Uni NEWS

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November 2022

UNIVERSITY OF AUCKLAND
Waipapa Taumata Rau

BRENDON DUNPHY

Giving sea birds the best chance of survival in a changing climate

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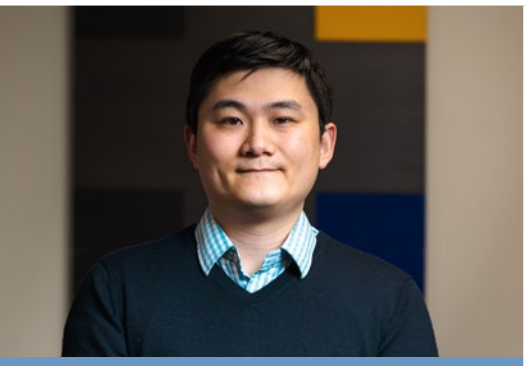

TALKING ABOUT TECH

Andrew Chen was living a busy research life when the pandemic hit, leading to an unexpected new role

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University brain and heart scientists visit an A & P Show and Cosmopolitan Club to share research with communities

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LIFELONG LEARNING

Spring graduates share their love of sticking with education, no matter what their stage of life

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IN THE **NEWS**

A selection of Waipapa Taumata Rau, University of Auckland staff and student expert commentary in the media recently. Email: uninews@auckland.ac.nz


Ruth Monk

DESCRIBING THE NEURODIVERSE

Research fellow Dr Ruth Monk talked to Melbourne's *SBS News* about a piece she'd published in *Trends in Neurosciences*. It outlined terms to avoid in describing the neurodiverse, such as 'people with autism' and the terms to use, such as 'autistic people'. She said autism is part of a person's identity and something the majority feel positive about. They want to see an end to terms like 'cure, treatment or intervention' and to use 'specific support or service'.

Link: tinyurl.com/SBS-Ruth-Monk


William Cheung

IMPACT OF AIRBNB

Senior property lecturer Dr William Cheung was featured in *Stuff* to talk about a paper he co-authored with Associate Professor Edward Yiu (Property at the Business School). It explored the impacts Airbnb listings can have on different locales and residential rent prices. William said the effect on neighbourhoods reveals a need for designated zoning laws.

Link: tinyurl.com/William-Cheung-Stuff

WHAT LIES BENEATH

Professor Kathy Campbell talked to *Breakfast* on TVNZ about microbes on Mars. She was commenting after French scientists suggested microbes could have thrived just beneath the planet's surface billions of years ago, but would likely have wiped themselves out by producing climate-altering methane. If life once existed near the planet's surface, could it now exist deeper down? "Is there life down there now?" Campbell asked. "Those are the big questions."

Link: tinyurl.com/TVNZ-Kathy-Campbell


Annie West

GUTS OF THE MATTER

Dr Annie West told *Newshub* about her research on the microbiome of the endangered kākāpō. "Their gut is dominated by *E. coli* and that's very strange in the animal kingdom," she said. Searching for animals with a similar microbiome, the closest contender she has come across is a mammal, the giant panda. Knowing more about the kākāpō's microbiome can aid efforts to keep the bird healthy. Only 252 are alive, managed by the Department of Conservation.

Link: tinyurl.com/Newshub-Annie-West


Jan Eldridge

STARS IN THEIR EYES

Astrophysicist Dr Jan Eldridge walked RNZ listeners through images from the James Webb Space Telescope showing rings of dust radiating around two stars more than 5,000 light years from Earth. The images showed 17 rings which, like the rings in trees, record the passage of time. The two stars, which have an eccentric orbit around each other, create the rings when their winds collide about every eight years.

Link: tinyurl.com/RNZ-Jan-Eldridge


Linda Tyler

ART EDUCATION NEEDED

Art historian Associate Professor Linda Tyler talked to RNZ's *Nine to Noon* about the high-quality New Zealand art on display in corporate offices in Auckland City, as part of the 2022 Art in the City programme. Linda also discussed some businesses' lack of understanding about artworks inherited in newly acquired buildings.

Link: tinyurl.com/RNZ-Linda-Tyler

THIS ISSUE

STAY IN THE LOOP

Your staff email newsletter *Whaimōhio The Loop* comes out every fortnight. If you have content or achievements to share, email: staff-comms@auckland.ac.nz. Deadlines are on the intranet under News, Events and Notices, *The Loop*.

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denise.montgomery@auckland.ac.nz
PHOTOGRAPHY: Billy Wong, Elise Manahan
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GREAT ACHIEVEMENTS

Earning a degree is hard work, but many people can't get enough of learning and academic success.


Natasha Urale-Baker


Emeritus Professor Alan Kirkness


Cass Mark-Chan and Andrew Chan

Lifelong learning was highlighted by many of those crossing the stage at the spring graduation ceremony.

Around 2,500 students graduated at ceremonies at the Vector Arena, including 81-year-old Emeritus Professor Alan Kirkness who was awarded a higher doctorate – the Doctor of Literature (LittD) – for his internationally acclaimed and ground-breaking work on the *Deutsches Wörterbuch* (German Dictionary) founded by the brothers Jacob and Wilhelm Grimm, and its history and place in the development of German lexicography.

Alan is an emeritus professor who taught in what was then the Department of Applied Language Studies and Linguistics at the University, retiring in 2004. The award of a LittD is a significant accolade and recognises Alan's international eminence and work of real distinction over an extensive period.

"It's both gratifying and humbling to be recognised as a scholar by my home university, especially as practically all my work is in German and on German topics," says Alan.

"My scholarly reputation, such as it is, is more likely to be situated in Germany rather than here in New Zealand. This makes the award by the University of Auckland even more of an unexpected honour."

Alan says he won't stop learning any time soon.

"I am fully retired, but I am now reading about New Zealand history over the past few centuries, in an attempt to understand more of the Māori world and today's ethnic relations, not least with reference to the Treaty of Waitangi.

"It's a completely different focus, where I have a great need to catch up."

Another graduate, Jim Floerchinger, aged 52, says he made several friends during his later-in-life studies, and was jokingly dubbed the 'outlier' by younger students in his statistics class.

Jim graduated with a master of management in international business. The pandemic was a catalyst for the Missouri-born former Harvard water polo coach and current teacher to return to studying.

"I was sitting on the couch, thinking I wanted to pursue something different, and broader in scope and scale. The pandemic made me consider a few things, and feel like it was time to back myself a bit more."

During his full-time studies Jim was also a water polo coach, dad to a 13-year-old, and a King's College coach and teacher. It was challenging, but he graduated with first-class honours and top marks in several of his papers.

Natasha Urale-Baker set herself the ambitious task of completing three degrees in ten years as a mature student after heading to university at 47. She has now graduated with a PhD from the Faculty of Education and Social Work. She was the first Pacific student to complete her education from undergraduate to doctorate in social work.

Natasha's focus was Samoan funeral rituals. She says if you want to understand a culture, you need to look at its songs and rituals. Of Samoan descent, and a musician, her academic interests coalesced with the rest of her life in her research question: what do the songs used in Samoan funerals in Aotearoa tell us about Fa'asamoa (Samoan culture and identity) now?

"I was interested in what has changed and what's remained the same in Samoan funeral rituals," she says. "I'm very conscious that the Pacific population is changing very, very quickly, but I wanted to know what constituted the 'bedrock' of those rituals."

She was lucky to have completed her field research before Covid changed everything.

"Just after I submitted my thesis, it was a Covid lockdown and Samoan funerals changed forever, but fortunately I'd already gathered my data. Things will never be the same again; it was a snapshot in time."

Lifelong learning together was exemplified when 32-year-old Cass Mark-Chan and Andrew Chan graduated together.

The couple attended the same intermediate school, high school and university and got married along the way. They both graduated with a PhD in science in September.

"There was some healthy competition when we did a few of the same undergraduate papers, but it's been a really great experience going through it all together," says Cass.

Biologist Cass investigated the ecology and camouflage of the North Island lichen moth for her PhD. Chemist Andrew focused on so-called 'superconductor sandwiches' and the phenomena that arise when a very thin superconductor is sandwiched between layers of magnetic manganite.

Cass is now tutoring English and volunteering in entomology at the Auckland War Memorial Museum, while Andrew is working as a microscopy scientist at Plant and Food Research.

Is further university study conceivable?

"Learning's a lifelong thing, so who knows, we might be back," says Cass.

ALL GRAD STORIES

Read all the inspiring graduation stories at this link: **auckland.ac.nz/grad-stories**

Tūī in spring at the City Campus.
Photo: Elise Manahan

WORLD-CLASS **SUSTAINABILITY** SCORE

The University of Auckland's commitment to sustainability is paying dividends.

Quacquarelli Symonds (QS), which delivers the World University Rankings, has created an additional framework to show how universities are taking action to tackle the world's greatest environmental, social and governance (ESG) challenges. It's called the QS World University Rankings in Sustainability. There are two categories: environmental impact and social impact.

The inaugural QS World University Rankings in Sustainability have just ranked Auckland number ten in the world. Waipapa Taumata Rau is the only university with a top ten ranking in both the QS and the Times Higher Education (THE) rankings for sustainability. All other universities in the top ten are top 50 universities in the World University Rankings.

The University is ranked first in New Zealand in both environmental impact and social impact. It is ranked fifth globally for sustainable education and sixth globally for impact of education, placing the University of Auckland in the company of Ivy League (US), Russell Group (UK) and the Group of Eight universities (Australia).

This excellent result sits alongside the University's sixth place in the 2022 THE University Impact Rankings for sustainability earlier this year. The Impact Rankings assess universities against the Sustainable Development Goals. Having held the top place for the first two years of this ranking, the University of Auckland has remained in the top ten since.

The QS rankings measured 700 universities worldwide including 169 in Asia-Pacific, from an initial review of 1,300 universities.

Full story: auckland.ac.nz/QS-sustainability

WINNING ENTREPRENEURS

Consent, mental health, and water quality were a few of the real-world concerns tackled by innovators and entrepreneurs as part of the 2022 Velocity $100k Challenge.

A revolutionary solution to help improve precision and safety during neurosurgery was awarded first place at the Challenge awards ceremony at the University on 19 October.

The winning venture Neuroφnos, led by Auckland Bioengineering Institute research fellows Dr Hamid Abbasi and Dr Soroush Safaei, with Dr Jason Correia, deputy director at Neurosurgery Auckland Hospital and Dr Samantha Holdsworth, director at Matai Medical Institute, was awarded $25,000 seed capital.

Five other teams took home prize money to support their ventures to develop.

Full story: auckland.ac.nz/velocity-2022

NEW DEAN OF CREATIVE ARTS AND INDUSTRIES

Professor Nuala Gregory, the acting dean of Creative Arts and Industries (CAI), has been officially appointed as dean of CAI.

Nuala has been a senior manager in CAI for many years and takes over as dean from Professor Diane Brand, who retired last year. Nuala is also a well-known artist, mainly painting (her work *Vortex* is pictured).

"I really enjoy working with a dedicated, talented and good humoured team at CAI," she says. "That's what makes things possible for me to play my part."

EXECUTIVE ROLE FOR **FRANK**

Professor Frank Bloomfield has been appointed the new Ihorua Rangahau Deputy Vice-Chancellor (Research) and will become a member of the University Executive Committee.

Frank (above) is a professor of neonatology and director of the Liggins Institute who, until recently, held a concurrent position as consultant neonatologist at Auckland City Hospital. He will begin his role as DVC Research next March, taking over from Professor Jim Metson who, by next February, will have been in the role for seven years.

Jim will become the Vice-Chancellor's strategic adviser for the Newmarket Campus.

GLUCKMAN MEDAL

Professor Mike Dragunow (above) has been awarded the 2022 Sir Peter Gluckman Medal.

The medal was awarded in recognition of Mike's drug discovery in the field of brain injuries and trauma and his sharing of findings with the scientific community and the people of Aotearoa. Mike is committed to ensuring his research on the brain is contributing to patients, whānau and the global scientific community.

"I am but one member of a team who deserves this award," he says. "It represents an acknowledgement of our research approach and, in particular, acknowledgement of the donors and the families for whom we undertake the research."

Mike works in the Centre for Brain Research.

Full story: auckland.ac.nz/dragunow-gluckman-medal

SCIENTISTS DON GUMBOOTS FOR GISBORNE'S A&P

Top heart and brain scientists visited Tairāwhiti to talk about research and community health.

Some of the University's most eminent scientists donned gumboots in Tairāwhiti to attend the Poverty Bay A&P Show and give a talk at the Cosmopolitan Club in October.

Staff and students from the Centre for Brain Research (CBR), Manaaki Manawa Centre for Heart Research, Anatomy and Medical Imaging, Auckland Bioengineering Institute and Engineering shared the Mātai Research Institute's tent.

Manaaki Manawa director Professor Julian Paton says he had to purchase his first pair of gumboots for the agricultural fair.

"I was told they had to be a specific brand, 'Red Bands'. I had never heard of them before," says UK-born Julian. They proved their worth, as the spring weather was rainy and cold.

The team demonstrated live ultrasound scans, projecting the heart onto an interactive screen, as well as showing children 3D-printed 'Ken' and 'Barbies', with translucent skin and muscles showing the skeleton and circulatory system.

Despite the temptations of activities such as ferris wheels, wood-chopping, shearing and dressage competitions, hundreds of people aged from eight to 80 visited the Mātai tent, which went on to win Best Trade Site in Show.

Manaaki Manawa's goal is to reduce disparities in heart health and cardiac-related deaths in Māori and Pacific compared with other groups, by doing research differently and also engaging young people with science in the hope they go on to STEM careers. The scientists listened to locals' stories of whānau with heart disease, and answered questions.

"We're all about health equity," Julian says. "The way we're going about that is to reverse the standard way of doing things. We used to set up a hypothesis and drive it through to some outcome, then deliver that outcome to the community.

"Now we're going out to the community and asking them what the hypothesis should be. Then our experts address that hypothesis, test it and go back out to the community with the solution to the problem we originally discussed with them."

The Manaaki Manawa Outreach and Education team of researchers and students, led by Dr Anuj Bhargava, have been visiting schools and events around the country and are also heading to Hamilton Fieldays later in November.

CBR director Professor Sir Richard Faull (Te Āti Awa, Ngāti Rāhiri) grew up on a Taranaki farm and is no stranger to gumboots or A&P shows.

L-R at back: Professors Julian Paton, Chris Bullen and Martyn Nash L-R at front: Dr Carol Bussey, Lisa Wong and student Debbie Zhao. The 'patient' is Dr Gonzalo Maso Talou.

Professor Julian Paton in his first pair of gumboots, with Lisa Wong, research operations manager for Manaaki Manawa.

Cheryl Morley and Sandra Elsmore from Alzheimers New Zealand with CBR's deputy director Māori, Dr Makarena Dudley (right).

"We have been doing outreach from the start," Sir Richard says. "It's about going out to people affected by brain injury and brain disease and talking to them and their whānau on their land. This is important to everyone, but especially for Māori, who take care of the land and come from this land."

On this trip, CBR's deputy director Māori Dr Makarena Dudley presented an inspiring talk about mate wareware (dementia) at the Gisborne Cosmopolitan Club. About 50 people attended and Makarena was invited back to Tairāwhiti in February to present to other Māori health services.

As well as attending community events, the CBR's Being Brainy team visits schools, hosts a choir for people with brain injuries and disease, and has a Gavel Toastmasters group for people who have had strokes. Says Sir Richard: "We're taking our science to the people; and we are doing science for the people."

■ Jodi Yeats

L-R, back: Dr Sheryl Tan, Linh Nguyen (PhD student) and Professor Sir Richard Faull. L-R, front: Jess Kelly (PhD student), Professor Bronwen Connor and Brooke Hawker (PhD student).

Brendon Dunphy has been warning about the decline of tītī and other seabirds for many years. *Photo: Elise Manahan*

BRENDON DUNPHY: SAVING SEABIRDS

Just because most of us don't see New Zealand's seabirds doesn't meant we shouldn't ensure they are protected.

Dr Brendon Dunphy's preference was clear when it came to the popular Bird of the Year campaign recently. The tītī got his vote. The weka? Didn't stand a chance.

He's unlikely to ruffle any feathers by saying that. The tītī is the focus of many years of Brendon's research, and he is part of a group recently awarded $1m from the Ministry of Business, Innovation & Employment's Endeavour Fund to develop predictive tools to improve climate resilience for tītī.

Researchers from Waipapa Taumata Rau will work with Ngāi Tahu, other researchers from Plant and Food Research, the Department of Conservation, Manaaki Whenua Landcare Research and Tāmaki Paenga Hira Auckland War Memorial Museum. Their research will analyse how the effects of climate change, such as warmer waters, and El Niño, which creates warmer ocean surfaces in the Pacific, affect tītī stress levels and therefore breeding, because stress reduces breeding success. The team will also look at whether and why northern tītī colonies are more stressed than southern.

The tītī or sooty shearwater (*Puffinus griseus*) is also known as the muttonbird and it's a member of the petrel family of seabirds (*Procellariidae*). Its numbers have crashed over the past decade, mainly in the North Island.

"We are collaborating on another project to boost the numbers of sooty shearwaters on Kapiti Island, north of Wellington. Unfortunately, weka are getting into the tītī nests and eating the eggs. We're trying to work out what the heck to do. Whether we translocate the weka, which are also endangered, or create nesting boxes; we don't know yet."

Turns out, it's a bird-eat-bird world out there. (Watch the video at: **tinyurl.com/Kapiti-titi**)

But weka aren't the greatest threat to tītī.

"The bigger threats are climate change and pests. Around Auckland, the poor little chicks are just so much lighter and we think it's because of the parents taking longer to find food. There's a real risk they will die out in this area. Pests such as rats and stoats are also a big problem. Even light pollution has been shown to be deadly – causing birds to crash into buildings in the city and die."

Most tītī live on Rakiura (Stewart Island) and thrive on predator-free Tini Heke (the Snares Islands). That's where the cultural harvests of the muttonbird take place. It has been a traditional food for Māori for thousands of years. In those areas, there are millions of birds, and around 350,000 are taken for the harvest. (See sidebar.)

"That harvest also provides good information for researchers – the birds' feathers can tell us if the birds have been stressed, through the hormones released, and also what they were eating," says Brendon. "As researchers, we've partnered with Māori harvesters to get these samples as part of our research into the impact of climate change on seabirds' food sources."

The cultural harvest is guided by kaitiaki and there is a rāhui (ban) in some parts of the country on taking similar birds, for example the grey-faced petrel, the northern muttonbird.

"One of our goals is to provide as much information to kaitiaki to assist them in making those decisions and management of the birds."

Brendon is keen to protect other seabirds along with the tītī. "There are more than 20 species of seabird in the Hauraki Gulf. If you take away a lot of the agents of mortality, get rid of all the pests and stop the fisheries-induced mortality, then the birds can spring back pretty well.

"One of the problems is these seabirds aren't well-known like the kākāpō. People are unlikely to see them. They often come in at night and then head off out over the horizon. Unless you've got a boat, you don't really know about them.

"When people think of seabirds, they usually just think of seagulls which are screechy and annoying and steal your chips!"

Brendon and others have been warning about the decline of tītī and other seabirds in the north for many years. Ninety percent of Aotearoa New Zealand's seabird species are under threat. Only 3,600 yellow-eyed penguins survive, despite conservation efforts, the National Plan of Action for Seabirds and many community projects around the country for such birds.

Warmer oceans and reduced food sources, and fishing nets and lines are all having an impact. Plentiful food is vital for tītī, which migrate to the North Pacific to feed and then head back to New Zealand within 11 days to breed. They need a high-quality diet to put on around 50 percent of their body weight to make the migration and enable them to be strong enough to dive to great depths for further feeding.

Brendon, who is very much a pen-and-paper

person ("you don't have to download updates or change batteries"), has embraced technology and even harnessed the power of the International Space Station for the group's tītī research.

"We've been tracking migrating and breeding tītī over both hemispheres using GPS tags on the birds. They have a tiny solar panel and as they fly across the North Pacific, they feed data to the space station and back to us."

The birds travel a very long way on their round trip so need to eat enough to maintain weight. They travel up to what's called the Emperor Seamount Chain, with Alaska, California and Japan, being key destinations. Around three or four million depart from the Snares Islands, which are about 100km southwest of Stewart Island, and return in spring for the summer breeding season.

"I would love to know how that evolved," says Brendon of the strange and energy-sapping annual journey. "They're chasing summer and constant productivity."

As the birds come in to breed, the GPS tracks what they're doing and where they're going. Technology also allows researchers to work out what the birds have been eating.

"You get stable isotopes. Nitrogen doesn't tell you what specific species they're eating, but it tells you if it's squid, fish, krill, whatever. We sample the feathers and that can also tell us how stressed the birds were up there, which can inform how well they're going to do this year."

Trackers on the birds are matched to satellite data that show the environmental conditions they've encountered along the way.

"This means we'll be able to develop a predictive model of how breeding success is affected by ocean conditions."

Brendon is passionate about conservation of all seabirds and it shows in his teaching. In 2020, he won a University Teaching Excellence Award and in 2021 won a national award for Sustained Excellence in Teaching.

He says students should expect the unexpected, in their first year at least. Students are expected to dance and move in his lectures to learn complicated terminology. The idea came to him while he was doing a te reo Māori class.

"We were learning kapa haka as part of it, and when you're beginning to learn te reo it helps to associate a word with movement. I got thinking about how to use it in my teaching. Zoology has so much terminology – students will learn around 20,000 words during the course of a zoology degree. So I was just trying to find a more engaging way to get those words across."

He admits the first time he tried it, he felt a bit like the embarrassing dad dancing.

"I try such things out on first-year students, because they're always up for something new. There's nothing like the sight of 400-500 students

"One of the problems is these seabirds aren't well-known like the kākāpō." *– Dr Brendon Dunphy, senior lecturer, School of Biological Sciences*

standing in front of you doing these things. But what's hilarious is that all my postgrad students who come through three or four years later remember it. They actually bonded over how embarrassed they felt doing it. But they still know it and the zoology words!"

Brendon has now built dance into stage two classes as well. "I'm just trying to get students to use their bodies in learning – professor of statistics Rachel Fewster (Faculty of Science) inspired me to do that. She said if you can relate it to the students themselves, they'll remember they have a body and learn the terms. It works."

Brendon, a senior lecturer in the School of Biological Sciences, is also an inclusive teacher.

"I welcome all answers. We're not going to mock each other; we are here as a whānau of learners. I ask them, 'What's going to work for you?'"

He embraces whakawhanaungatanga, which he describes as "a relationship-building concept".

"It works in a classroom where you want everyone to contribute and feel a part, not just having to listen to me talking at them."

It's also related to the principle of ako ako – the reciprocal relationship between teacher and student. "I really like it when I set a class a problem and we work as a team to solve it. Relationships are absolutely key."

Brendon, who is Pākehā, has been learning te reo Māori but isn't fluent. He is married to Cath Dunphy, Kaikōkiri Rautaki Māori in the office of the Pro Vice-Chancellor (Māori), and the couple's two children had a full te reo immersion education within puna reo and kura kaupapa Māori.

Brendon grew up in Stanmore Bay near the beach, the youngest of seven children.

"Dad was a teacher, and this was back in the day when you could afford coastal property. Instead of watching TV, I'd just go down to the rock pools."

He did all his degrees at Waipapa Taumata Rau but tries to explain to his students that he himself wasn't an A-grade student.

"It took me quite a while to get into learning and to navigate this whole university space. I didn't really plan to teach at the University but during my PhD I found out we were having another child so I needed to find a job and was fortunate to get a teaching job here. Later I transitioned over to lecturing."

His teaching now covers every level of the biological sciences degree programme from first year to postgraduate, focusing on biodiversity, marine organisms and aquaculture.

His leisure time also involves nature – surfing is his first love but also just being outdoors, such as tramping in the Waitakere area. It also gives him time to think. "The key thing I find for our students nowadays is that they can see that the world has problems and they want to be part of the solution. How do we cater to their desire to do that?

"I'm so positive about the capacity that the people in this country have to learn from each other. I think we have a great opportunity to go forward and if we can just get it right we'll be unstoppable. I truly believe that."

■ Denise Montgomery

Cultural harvest (muttonbirding)

Rakiura (Stewart Island) Māori and descendants have the rights to gather muttonbirds on 36 islands, the Tītī Islands, around Stewart Island. They can harvest chicks each year from 1 April to 31 May under the Tītī (muttonbird) Islands Regulations 1978. Muttonbirds are plentiful in this region, and in recorded history Rakiura Māori have never imposed a catch quota. Harvest-management systems on each of the islands are determined by traditional guidelines (kaitiakitanga). **Source: teara.govt.nz**

Brendon Dunphy checking on the health of a grey-faced petrel chick on Mokohinau Islands in the Hauraki Gulf.

ANDREW CHEN: VOICE OF REASON

From 2020, Dr Andrew Chen was called on by media to explain the Covid-19 app. He'd not long completed his PhD and hadn't done media training. He nailed it.

Dr Andrew Chen is an expert in AI, machine learning, video analytics and technology ethics.

Being an excellent communicator of complicated technology concepts, he is bemused that the only time he's made it onto one of the biggest broadcasters in the world, CNN, was to discuss something of global importance – Wordle.

"It was the weirdest, most surreal experience of the past year. I wasn't talking about my academic work or my expertise …

"I was talking about the person who came up with the Wordle emojis, its familiar coloured squares. CNN found a *BuzzFeed* article with me and two others talking about emojis and contacted me. I thought I might as well.

"There's a five-minute segment that aired at around 4am in the US, so not many will have seen it. After having put so much time and effort into Covid-19 communications, turns out the thing I'm on CNN for is Wordle."

He's not grumpy about it at all – it's hard to imagine Andrew being grumpy.

And that media training he mentions? There's a funny story about that too. When he was finishing his PhD in 2019, he was offered a part-time role as a research fellow at Koi Tū: the Centre for Informed Futures, directed by Professor Sir Peter Gluckman, to research digital technology and its impacts on society, including ethics and privacy.

But his partner, now wife, had just been offered a job in Wellington so he asked if he could do the research from there. That was fine and, as it turns out, fortuitous in many ways. "We didn't know that Covid was going to happen, and, of course, it didn't matter where I was once that happened and we were working from home."

Ultimately, it was useful for Andrew to be in the capital when the pandemic was proceeding full throttle. "It was surprising for a few of the policymakers when I'd say, 'I'm actually in Wellington, so I can come to the office and have a chat.' In terms of building relationships, it's easier to do that."

Prior to the first 2020 lockdown, Andrew had been due to do the Science Media Centre media training course in May. Instead, he learned to swim by being thrown in the deep end as the local go-to expert on technologies developed in response to Covid-19. He appeared on radio, TV, online and in print media, as well as penning opinion pieces.

His PhD was titled "The Computers Have a Thousand Eyes: Towards a Practical and Ethical Video Analytics System for Person Tracking" and he was able to adapt some of its concepts to the questions being asked early on about QR-codes, the Covid-19 app and Bluetooth tracing. It all seems like a blur now, but at its peak during the pandemic, there were almost four million QR-code scans in a day, from almost 1.5 million phones, and around 2.4 million devices exchanging Bluetooth handshakes around the country.

Before that, when the app was just being mooted by the government, Andrew was pushing against technologists who claimed building a good app was easy. "People were saying 'just do it', like it should be done overnight. And, yes, people were building their own systems overnight, but they weren't good systems. They didn't think about all the things a government needs to think about. I was trying to paint that picture.

"Then the government released its app in May 2020. Before that, they didn't know anything about me. But one of my friends found the app on a server and said it was available, the day before the government intended to release it.

"Then somebody else started tweeting about it and I thought, 'Okay, well if they've already started talking about it, I should talk about it too.' Previously I didn't want to spoil their plans. So I told everybody 'hey, the app is here if you want to try it' and gave the link and apparently it crashed the system because they weren't ready for it. So that's how the government found out about me!"

The ministry asked to meet him. "I explained to them that I was just a researcher. They weren't angry. They were just kind of pleased someone was actually interested."

There were already many science communicators talking about the disease and modelling, but not so much about the app and digital contact tracing. "I was interested in the ethics of it as well and did some study on that."

Andrew points out he was never paid by the government to comment on any aspect of the Covid-19 app.

"I wanted the freedom to be objective. And because I was in Wellington I could meet with officials and get an idea of what they were trying to do. It was always going to take them some time to roll out all of the features. But I got the chance to understand what was going to happen before they announced it, so that when the media asked me for an opinion, I was knowledgeable.

"Of course, there were times when the app could have been better. But that wasn't down to the developers as much as getting the decision-makers and ministers to understand it. If I noticed something that wasn't good, that's where I could elevate issues a bit more."

> ***"We're looking at AI systems and how people contribute to these systems without even knowing it."***
>
> *– Dr Andrew Chen, research fellow, Koi Tū*

An example was when Covid re-appeared in the community in August 2021, but public health officials didn't seem to be using the Bluetooth information coming in from around a million people, even after more than a week.

"I said 'all these people are contributing data to the system, something should be appearing by now.' I was asking questions and wrote an article on *The Spinoff* and the *NZ Herald* pointing out there must be a problem. In the second week the health officials said, 'ah, yes, there's something wrong' and had to fix it."

This was important because the original theory around contact tracing was that if the system could get people to isolate faster, it would slow the spread of the disease.

Andrew now has a couple of government contracts that largely arose from the way in which he communicated during the pandemic. He is also working for Matū in Wellington, a venture capital group focused on science and technology commercialisation.

"My Matū job involves looking at interesting projects, trying to figure out which might have commercial potential and then picking the ones we're going to invest in and getting them through that process."

Andrew has always been interested in figuring out how things work. He had a passion for robotics at high school on the North Shore, and when he started at the University he did computer systems engineering, thinking perhaps that he could merge those two interests at some point.

"But in my final year of undergraduate studies in 2014, I did a course on the fundamentals of AI. I realised there was so much that was about to happen with AI, I'd like to learn more about it. I ended up doing a PhD and it went from there."

Right now, the University segment of his working week involves being part of a research project funded by the Transdisciplinary Ideation Fund.

"It's the Hidden Humans Project. We're looking at AI systems and how people are contributing to these systems without even knowing it."

There are examples everywhere online. One that might surprise people is Captcha.

"If you want to buy tickets, for example, a Captcha will pop up with images or a word in funny type, or you can click on all the examples of traffic lights. These systems are advertised to you as being used to detect whether you are a bot or a human."

But, in fact, that's only one of Captcha's functions. "If we take the 'word Captcha' example, generally it will show you two words. For one word, the people at the back-end know the correct answer. The other word, they actually don't know what the word is. When you type in the first one correctly, they assume you will get the second one correct. Then they use the data from the second entry to learn how to read printed text. They are using you to train optical character recognition (OCR) models. This has then ended up being used to digitise all the books in the Library of Congress, which is a laudable goal, but they've been harvesting brain power from millions of people, for free, to help them learn how to digitise the books.

"Likewise, when you click on the images of traffic lights, that becomes data used to train autonomous vehicles, because they're trying to help teach the car that 'this is what a traffic light looks like'. They just don't tell you this."

It all sounds vaguely conspiratorial, but Andrew says this is no secret.

"Lots of people know about it. It's just that it's not in the public consciousness. They don't reveal the true reason the system exists. They don't ask for user consent. In fact, the user is presented a barrier because you have to do this in order to buy your concert ticket and you're not compensated for it. At an individual level, you wouldn't think of that as being work you'd be paid for. But when we take millions of people doing it, and contributing data, there's value ascribed to that."

But does anyone care?

"Well, this is what we're testing. I'm open to the idea that maybe nobody cares about this and that maybe that's why everyone's fine with it. But I think there are some arguments we haven't tested.

"For example, it'd be difficult to make the New Zealand government regulate the companies doing this. But if there are four million adults all doing these Captcha, maybe fifty times a year; each time it uses x amount of time and there's value associated with that. When you aggregate it, New Zealand is actually exporting millions of dollars' worth of time and labour and getting nothing back for it. Would the government care about it then?"

Food for thought at least.

Those doing the thinking alongside Andrew on that project come from all over the University: Dr Brent Burmester (Business), Dr Ellie Bahmanteymouri (School of Architecture and Planning), Dr Fabio Morreale (Music Technology), Matt Bartlett (Faculty of Law) and Dr Katerina Taskova (Computer Science).

"We're a group of people who otherwise wouldn't have been brought together, but we all shared this interest in AI and ethics. We're about three-quarters of the way through the one-year project. We've run a couple of workshops recently with stakeholders to test some of these arguments and see if they resonate."

In 2021 Andrew worked with police to help them better understand the software they were using for facial recognition. "We did an audit and it helped them understand how they were using it because they weren't sure at the time."

He is now on the expert panel for emerging technologies for police, the Data Science Review Board for MBIE and the public advisory committee for disarmament and arms control for MFAT, with nonproliferation and arms control being another of his interests.

In the little spare time he has, he's contributing to other Koi Tū projects and submissions to "bring a digital lens" to work being done there.

Are there enough people like Andrew in New Zealand? "Oh, there's a community. I see the same people at events. But I remember during the vaccine pass rollout saying to the Ministry of Health folks, 'Are you talking to any other academics about the vaccine pass rollout … so I don't have to do all of it'. And they said 'you're the only one we're talking to'. So I guess you're right, the roster isn't very deep."

Looking to the future pool, Andrew thinks students would benefit from doing a programme like Global Studies.

"It's a great course to get a transdisciplinary view of the world. We have technical degrees like engineering or science, but there are other opportunities to engage in things like public policy and to ask, 'How does this algorithm I developed affect society? What are the ethics of it?'"

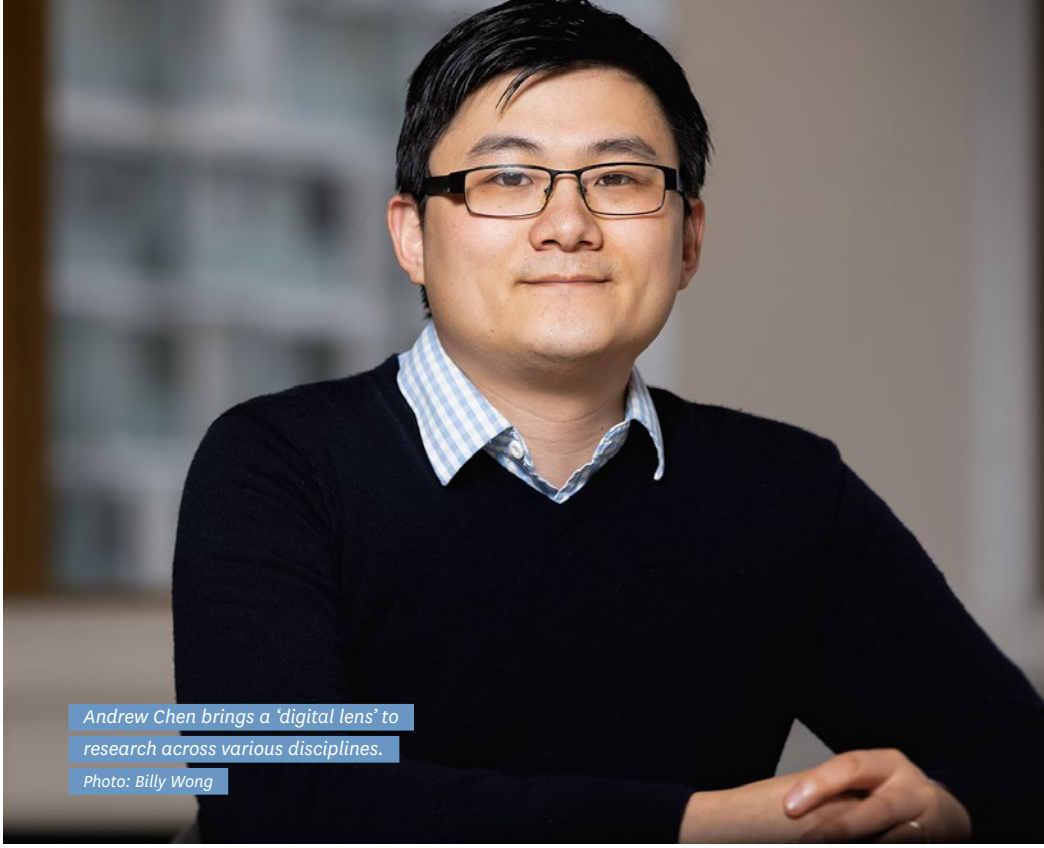
He edited *Shouting Zeros and Ones: Digital Technology, Ethics and Policy in New Zealand* (BWB Texts), a book released in August 2020. It's aim was to help inform people so they can put more pressure on the government to do better in the area of data.

"If the public keep saying, 'We do actually care about our data. We want our data to be used well, not sold,' then that will urge governments to keep people informed and be transparent about what it allows to happen with data."

It all sounds a bit overwhelming to the average human so I return to a very important subject, Wordle. Andrew was an early adopter. So did he get the word 'parer' that confuddled so many recently? Of course he did. In three.

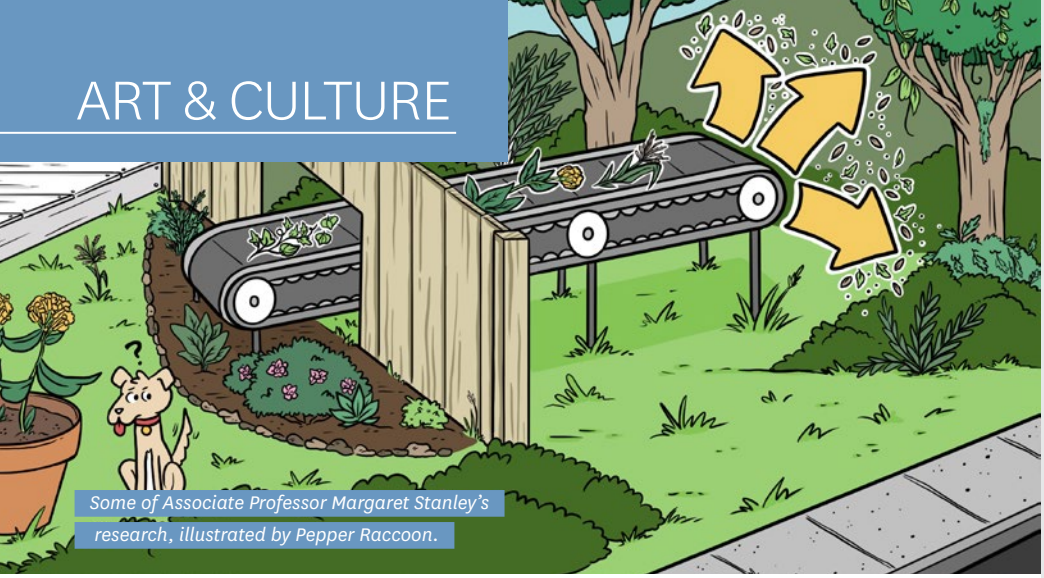
"I didn't realise it was a difficult one until afterwards when the *New York Times* said that 40 or 50 percent of people failed that day."

■ Denise Montgomery



Andrew Chen brings a 'digital lens' to research across various disciplines.
Photo: Billy Wong

"If the public keeps saying, 'We do actually care about our data. We want our data to be used well, not sold.' Then that will urge governments to keep people informed."
– Dr Andrew Chen, research fellow, Koi Tū: The Centre for Informed Futures



Some of Associate Professor Margaret Stanley's research, illustrated by Pepper Raccoon.

RESEARCH EXPLAINED **IN COMICS**

A hub of artists translating academic research into comics and graphic novels could become a reality.

Associate Professor Neal Curtis has an idea that could make tricky academic concepts easier for the mainstream to understand.

Neal, a lecturer in Media and Screen Studies, wants to connect academics – from science to sociology – to graphic artists, to have their research presented in a fresh, engaging way. Neal has taught comics and visual narrative for the past decade, and has a personal and research interest in comics and graphic novels. He believes they are closer to our natural mode of communication.

"They are what we refer to as 'multi-modal', in that not only do they use text and images but also sound, gestures, facial expressions and spacial relations such as body position and proximity; they are such a rich, sophisticated medium."

Neal says comics are becoming popular as a way to communicate important and often complicated ideas in the areas of medicine, science, justice and journalism.

"An example people might be familiar with is the series of cartoons and comics by *The Spinoff*'s Toby Morris, alongside microbiologist Dr Siouxsie Wiles, that really clarified important, scientifically reliable information about Covid ('flatten the curve') at a time when there was a lot of misinformation out there."

Neal has already had a positive response to his idea with a number of academics from across the University wanting to get involved and nationally known cartoonists such as *Stuff* cartoonist and illustrator Emma Cook, and alumnus Chris Slane, a freelance cartoonist.

However, he says there is still some resistance to the idea of taking comics as a genre seriously.

"You have to get over the deeply ingrained attitude that they are 'only for children' or somehow dumbing down information. Nothing could be further from the truth."

To fund the first stage of a much larger plan, Neal is hoping to use an initial grant from the University's Transdisciplinary Ideation Fund, set up to support research projects that require expertise from the breadth of the University.

He's also hoping to get funding to involve medical anthropologist Dr Pauline Herbst to document the process of translating research into comics as a blueprint for others wanting to do the same. The ultimate plan is to establish a comics lab, a virtual space that will involve a semi-permanent community of creators and a revolving set of academics. It would eventually be able to take on outside work from stakeholders who want to get important ideas put into comic form.

"I want to be able to pay these talented creators properly and hopefully offer a regular source of work. At the same time, we'd serve the purpose of combatting false or misleading information by making it clear, accurate and accessible in this brilliant medium."

■ Julianne Evans

Full story: auckland.ac.nz/neal-curtis-comics

WINNING CREATIVE WRITER

Master of Creative Writing student Romola Lang is the recipient of the $10,000 Crystal Arts Trust Prize, the richest university writing prize in the country.

Author and essayist, Associate Professor Paula Morris, director of the masters programme, says Romola is a worthy winner.

"Romola's novel is stylish and funny, and a vivid depiction of Dunedin and London in the Eighties, in all their scruffy glory. Despite its title – *Artless* – it's an extremely artful work, revealing her talent, flair and unique point of view."

Artless is Romola's first book.

Full story: auckland.ac.nz/crystal-arts-22

OPERA STARS ALL: BRAVO!

The School of Music staff, students and alumni had a big presence in the recent NZ Opera season of *Macbeth*.

After more than two years of lockdowns and regular concert cancellations, soprano and School of Music senior lecturer Morag Atchison took the part of lady-in-waiting, one of two female roles in the opera, which ran for a month over September and October. She supported Lady Macbeth both as a character and a singer.

Morag, one of the country's leading sopranos, has played the role before for NZ Opera, in 2010.

"It was wonderful to be able to revisit, work within a different dynamic and find a new personality to play with. With Shakespeare's extraordinary story shaped by the genius of Verdi's score, there's always another layer to peel back, another emotion to find, and another way to explore the fragility of the human condition."

ART EDUCATION WITH YOUR CHIPS AT OGH

Check out the walls in the lounge at Old Government House (OGH) in the next couple of weeks.

The politics behind collecting and exhibiting contemporary art is being explored in an exhibition running there until 14 November.

Spectacle features 13 works from the University of Auckland's art collection, curated by postgraduate art history students under the direction of art historian Linda Tyler, who holds the David and Corina Silich Associate Professorship in Museums and Cultural Heritage. The *Spectacle* theme came from French Marxist theorist Guy Debord's 1967 text *The Society of the Spectacle*, which critiqued society's fascination with consumer culture.

The exhibition includes pieces by multi-disciplinary artists Bill Culbert, alumna Edith Amituanai and the late Billy Apple, photographers and alumnae Yvonne Todd and Ane Tonga, and alumni painters Fatu Feu'u and Nicky Glasgow.

Honours student Sally McMath says the group took on various organisational roles in the exhibition's lead up, including publicity, creating the catalogue and installation.

"We all want to gain practical experience in

School of Music in Macbeth – *Row 1 around Morag: Maeve Herd (in red) MMus, Hannah Ashford-Beck (PGDipMus), Alex Francis (MMus), Te Ohorere Williams (MMus student), Carla Camilleri BMus (Hons), Teresa Wojtowicz (BMus), Cecilia Zhang BMus (Hons) student. Sophia Yang (MMus student) and Alex Matangi (BMus). Row 2: Tayla Alexander BMus (Hons) student; Lachlan Craig (MMus), Dilys Fong BMus/BSc, BE (Hons); Sid Chand BMus (Hons), Sophie Lamb BMus (Hons) PGDipTeaching student, and Chris McRae BMus (Hons), PhD student.*

She also got to perform alongside around 20 former and current vocal students who sang in the chorus, including the chorus of witches.

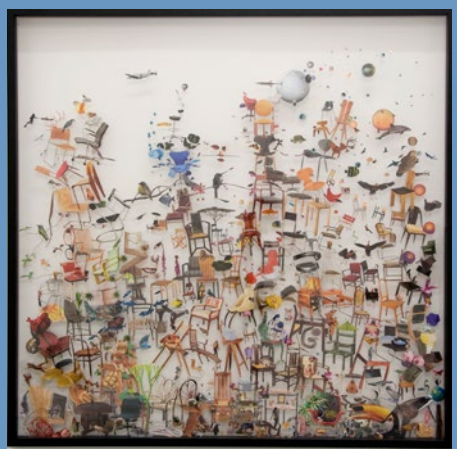
"It helps students to see their teachers do their craft," says Atchison. "We're pedagogues and practitioners, and it also keeps us on our toes because we must make sure we're doing what we teach them to do! On the other hand, I need to remind myself that we're all performers and that, in this context, I'm not their teacher."

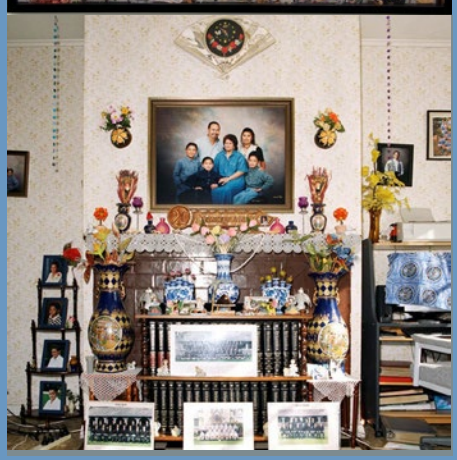
The last significant opera role Morag performed was Berta in *The Barber of Seville* in pre-pandemic times, 2019, for which she received critical acclaim.

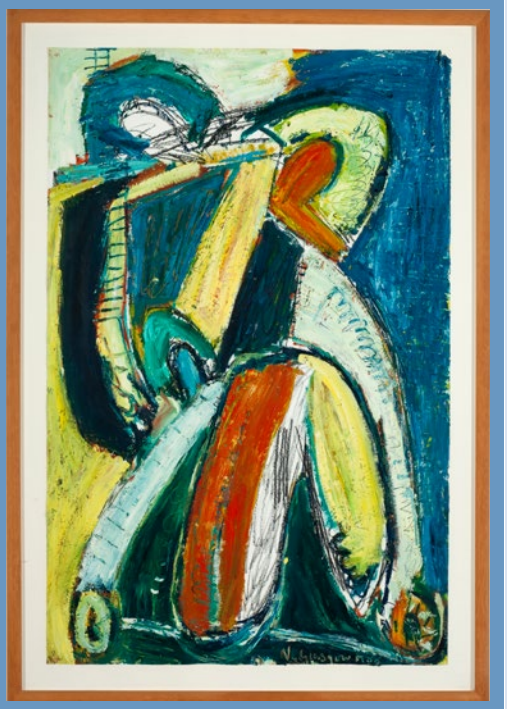
one way or another, and valuable skills that will equip us for future work within the field of art in Aotearoa and beyond."

■ Julianne Evans

Full story: **auckland.ac.nz/spectacle-display**



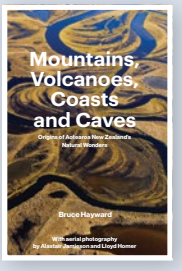




Clockwise from top left: Peter Madden's Empire of Rest; *Nicky Glasgow's* Step Up the Ladder; *Edith Amituanai's* The Manu Lounge, from Mrs Amituanai.

BOOKS

Mountains, Volcanoes, Coasts and Caves: Origins of Aotearoa New Zealand's Natural Wonders



Alumnus and retired geologist and marine ecologist Dr Bruce Hayward, an honorary academic in the Faculty of Science, guides readers through 100 natural wonders of Aotearoa, introducing the geology and history with words, explanatory diagrams and dramatic aerial photography.

Bruce Hayward, photos Alastair Jamieson and Lloyd Homer, AUP, $70, out 10 November

More Zeros and Ones: Digital Technology, Maintenance and Equity in Aotearoa New Zealand

Following on from the success of *Shouting Zeros and Ones*, this fresh collection of writers including Dr Andrew Chen, Associate Professor Marama Muru-Lanning and Dr Sarah Bickerton continues the exploration of emerging issues for digital technology and society.

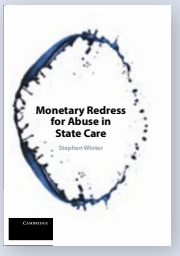
Eds Anna Pendergast, Kelly Pendergast, Bridget Williams Books, $18, e-book $5

The Persimmon Journal: The Art of Getting Older Through Lockdown, Loss and Release

Arts alumna Dr Juliet Batten is an artist, teacher, and has a worked as a psychotherapist for 26 years. She is the author of 11 books on the later stages of life and creativity. *The Persimmon Journal* is a resource for the acceptance of ageing.

Juliet Batten, Ishtar Books, $42

Monetary Redress for Abuse in State Care



Is justice possible for survivors of child abuse in state care through monetary redress? In his analysis of schemes in New Zealand, Australia, Ireland and Canada, Associate Professor Stephen Winter (Faculty of Arts) identifies how governments should balance political, logistical and ethical values in deciding how redress should be decided.

Stephen Winter, Cambridge University Press, $170, released mid-November

BOLD VISION: BE ANTI-RACIST

In October, Professor Papaarangi Reid (Te Rarawa) gave the Sir Ian Hassall Memorial Lecture, hosted by the Child Poverty Action Group, at the Fale Pasifika. Her topic was 'Visioning our maunga teitei – dreaming of a time when it's safe to be born a Māori child'. This piece is adapted from that lecture.

"What we need now is healing and to put a lot of energy into that."

– Professor Papaarangi Reid

The late Sir Ian Hassall's vision was for a society not just safe for children, but where tamariki can thrive, free from abuse, where they are valued, have a voice and their rights respected and expressed. Where we lobby and advocate for better outcomes.

At the heart of my work as a public health academic are two ideas, and both align with Sir Ian's. One stems from something Donna Awatere once said: that she dreamed of "a time when it was safe to be born a Māori child". The second is a well-known whakataukī: "Whāia e koe te iti kahurangi; Ki te tuohu koe, me maunga teitei." It has been variously translated, and the best-known fragment of it is, "If you bow your head, let it be to a lofty mountain".

For me it means have a bold vision and only let something really big and insurmountable stop you.

Associate Professor Bridget Robson, a public health researcher at Otago, reminds me that inequity is like a coin; it has two sides. The flipside of inequity is privilege, because wherever someone is getting less, someone else is getting more. We must analyse privilege as much as we do inequity because it's a secret that's hiding in plain sight. No one likes to talk about privilege.

When we ask why Māori have fewer resources, we should be asking what happened in our society that non-Māori have more?

For me, it's obvious. Racism and colonisation are at the base of this causal pathway. By racism, I mean processes through which systems, policies and action in our society create unequal opportunities and outcomes for different groups. It's not about finding out who the racists are. It's about asking how racism is operating. That's the question we must face and answer, no matter how difficult.

Attempts to portray health inequities borne by Māori as being the result of an inferior people being overcome by a superior people, are a fantasy. Read our history. Māori lives were disrupted by Treaty trickery, and by war, genocide, racist policies that removed Māori resources, broke up communities and outlawed cultural practices. Our history has been hidden from us for such a long time, so it's heartening to have the refreshed compulsory New Zealand history curriculum in schools in 2023.

The state of Māori health, especially children's health, is an outcome of these deliberate policies to break down Māori people, lands, culture and relationships. Not just relationships with each other, but with our history and our whenua. Poverty has not just been economic. It has been spiritual and environmental. And it's caused by colonisation. The recent TV documentary *No Māori Allowed* described it poignantly: what happened to Māori in Pukekohe and in many other parts of the country, created "soul wounds". When children witness something so damning to their whānau, it wounds their souls and they carry it with them through generations.

What we need now is healing and to put a lot of energy into that. It can't happen without truth-telling, and will begin with us having the bravery to face what happened.

The documentary ended hopefully, that Pukekohe might become the first anti-racist town in Aotearoa. I thought 'yes, that's the new goal: be anti-racist'.

But how does this relate to our prescription for the future of child health? Matike Mai Aotearoa (the report of the Independent Working Group on Constitutional Transformation) provided a blueprint to start a discussion about how we can build a relationship that benefits all equally. It says there are three spaces: the kāwanatanga space, where government has power. There's the rangatiratanga space, where Māori are sovereign. The final space is the relational space, where we negotiate how to jointly do business together.

During the height of the pandemic, we saw rangatiratanga emerge to a degree. Iwi roadblocks helped protect communities. And Māori health providers took it upon themselves to educate, support and vaccinate their way. It was so successful that many Pākehā also used these health services. It was such an interesting time to explore how this model of Matike Mai can work.

We haven't quite worked out how we do business in the relational space yet and it may be difficult where values are poles apart.

But we can't afford not to. Over the past few years, I've been working with researchers on a project called 'The Cost of Doing Nothing'. We've gathered New Zealand data on the cost of health inequities to both Māori and New Zealand society.

We'd already tried moral and health arguments, citing disparity in the likes of rheumatic fever rates, childhood immunisations etc. Those arguments to get governments to commit to eliminating inequities haven't worked. It's beyond disappointing to those who have worked so hard on this.

Aotearoa is built on health inequities. Our research confirms the cost of keeping Māori sick is many millions of dollars. Saving Māori lives will save the country money. This should be an unbeatable argument for the Treasury. We are waiting.

Sadly, if we look in the media, we see more about the rich list than about child poverty action. And there are so many advertisements appealing to our unbridled consumerism; they want us to have bigger SUVs, flash phones and to consume.

I recently read a South American leader say, 'It's an honour to pay taxes'. It means you're investing in the collective social system as opposed to individual greed. Yet we celebrate people who manage to reduce how much they pay in tax. There's an obvious clash of ideologies between individualism and collectivism. Economist John Galbraith has said: "The modern conservative is engaged in one of man's oldest exercises in moral philosophy; that is, the search for a superior moral justification for selfishness."

How do we move our culture away from greed and individualism to embrace what matters? What should our bold vision be? We need to be values and rights-based. Don't be lulled into a sense of contentment, because you're doing quite well on your own little treadmill. Be knowledgeable, because ignorance is our weakness. Honour our history.

But we must first start work on racism and coloniality. Become anti-racist. I truly believe that if we do that, the rest will follow.

■ **Professor Papaarangi Reid is Tumuaki, Te Kupenga Hauora Māori, Faculty of Medical and Health Sciences**

Sir Ian Hassall, who died in June 2021, was a paediatrician whose life's work involved protecting children's health and legal rights. He helped establish the Child Abuse Prevention Society in 1977 and, in 1989, became the first Children's Commissioner.

The views in this article reflect personal opinion and are not necessarily those of the University of Auckland.