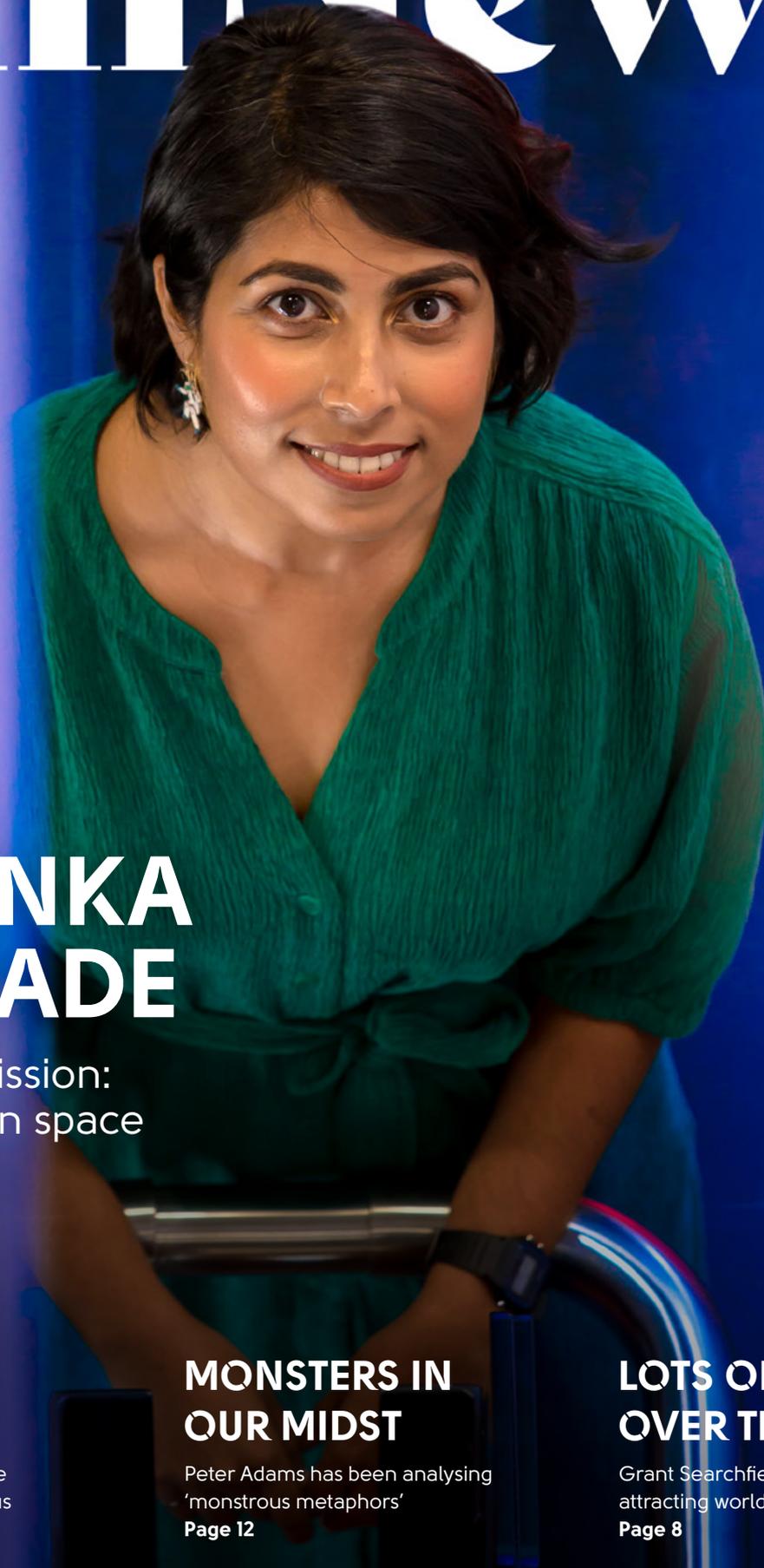


# UniNews



## PRIYANKA DHOPADE

Her cosmic mission:  
sustainability in space

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## BEAUTY ON THE WALLS

An insight into another of the  
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Peter Adams has been analysing  
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## LOTS OF BUZZ OVER TINNITUS

Grant Searchfield's invention is  
attracting worldwide interest  
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A selection of Waipapa Taumata Rau, University of Auckland staff and student expert commentary in the media recently. Email: [uninews@auckland.ac.nz](mailto:uninews@auckland.ac.nz)



Helen Lu

## AI DOES THE BUSINESS ON STOCKS

Dr Helen Lu (Business) told the *Waikato Times*, *Stuff* and others about research that shows machine-learning algorithms evaluating the value of companies based on profitability, efficiency, growth and risk. She said AI is more accurate than traditional methods. This is potentially game-changing as it reveals when stocks are overvalued.

Link: [tinyurl.com/Helen-Lu-AI-stocks](https://tinyurl.com/Helen-Lu-AI-stocks)



Fabio Morreale

## ARTIFICIAL POP MUSIC

Dr Fabio Morreale (School of Music) told the *Waikato Times* about what the rise of AI-generated music means for the future of songwriting. "Let's say that it risks redefining completely the way people listen to and create music."

Link: [tinyurl.com/Waikato-times-Fabio](https://tinyurl.com/Waikato-times-Fabio)



Sarah-Kay Coulter

## THINKING OUTSIDE THE SQUARE

Education PhD candidate Sarah-Kay Coulter (Ngāti Porou) spoke to TVNZ's *Te Karere* about reconsidering mandatory school attendance for Māori under Te Tiriti o Waitangi. "If we keep saying a child has to be in state-led education ... we're missing an opportunity to transition our taurira Māori in ways that really grow us." She also outlined the history of New Zealand school policy for *Stuff* and said teachers need to be mindful of "education being politicised".

Links: [tinyurl.com/TK-Coulter](https://tinyurl.com/TK-Coulter) and [tinyurl.com/Stuff-Coulter](https://tinyurl.com/Stuff-Coulter)



Jon Tunnicliffe

## RIVERS NEED ROOM TO MOVE

Dr Jon Tunnicliffe (School of Environment) told RNZ that longer-term thinking to manage river flooding should include assessing where a river might switch paths in the future. Instead of nailing the river in place, conservation work should preemptively give the river "space to erode as it would naturally". Many countries use this concept.

Link: [tinyurl.com/RNZ-tunnicliffe](https://tinyurl.com/RNZ-tunnicliffe)



Michaela Dobson

## SPRINGING INTO MARS

PhD student Michaela Dobson (Faculty of Science) told bFM that studying extreme life in hot springs in Rotorua had helped prepare her for a research scholarship to aid space agency NASA's efforts to find traces of life on Mars.

Link: [tinyurl.com/bFM-dobson](https://tinyurl.com/bFM-dobson)



Samantha Holdsworth

## METH BRAIN STUDY SPARKS HOPE

Associate professors Miriam Scadeng and Samantha Holdsworth (Faculty of Medical and Health Sciences) told *The Guardian* in the UK that their Mātai Methamphetamine Brain Recovery study, which shows damage to meth users' brains on screen, can have an impact in treatment when users who quit see the damage repairing. Miriam said: "If we can demonstrate that there is possibility for improvement, it will encourage people who are participating to stop."

Link: [tinyurl.com/Meth-study-Guardian](https://tinyurl.com/Meth-study-Guardian)

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For the fortnightly *Whaimōhio The Loop* newsletter, email: [staff-comms@auckland.ac.nz](mailto:staff-comms@auckland.ac.nz).

Deadlines are on the intranet under News, Events and Notices, *The Loop*.

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## STORIES OF PERSISTENCE

So many great stories came from the Autumn graduation. Here are some excerpts.

### **Muliagatele Vavaō Fetui, PhD in Pacific Studies, Faculty of Arts**

Muliagatele Vavaō Fetui's doctoral thesis was only the second to be written in Samoan and the first awarded by a university outside Samoa.

He was educated in Samoa before coming to New Zealand on a government scholarship and attending teachers' college. He returned to Samoa to work out his bond, teaching primary then junior high school in Apia. "It was a great experience to be trained in New Zealand and a great privilege that the government looked after us," he says.

His career since has included piloting an English as a Second Language programme at Mt Roskill Grammar. Then, at the Ministry of Education, he helped introduce Samoan language and culture teaching in New Zealand.

In his thesis, funded by a Royal Society Te Apārangi Marsden grant, Muliagatele focuses on the ava (kava) ceremony and how it demonstrates respect in Samoan culture, especially in the way the matai (chiefs) are formally seated. He wanted to know why fa'aaloalo (respect) is so morally important in Samoan communities and in a contemporary context.

The thesis analysed interviews with 24 people from the Samoan diaspora in Sydney, San Francisco and Hawaii and he says it provided "a window into the evolution of the relationship of matai with Samoa, over time and space".

*Clockwise from below: Muliagatele Vavaō Fetui,*

*Sasha Douglas, Helen Pahulu, Debbie*

*McLenaghan and Ja Seng Aung Lahpai.*

### **Sasha Douglas, Postgraduate Diploma in Clinical Exercise Physiology, Faculty of Science**

Sasha Douglas's rheumatoid arthritis has taught her what life is like in a body that isn't in optimal health.

"It's an extra point of connection with the people I'm treating," she says, speaking about prescribing exercise treatments for people with chronic conditions. "There's extra empathy."

The 25-year-old now has a Postgraduate Diploma in Clinical Exercise Physiology despite being shattered to get her diagnosis in 2020. Pain in a shoulder, lack of movement in an arm, and "strange" swollen hands were signs her immune system was attacking healthy tissue, causing swelling and pain around joints.

The condition is now controlled by diet, medication, taking good care of herself and exercising. She is working in a clinic where people may have conditions like hers that require care with exercise.

### **Ja Seng Aung Lahpai, Bachelor of Science, Faculty of Science**

Ja Seng Aung Lahpai arrived in New Zealand from Kachinland, Myanmar, in 2007. She became part of the Kachin community in Porirua, north of Wellington, and is the first in their group to graduate in the sciences.

Her first step to a degree came when she left Porirua to study at the University of Auckland.

"The hardest part was learning to be independent. Not just learning academically, but also how to live independently. Groceries, budgeting, I'd never done those things."

The Faculty of Science's Bio Equity grant helped. It provides resources and vouchers to support students from refugee backgrounds through their studies and life on campus, and assigns them a go-to person for everything needed for their degree.

"Equity support meant more than receiving course advice and support. It gave me confidence ... a community to belong to away from home, and a society that advocates for me."

### **Helen Pahulu, Bachelor of Music, Creative Arts and Industries**

Helen Pahulu watched her mother graduate so she found it "exciting to have my mum watching me graduate".

Helen's mum came from Tonga in 2000, graduated from the University of Auckland and became a high-school English teacher. Helen's degree is a Bachelor of Music, majoring in jazz, and she wants to fuse jazz with Pacific music.

"Having my cultural heritage mixed in with what I was studying brought meaning to my degree."

At first, the idea of studying music at University was daunting, but changed after music students from the University visited her school.

"After talking to one of them, I thought 'This is something I could do,'" she says.

### **Debbie McLenaghan, Master of Nursing (Hons), Faculty of Medical and Health Sciences**

Debbie McLenaghan (Waitaha, Kāti Mamoe, Kāi Tahu) is now a Master of Nursing and already has a role in her hometown.

She has joined the Rotorua Youth Health Centre as a mātanga tapuhi (nurse practitioner), a position created especially for her.

Debbie is supporting young people across all facets of mental and physical well-being.

"Our rangatahi are our future. I want to provide them with healthcare that is trustworthy and aroha-based, through a service that helps them reach their full potential."

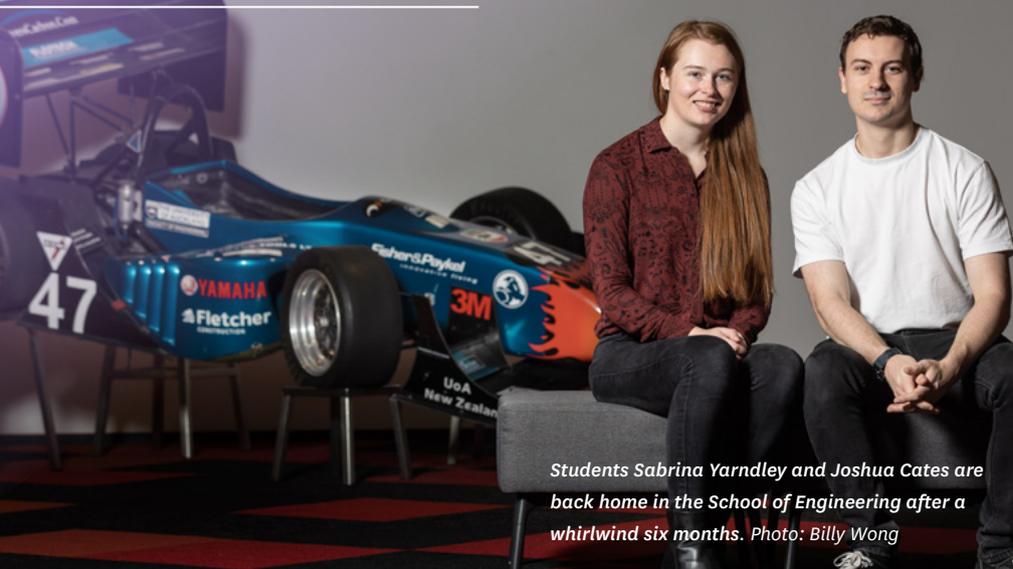
Debbie also provides clinical healthcare to rangatahi at Te Maioha o Parekarangi youth justice facility, as well as training other nurses.

Initially, her work experience in schools gave her the push to pursue her studies.

"It made me realise my potential for making positive changes. Rangatahi are often misunderstood, but they are such fun to work with. Sometimes all they need is someone to listen."

Read these stories in full and other graduation stories at [auckland.ac.nz/grad-stories](https://auckland.ac.nz/grad-stories)





Students Sabrina Yardley and Joshua Cates are back home in the School of Engineering after a whirlwind six months. Photo: Billy Wong

## ON THE ROAD TO SUCCESS

**It's been a whirlwind few months for mechanical engineering students Sabrina Yardley and Joshua Cates.**

The pair played a significant role in the success of the University's Formula SAE Team that beat 22 other universities to win the Australasian F:SAE EV-Class competition in December. The three-day student engineering competition held in Winton, Australia, is judged on the design, construction and racing of an internal combustion or electric race car up to 610cc/80kW.

Sabrina was the team's chief engineer, and Joshua was the aerodynamics manufacturer and design leader.

Fresh off their win, Sabrina and Joshua took a direct flight from Australia to the UK to begin a three-month internship at UK-based supercar company McLaren Automotive.

Both were named as the latest Bruce McLaren engineering scholars, thanks to a donor-supported travel and internship award for Faculty of Engineering students that was set up to honour New Zealand racing legend Bruce McLaren.

"It was definitely the opportunity of a lifetime," says Sabrina.

During their internship, Sabrina and Joshua were based at the state-of-the-art McLaren Technology Centre in Woking where they had stints with designers and engineers to gain a unique insight into the workings of the company.

"We got to see a different side of engineering to what we're exposed to at University," says

Joshua. "There are a lot more aspects that go into designing and completing a project, and a lot of different jobs that you don't necessarily think of."

The scholarship can play a big role in getting engineering students on the road to success. Former Bruce McLaren engineering scholar and alumna, Lizzy Grant, is now working to develop battery technology for the company's electrified powertrains.

Sabrina flatted with Lizzy during the internship and says the mentorship she provided helped the pair to settle in quickly.

"She was extremely helpful and showed us all the little things about living in a different country that you need to know," says Sabrina.

Joshua has been a Formula 1 fan for a while, but Sabrina didn't have a big interest in cars until her passion for working with composite materials led her to join the Formula SAE team.

"It was kind of my entry point into working around cars.

"I thought, 'Actually, I do enjoy this. I could see myself working on this in the future.'"

The pair are both finishing their studies this year and are still involved with the Formula SAE team. Joshua is hoping to continue working in the composite materials area when he finishes, while Sabrina has plans to start a PhD that focuses on crash structures in vehicles and how improvements can be made to protect automobile occupants.

"My parents could not have imagined me working on cars," says Sabrina. "They're taking it a little bit more seriously now."

■ Hussein Moses

## WFH BUMPS UP RENT IN THE SUBURBS

**The pandemic proved the benefits of working from home in many industries, and a study through the Auckland Business School has shown the effects this has had on Auckland's urban rents.**

University of Auckland Business School academics Dr William Cheung and Associate Professor Edward Yiu, together with research scientist Daniel Wong, used rental listings data in 242 Auckland suburbs from January 2013 to December 2021, as well as micro-level household data from Statistics New Zealand to analyse trends.

They applied a rental gradient analysis to compare rental prices pre-and post-Covid-19 and found the difference in rental prices between the city centre and suburbs further out becomes much less pronounced after 2021.

Because many businesses have introduced flexible working arrangements, suburbs further away from the office likely became more attractive places to live, says William, and in turn, this pushed rent prices up in those areas.

"We found that rents were increasing more in lower-density suburbs and that the city experienced rental gradient flattening, meaning the difference in rental prices between the city centre and suburbs further out became less pronounced post-pandemic."

He says this suggests that working from home is reshaping the urban rental structure by creating more demand for rental properties in city fringe suburbs.

The researchers say this shift in the rental



Dr William Cheung

market may have implications for urban planning and policy and recommend policymakers consider the changing needs and preferences of people who work from home when making decisions about housing and transportation. Their research appeared in the *International Journal of Housing Markets and Analysis*.

■ Sophie Boladeras

**Full story:** [auckland.ac.nz/rent-research](https://auckland.ac.nz/rent-research)

## IDEAS TO FIX WATERWAYS

**Researchers hope a new device can help clean Aotearoa New Zealand’s waterways.**

“New Zealand’s water quality is quite short of the standards of where we should be when compared with other developed countries,” says Associate Professor Lokesh Padhye from the Faculty of Engineering. A recent report from the Ministry of Environment showed that almost 50 percent of our rivers are not suitable for activities like swimming due to the risk of infection from campylobacter.

Lokesh has spent the past five years

collaborating with Professor T. Alan Hatton from the Massachusetts Institute of Technology (MIT) and Professor Xiao Su from the University of Illinois Urbana-Champaign to find new ways to tackle environmental pollution and clean up our waters. The research has been funded by the Royal Society of New Zealand’s Catalyst grant.

The research team is now focused on developing a portable device to remove contaminants from water, including ‘forever chemicals’ or PFAs. PFAs come from fluoropolymer coatings and products that resist heat, oil, stains, grease and water. The research team wants to develop a device that can treat a range of different contaminants, rather than targeting a specific one. The devices would then be used to treat agricultural runoff and wastewater-impacted source waters, as well as household drinking water. The device relies on producing



Professor T. Alan Hatton, Associate Professor Lokesh Padhye and Professor Xiao Su.

oxidising radicals that can decontaminate drinking water. All it needs is an electrical supply.

It could be especially useful for homes on Waiheke or in some of New Zealand’s rural communities where rain tanks are used as a source of drinking water, says Lokesh.

**Full story: [auckland.ac.nz/water-decontamination](http://auckland.ac.nz/water-decontamination)**

## ABI DRAWS CROWDS OF THE CURIOUS

**A pumping heart station, a technicoloured rotating lung hologram and a ‘Taniwha’ human-powered submarine greeted visitors as they entered The Cloud in May to check out the ‘Bioengineering the Future’ event.**

The six-day event by the Auckland Bioengineering Institute (ABI) showcased more than 40 weird and wonderful interactive exhibits and drew in crowds in what could be described as New Zealand’s most accessible interactive display of ‘hard’ science. Families flew in from around the country, curious passersby wandered in from the rain, and hundreds of primary and secondary students arrived in busloads from across Auckland and Waikato to soak up the inspirational science, wonder at a giant inflatable brain, try precision surgery, and take part in gamified Virtual Reality simulations. Students also explored whether bioengineering might feature in their future study and career prospects.

On opening day, the floor was a sea of hot pink as postgraduate students, post docs, research fellows and professors, in pink T-shirts, were engaged in animated conversations about how things worked and why. The delight was on both sides of the conversations.

The event was also a delayed celebration of ABI’s 21st birthday. The breadth of its research

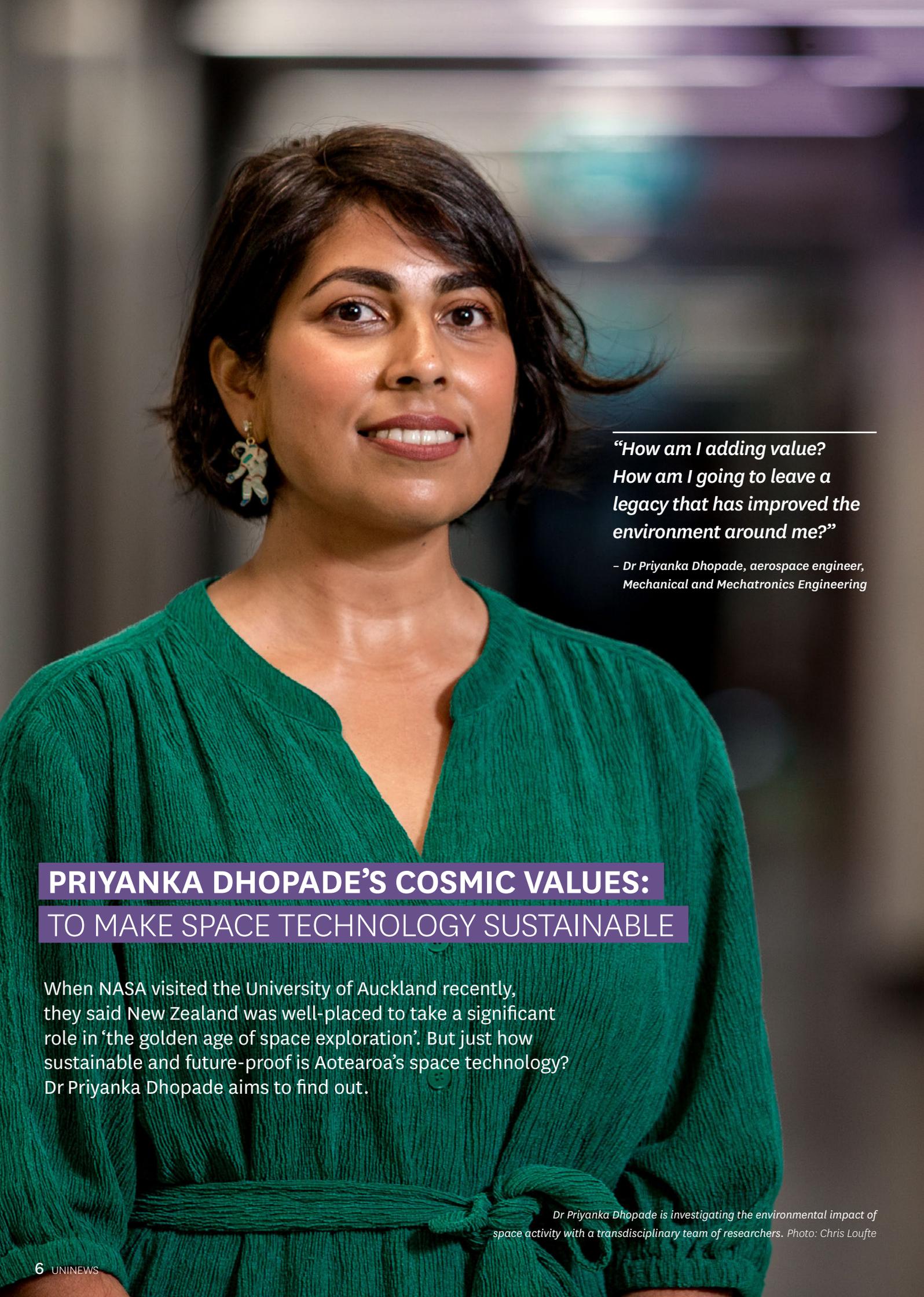


ABI staff and curious minds at the event which featured around 40 interactive demos. The ‘connections and empathy’ station with VR/AR demos by Professor Mark Billingham, middle far right, was very popular.

areas and potentially life-changing technologies could be explored across seven stations: ‘beats and breaths’; ‘moving and thinking’; ‘connections and empathy’; ‘robotics and biomimetics’; ‘healthy guts’; ‘men’s and women’s health’; and ‘sensors and devices’.

Despite another Auckland deluge, state of emergency declaration and school strikes, the exhibition was an unparalleled success attracting around 3,500 visitors.

■ Megan Fowlie



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*“How am I adding value?  
How am I going to leave a  
legacy that has improved the  
environment around me?”*

*– Dr Priyanka Dhopade, aerospace engineer,  
Mechanical and Mechatronics Engineering*

## **PRIYANKA DHOPADE’S COSMIC VALUES: TO MAKE SPACE TECHNOLOGY SUSTAINABLE**

When NASA visited the University of Auckland recently, they said New Zealand was well-placed to take a significant role in ‘the golden age of space exploration’. But just how sustainable and future-proof is Aotearoa’s space technology? Dr Priyanka Dhopade aims to find out.

*Dr Priyanka Dhopade is investigating the environmental impact of space activity with a transdisciplinary team of researchers. Photo: Chris Loufte*

**Dr Priyanka Dhopade had always dreamed of being an astronaut when she was growing up.**

“For as long as I can remember, I was looking up at the sky and wondering what’s out there,” she says.

Priyanka was born in India and spent her early childhood in Saudi Arabia. She was ten when her family moved to Canada.

At school one day, there was a talk by Roberta Bondar, the first Canadian woman to travel to space. “I remember thinking, ‘I want to do something like that,’” she says.

In 2016, she got her chance when she tried out to be an astronaut for the Canadian space programme. Out of 3,700 people that applied, she made it to the top 72 candidates.

The opportunity was “a dream come true,” she says. “But it was always going to be a long shot.”

Unfortunately it wasn’t to be, but she had a backup plan anyway. After completing her PhD in aerospace engineering at UNSW Canberra, she took a senior research position at the University of Oxford and, in 2017, was named as one of the Top 50 Women in Engineering Under 35 by the Women’s Engineering Society in the UK.

The role at Oxford had an aviation focus and involved working with Rolls-Royce Holdings to design cooling systems for aircraft jet engines. But she always wanted to get back to working in the space sector.

“Both my husband and I are aerospace engineers, and we were keeping an eye on what’s happening around the world. The emerging space sector in New Zealand is an exciting place to be because there’s so much happening. So we thought, ‘Why not have an adventure and try something new.’”

She began working in the Faculty of Engineering in 2020, and is a lecturer in thermofluids in Mechanical Engineering.

She is also investigating the environmental impact of space activity with a transdisciplinary team of researchers from across the University.

The space sector in New Zealand is soaring, with a report commissioned by the Ministry of Business, Innovation and Employment in 2019 estimating it’s worth \$1.75 billion.

With New Zealand’s commitment to a net-zero carbon future, Priyanka says we need to look beyond economic measures of success and think about the potential consequences of such a fast-growing industry.

“We’ve become increasingly reliant on space technology, whether it’s for telecommunications, GPS, or internet access. Satellite data is used to inform things like environmental policy, stock investment choices and geopolitical decisions, yet there’s no public information on the trade-off between what we’re sending up to space and the actual value it’s adding,” she says.

As one of the few space-faring nations in the world with launch capability, New Zealand could choose to do things differently, says Priyanka. The team are using systems-thinking to understand how sustainable and future-proof our space technology really is and plan to use the data to create design practices that help to reduce the industry’s carbon footprint.

Transdisciplinary research is a great catalyst to bring sustainable thinking to the table, says Priyanka, but it requires us to challenge our “business as usual” mindset.

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***“We’ve become reliant on space technology, whether it’s for telecommunications, GPS, or internet access ... yet there’s no public information on the trade-off between what we’re sending up to space and the actual value it’s adding.”***

– Dr Priyanka Dhopade, aerospace engineer, lecturer, Faculty of Engineering

“The main thing we want to achieve is more inclusivity around how decisions are made and an evidence base for some of these decisions. Some of our research shows that there are some gaps, particularly the absence of Māori leadership, and an approach led by the principles of Te Tiriti o Waitangi.

“If we don’t have the right people around the table and make room for them to challenge

business-as-usual, then we’re missing out,” she says. “It’s a no-brainer, but sometimes people make it out to be more difficult than actual rocket science.”

Priyanka’s research is guided by a belief in having something to stand for and a strong value system to back it up.

“I just want to leave this place slightly better than how I found it,” she says.

“For a long time, my value system has defined everything that I do, including how I do research, how I teach and how I interact with students. All of that is around asking, ‘How am I adding value? How am I going to leave a legacy that has improved the environment around me?’”

After arriving in New Zealand, she helped to set up Women In Space Aotearoa New Zealand, a programme that provides mentorship for women and gender minorities wanting to pursue a career in the local space sector.

She knows first-hand just how overlooked and underestimated women in the industry are.

“I continue to be underestimated because I think differently, and I’m never the loudest person in the room,” she says. “I think that says more about the culture and the environment than it does about me.”

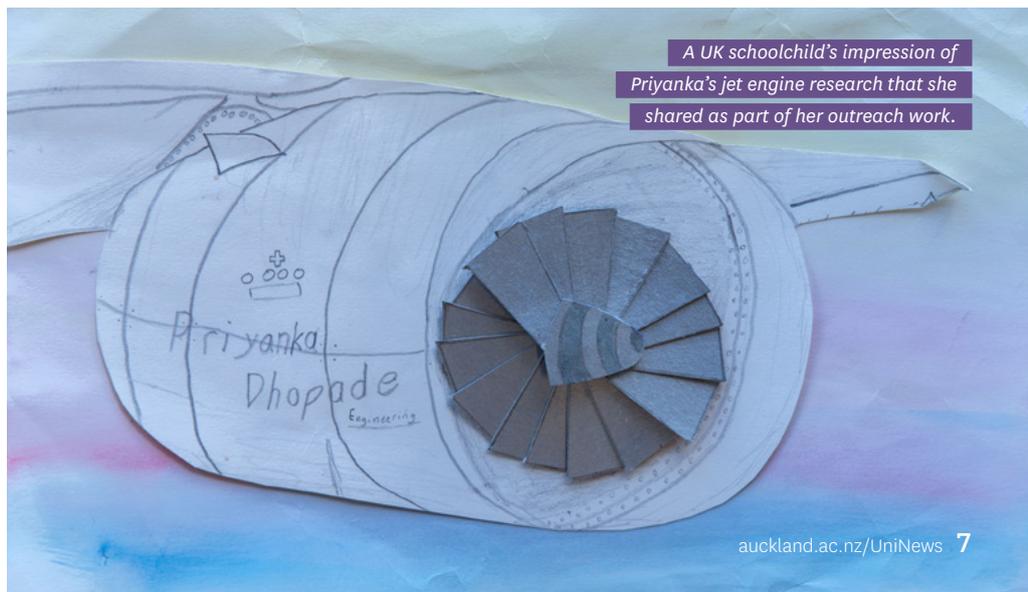
Growing up, she says her biggest role models were her parents and teachers.

“With a lot of the outreach work I’m involved in we are often asked, as women engineers, to go into schools. I can see why people think it’s a good idea. There is value in it, but I’m always the first one to say, ‘let’s talk to the parents, the grandparents, the aunts, the uncles and the teachers’, because research shows they’re the ones who influence a child’s self-perception and their career choices.”

Priyanka’s own career choices have worked out well, but she hasn’t given up her dream of being an astronaut. When asked if she would ever consider trying out again, there’s no hesitation.

“Absolutely,” she says.

■ Hussein Moses





Professor Grant Searchfield says some people can tune out from tinnitus, but others can't and it seriously affects their lives.  
Photo: Billy Wong

## GRANT SEARCHFIELD: LOTS OF BUZZ AROUND TUNING OUT TINNITUS

A novel therapy to deal with tinnitus – an annoying false perception of buzzing in the ears – is sparking interest from around the globe.

**When Professor Grant Searchfield put out a media release last August about some published research, he didn't think he'd have to take a crash course in Spanish as a result.**

Grant is Head of Audiology in the Faculty of Medical and Health Sciences, and the research paper, about a prototype therapy for dealing with tinnitus, was published in *Frontiers in Neurology*. Nine months on, the paper was still in the top one percent of that journal's articles viewed online.

"Breakthrough in search for tinnitus cure" went, as they say, gangbusters. It outlined the success of a trial of a prototype and asked people interested in taking part in further trials to email Grant.

By February, he had received around 2,000 emails from people interested in the trial.

"We were surprised. We didn't expect the global reach we got. We didn't have a plan in place to deal with it, which was an oversight," says Grant.

"When we put out media releases, we're looking for a bit of publicity and to promote our research locally. I thought we'd get a few emails from the scientific community."

Hola! Then Grant started receiving emails from Spain. "The emails in Spanish started arriving fairly early, because it had been published in a Spanish-speaking newsletter or journal.

"That went on for four months. As soon as we started getting hundreds of emails, it was clear this was something I needed help to deal with."

Grant's response?

"Forward them to Phil," he jokes.

Phil is Dr Phil Sanders, a postdoctoral audiology research fellow who has been working with Grant on their digital polytherapeutic treatment for tinnitus, a multi-pronged therapy, which is what the research paper was about.

Grant updated the original online release that had asked people to email him, to instead ask them to register their interest on the TrueSilence Therapeutics website, the UniServices spinout company boosting the development of the tinnitus treatment.

So what was everyone so excited about?

After 20 years searching for a cure for the annoying aural affliction that's essentially a false perception of sound, Grant and Phil's study randomised 61 patients to one of two treatments, the prototype of their new 'digital polytherapeutic', or a popular self-help app producing white noise and nature sounds. On average, the group using the polytherapeutic treatment (31 people) showed clinically significant improvements at 12 weeks, while the other group (30 people) did not.

"Most therapies use either counselling, or sound therapy or hearing aids," says Grant.

"What we do differently is personalise the care for each individual by looking at their particular needs, the problems they're experiencing and the nature of their tinnitus. We then prescribe customised options within our software. There's counselling, passive sound therapy (exposure to different sounds), and ways to retrain the brain, which include games."

Some people can tune out from their tinnitus (a high-pitched ringing), while others can't, and it seriously affects their lives.

"The games reward people for not listening to the tinnitus. So we're rewiring the brain by providing stimulation that people need to focus on, instead of the tinnitus."

The treatment is more than just an app – there's clinician software, and hardware including headphones and even Bluetooth pillow speakers through which to stream the different therapies at night. Sounds people might choose include surf, a babbling brook, or wind in the trees. After the Auckland floods, there are likely to be fewer takers for the sound of rain.

Grant says the audiology researchers are working closely with clinicians because tinnitus can be associated with a medical complaint. The causes are complex – it can be caused by noise, the nervous system, or damage to the ear.

"Going through a clinician is the best approach because we see this as a health problem, rather than a lifestyle problem. And we're enabling the clinician to be able to provide our therapy."

TrueSilence Therapeutics is incorporated in the United States with funding from overseas entrepreneurs involved in the health tech sector.

But local funding has helped propel this promising tinnitus treatment to where it is today.

“One of our strongest supporters for many years has been the Auckland Medical Research Foundation,” says Grant.

With funding from others, including the MedTech Accelerator Fund and the University of Auckland’s UniServices, the goal is to develop the treatment further, including using AI.

“Eventually, we will be able to tune to an individual’s needs based on artificial intelligence. If individuals are happy for their progress to be captured, that will create a large pool of data. Eventually, the therapy will become smarter.

“We also have funding to develop a headset for our EEGs, done as part of the patient analysis, so people don’t have wires all over their head, just a headphone to capture the information.”

Ultimately the plan is also to be able to use data extracted from smart watches or smart earphones or ‘hearables’ that have similar kinds of sensors.

“Then we can tailor the therapy based on the smart-watch readings that show whether you’re relaxed, stressed, have exercised or not had much sleep, for example.”

Tiredness and stress have been shown to be contributing factors to tinnitus in sufferers.

“The thing we commonly find is when people are tired, or there’s been a stressful event such as the loss of a loved one, it often leads to a spike. While for some it may subside, for others it will become a focus and it will be difficult for them to distract themselves from it.

“We also know that the worst cases of tinnitus are associated with post-traumatic stress disorder. Tinnitus is the number one medical injury complaint for Veterans Affairs in the US; number two is hearing loss.”

With soldiers, there can be injury to the ear, probably from a loud blast, and there may be a head injury causing concussion.

“Both of those are related to the onset of tinnitus. But they may also have experienced a profound psychological impact ... the death of a friend or another horrific event.

“The perfect recipe for severe tinnitus is a combination of ear injury and some kind of psychological upset.”

Grant has attracted people with different skill sets to the TrueSilence project, such as research fellow Amit Barde who has moved over to Audiology from the Auckland Bioengineering Institute (ABI). Amit’s expertise includes sound design, spatial audio reproduction and AR/VR wearable devices. There have also been a number of other post-doctoral researchers involved, including Zohreh Dobarjeh whose expertise is AI and who came to the University from AUT.

“For the engineering, we’ve been working with ABI; for some of the algorithm work, we’re working with AUT. It’s a really exciting environment.”

The goal is to run further trials and, ultimately, to gain FDA approval and have access to commercial markets, such as North America. It’s estimated there are around 60 million there with tinnitus.

“We’re working with New Zealand audiologists who provide expert input on the clinical pathway,” says Grant. “We test and refine here, with input from the US to make sure we don’t miss anything in the cultural economic translation.”

Clinicians, including GPs, will be upskilled in the TrueSilence treatment

“Not all audiologists or clinicians are comfortable with providing tinnitus care. This tool makes it easier for them and takes some of the load off their practice.”

Grant and TrueSilence are also assessing the requirements needed to get approval from the US Food and Drug Administration (FDA) for their novel treatment.

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***“We commonly find when people are tired, or there’s been a stressful event such as the loss of a loved one, it leads to a spike in their tinnitus.” – Professor Grant Searchfield, Head of Audiology, Faculty of Medical and Health Sciences, inventor at TrueSilence Therapeutics Ltd***

“We believe what we’ve done so far meets FDA requirements. We monitor things like how the headphones work for people with hearing loss so as not to cause damage, how the software interacts, the useability, the sound levels.”

He concedes that to some extent the success of TrueSilence may be limited by the user, such as whether they are open-minded about technology. But Grant is confident that for the next step in development, they will find a software company that has experience in designing technology for seniors.

“When technology is done properly, intuitively, older people are very good at using it.”

As people age, the incidence of tinnitus increases. In New Zealand, the self-reported prevalence is highest in over 65s, at around 13 percent. Under tens is around one to two percent. It is also slightly more common in males than females, a gender bias that may reflect ‘traditional work’ roles in industry.

But situations can play a part too. Grant says in the absence of sound and normal auditory activity, the brain goes looking for it. A New York

study published in 1953 tested a group of college students with normal hearing.

“Researchers put them in a sound-proof room, gave them a piece of paper and left them there for some time. They asked them to write down all the sounds they heard. Around 90 percent wrote that they heard crickets, whistling, humming or buzzing. These are the sorts of sounds people hear as tinnitus. As soon as they came out of that silent environment, the sounds disappeared.”

And all ages can get tinnitus.

“For young children, who are limited by being old enough to describe it, it will generally be related to a temporary ear infection as opposed to permanent damage to the inner ear.

But there’s a new threat. “Long-term exposure to music at high levels may well mean we’ll see a bit of an increase in a younger group.”

Grant says it’s important to note that not everybody with tinnitus will suffer from it.

“It’s really important to understand that. Some people have tinnitus, but develop ways of dealing with it, so for them it’s not a problem.”

He says that has led to a new definition.

“We’re beginning to hear more about ‘tinnitus disorder’, when tinnitus definitely has an impact. It’s not universally agreed upon though – when do you suddenly have tinnitus disorder? It’s not a switch, it’s more a continuum. But some people certainly suffer.”

As was indicated by those 2,000 emails. How did he get on with those?

“We answered them all. I’m happy to spend a moment pointing people in the right direction or updating them on TrueSilence’s progress. It’s not a big deal for me to help people like that, so I’m still fine to be contacted.”

Gracias, Grant.

■ Denise Montgomery

## EISELL MOORE CENTRE

As deputy director of the Eisdell Moore Centre, Grant collaborates across disciplines with researchers from the universities of Otago and Canterbury. The centre’s goal is to reduce the impact of hearing and balance disability across the Pacific through research, community education and equitable clinical service.

Sir Patrick Eisdell Moore, who was also the surgeon for the 28th Māori battalion, was an ear, nose and throat surgeon and founder of the Deafness Research Foundation in New Zealand. A Pākehā, he was heavily involved in Māori health and in the 1960s and 70s, visiting places with high Māori populations to run clinics for early detection and treatment of ear disease in children, especially in rural areas. He later introduced mobile ear-health clinics.

## BE IN AWE OF RON TE KAWA'S WORK ON OUR WALLS

If you have paid a visit to the Elam School of Fine Arts of late, you could not have missed the exuberant tapestry by contemporary artist Maungarongo 'Ron' Te Kawa (Ngāti Porou).

*The Natives Must Be in Awe* (2020) is a quilted wall-hanging and a recent addition to the University of Auckland art collection, acquired in late-2021 and joining a growing group of textile-based artworks that are part of the collection.

Ron Te Kawa lives in Woodville, Manawātū, though he has been working in fabric across the fashion, art and education sectors throughout Aotearoa for decades. He is a takatāpui (LGBTQI+) artist and is self-taught, first learning to sew from his father who purchased a second-hand sewing machine when Ron was aged nine. Ron has been creating intricate textile works since the 1990s, and he uses his unique style of quilting as a conduit for storytelling.

Ron's artworks explore mātauranga Māori (Māori knowledge) and his whakapapa and atua wāhine (female deities), through his characteristic use of bold colour and an illustrative style that brings scenes in his works to life. He sees the quilting as akin to tukutuku panels and in the past he created Aids memorial quilts when he was starting out.

*The Natives Must Be in Awe* is a striking example of Ron's large-scale quilted banner works. The artwork was created in response to his shock at a sentiment he heard broadcast on air.

When describing the work, Ron explained that he couldn't believe it when he heard a host on a radio programme saying how, "The natives must have been in absolute awe when they saw the *Endeavour* sailing over the horizon."

Adds Ron: "I know people from all around Gisborne and in their way of telling it, they were not in awe."

Ron's quilted wall artwork depicts a tongue-in-cheek representation of Māori ('the natives') encountering colonial explorers (represented by a ship sailing a flag, depicting a skull and crossbones over a Union Jack).

Incorporated into the composition is a vibrant waka against a rainbow sky and many figures wearing tipare (headbands). They are responding to the foreigners in the background



from their focal position on the foregrounded moana, each with mouths poised in waiata.

The work was part of Ron's solo exhibition *Hīnātore: A Love Story: Ron Te Kawa* at Objectspace (2021). In an accompanying text Ron explained, "Whakapapa quilts are an invitation to celebrate the fun, colour and magic of te ao Māori and all those things that fill my heart and heal my mind and spirit. Dance, connection to wairua and nature, whānau, whenua, stories, survival, resilience."

The exhibition also incorporated a functioning sewing studio in the gallery space. Ron has long been involved in community projects and throughout the show, he held several sewing and textile whakapapa workshops within the gallery, for the public to learn alongside his artworks.

He is currently preparing a new body of work to take to Sápmi (Sweden and Norway) to share with the Sámi peoples later this year.

In 2021 Ron told *Viva* in *The New Zealand Herald*, that after being a fashion designer for 25 years, he'd wanted to work out a way to change careers but still include fashion. He started sewing figures onto clothes to protect the wearer.

"No one is gonna mess with you when you are wearing a Hine-nui-te-pō [the goddess of death] skirt or a jacket emblazoned with a fierce kaitiaki," he said.

*The Natives Must Be in Awe* (2020) is part of the University of Auckland's art collection and is hung at the Elam School of Fine Arts.

The celebration of contemporary textile and fabric practices, particularly those of Indigenous artists, has only come about in recent decades. Such practices were historically regarded as 'crafts' and not considered to be fine art in the same way that media such as painting or sculpture were.

This is reflected in the University's art collection, in which textile-based works make up only around 25 of nearly 2,000 artworks, with the majority acquired in the past 15 years. *The Natives Must Be in Awe* then, makes a tactile and welcome addition to the Waipapa Taumata Rau walls.

■ Madeleine Gifford, Art Collection Adviser, Te Tumu Herenga, Libraries and Learning Services

Read more about Ron Te Kawa's quilts:  
[tinyurl.com/NZH-Te-Kawa](https://tinyurl.com/NZH-Te-Kawa) and  
[tinyurl.com/Viva-Te-Kawa](https://tinyurl.com/Viva-Te-Kawa)



Dr Morag Atchison with high-school music teacher David Hamilton. The pair have teamed up on Morag's debut album. Photo: Arie Hoeflak

## STUDENT AND TEACHER LEARN FROM EACH OTHER

Morag Atchison is one of New Zealand's top operatic talents. Her debut album is testament to how it all began.

**It was during high school that Dr Morag Atchison first knew she wanted to make a career out of music.**

More than 25 years later, the School of Music senior lecturer has just released her debut album – written by none other than her high-school music teacher and one of Aotearoa New Zealand's most prolific composers, David Hamilton.

*The Distance: Songs of David Hamilton* is an album of art songs that have played a large part in the soprano singer's musical journey. Some even date back to her time at Epsom Girls Grammar School, where she performed in the school's choir as a teenager.

David has had a profound influence on Morag's career. She credits him for teaching her to love the art of music-making and introducing her to "the beauty, excitement and possibilities of choral and vocal music."

"It's David's fault I'm not a lawyer or something sensible," she says.

Morag is one of this country's leading sopranos and voice teachers. She studied at the prestigious Royal Academy of Music in London and was the first to earn a Doctorate in Musical Arts in Vocal Studies from a New Zealand university.

She has performed many operatic roles and was most recently seen on stage in the New

Zealand Opera productions of *Macbeth* and *The Unruly Tourists*.

Joining her on *The Distance: Songs of David Hamilton* are two other colleagues from the School of Music: Rachel Fuller on piano and Luca Manghi on flute.

The trio first began recording the album over summer in 2019 at the School of Music.

"We had to turn the air conditioning off because it makes such a horrible noise," remembers Rachel. "We were melting."

But the sessions had been going really well.

"The stars had aligned," says Morag. "But then Covid hit."

Heading into lockdown meant they would have to wait to finish recording, but being at home gave Morag a chance to start brainstorming album titles.

The name of the opening track seemed suddenly poignant amid a lockdown. 'The Distance' was a new composition that David had written specifically for the record, with the lyrics set to a poem of the same name by English author Eleanor Farjeon.

The words to the poem conjured up "exotic lands far away, places that have been out of reach for most of us for the last few years," says Morag.

The album was finally finished in 2022 and is dedicated to Morag's mother, who passed away during the making of it.

"I knew that Morag was going to do a fabulous job with the music," says David. "Luca is a fabulous flautist and Rachel's a great accompanist. I knew everything was in good hands."

But it hasn't always been an easy run for the renowned singer and composer. Back in fourth form (Year 10), Morag wasn't even picked for the school choir.

"I couldn't believe it. I was so angry," she says. "Then there were auditions halfway through the year and I got in. It was like phew, now I'm here. I'm supposed to be here. This is where I should be."

■ Hussein Moses

***The Distance: Songs of David Hamilton* by Morag Atchison, Rachel Fuller and Luca Manghi, is streaming online and available on CD from Marbecks.**

## BOOKS

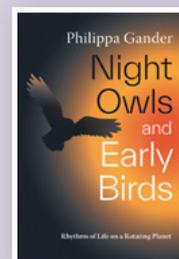


**Monster Metaphors: When Rhetoric Runs Amok**

Professor Peter Adams (School of Population Health) explores ways in which common metaphors can play a detrimental role in

everyday life. Peter looks at the metaphor of mental illness; free-flowing markets; mind as a mirror; and men as naturally superior. (Read more about the ideas from Peter overleaf.)

**Peter J. Adams, Routledge Taylor & Francis, \$66 or ebook \$50**



**Night Owls and Early Birds**

Dr Philippa Gander is a former staff member and science alumna, and this book explains how Earth's rotation affects humans and other animals. From

hibernation to jet lag to sleep cycles, life is profoundly shaped by the daily, monthly and yearly cycles of planet Earth.

**Philippa Gander, AUP, \$40**



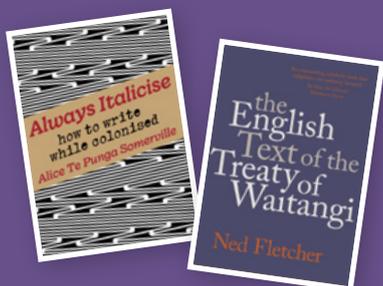
**'A Bloody Difficult Subject': Ruth Ross, Te Tiriti o Waitangi and the Making of History**

History alumnus Associate Professor Bain Attwood explores the path-breaking historical research of

Ruth Ross on the Treaty of Waitangi and how it shaped how it's seen today. Ruth's story began in 1955 when she and her family left Auckland for remote Northland, and she started writing a story about the Treaty for schoolchildren.

**Bain Attwood, AUP, \$60**

## OCKHAM NEW ZEALAND BOOK AWARD WINNERS



Two alumni took out major prizes at the Ockham NZ Book Awards on 17 May. Dr Alice Te Punga Somerville's poetry collection, *Always Italicise: How to Write While Colonised* (Auckland University Press), won the Mary and Peter Biggs Award for Poetry. Alice is a Professor at the University of British Columbia who did her MA in English at the University of Auckland.

Dr Ned Fletcher (MA history, PhD Law) won the General Non-Fiction Award for *The English Text of the Treaty of Waitangi* (Bridget Williams Books). Our book publisher AUP was also a winner for Nick Bollinger's *Jumping Sundays: the Rise and Fall of Counterculture in Aotearoa New Zealand*, which won the award for best illustrated non-fiction.

## REPAIRING DAMAGE WROUGHT BY RHETORIC

**Professor Peter Adams asks why it is so hard to purge society of metaphors that inflict damaging and out-of-date concepts.**

Metaphors contribute to our everyday lives in many wonderful ways by helping us describe, explain and express what is happening both in our surroundings and in our inner worlds. Just consider the power of the bubble metaphor used in the ‘stay in your bubble’ campaign that guided us through our first Covid-19 lockdown.

However, metaphors can also have a dark side. Some metaphors manage to embed themselves deeply in our minds in ways that allow them to grow in size and strength to a point that they begin to dominate all around and to unleash damaging ways of thinking and behaving.

For example, the ‘leader as father’ metaphor is commonly exploited in autocratic regimes to position the person in charge as a strict but benevolent father whose rule generates an orderly family life in which all citizens (‘children’) can benefit. Both left- and right-wing rulers have made use of this metaphor: in China, Mao Zedong was referred to as ‘Father Mao’, and in Italy, Benito Mussolini fashioned himself as ‘Duce and Father of fascist Italy’. In both cases, the metaphor played a role in propelling compliant and loyal ‘children’ into inflicting widespread destruction.

In my recent book, *Monster Metaphors*, I look closely at a set of metaphors that have grown to such a size that they are able to dominate their surroundings, squash out other competing metaphors and, on the basis of their supremacy, wreak havoc in lasting ways on those subjected to them.

One such ‘monster’, and one that achieved its dominance surprisingly quickly, is a metaphor that approaches economic systems in terms of ‘free-flowing markets’.

The metaphor had its origins in 19th century economic theory that proposes money moves around like fluids flowing in a contained system, in a similar way to water in an incoming tide being distributed through the channels and streams of an estuary.

The flows keep moving until an equilibrium is established and this process can be optimised

*“The dominance of the metaphor of a ‘free-flowing market’ has come at a cost.”*

*Professor Peter Adams says metaphors can cause harm.*

*Photo: Billy Wong*

by a flow controller (i.e. a government) guiding the flows in a productive fashion.

In 1947, the Austrian economist Friedrich von Hayek organised a meeting of economists, philosophers and political scientists at a hotel in Mont Pèlerin, a small Swiss town on the shores of Lake Geneva. Those attending were seeking economic theory that steered somewhere in between the extremes of communism and fascism. At the meeting was a rising star, Milton Friedman, an economist from the University of Chicago.

Friedman tweaked the metaphor of money flows in one important way: he took the role of flow controllers out of the equation. In other words, he insisted the flows need to be free to find their own equilibrium without any unnecessary and distorting interference from governments.

During the 1960-70s, a network of think tanks and policy institutes promulgated the freshly forged ‘free-flowing markets’ metaphor to political leaders, industrialists and the media. They gained such traction that the merits of the metaphor became championed in Ronald Reagan’s presidency and in Margaret Thatcher’s Conservative government.

Similarly in Aotearoa, the 1984 fourth Labour Government embraced this monster in ways that led to radical changes in our economy that included removing subsidies, selling off state assets, restructuring government agencies and reforming taxes. Successive National- and Labour-led governments carried these processes forward and, over time, the metaphor of ‘free-flowing markets’ moved from a promising idea to a self-evident truth.

But the dominance of this metaphor has come at a cost. Over the past 50 years, we have shifted to a markedly less equal society. For example, in 1984 the richest ten percent earned five times as much as the poorest ten percent, but by 2014 this had risen to eight times as much. This rise in inequalities has lumbered our low-income communities with a range of social challenges as well as poorer physical and mental well-being.

The ‘free-flowing markets’ metaphor is one example of a monster whose dominance has had damaging effects. The later chapters of *Monster Metaphors* tackle the question of what might be done to curtail such dominance and pave the way for alternative metaphors. Predictably, monsters don’t respond to challengers lying down. Once detected, they will devote their considerable strength to measures aimed at diverting, blocking and stomping out any form of resistance.

Accordingly, tackling a monster is no easy undertaking. It typically requires multiple communities of resistance forming over time into a sequence of social movements aimed at destabilising the monster’s dominance and establishing alternative perspectives.

■ Peter J. Adams is a professor in Social and Community Health in the School of Population Health, Waipapa Taumata Rau, University of Auckland. His latest book is *Monster Metaphors: When Rhetoric Runs Amok*, Routledge, New York, \$63

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