael Moka (Ngāpuhi, Te Rarawa, Ngāti Hine and Mangaia of Cook Islands) was 15, he and girlfriend Toria lived in their car, in garages and with relatives while working multiple jobs to put themselves through school. Michael became head prefect at Kelston Boys’ High and was involved in kapa haka and sport. He and Toria are now married and have a baby son, Raukura o Te Huia.

Michael’s consultancy, Indigenous Growth Limited, brings Indigenous values into organisations to tap into the leadership potential of employees.

“Leadership consultancy is mainly a Pākehā area. I saw organisations that had Māori leadership, but they go, ‘here’s a leadership programme that works for

everyone, let’s just put Māori words in and call it a Māori leadership programme’ and they would put in a Māori facilitator if you were lucky.”

Indigenous Growth starts with Indigenous principles and overlays relevant executive principles. “We just flipped it around. It did take a while to get the model, but now it’s there everyone’s going, ‘this is common sense’.”

Michael works with big clients such as SkyCity and Fletcher Building, which have both won diversity awards for the programme.

While studying at the Business School, he was involved with student association Ngā Tauira Māori. It’s what he values most about his time at the University of Auckland. “This is what I keep telling our people. ‘If you didn’t go to university, you better be good networkers.’ The greatest thing I got in those four years of study was 50 lifelong friends. When we can help each other out, it’s a lot easier to ask because you have that connection.”

“If you didn’t go to university, you better be a good networker.”

40 UNDER 40: FULL STORIES

These are excerpts from 40 Under 40 stories. Read full versions at alumni.auckland.ac.nz/40under40 along with the 35 other stories.



SOCIAL INEQUALITY THE REAL CRIME

Dr David Mayeda

By definition, gangs are entities that engage in criminal behaviours. To this end, no, gangs are not good for society, and in most cases gangs end up being harmful to gang members themselves. While that is a definitive answer, it is also an easy answer and one that lacks adequate context.

The more difficult question is, if gangs are not good for society and are not even good for those enmeshed in gang activities, why would people join them? The answer lies in understanding how social inequalities play out.

Every society has inequalities. Relative to other OECD countries, Aotearoa New Zealand experiences some of the widest gaps between rich and poor. What research has shown across multiple global contexts is that in communities lacking economic resources and opportunities, gang membership increases. The blocked opportunities that accompany economic strain include inadequate educational services, poor relationships with law enforcement and family fracturing. When a young person doesn't see school as a place that provides the means to progress in society, gangs become a more attractive mechanism to secure employment and earn the respect that work delivers.

Likewise, in communities where there is heavy tension with law enforcement and trust is hard to come by, young people will be more susceptible to finding alternative forms of protection. Thus, even if gangs are entities that encourage dangerous activities, they are perceived by many as organisations of protection in an environment where the formal institution assigned to protect – the police – is viewed as (and often is) dangerous.

You can see where we're going with this. When there is family breakup and if a gang is in the mix, all of a sudden a young person may be inclined to see the gang as their new family.

By themselves, lack of family cohesion, contentious relationships with police and poor schooling will not make gang membership appear a beneficial avenue. But when all three happen simultaneously, surrounded by a broader context of economic precarity, gang membership can appear a positive option. Gangs also generate a particular type of respect that resonates heavily with men and boys who have been ostracised by school, family and the police – a respect connected to physical toughness and aggression.

So, no, gangs are not good for society. But what's worse for society are the social inequalities and gendered norms that make gangs look good for those who lack equal opportunity.

Dr David Mayeda lectures in sociology

CAN GANGS EVER BE GOOD FOR SOCIETY?

Three experts from the University of Auckland
explore the question.

What do you think? Have your say.
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*The writers' views reflect personal opinions and
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LABELS ARE TOO SIMPLISTIC

Associate Professor Tamasailau Suaalii

Whether gangs are good for society is a complex question. It assumes a number of readings of what we understand of gangs and also what we understand constitutes good society.

The word ‘gang’ has a stigma associated with criminality – which negates any belief they can contribute positively.

My research around Samoan and Māori experiences of the youth justice system dovetails into the question because we stereotype Māori and Pacific young offenders in the same way. They are collectively labelled early.

A lot has to do with media portrayal leading to societal constructs of what is appropriate in terms of social connections. Are they groups of like-minded social justice warriors or gangs? Moral panic abounds with the word gang. What is considered newsworthy rarely considers evidence. It is wholly simplistic to take a black and white perspective on any value of gangs.

If you delve into the broader narrative around criminality, gangs and delinquency, you get a better sense of these complexities. A person’s ethnic and gender group or class and identity will frame their choices.

Class is a major driver and it’s a no-brainer that economic and social deprivation can lead people into so-called gangs. Māori have a long history struggling with colonisation and state abuse, which is now intergenerational and normalised. For Pacific young people who are in gangs, many are still a part of their families. They still go to school and may even go to church. They often haven’t lost their culture or suffered disconnection.

Kinship is a good word in terms of thinking about why people join and mobilise as a unit. It’s a fight for identity and space, and aligns well with the kaupapa of asserting your identity and prominence in that space. As experienced by one of our research team members, if you look at a gang like the King Cobras, it is structured in a similar way to a Samoan aiga in terms of rank, seniority and roles played.

I’m interested in the associations being made in which we, as a society, label particular groups, especially ethnic groups. Māori and Pacific are considered to have associations with criminality and violence in the same way that gangs are associated with those traits.

But we are all in a gang of sorts. We say we aren’t because we see ourselves as not being criminals. That’s because the words ‘gang’ and ‘criminal’ have become interchangeable.

Associate Professor Tamasailau Suaalii lectures in criminology



GOOD AND BAD ‘GANGS’

Professor Ian Lambie

Ngāi Te Rangi chief executive Paora Stanley told RNZ: “Gangs are supported by accountants, lawyers, a lot of different sectors feed off gangs in this town – we need an appreciation that it is everybody’s problem not just a gang problem, and not just a Māori problem.”

Mention the word ‘gang’ and we typically think patched gang members, drugs and violence. They’re ‘bad’, we’re ‘good’ and politicians must ‘crack down’ on them. But let’s remove the political headlines and have a look at the data. In 2019, of the crimes that had a specific offender identified, only 4.8 percent were linked to national ‘gang list’ members.

We humans are social beings who form groups to be able to rear infants, feed and protect ourselves, and stay warm and dry. These groups flourish across generations with shared identities, histories, valued beliefs and cultural practices. Thus, the highest risk factor for being a doctor or lawyer is intergenerational – passed down through warm houses and the high expectations of the private schools our fathers went to, and the first job we’re given at a parent’s friend’s firm. Gang principles operate across our groupings – though the outfits look different.

The ‘bad’ gangs arise out of social and economic hardship, poverty and entrenched institutional racism. Violence and addiction within the nice homes of white-collar criminals (family-violence perpetrators, tax criminals, sexual predators and people with alcohol, drug and gambling addictions that cause harm to all those around them) are less visible.

Early intervention is the key to solving the ‘gang problem’. Children need good role models in loving adults, who help them learn to manage their emotional pain without abusing drugs and alcohol, show respect to intimate partners, to abide by tax and other laws, and to cultivate decency and kindness towards others.

New Zealand’s justice system has a history of ‘too little, too late’, with money going into building prisons instead of schools and communities where the real solutions lie.

When any chance of early help is gone, some entrenched offenders need jail but, particularly for young people on the fringes of gangs, incarceration only compounds the problems. We cannot arrest and imprison our way out of the ‘gang problem’ – especially when those who profit from gang business, selling flash cars and real estate, managing dodgy accounts and clever legal cover, earn far more than addiction workers, family violence advocates or early childcare workers ever will.

Professor Ian Lambie lectures in clinical psychology

“It’s a no-brainer that economic and social deprivation can lead people into so-called gangs.”



OUT OF THE BOX

By Pete Barnao

Unconventional award-winning architect Anthony Hoete has brought his skills and vision home.

Professor Anthony Hoete comes home brimming with ideas. Photo: Elise Manahan
Top right: The Lego facade on the London school.

If you were ever trying to get a child interested in architecture, building their school out of Lego is a sure-fire way to pique young interest.

That's what Kiwi architect Anthony Hoete did for one of his many innovative projects. Pupils and parents at a primary school in London were given 3,000 bricks so they could contribute to the design process for their school. Anthony had wanted them to be part of the process, but knew they would feel overwhelmed at having to draw a design.

"Lego bricks, rather than drawings, designed the school," says Anthony. "During the process we realised, instead of just designing the school, why not make the school out of Lego bricks?"

Anthony sourced the bricks from Legoland then coated them for fire compliance along with the usual tests for structural integrity. The result was

a black and white façade built with 1.4 million Lego bricks, breaking with adult conventions that favour primary colours for children's equipment. He also incorporated artworks by each of the school's 400 pupils.

"The architect acted as builder while the children played architect," Anthony says. "It was an example of role play."

Professor Anthony Hoete is back home to play a different role now. He has returned to the School of Architecture and Planning, from where he'd graduated in 1990 with honours in architecture, as Professor of Architecture (Māori).

Anthony, a Kawerau College old boy, has spent three decades overseas building a reputation as a world-class teacher, researcher, entrepreneurial architect and developer. He set up WHAT_architecture in the UK in 2002 and a development company, Game of Architecture, in 2015. Accolades include a UK Prime Minister's Award for Better Public Building and awards from the Royal Institute of British Architects and the Civic Trust.

He likens architecture to a game, and explores how architectural practice can be played better.

"One way is to question how we interpret, manipulate, challenge and bend the myriad rules that inform architecture to produce better outcomes for the built environment," he says.

He says the architect's role can be expanded to include that of the developer and builder. His entrepreneurial side certainly embraced that idea around the time of the 2008 recession.

"WHAT_architecture needed to reconfigure so we set up WHAT_developments as well."

The company acquired land and developed sites. One acquisition was the old Shoreditch railway station in London, bought at auction.

"We didn't win it at first, but the winner didn't produce a banker's cheque. We'd taken the deposit with us, we had \$70k in cash in a briefcase. Cash talks."

While they were going through planning to develop the site, interest on the mortgage needed to be paid. "We started hiring out the building for raves ... raves in the railway station... with our Russian DJ Nina Kraviz. The raves could bring in \$50,000 on the bar and £10 a ticket. We covered the mortgage that way."

Another temporary out-of-left-field idea for the site was a hot tub cinema. "That's basically six people in an inflatable tub paying £35 a head for champagne and movies. Millennials loved it."

He says those ideas are examples of an architect breaking out of the box. "When an architect is a developer, they're no longer the passive recipient of a brief," says Anthony.

"The architect can drive the project from the outset when they're involved in site acquisition... you're involved in the economic feasibility and empowered by setting the brief."

Anthony has a masters in architecture from University College London (UCL) and a PhD from the Royal Melbourne Institute



“When an architect is a developer, they’re no longer the passive recipient of a brief.” Professor Anthony Hoete, School of Architecture and Planning

of Technology. Since 2013, he has been an honorary senior research scholar at UCL, specialising in ‘future heritage’.

In the UK, Anthony worked with the UK National Trust and Heritage New Zealand to secure the future of the historic Hinemihi meeting house. Originally sited in the ‘buried village’ of Te Wairoa, where it sheltered survivors of the 1886 Mount Tarawera eruption, the building was relocated in 1892 by the Earl of Onslow to a park in Clandon, Surrey. Anthony’s group brokered an exchange that will see Hinemihi returned to New Zealand and a new pan-iwi whare constructed in the UK. The agreement is the culmination of years of creative problem solving and delicate negotiations. But Hinemihi has also shaped Anthony’s ideas about buildings.

“The significance of these buildings lies not in their material ‘bricks and mortar’ but in their use, in the past, present and future.”

Anthony says his Māori heritage is a factor in calling him home. He’s of Patuwai hapū, of Ngāti Awa, from Motiti Island near Tauranga. He would like his 16-year-old son Māui Pehiamu O Patuwai Roger – educated in the inner London borough of Hackney – to learn its tikanga. Māui will arrive in New Zealand as soon as possible and also once an airline carrier agrees to bring over the canine member of the family, an Akita dog named Chiba.

Chiba now has his own Instagram account @thebarkitect. “I arrived home and was asked to be the international judge for the 2020 NZ Architecture Awards, the winners for which were being announced on 5 November. NZIA wanted me to get active on Instagram as we toured the entries around the country.”

He says the chance to see new architecture or restorations reconnected him with New Zealand.

“I’ve been out of New Zealand for more

time than I was in it,” he says. “You pass that threshold and sort of question whether you’re a New Zealander still, although I do identify strongly as a New Zealander – not least because I’m Māori. That gives me a strong connection back to the land and iwi.”

He and the other judges travelled for nine days, covering 2,000km and visiting 47 projects.

“It was a great welcome mat and allowed me to see the lay of the land.”

He says another factor drawing him home was the opportunity to undertake research in Māori and Indigenous architectural projects, including Māori social housing and “unlocking” Māori land, even on his tūrangawaewae, Motiti Island.

“It’s been bequeathed through successions of generations, but it’s all locked up. Motiti is a bit lost in time; they haven’t even planted a tree. That’s partly because they haven’t worked out a good economic model and that’s happening with a lot of Māori land.”

He’s keen to supervise theses in what he calls Ngārchitecture, or new Māori architecture. He will work with Professor Deidre Brown, head of the School of Architecture and Planning, and is teaching the design studio ‘Housing Puzzle’ with Matilda Phillips. He is also co-director, with Dr Karamia Muller, of a new hub called the Sites Pacific Research Hub, looking at what’s specific about South Pacific architecture. He has an eye on high-density building solutions that yield more affordable housing.

“One model of interest could be instead of individual houses, we build clustered rooms. I’ve noticed that older people, for example, don’t want to live by themselves. They want their mates around them. How can we achieve that?”

“That’s one of the good things about being back in an academic environment – you have time to conduct important research that affects people’s lives.”



See Anthony Hoete in the Dream Catchers series tinyurl.com/Hoete-Dream-Catcher (from 11 minutes in)

AROUND THE GLOBE

Ingenio catches up with three alumni living overseas and finds out what impact they are having around the world. **By Wendy Colville**

CRAIG WHITE *Boston, United States*

Decision science is Craig White's speciality. It's a science that focuses on making the best decision to maximise the chance of achieving a particular outcome, given limited resources and a set of constraints.

He applies those skills every day across all facets of his role leading a research team of 100+ people at a US-based healthcare start-up.

It's a science well informed by his University of Auckland engineering degree.

"An engineering degree produces problem-solvers," he says.

"It's about solving problems in a reproducible and scalable way. You take the problem, break it down into small pieces and solve those. That foundation has been the single biggest thing in my career."

Craig's doctorate at Harvard University in Health Policy (Decision Science) is also a vital tool in a world of limited resources and exponential choices.

Craig, 44, is senior vice president at ConcertAI based in Boston, Massachusetts, in the US. The company uses data and AI-enabled

tech solutions to accelerate research and new treatments in oncology. For example, predicting which of the multitude of new cancer treatments available will work best for individual patients, or helping doctors understand whose disease will progress quickly and whose slowly.

Another example of how decision science is used is the way New Zealand decides which medicines to fund, and which to restrict.

"The Government has finite resources, so it's saying, 'how much of our budget are we willing to spend on healthcare versus infrastructure or education? What generates the best outcome for the money?' That's the art of decision science."

From his Boston home, Craig says New Zealand has had good press for its handling of the Covid-19 crisis, even with the August resurgence.

"The perception of New Zealand has been massively heightened as an example of how a government can operate collaboratively to get a policy implemented across the country.

"Yes, you are isolated, as an island, but you could easily have squandered that advantage with short-sightedness, and others have."

At ConcertAI, employees across the globe all now work from home. Craig and his wife, Andrea, both spend their days at opposite ends of the house, online.

"Everyone has to plan for the possibility that this could be here for a long time," he says.

"The benefit of New Zealand's approach is that they've found a way to operate relatively normally.

"The question is, how long can New Zealand go on and how well implemented is the solution to permit Kiwis to have normal lives?"

As to whether he's had any thoughts of bringing his skills home, he says: "If the right opportunity were to present itself, it would be hard not to come back home.

"I'm hoping for a call from Ashley Bloomfield or the health minister at some point!"

Craig White specialises in decision science, a skill that's vital in a world with limited resources but lots of choices, such as in medicine.



CARL ADAMS *Cox's Bazar, Bangladesh*

Working in the world's largest refugee camp has put Carl Adams squarely in the everyday reality of the Covid-19

pandemic. "It's been the challenge of an 'emergency within an emergency'," he says.

Carl, 28, has been working as Bangladesh country director for Medair, a Swiss relief and recovery agency serving close to a million Rohingya refugees who have fled Myanmar.

"It's a bamboo city carved out of the jungle in the middle of nowhere. We've had to retrofit everything, sanitation, drainage, roads ... and all in a super-densely populated camp."

Carl lives a short drive from the camp, in Cox's Bazar, a city that takes its name from the British East India Company era. His days are filled with meetings, many of them now online, as he co-ordinates agencies, government and local representatives. No day is the same, which suits the former Aucklander who completed a Master of Arts in Development Studies at this University.

"My studies challenged and grew me to be self-directed, to look at 'out-of-the-box' solutions. Those skills are critical in my work where I look for efficiencies when having limited resources."

Living in Bangladesh has meant adjustments.

"Working cross-culturally is an interesting dynamic. We're from a non-hierarchical society where people can have a voice, be listened to or engage in politics without fear."



He says Bangladesh has a real hierarchy of age, status and gender.

"I've really thought about where to follow the culture of the country and where to challenge things. I've worked to elevate the voices of team members, for instance having women in leadership roles which is pretty non-typical here."

Cox's Bazar has a long coastline, which is an asset, although going to the beach has cultural differences, too. "Thousands of people come from other parts of the country – it's a holiday experience and a photo opportunity. They come dressed in their finest clothes, jeans and walking shoes while I'm there in jandals and shorts."

Carl Adams' work has involved the challenge of 'an emergency within an emergency' in Bangladesh. Carl is one of the University's 40 Under 40 alumni (feature page 27).

CAT AUBURN *Newcastle upon Tyne, Northumberland, UK*

Leaving New Zealand brought a new lens to Cat Auburn's creative practice. "It gave me perspective on my heritage, someone who is from a Pākehā and colonial background, and what it means for me to be a New Zealander. And an understanding that every creative endeavour comes from that perspective," says the multi-media artist.

Cat completed a Bachelor of Fine Arts, then a Postgraduate Diploma (Hons) at Elam and her art ranges across sculpture, filmmaking and installations. She was awarded a British Arts Foundation studentship and is working on her PhD at Northumbria University. She also recently spent time working with celebrated British sculptor Antony Gormley.

Investigating culture and identity is a constant theme in her work. Her award-winning 2016 exhibition, *The Horses Stayed Behind*, was about the 10,000 horses that left New Zealand for the frontline in WWI, with only four returning. Cat created a five-metre work featuring 700 flower rosettes painstakingly crafted from horsehair,



similar to those made from human hair in Victorian times as memento mori.

Her thesis examines Anzac stories from the WWI Sinai-Palestine campaign and the effect on ideas of nationhood, although plans to research in the Middle East have been shelved for now.

"I have to structure the work so it's fluid and can pivot at any point. But this project will be a picture of its time. The thing is, it's an absolute privilege to be working full-time on my art."

Cat Auburn has been exploring what it means to be a New Zealander in her art.

RADAR LOVE

Golden Graduate Dr Alan Maxwell is an eminent physicist specialising in solar radio astronomy. Now, giving back is on his radar. By Louise Callan



L-R: Alan with the Jodrell Bank telescope in Manchester, 1950s; Alan, left, with Joe Taylor, at Harvard in 1994; Alan in Auckland; the antennae atop the Biology Building at what was then Auckland University College, in 1947. Photos: Maxwell Family Archive and Susan Maxwell Skinner

When Alan Maxwell set up twin Yagi antennae on the roof of the Biology Building at the University, it signalled the beginning of a stellar career. From mid-1947 until the second half of 1948, the aerials tracked the sun at 100 MHz in a solar radio astronomy project for Alan's Master of Science. He found that "in general when solar noise was received, there were sunspots on, or near, the sun's meridian".

The findings, linking radio signals with solar energy, formed one of the world's first postgraduate theses on solar radio-astronomy although, following the custom of the time, it was not published. "I was just a student and nobody would have been aware of my research," says Alan, now 93. "I only found out a number of years later that similar work was under way in Australia and under Wayne Orchiston at the Carter Observatory in Wellington.

"I'm not sure whether some kind of post-war secrecy played a role, but it would have been good to know about Orchiston's work earlier."

Alan's pursuit of a rapidly developing scientific field drew him overseas, to the University of Manchester's Jodrell Bank Observatory. He undertook research for his PhD in radio-astronomy, under eminent physicist and radio astronomer Sir Bernard Lovell, the observatory's first director. In 1953, Alan was awarded his doctorate in physics.

His next move was to the US where he built an international reputation in solar radio astronomy. He joined Harvard University and led a project to establish the Harvard Radio Astronomy Station. Alan's practical experience as a solar radio observer showed it was important to avoid interference from man-made transmission services, such as communications and broadcasts.

"Instead of siting the radio equipment on the mountain top with the observatory at Sacramento Peak, I looked for a sheltered valley and found an ideal location near Fort Davis in

Texas," he says. "It was 1,609 metres above sea level and 322 kilometres from the nearest town."

The station began operating in 1956 and its solar programme ran until 1982. That meant three decades of commuting between Fort Davis and Cambridge, Massachusetts, and Alan's lecturing commitments at Harvard, where he taught many future leaders in the field.

"One really stood out, Joseph Taylor, whose doctorate I supervised. In 1993, he was awarded the Nobel Prize in Physics. It was a highlight in my career."

Among Alan's peers were British astronomers and physicists Robert Hanbury Brown and Richard Twiss, famous for the Hanbury Brown and Twiss (HBT) effect in physics. Their work led to his Harvard colleague Roy Glauber's experiment in quantum optics, which earned Glauber a joint Nobel Prize in Physics in 2005. For a number of years after his retirement, Alan kept an office at Harvard.

Alan grew up in Northcote, Auckland, where he learned the piano and organ. He was 16 when he gave his first public organ recital in the Auckland Town Hall and he regularly played at church services. Like science, music is a constant in his life as is, in his later years, travel. Prior to Covid-19, he attended concerts and science seminars across the world, and returned home to New Zealand each summer to catch up with family, including Associate Professor Scott Parkins from the Department of Physics. Unfortunately, pandemic restrictions are unlikely to relax sufficiently to allow his annual Christmas dinner with family in Auckland in 2020.

Alan's connection with home, and interest in his alma mater, is behind a generous decision to leave a gift to the University in his will. The Alan Maxwell Fund will support the Faculty of Science and he's happy for it to be used as the faculty sees fit. "I don't have a philosophical explanation for doing it," he says. "It's enough for me to know the gift will be used appropriately."

Golden Graduates

Our Golden Graduates are those who graduated from the University of Auckland 50 or more years ago, along with graduates aged 70 and over.



Three Sisters, Felix Kelly (1915-94), 1943, oil on paper, 210 x 255mm

The University's Art Collection has more than 1,700 items spread across five campuses and 90 percent of the collection is on display at all times. Art historian Linda Tyler showcases her favourite piece.

Linda Tyler holds the David and Corina Silich Associate Professorship in Museums and Cultural Heritage.

A RIDDLE PICTURE

A wintry, slightly surreal scene, this painting was gifted to the University by the original owner's daughter-in-law in 2014. How it got to New Zealand is a story in itself, but its intriguing imagery is what draws me to it. Who are the three sisters, and why are they wandering separately out of a glass house down an arbour of spindly hoops towards the viewer? Are the wintry trees threatening or protecting them? The low red brick wall is an excellent dynamic device to define the rapid recession, and complements the chartreuse grass beautifully. Somehow the glowering sky manages to balance the vertiginous slope of hill on the right, too.

So it is a riddle picture, competently composed but well-removed from New Zealand painting traditions of the middle of last century. Yet the artist was a Kiwi émigré, Felix Kelly, who left Auckland at the height of the Depression in 1935, having won a coveted position as a layout artist at Lintas in London, the advertising wing of Unilever. Highly skilled at networking, and with a fondness for sports cars, he had soon insinuated himself into the English aristocracy, accepting many commissions to depict country houses.

Kelly was an airman in the RAF during wartime but had a nervous breakdown and was hospitalised twice in 1943, the year after this painting was completed. Despite this, he managed to produce six small paintings that were included in the summer exhibition at the prestigious St James's gallery, Alex Reid and Lefevre Ltd in August 1943. The society magazine *Tatler* commented on these

as "delicious little pictures". The artist was in Shenley Psychiatric Hospital in Hertfordshire for the duration of the exhibition.

Perhaps Kelly was inspired by John Gielgud's 1936-37 production of Anton Chekhov's *Three Sisters* at the Queen's Theatre in London's West End? Or did he admire the grim 1834 portrait of Emily, Charlotte and Anne Brontë by their brother Branwell, which hangs in London's National Portrait Gallery? Kelly's three sisters are Brontë lookalikes, clad in dark Victorian clothing with veiled heads like mourners in a procession. Above, lopsided leafless trees claw the sky, leaning away from the prevailing wind, branches broken on one side. The effect is to make the three sisters seem like apparitions, or sleepwalkers under a spell.

Art historian William Gaunt pointed out that Kelly's figures do not inhabit the scenes in which he places them, so much as haunt them. To Kelly's delight, this painting was purchased by the esteemed art critic Herbert Read (1893-1968). Kelly persuaded Read to write the introductory essay for the book *Paintings by Felix Kelly* (which reproduced 41 of the artist's works) by agreeing to put this work, which Read owned, on the cover. Kelly wrote to Read to explain his approach to painting: "Firstly, before commencing ... I must realise the emotional content of my subject. Secondly, whatever the subject, either imaginative or otherwise, I like to compose it not only of the visible but the invisible people or things once there. Thirdly, I suppose it is obvious that the classical symbols of the 18th century have the strongest appeal."

In *Three Sisters*, this recipe is evident: the mood is sombre, the figures ghost-like and the architecture Georgian. Perhaps the whole picture is a depiction of the struggle between classical order and romanticism? Or just an imaginative reconfiguring of female figures on the route from the nurses' home to the hospital during the wartime blackout? Interpretation remains elusive, which is what makes this tiny work so compelling.

SEE MORE ARTWORKS

artcollection.auckland.ac.nz

The online catalogue lists 1,200 works although the number is now 1,700.

See the Felix Kelly piece at artcollection.auckland.ac.nz/record/605476

Watch more about the collection:

artcollection.auckland.ac.nz/video/



Linda Tyler tours artworks in the Science Building at auckland.ac.nz/ingenio

Whakataukī for living

Dr Hinemoa Elder has lived an extraordinary life, in and out of the limelight. Now a respected psychiatrist, she has collated 52 proverbs in a powerful book to provide life lessons in stressful times. **Janet McAllister** talks to Hinemoa about how the Māori wisdom in *Aroha* can help us live contented lives in harmony with the planet and ourselves.

“I remember being told I was a ‘TV bimbo’ when I was training in psychiatry, having already completed my medical training,” writes

Dr Hinemoa Elder, in one of the many lively personal snippets she drops into *Aroha*, her new book of whakataukī (proverbs).

“I was blindsided. Those words aimed to put me in a box. Those words were designed to constrain and define me ... preclude me from being anything else.”

Hinemoa is a child and adolescent, and youth forensic, psychiatrist as well as Māori strategic leader for Brain Research New Zealand, based in the Anatomy Department at the University. She breaks constraints, opens boxes and defies assumptions – showing they’re irrelevant for everyone. Why shouldn’t a scientist be glamorous? Why wouldn’t a psychiatrist be concerned about climate change? Why don’t more clinicians promote te reo Māori, given it protects against mental distress and addiction for Māori? And why shouldn’t a leading Māori child psychiatrist be proud of her past, presenting children’s programmes? As she writes: “All the women I know who work in television are skilled and dedicated people.”

We talk via Zoom during Hinemoa’s lunch break at a Milford clinic, under Level Three rāhui. Even under fluorescent lights in an anonymous office, Hinemoa has charisma, her moko kauae framed with earrings of replica white-tipped huia feathers, symbols of mana and leadership. She has described the moko process as “extraordinary”, telling an Auckland Women’s Centre audience earlier this year that the artist, “tohunga of karakia” James Webster, “sent me to another realm. At one point I did feel like I was under the ocean ... It was amazing.”

This is what a Māori scientist looks like.

Hinemoa’s path to becoming a scientist began with tragedy. Her mother, Ina, had died of breast cancer in 1991 and Hinemoa took her body to the Medical School. Sir Richard Faull, neuroscientist and director of Brain Research New Zealand, said it was “no small gift”.

“It’s very uncommon in our culture as many of

us believe in the sanctity of all parts of the body being buried together,” says Hinemoa. “But as a whānau, we agreed to support her dying wish. It had a profound impact on me that my mother had chosen to do this.”

Sir Richard later became a supervisor for Hinemoa’s PhD and encouraged her to join the brain research team. One of the most influential people in her career, he’s now her boss at Brain Research New Zealand.

“My mum showed the way,” she says.

When Hinemoa suffered another tragedy, her younger brother taking his own life, she says the whānau experience of loss and pain was part of the reason she became a psychiatrist.

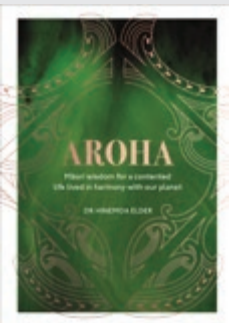
“So I could work alongside those with suicidal thoughts, and support them to stay alive and support their families,” she says in *Aroha*. “Some might say that is ridiculously impossible. Well, I am all for attempting the seemingly impossible.”

That’s where a proverb like, “Ki te kotahi te kākaho, ka whati; ki te kāpuia, e kore e whati” resonates. It means, “If a reed stands alone, it can be broken; if it is in a group, it cannot,” or “When we stand alone we are vulnerable, but together we are unbreakable”.

These days she’s also a member of the NZ Mental Health Review Tribunal and occasionally guest lectures at the Faculty of Medical and Health Sciences. Her activities all seem to work towards a common goal, like strands woven to create one tapestry – one tukutuku panel. The pattern she’s weaving, her kaupapa, is perhaps summed up by *Aroha*’s subtitle: *Māori Wisdom for a Contented Life Lived in Harmony with Our Planet*. The well-being of people and Earth are interconnected – and she says we need to value Indigenous knowledge to get there.

Case in point: in her doctoral research, Hinemoa developed a clinical tool, Te Waka Oranga, that recognises that cultural and whānau knowledge – not just clinical knowledge – are essential for assisting children and rangatahi recovering from traumatic brain injury.

Hinemoa recorded Indigenous knowledge through wānanga (learning) on marae and was guided by whakapapa (in her case, Te Aupōuri,



Aroha

Dr Hinemoa Elder,
Penguin Random
House New Zealand,
\$30

We have two copies
to give away.

Email: [ingenio@
auckland.ac.nz](mailto:ingenio@
auckland.ac.nz)
with your details by
8 December.

“I am all for attempting the seemingly impossible.”



Ngāti Kurī, Te Rarawa and Ngāpuhi). “I went home [to ancestral whenua in the Far North] to ask permission to do research regarding the brain, the head, a sacred part of the body.

“One kaumatua said ‘yes, you can do that, but you have to bring it home first’. So I always brought it home.”

The tool is now used by a rehabilitation centre in Ranui, West Auckland, an impressive direct translation from research to practice.

The book *Aroha* continues this centring of mātauranga Māori (Māori knowledge). It’s written partially to challenge the idea that Māori culture “is some sort of relic that should just be left in a museum”, preserved and fixed, boxed and labelled. Instead, the book promotes a living, evolving culture, by including whakataukī written by Hinemoa’s own kaiako, her own teachers.

Hinemoa’s hoped-for audience includes those who feel alienated from their own culture, labelling themselves as “plastic Māori”. She describes such harmful terms as internalised colonisation. “It’s a different kind of infection, if you will. A different kind of virus. The structures of the dominant culture are exquisitely attuned to infecting us with ways to hurt ourselves, and hurt each other.”

But *Aroha* is warm and perceptive, gently making te ao Māori accessible and relevant to all – through tantalising and sometimes poignant glimpses of her own life.

“My mum continues to have the most critical impact on my life. I have a chat with her most days. She remains my yardstick.

“She is still the takere, the hull, of my waka, canoe, and my journey is better for that.”

Like her fellow local physician writers – playwright/paediatrician Renee Liang, poet/GP Glenn Colquhoun and essayists Emma Espiner (Ngāti Tukorehe, Ngāti Porou) and Sylvia Giles, Hinemoa offers stories because “science alone is not going to save us”.

She says we need stories – the traditional vehicle of Indigenous wisdom, encompassing cause-and-effect, empathy and explanation – to make us care.

He aha te kai a te rangatira? He kōrero, he kōrero, he kōrero. Good communication is required for good leadership.

By that – and any other measure – he rangatira ia. Here is a true and remarkable leader.

Dr Hinemoa Elder wrote the stories in her book Aroha partly because “science alone is not going to save us”.
Photo: Elise Manahan

Doctoral candidate Ashlea Gillon (Ngāti Awa) assisted with this kōrero.

PERFECT PROVERB FOR 2020

Whakataukī: *He iti hoki te mokoroa nāna i kakati te kahikatea* / While the mokoroa grub is small, it cuts through the white pine.

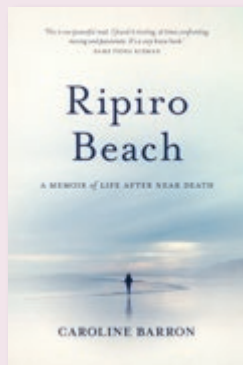
There is power in small things.

“I’ve had days where it’s been tough,” says Hinemoa of the Covid-19 lockdowns. “Life can feel pretty overwhelming. I’ve had to tell myself ‘get up, get out of bed, get dressed. Vacuum the lounge. Put the kettle on, feed the dog’ and I can manage to do those little things.

“So, I have found this whakataukī really comforting, because it reminds me that little things matter.”

Internal forces

Delving into family history, you're bound to uncover secrets. That's what alumna Caroline Barron found in researching her memoir. She talks to **Tess Redgrave**.



Ripiro Beach: A Memoir of Life After Near Death, Bateman Publishing, \$35

There is a pivotal scene in *Ripiro Beach* when author Caroline Barron steps out of Fruit World in Richmond Road, Grey Lynn.

As grocery bags crash against her calves, a woman in a Volvo station wagon speeds past in the carpark “so fast”.

“It happens in an instant,” writes Caroline. “Rage springs from the pit of my stomach into my chest, constricting my throat.

““Slow the f... down!” I scream – actually scream – my vocal cords clanging.”

The woman in the Volvo looks like she is about to cry. A roadworker in a high-vis vest looks on.

“How could I have lost it like that?” Caroline writes a few paragraphs later. But for many readers, there’s been a similar moment in our lives when we, too, might have asked ourselves: “How could I have been such a bitch?”

In *Ripiro Beach*, Caroline doesn’t flinch from telling her story – just as it is.

That incident outside Fruit World came during a gruelling personal time for the author, trying to overcome the impact of a near-death experience and loss of her uterus during childbirth; of ongoing grief over her father’s death when she was 20, and of a close friend’s recent, untimely death. She had also been exploring her father’s bloodline (he was adopted) uncovering suicide, brain tumours, heart disease, early death and violence, and a Māori heritage she didn’t know how to open.

“There are too many things to process,” she writes, “so it is easier to remain buried beneath.”

But she doesn’t. As Caroline seeks the medical and wellness help she needs, she travels to Northland to untangle her Māori whakapapa and discovers a physical and spiritual home at Kaipara’s Ripiro (Baylys) Beach. Her journey, and the memoir she is writing in ‘real time’, turns into a story of healing and transformation. “I see memoir and books in general as a salve, to answer questions, to help me find a way forward,” she says.

If her full email inbox is anything to go by, readers from all around the country have found aspects of her a story a ‘salve’, too.

Tall and lean, Caroline was a teenage model for Maysie Bestall-Cohen, and then in her mid-twenties took over the management of Nova Models & Talent and ran the top agency until 2009.

But writing is her first love. She has kept



As Caroline Barron’s words poured out, she drew on skills learned in her Master of Creative Writing.

journals since she was 13 and has a degree in journalism. In 2015, she won a coveted place on the University of Auckland’s Master of Creative Writing (MCW) and worked on a fictionalised account of her father’s conception and adoption.

But it was only once the MCW year was over that Caroline felt an “unbelievable internal force to write memoir”. As the words “poured out”, she drew on skills learnt during the MCW.

“We had been taught how to close the narrative gap between the reader and the words on the page, which means understanding and going deeply into a character’s point of view.

“With memoir, I am the character.”

As *Ripiro Beach* neared publication, Caroline admits she did “um and aah a lot” about taking the Fruit World scene out, but felt it had “real resonance”. Her approach was affirmed when in 2018 she did a masterclass with Norwegian memoirist Karl Ove Knausgård.

“He said, remember, the closer you get to yourself, the more universal it becomes.”

“I realise this is the key,” writes Caroline at the end of *Ripiro Beach*. “I must try my best to tell the truth as deeply as I can. For perhaps this is the thing that will connect to the outside world, to other people whom life has also tripped up.”

WIN: We have two copies of *Ripiro Beach* to give away. Email: ingenio@auckland.ac.nz by 8 December.



Shining Land

Associate Professor Paula Morris, who runs the Master of Creative Writing programme, and photographer Haru Sameshima, explore the world of New Zealand journalist, poet, fiction

writer and war correspondent Robin Hyde. They each visit locations important to her life and ground-breaking work, embarking on separate road trips and then reporting back with words, pictures and different perspectives.

Paula Morris and Haru Sameshima, Massey University Press, hardback, \$45 (released 12 November)

WIN: We have one copy of *Shining Land* to give away. Email: ingenio@auckland.ac.nz with your details by 8 December.



The Telling Time

This first novel by Pip (P.J.) McKay (Master of Creative Writing, 2017) won the 2020 First Pages prize, judged by a panel including Sebastian Faulks. *The Telling Time* is the story of Gabriijela, a young Croatian exiled to New Zealand from the town of Korčula in the 1950s, who is harbouring a secret.

P.J. McKay, Polako Press, \$35



This Pākehā Life: an Unsettled Memoir

Award-winning author Professor Alison Jones from the Faculty of Education and Social Work has written an account of a life spent traversing Pākehā and Māori worlds. It's also an insight into New Zealand's social history of the past 60 years.

Read an interview with Alison: auckland.ac.nz/alison-jones-memoir

Alison Jones, Bridget Williams Books, \$40



Fake Baby

Amy McDaid, who has a Bachelor of Nursing and Master of Creative Writing from Auckland, has had great success with her darkly funny satire, exploring resilience, mental health and being real. Amy works

as a neonatal nurse at Starship and this was her first novel. It's been out since April but was still in the top 10 NZ books (Nielsen) in September.

Amy McDaid, Penguin Random House, \$36



The Girl from Revolution Road

The essays of Ghazaleh Golbakhsh, alumna, Fulbright scholar and filmmaker, are based on her experience as an Iranian immigrant. Subjects range from a night spent in prison as a six-year-old to learning English at her Auckland primary school, and dating in the days of Covid-19. Hear Ghazaleh talk about the essays on RNZ. tinyurl.com/RNZ-Revolution-Road

Ghazaleh Golbakhsh, Allen & Unwin, \$37



The Best of Times, The Worst of Times

Alumnus Dr Paul Behrens (PhD physics) is an assistant professor of energy and environmental change at Leiden University in the Netherlands. His book, subtitled *Futures from the*

Frontiers of Climate Science, features climate hope as well as pessimism and chapters on subjects such as energy, food and economics.

Paul Behrens, Indigo Press (to be released 1 December)



The Girl in the Mirror

If you haven't heard Rose Carlyle's story, best Google it. Rose is another graduate of the Master of Creative Writing programme and was a Michael King Writer in Residence in 2020. Her best-selling debut novel is a thriller about identical twins. The overseas rights to it were snapped up after a bidding war and the film rights have also been secured.

Read more: tinyurl.com/Rose-Carlyle-Stuff

Rose Carlyle, Allen & Unwin, \$33



How to Talk About Spiritual Encounters

Professor Peter Adams, from the School of Population Health, probes the language people use when discussing their spiritual encounters. Written in the style of café conversations.

Peter J. Adams, Palgrave MacMillan, hardback, \$150

Mophead cleans up



In August, *Mophead: How Your Difference Makes a Difference*, written and illustrated by Associate Professor of English Selina Tusitala Marsh, won the Margaret Mahy Book of the Year at the NZ Book Awards for Children and Young Adults. As well as top children's book, the graphic memoir also won the Elsie Locke Award for Non-Fiction.

Selina's next book is

Mophead Tu: The Queen's Poem to be published on 12 November. In *Mophead Tu*, Selina is crowned Commonwealth Poet and performs for the Queen at Westminster Abbey.

Selina Tusitala Marsh, Mophead Tu: The Queen's Poem, Auckland University Press, \$25



CONNECTION POINTS



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SIGN UP

RAISING THE BAR: BACK IN 2021

From its launch in 2017 to its digital debut in 2020, the popular Raising the Bar (RTB) event has regularly sold out across Auckland. RTB takes research outside lecture theatres with a series of interesting subjects, speakers and venues each year. In 2020, it became the 'home edition' online due to lockdown, but all going to plan it will be back in the real world and online in 2021. Twenty of the University's academics will fill inner-city bars for entertaining, thought-provoking discussions on topics affecting our everyday lives. Sign up to RTB e-news at rtbevent.com for updates. If you missed RTB 2020, see: rtbevent.com/rtb-auckland-home-edition



STAY

SUMMER STAYS: CHEAP HOLIDAYS

Student accommodation becomes holiday accommodation in the summer months. We have a limited number of places to stay at Carlaw Park and 55 Symonds Street, offering excellent facilities at affordable prices. Summer Stays also gives back to the students by subsidising their accommodation costs. Use the code UOAAAlumni for 10 percent off stays at Carlaw and 55 Symonds Street. Book your Auckland summer break today at summerstays.auckland.ac.nz



NOMINATE

EXCEPTIONAL ALUMNI FOR 2022

Each year the University presents up to five Distinguished Alumni Awards to honour people who have made outstanding contributions to their professions and their communities. (Pictured are 2019's winners, from left, young alumnus William Pike, Simon Talbot, Moana Maniapoto and John Bongard.) The 2020 event was cancelled, but we're hoping to create double the magic in 2021. We'd also like nominations for 2022 and these close on 30 June, 2021. If you would like to nominate an exceptional alumna or alumnus, visit auckland.ac.nz/daa.



LEARN

EMBRACE TE REO

Te Kūaha, meaning The Doorway, is an educational app for alumni, staff and students to learn basic te reo Māori and protocols including a few waiata. The app is part of a programme of work to inspire the revitalisation of te reo. Download Te Kūaha from Google Play, Apple and Windows stores. Find out more at: auckland.ac.nz/te-kuaha



VOLUNTEER

LEND A HAND

Through our informal mentoring platform, Alumni Connect, you can now share your career insights to support our students and exchange industry advice with fellow alumni. Whether it's a chat about career possibilities in your industry, or what it's like to work in your part of the world, it's a rewarding way to give back. Connections are made online but mentors and mentees can meet up if they wish. Volunteer your expertise today at connect.auckland.ac.nz.

Volunteering doesn't have to take a lot of your time and it can make you feel part of your community, too. Our volunteers – be they alumni, students, or friends – have helped improve native bird habitats, lent a hand to community organisations, assisted with special needs children in classrooms and much more. There's usually a volunteering event that ties in with your interests, too, so that makes it especially rewarding. Head to auckland.ac.nz/volunteer to find a range of volunteering opportunities.



CATCH UP

NETWORKING EVENTS

University of Auckland events are always interesting and a chance to catch up with alumni or network with new people. There are mainstay events such as annual distinguished alumni celebrations and the Golden Graduates lunch, to alumni and friends receptions including one in Christchurch, 18 November and one in Wellington, 19 November. There are also informal gatherings led by alumni. In these unusual times we are finding ways to connect and engage online as well. Update your email address at alumni.auckland.ac.nz/update and we'll make sure you stay informed of events or changes to events. Or visit our events section at nvite.com/community/universityofauckland for the latest.



SHARE

TELL US YOUR STORY

This year brought the need for volunteers to the fore, despite restrictions on physical distancing created by Covid-19. The pandemic has created different kinds of needs in the community and Volunteer Impact Week 2020 went ahead from 21-27 June during Level One. The University community stepped in to help virtually and in projects in the real world around New Zealand.

We'd like to hear from people who've done any volunteering this year, from a little to a lot. Tell us your story by writing to alumnivolunteer@auckland.ac.nz with a few sentences about your volunteering and the impact it had on you and others. It'd be great to get a photo of you volunteering, too.

UPDATE YOUR DETAILS: BE IN TO WIN A BOSE SPEAKER

Update your contact details to stay informed about your university's news through our alumni publications, emails with exclusive offers, competitions and information about events happening near you. If you update your email and postal address at alumni.auckland.ac.nz/update before 31 December 2020, you'll go in the draw to win a Bose Wireless speaker worth \$479. Or just fill out the form that came with this magazine.



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