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UNIVERSITY OF AUCKLAND
Waipapa Taumata Rau

UniNews

NUALA GREGORY

Creative strategies are in her blood

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From photos to painted artworks, new strokes of genius

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How leaders discuss the use of nuclear weapons really matters

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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


Janet Fanslow

FAMILY VIOLENCE MAKING US SICK

Women who have experienced intimate partner violence are almost three times as likely to have a mental health condition and almost twice as likely to have a chronic illness, compared with those who have not. Associate Professor Janet Fanslow (FMHS) talked to *Stuff* about her research. "This is the first time we've been able to demonstrate how intimate partner violence contributes to the burden of ill health."

Link: tinyurl.com/Fanslow-Stuff


Paula Morris

BOOK REVIEW RESOURCE

Associate Professor Paula Morris spoke to RNZ's Jesse Mulligan about her new review website, the Aotearoa New Zealand Review of Books, which launched in April with seed funding from the Faculty of Arts.

Link: tinyurl.com/Morris-RNZ


Juan Schutte, right, with Olaf Diegel x2.

LET'S FACE IT, IT'S FUN

Dr Juan Schutte and the team at the Creative Design and Additive Manufacturing Lab have figured out how to make a 3D print of a face so accurate it can crack a cellphone's facial recognition security. "It's not that we're trying to break into phones," he told TVNZ. "We're trying to test the limits of this technology for real-world, human-centric problems we can solve."

Link: tinyurl.com/Schutte-TVNZ


Joel Rindelaub

LAB IN THE AIR

Dr Joel Rindelaub of the School of Chemical Sciences told TVNZ's *1 News* that tiny traces of nicotine, methamphetamine, caffeine and THC were detected in the air near the bottom of Queen Street, in the first study of its kind in Oceania. "The results aren't as concerning as a headline might make them sound. But we need to investigate more about the air because some of the things we're breathing in could be surprising."

Link: tinyurl.com/Rindelaub-drugs


Sir Collin Tukuitonga

PACIFIC HEALTH RESEARCH

Sir Collin Tukuitonga (Associate Dean Pacific, Faculty of Medical and Health Sciences) talked to TVNZ's *Breakfast* about the launch of Te Poutoko Ora a Kiwa, the Pacific and Global Health Research Centre. He said the centre will "look at things that matter, like diabetes, heart disease and child health. But it also wants to attract young people to come into health research for a career."

Link: tinyurl.com/Pacific-health-TVNZ


Antony Hoete

REVIVING MĀORI BUILDING SKILLS

Professor of Architecture Anthony Hoete talked to *Newshub Live at 6* and RNZ about his project, with the Faculty of Engineering, creating a full-scale timber structure for an Opōtiki marae that can withstand earthquakes. The team used interlocking frames in the traditional Māori mīmiro technique, a no-nails method.

Links: tinyurl.com/Hoete-build-RNZ and **tinyurl.com/Hoete-newshub**

THIS ISSUE

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SEEKING CLUES ON A REMOTE ISLAND

An expedition involving scientists from the universities of Auckland and Canterbury, with Ngāi Tahu, is looking at how Māori lived on the sub-Antarctic island of Enderby.

Professor Simon Holdaway at home with creature comforts before the expedition.
Photo: Chris Loufte

A challenge to the idea that pre-colonial Māori adapted to living in Aotearoa by planting gardens like kumara in the north and hunting wild resources like seals in the south is the focus of a significant expedition to the Auckland Islands in the Southern Ocean.

The Marsden-funded expedition is led by Simon Holdaway and Thegn Ladefoged, professors of archaeology at Waipapa Taumata Rau, and Dr Matiu Prebble, a senior lecturer in environmental science at the University of Canterbury. Thegn's specialist area is the relationships between human behaviour and the environment.

Simon says the project is testing long-held theories that have rather simplistically divided early human society into either agriculturalists (Neolithic) or hunter-gatherers (Palaeolithic) depending on which climates they lived in.

"These theories have changed pretty radically in other parts of the world over the past 20 years. The firm dichotomy between very different economies, and therefore societies, has dominated our understanding of early human habitation throughout the 20th century, and back as far as the 19th; however, this has now shifted as people have a much better idea of the process and variability all over the world."

Simon is one of 12 scientists and students and seven crew who headed off in April to spend ten days on Enderby, a Department of Conservation-protected island, 465km from Bluff, in the uninhabited Auckland Islands archipelago. The expedition included palaeoecologists, archaeologists, geomorphologists and biogeochemists.

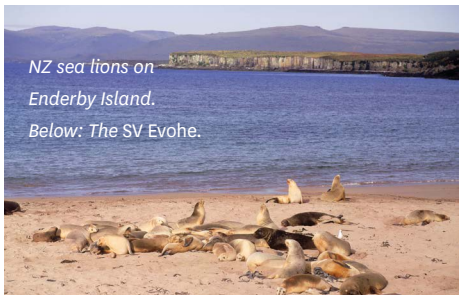
They looked for plant and animal remains, as well as portable artefacts and features like fire places, that might tell a different and more complex story of Māori habitation.

At Sandy Bay, Enderby's only landing point, there is a back swamp sitting in behind the dunes which is a typical landscape found all around New Zealand. From this, a team, led by Dr Matiu Prebble from the University of Canterbury, hoped to analyse ancient pollen core samples.

"Changes in vegetation and any burning will provide clues to any human-made changes in the plant life of the island," says Simon.

"We're interested not only in plants specifically grown by humans but also in native plants on these island, from different parts of Aotearoa, that people might have been using and then modifying the environments in which they grew.

"This is a great opportunity to look at how Māori throughout the motu were engineering environments and using a variety of plants and animals." *– Professor Simon Holdaway, Archaeology, Faculty of Arts*



NZ sea lions on Enderby Island.
Below: The SV Evohe.

"This is a great opportunity to look at how Māori throughout the motu were engineering the environments and using a variety of plants and animals; right from their initial contact with this part of the southern Pacific, from around the late 13th century."

As well as flora and fauna, the team was hoping to find the remains of stone artefacts.

"We know people were down there around 700 years ago so it will be interesting to work out to what degree people were supplying the island with these artefacts.

"We want to understand how the artefacts have moved or changed in size and shape; things like basalts, cherts [sedimentary rocks] and any other rocks that we can identify to other New Zealand regions."

The team accurately mapped the location of any objects they found in 3D using Trimble gear, precision engineering mapping tools used most often on construction sites.

Before they left for Enderby from Bluff, Simon was warned that sea sickness was unavoidable during the two-day voyage on *Evohe*, a specially equipped research vessel often used for trips in extreme environments.

The researchers and crew also had to undertake major decontamination of their clothes before departing to ensure they didn't taken any plants, seeds or pests to the pristine islands.

The trip is part of a larger project to explore six small offshore islands, extending as far north as sub-tropical Raoul Island and as far south as Enderby. This project aims to form a clearer picture of the relationship of Polynesian settlers to the land across 2,700km of the Pacific.

■ Julianne Evans

HEART-SAVING DRUG SHOWS PROMISE

New type of heart medicine a 'two-for-one'

Professor Julian Paton

A novel drug is showing promise for alleviating heart failure, a common condition associated with sleep apnoea and a reduced lifespan.

The drug, known as AF-130, was tested in an animal model at the University where researchers found it improved the heart's ability to pump and also prevented sleep apnoea.

"This drug does offer benefit for heart failure, but it's two for the price of one, in that it's also relieving the apnoea for which there is currently no drug, only CPAP (a breathing device), which is poorly tolerated," says Professor Julian Paton, director of the University's Manaaki Manawa, Centre for Heart Research.

When a person has a heart attack and subsequent heart failure, the brain responds by activating the sympathetic system, the 'fight or flight' response, as a way to stimulate the heart to pump blood.

However, the brain persists with this activation of the nervous system, even when it is no longer required, and this together with the consequent sleep apnoea, contributes to the patient's reduced life expectancy. Most patients die within five years of a heart failure diagnosis.

"This study has revealed the first drug to temper the nervous activity from the brain to the heart thereby reversing the heart's progressive decline in heart failure," says Julian.

"These findings have real potential for improving the wellness and life expectancy of almost 200,000 people living with heart disease in Aotearoa New Zealand," he says.

Another exciting factor for the scientists, who are also from the University of São Paulo, Brazil, is that the drug is soon to be FDA approved, for a different health issue, but that could pave the way for human trials in the next year or two.

Read more: auckland.ac.nz/new-heart-drug

KUPE LEADERS READY TO ROLL

Kupe executive chair David Downs presented Kupe Leadership Scholarships to 18 students at a recent ceremony held at the Business School, where the 2023 cohort also met their mentors.

Kupe Alumni Committee co-chair Arizona Haddon, Master of Urban Planning (Professional) also facilitated a kōrero with Sir Stephen Tindall and Vice-Chancellor Professor Dawn Freshwater in which they discussed responsibility in leadership, collective leadership and philanthropy in education, all perfect topics for future leaders.

The Kupe Scholarships, now in their fifth year and funded by donors and mentors, are for students from any faculty to help with their postgraduate studies. Kupe Scholars are all strong academically, but also demonstrate a commitment to service.

See: tinyurl.com/2023-Kupe-scholars

Clockwise from back left: Kiana Young-Whenuaroa, Charlotte Noble, Thomas Swinburn, Ariana Andrews, Jannik Wittgen, Arianna Bacic, Harry Pottinger-Coombes, Nakita Daniel, Emily Hacket Pain, Chelsea Naepi, Leny Woolsey (Kupe director), Lusi McCabe (Kupe manager), Ashley Vaotuua, Kimberly Thio, Shaheer Salman, Adela Plakic, Meghshyam Prakash, Annah McPherson and Alexander King. Absent: Elizabeth Gane

GENDER PAY GAP INFO RELEASED

The University has released its gender pay gap information, in line with government expectations on pay-gap reporting.

The gap for staff is 9.2 percent, based on a pay snapshot taken on 8 December 2022. This figure is in line with the gender pay gap for Aotearoa New Zealand generally.

The gender pay gap is an indicator of the overall difference in earnings between gender groups, based on median hourly earnings.

While it is a measure of inequality, it is not the same as an 'equal pay' issue, where people of different genders are paid differently for doing the same work. The gender pay gap can result from people doing different jobs, or from bias and discrimination, among other reasons.

Now that the overall gender pay gap has been identified, the University will investigate the data and provide further insights into the pay gaps relating to gender and ethnicity. It will release proposed solutions this September.

Pro Vice-Chancellor Equity Professor Cathy Stinear said the University is committed to enhancing equity, including how people are remunerated.

"We know there are issues of fairness in pay, and owning our number helps us understand the areas where we need to focus our efforts.

Pro Vice-Chancellor Equity Professor Cathy Stinear

"It's the first step in addressing the systemic issues that produce these gaps," she says. "It's not a bad start being at the Aotearoa average, but certainly we can and should improve."

CLEVER FIX FOR EARTHQUAKE-PRONE BUILDINGS

Engineers from the University have found a cost-effective way to strengthen thin concrete walls.

Faculty of Engineering researchers have come up with a novel solution to strengthen the country's riskiest buildings.

PhD candidate Victor Li, Dr Enrique del Rey Castillo and Dr Rick Henry found that wrapping weak spots in concrete walls with carbon fibre strips can strengthen high-rise buildings to resist earthquakes well beyond the demands of the building code.

The research was funded by Toka Tū Ake EQC to help find the most efficient and cost-effective ways to strengthen thin concrete walls.

"The results have even been better than we anticipated," says Victor.

He says thin walls can deform 'out of plane' due to their inherent instability, and just one percent of lateral displacement can cause catastrophic collapse.

"Technically it's called 'axial failure'. It can still happen in a newer building, as we saw in Christchurch's Grand Chancellor Hotel, but pre-1982 design methods mean the risk is higher in older buildings," he says.

"Our research has shown that with the carbon fibre solution, the wall cannot buckle in the out of plane direction."

The engineers wrapped and tested 56 different combinations of concrete, steel and carbon fibre to see when and how they would break. The team also tested the walls for seismic resilience, at almost twice that required by the building code.

Dr Enrique del Rey Castillo, left, with Victor Li, measuring cracks in concrete walls they tested.

"Thanks to the input from people working in the industry, we have delivered something that can be put to practical use right away," says Victor.

Full story and video: auckland.ac.nz/earthquake-engineering-solution

CHATGPT VERSUS ACCOUNTING STUDENTS: WHO WON?

A first-of-its-kind accounting test for ChatGPT assessed AI's ability in thousands of exams from around the world.

ChatGPT may have passed the bar, but its accounting isn't quite up to par, according to a 14-country study featuring University of Auckland exam questions.

The crowd-sourced study, using more than 25,000 questions from 186 institutions' accounting assessments, found that students outperform ChatGPT overall. It also revealed that the artificial intelligence tool sometimes made up 'facts', made nonsensical errors such as adding two numbers in a subtraction problem, and often provided descriptive explanations for its answers, even if they were incorrect.

The study's 328 co-authors from around the world, including finance academics Ruth Dimes and Professor David Hay, entered assessment questions into ChatGPT-3 and evaluated the accuracy of its responses between December 2022 and January 2023. Ruth, a doctoral candidate who directs the Business Masters programme, used two recent exams from the Analysing Financial Statements course.

"I entered the exam questions into ChatGPT and recorded how it performed compared with student grades. I was surprised it didn't perform as well as I thought it might have," she says.

David, Professor of Auditing, used exam and test questions from the auditing course and found the bot was able to perform slightly better in auditing courses over financial accounting courses, but still not as well as the students.

Ruth Dimes

David Hay

"ChatGPT was quite knowledgeable about auditing requirements and standards in New Zealand, but it only scraped through the exam part of the course," he says. "Also, our courses include other components as well as exams, and ChatGPT would not get credit for activities like tutorial discussions and class presentations."

Across all assessments, students scored an average of 77 percent, while ChatGPT scored 47 percent based on fully correct answers.

Ruth says she's interested in seeing how newer versions of ChatGPT and other AI tools may perform if a similar study was undertaken in the future. "These tools will perform better over time. It highlights the importance of thinking carefully about what universities assess and how."

■ Sophie Boladeras

Full story: auckland.ac.nz/chatgpt-vs-accounting

CLAIRE CHARTERS AT THE UN

Professor Claire Charters is already having her voice heard through her role with the Human Rights Commission.

In March, Claire (Ngāti Whakaue, Ngāti Tūwharetoa, Ngā Puhi and Tainui) was made its Rongomau Taketake, Indigenous rights governance partner, to lead work on Indigenous Peoples' rights. Her role is part-time for a year and she's still working in the Faculty of Law.

Appearing at the United Nations Permanent Forum on Indigenous Issues in New York in April, Claire asked the UN to keep Aotearoa on track with work on its Declaration on the Rights of Indigenous Peoples (UNDRIP). New Zealand became a signatory to the UNDRIP in 2010, committing to draw up a declaration plan, but hasn't yet. "Developing an action plan to implement the rights of our Indigenous people in Aotearoa is a crucial step forward to address the enduring harm of colonisation," says Claire.

Read Claire Charters' full statement: tinyurl.com/UN-Charters

Professor Nuala Gregory, wearing a scarf she designed, says in her faculty, "There's always been a lot of creativity and a hunger for generating new ideas". Photo: Billy Wong

NUALA GREGORY: HAVING A **CREATIVE INFLUENCE**

Just as Professor Nuala Gregory built a new life when she moved from Ireland to New Zealand, she's now hoping to build a fresh identity for the Faculty of Creative Arts and Industries. And she's not afraid to question the way things have been done in the past.

Professor Nuala Gregory knew she would have to leave her home in West Belfast.

Back in 1997, opportunities were few and far between for artists from an Irish Catholic background. Despite the search for a political settlement, the legacy of discrimination lingered on after decades of conflict in the area.

"I always felt the need to get out of that environment, because you couldn't thrive," says Nuala. "You could struggle; there was little hope and genuine danger."

She had scanned the UK newspapers and decided to apply for teaching roles overseas. "One came up in Scotland, a second was advertised in England and a third was in this place called Auckland, New Zealand."

She interviewed for the first two without success, but with the luck of the Irish secured the third: a part-time gig lecturing at Elam School of Fine Arts. Within a year she was promoted to full-time senior lecturer and Head of Painting.

"It was the most amazing five years of teaching and studio work, alongside artists and educators like Judy Millar, Séraphine Pick, Kristy Gorman and Peter Robinson," she says. "It was incredible."

For the past 26 years living and working in New Zealand, Nuala has held numerous senior management roles across the University, including Head of Elam School of Fine Arts and Deputy Dean of Creative Arts and Industries.

> ***"As creatives, we have a role to play within the University in influencing all aspects of the business."***
>
> ***– Professor Nuala Gregory, Dean of Creative Arts and Industries***

She was promoted to Dean in 2022, and turned her focus to building a new identity for the faculty.

"There's always been a lot of creativity and a hunger for generating new ideas," she says.

"But we've started to question certain things that we've done in the past and ask, 'Has that really delivered on our wider goals; do we really want to go on doing that?'

"We now see a future in which the faculty will have a strong public purpose, with clear mission areas and targeted outcomes linked to *Taumata*

Teitei. We will focus on local cultures and communities against a global background.

"Our aim is to build 'collective intelligence' across all of our schools; to make a positive impact on climate change, the built environment, sustainability, a thriving economy and a new world of balanced work, education, art, culture and well-being.

"It's all about creativity for the individual and the public good. An ambitious strategy but we're determined to make it happen."

While consolidating her vision as Dean, Nuala continues to exhibit widely. She recently visited Ireland to begin work on a retrospective exhibition of her decades-long art career and plans to launch the show in Belfast before bringing it to Auckland.

Her strikingly colourful abstract paintings and collages feel like a challenge to the conceptualism that dominates the art world today.

"I'd rather point towards the potential for meaning that arises from encountering a painting, than try to make a direct statement. Painting can generate new meaning rather than simply communicate a message."

She says that out of all the art forms, painting retains a unique ability to generate feelings and draw people in.

"There's something special about experiencing a subtle new sensation that can make us question our perceptions and ourselves. That can feel strangely archaic in a world where we're focused on screens all the time."

Alongside her painting, Nuala has recently rediscovered her love of fashion and is working on prototypes for a line of silk scarves featuring her eye-catching designs. She was inspired by finding '70s vintage scarves in op-shops, with odd combinations of colours that spoke to her own work as an artist.

Other ideas for her scarves came from visits to a vintage Japanese kimono warehouse.

"The way they combine floral and abstract designs is fabulous and inspiring," she says.

Her sun-filled office overlooks the gardens outside the University's School of Architecture and Planning, but West Belfast is never far from her thoughts.

She grew up in a working-class family living in a conflict zone.

"The '60s and '70s were really hard times for my parents," she says. "There weren't many books in our home, let alone art."

But her mum had a creative side and taught Nuala and her sister Jeanette how to sew. The two sisters would then huddle together each night to create collages out of old newspapers that they kept under their bed.

"We would take the newspapers and tear them into shapes, then lick them and stick them onto the headboard above our bed. They would fall off in the middle of the night and our bedclothes would be covered with black ink. Our long-suffering mother eventually put a stop to it."

One of Nuala Gregory's colourful artworks, What you may know 1, *Acrylic on paper on linen, 2021.*
Photo: Sam Hartnett/Solander Gallery Wellington

"The '60s and '70s were really hard times for my parents. There weren't many books in our home, let alone art."

– Professor Nuala Gregory, Dean of Creative Arts and Industries

After graduating with a Bachelor of Arts at the University of Ulster, Nuala did a ten-year stint with a local artists' collective. Being part of a community of experienced artists helped her learn how to "do a lot with very little" such as organising exhibitions and securing funding from the local arts council.

It was when she went back to university to start her masters that she realised her career could take a new direction.

"I got some experience teaching and realised I absolutely loved it and wanted to do it."

She went on to complete a masters and her doctorate at the University of Auckland and believes that "it doesn't always take a lot to do something really inventive".

"As creatives, we have a role to play within the University in influencing all aspects of the business," she says."We can do amazing things with our collective ingenuity and invention to produce outcomes for our communities and, ultimately, our students. At the end of the day, that's what it's all about."

■ Hussein Moses

Award-winning bioengineer Dr Peng Du describes academia as a sheltered environment to investigate questions of interest. *Photo: Chris Loufte*

BIOENGINEERING BREAKTHROUGHS AND THE ART OF SCIENCE

Dr Peng Du's achievements come from more than a gut feeling ... he draws on electrophysiology, anatomy and, his greatest love, chemistry. And he aims to make it sound fun.

One notable quality of Dr Peng Du is his humour. His students agree. He uses it a lot. To engage, to get through 50 minutes of dry lectures. To be humorous, he says, you need to see the funny side of life; equally it's his way of carrying a truth.

Peng is Associate Director of Research at the Auckland Bioengineering Institute (ABI) and Associate Professor of Engineering. In 15 years of academia at Waipapa Taumata Rau, University of Auckland he has gathered a long list of accolades including the Prime Minister's MacDiarmid Emerging Scientist Prize in 2019 and the 2022 University of Auckland Research Impact Award recognising a decade of world-leading research culminating in a non-invasive wearable device, Gastric Alimetry, now used in more than 15 hospitals in five countries. The device records gut bioelectrical activity and Peng's research has uncovered new disease biomarkers for previously undiagnosable digestive diseases. Alimetry Ltd, the company spun out from the research, grabbed a record three awards at New Zealand's 2022 Hi-Tech Awards.

Still, rather than research into the bioelectrical activity of the gut, it is the entrancing aesthetics of science that make Peng beam. Peng curated the *Art of Bioengineering* exhibition held at the Gus Fisher Gallery in 2015. The unexpected and dramatic visions are still on show in the foyer of ABI at 70 Symonds Street.

"Art is another form of communication. Things that you can't put into words, you can put into pictures. You can see something created through science, yet the artwork allows you to inspect your work through another mindset."

Peng's view that life can be experienced from different vantage points was formed early. He spent his childhood in the city of Ürümqi in Xinjiang province, a city at the furthest point from the coast in Asia with a majority Muslim population.

"I grew up in a bicultural environment as a Han Chinese. There is a segment of the population that has an interesting dynamic, similar to Pākehā and Māori. There's the coloniser and the Indigenous people. There is integration and sometimes a clash of cultures."

He describes his family's move to New Zealand in the late 90s as "a drastic change in environment and culture". One day landlocked and the next, all at sea. In the school grounds of Kelston Intermediate, it was the relaxed freedoms that stood out for 11-year-old Peng: small classes, calling teachers by their first names, open fields, barefoot classmates. There was also a different mix of ethnicities and a new language. Somewhere in the background was the sense of a newcomer finding identity and belonging in another bicultural context.

At Avondale College, Peng started in the bottom stream and worked his way up to the top-stream class. In his final year, he see-sawed between university-level paper mathematics and catch-up subjects needed for Bursary. Right there, a moment of glee: "I ended up taking Classics – and English!"

He still has a keen interest in ancient architecture.

"In Rome, I enjoyed seeing all those buildings I learnt about in high school – the Pantheon, Hadrian's bath, the aqueduct, the Colosseum. Traces of the ancient world in the modern day is an interesting juxtaposition."

He's trying to engage the curiosity of travel in his preschoolers, Valerie and her younger brother Dominic. "This is the Taj Mahal; this is Red Square."

An enquiring mind replies, "Is this just a building or a playground?"

By the end of high school, Peng had fallen in love – with chemistry. The Nobel Prize for Chemistry was not only in his reach, he held it in his very own hands after an inspiring public lecture from Alan MacDiarmid.

But it turns out that Peng swoons at a bit of pizzazz. At the University's Open Day, Chemical Engineering "put on a really great show" so

Peng made a slight deviation. He incorporated chemistry, biology, and engineering into the fairly new degree of Biomedical Engineering.

Peng's introduction to the gut came in his second year when he was looking for a summer internship. He wanted work – and to work on the heart. But Professor Nic Smith, now Vice-Chancellor at Victoria University of Wellington, introduced him to Professor Andrew Pullan who was transitioning cardiac techniques to the arguably less attractive organ. When Nic left for the UK, he offered Peng a tantalising opportunity to do a PhD in cardiac research. But Andrew offered him a PhD in New Zealand on the gut.

The show won Peng over – again.

"Andrew was charismatic. He could paint a picture, 'the heart is all intricate detail, whereas here's the gut – this green pasture, the new and final frontier'". Peng was persuaded and went with his gut. (Sadly Andrew passed away of melanoma in 2012.)

Peng also met Professor Greg O'Grady who taught him about clinical translation and putting a device into patients' hands. That combination ultimately led to start-up company Alimetry Ltd. But despite the rapid rise of Alimetry, Peng is still in academia.

"With University spin-outs, there is no middle ground where you can have one foot on each side, but ABI is working hard and making the case where you can go back and forth between the two."

Peng describes academia as a sheltered environment to investigate questions of interest.

"It's more of a lifelong mission than a short-term goal – but job security is always a concern.

"This will resonate across academic communities. The rolling contract, the uncertainty of where you are going to be, has always been my biggest work challenge.

"I can relate to politicians in New Zealand because they all have a three-year cycle. In academia we call it the grant cycle. We think, 'Oh I need to put in something good'. That can motivate people, but on the other hand, it is stressful, especially when you have a family and expenses to pay."

For the immediate future, Peng points to growing interest in applying what has been learnt from the gut to another smooth muscle organ in the body, the uterine smooth muscle.

And there's also chemistry. "Alan MacDiarmid's claim to fame, leading to that Nobel Prize in Chemistry in 2000, was conductive polymers, plastic materials that conduct electricity. It just happens that my story may come full circle to what inspired me to do science in the first place."

> ***"With university spin-outs, there is no middle ground where you can have one foot on each side."***
>
> – ***Associate Professor Peng Du, Auckland Bioengineering Institute***

He's now working with Professor Jadranka Travaš-Sejdić and Dr Peikai Zhang from the Department of Chemistry to translate MacDiarmid's work into a new frontier in gut research. It's the next generation of biocompatible sensors (ones that don't cause immunological reactions) to be used in gut functions. "The sensors are already used in acute situations, but the plan, in the long term, is to implant them."

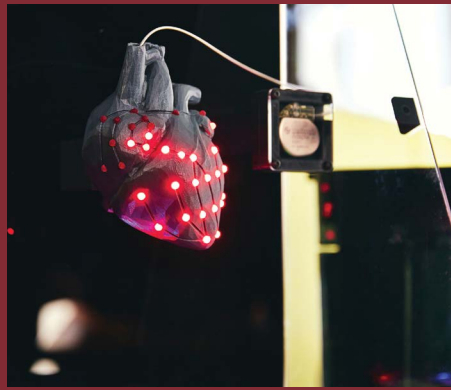
■ Megan Fowlie

SHOWCASING THE FUTURE

The Auckland Bioengineering Institute (ABI) is holding a family-friendly showcase at the Cloud, 89 Quay Street from 9-14 May.

There will be more than 40 fun, interactive demos on display from 10am-4pm daily.

The ABI was established in 2001 and one of its major goals is to enhance the diagnosis and treatment of a range of medical conditions, to help improve the lives of people with disabilities or injuries. ABI students and researchers work on everything from artificial intelligence avatars, to innovative gadgets and implantable devices, to world-leading 3D models of the human body. The free event will showcase and raise awareness about the ABI's life-changing research. To attend, search for Bioengineering the Future on Eventbrite.



Clockwise from top: Dr Alex Dixon (right) is developing an imaging system that can create 3D models of people – a digital twin; a heart-on-a-chip and pacemaker shows how a pacemaker can send electric sparks at the right place and right time; Dr Joyce John and Atefeh Rahimi display their lung research on a hologram projector.
Photos: Matt Crawford

INSPIRED BY LIFE: HIRIA ANDERSON

Two paintings have been welcomed into the University of Auckland Art Collection recently: *Land Survey* (2021) and *Whakakotahi* (2022), both by contemporary painter Hiria Anderson (Rereahu, Ngāti Maniapoto, Ngāti Apakura).

Hiria was brought up in Ōtorohanga, a small town in Waikato on the banks of the Waipa River, where she still lives and works today.

Her detailed paintings are created in her studio on Tūrongo Street, where her grandparents lived, and where they raised their children and granddaughter. Hiria's paintings are inspired by her life in Ōtorohanga on the whānau marae, and often incorporate her grandparents' skilled work in traditional whakairo (carving) and raranga (weaving).

Hiria frames her paintings first through photographs taken on her phone that capture pieces of her world and community. She uses photography as a tool for observing the compositions, which then become slow-moving artworks through her process of rendering them in oil paint. In depicting these slice-of-life scenes, Hiria is giving viewers an intimate insight into the everyday life of her community, while also creating artworks that portray the politics and nuances of Māori culture in our contemporary world.

A suite of these intimate works was included in the *Toi Tū Toi Ora: Contemporary Māori Art* exhibition at Auckland Art Gallery Toi o Tāmaki in 2021, curated by alumnus Nigel Borell and featuring more than 300 artworks by 110 Māori artists. The subjects ranged from a stack of pudding plates in the pā kitchen, to a close-up detail of a whakairo at the whānau marae. Art writer Lucinda Bennett says of Huria's works, "In depicting the everyday lives of her community, these paintings interrogate the history of representation of Māori in European art, gently shifting the viewpoint from outside looking in, to inside, looking at one another."

Hiria's two paintings now in the Art Collection are at a larger scale than many of her earlier works, marking a shift in her practice that she continues to explore. The first, *Land Survey* (2021), is from her solo-exhibition *Taonga* (Tim Melville Gallery, 2021), and captures a telescope in front of a window, seemingly poised for a viewer to peer through at the landscape beyond.

When creating this work, Hiria had recently joined the Ōtorohanga Museum Committee. She used her paintings to explore her questions about which objects become taonga, and how the audience reacts to being in the presence of 'museum objects'.

Of *Land Survey*, Hiria posed the question, "If we visit a museum and see a land-surveying instrument, in a region where Māori were subject to vast land confiscation, what should we think? Who decides?"

A similar theme is explored in *Whakakotahi* (2022), which depicts the relatively familiar scene of a group of bowls players on the Kihikihi War Memorial bowling green. In slowly rendering this particular outlook, the artist captures Parawera and Rangiowhia in the background; the latter being the site of a horrific war crime perpetuated by the Crown against Waikato Māori. The painting is a sobering visualisation of local colonial history, emphasising the importance of understanding such complexities.

In the foreground however, Hiria incorporates both Māori and Pākehā figures from the community, playing bowls together. Encapsulating a fitting and intentional sentiment, she has titled the work *Whakakotahi*; understood as a call to unite and unify, in te reo Māori.

Hiria Anderson's paintings Whakakotahi *(2022), above, and* Land Survey *(2021), below. Both are now part of the University of Auckland's art collection.*

The University's Art Collection comprises close to 2,000 artworks and is well-regarded for including work by many of New Zealand's best-known and most loved artists. The collection is a valuable cultural asset shared across campuses and luckily for us, it's permanently on display.

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

From left to right: Rosetta Allan, Selina Tusitala Marsh and Michele Leggott.

TALENT ON SHOW AT **WRITERS FESTIVAL**

The Auckland Writers Festival is held from 16-21 May and University of Auckland creatives are well represented.

We mentioned Master of Creative Writing (MCW) alumna Ruth Bayley's debut book *Barefoot* last month and she will pop down from the Faculty of Medical and Health Sciences where she works to take part in the Britomart event on 19 May, along with Arts doctoral candidate Te Kapua O'Connor. Te Kapua's book with Professor Melinda Webber, A *Fire in the Belly of Hineāmaru*, is shortlisted in the Ockham Book Awards, winners to be annnounced on 17 May at the Festival.

Emeritus Professor Michele Leggott will discuss poetry in a panel on 20 May. On the same day, Professor Selina Tusitala Marsh chats with Trinidadian writer Anthony Joseph.

Associate Professor Paula Morris takes part in two events on 20 May. In the morning it's a chat with EatLitFood's Albert Cho, Wellington poet Joanna Cho and children's author and Arts alumna Graci Kim, and in the evening it's a conversation with 2019 joint Booker prizewinner Bernardine Evaristo. She has two more events on 21 May.

MCW graduate and doctoral candidate Ruby Porter (her novel was *Attraction*) also appears in three events, on 19, 20 and 21 May, called 'Bookclub: The Books That Made Me'. The first includes law alumna and former staffer, and author of *Na Viro*, Gina Cole. Alumna Josie Shapiro and MCW alumna Caroline Barron (latest book *Golden Days*) will discuss female friendships with fellow MCW alumna and arts philanthropist Rosetta Allan on 19 May at 1pm.

Dr Carisa Showden, who appeared in *UniNews* last month, will discuss the impacts of climate change in a panel event entitled 'But What Can We Do?', on 18 May.

And pianist Jessie Leov from the School of Music will appear in an event that matches poets with musicians. Also in that performance is alum and poet Alice Te Punga Somerville.

HOPE THAT NEW BOOK IS USEFUL IN SCHOOLS

***Te Pouhere Kōrero 10: Māori History, Māori People* (Bridget Williams Books) was launched at a celebratory event in Wellington on 28 March.**

It's a special edition of a long-standing series of books authored by a collective of Māori historians known as Te Pouhere Kōrero.

This edition includes contributions from Associate Professor Aroha Harris and Associate Professor Ngarino Ellis from the Faculty of Arts, and independent researcher and former lecturer Dr Melissa Matutina Williams.

Aroha was one of three of the authors who also took part in a panel discussion at the book's launch. They discussed contributions to the journal including place-based history, the concept of citizenship, Māori art history, decolonisation, colonial history, and how to teach Māori history.

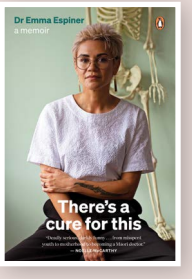
Associate Professor Aroha Harris

The authors hope the book will support the new Māori history curriculum in schools. Aotearoa New Zealand Histories is now a compulsory subject for Years 1 to 10.

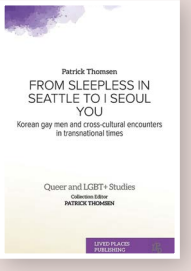
"For those unsure of how they might teach Māori and iwi histories, we hope this special edition provides some value, insight and direction," says Aroha. "I think if we can learn to love our history, we can learn to love each other and not feel threatened."

***Te Pouhere Kōrero 10*, edited by Arini Loader and Nēpia Mahuika, BWB, $30 (also digital)**

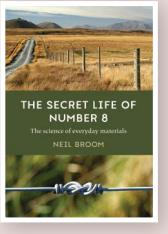
BOOKS



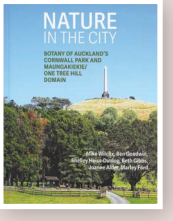
There's a Cure for This: A Memoir
Alumna Dr Emma Espiner (Ngāti Tukorehe, Ngāti Porou), is an award-winning opinion writer and medical doctor. This is Emma's own story, from her unconventional childhood to becoming a medical student then a junior doctor during the pandemic. It's her debut book. Out on 9 May.
Emma Espiner, Penguin Books, $35



From Sleepless in Seattle to I Seoul You
Subtitled *Korean Gay Men and Cross-cultural Encounters in Transnational Times*, this book by Dr Seuta'afili Patrick Thomsen, senior lecturer in the Faculty of Arts, is based on his PhD research. It explores gay Korean men's experiences around sexual visibility. Read more about Patrick's book at **auckland.ac.nz/sleepless-in-seattle**
Patrick Thomsen, Lived Places Publishing, $US25



The Secret Life of Number 8
Emeritus Professor of Engineering Neil Broom writes about commonplace materials that have shaped the course of technological development up to modern times. Using reader-friendly language, Neil explains how the structure of a material yields characteristics that we might either exploit or take special care to avoid.
Neil Broom, Mary Egan Publishing, $40



Nature in the City: Botany of Auckland's Cornwall Park and Maungakiekie/One Tree Hill Domain
This illustrated book, put out by the Auckland Botanical Society, is by Science alumni Mike Wilcox and Shelley Heiss-Dunlop, with Ben Goodwin, Beth Gibbs, Joanne Alder and Marley Ford. It describes these parks' diverse plant life, and includes accounts of lichens as well as fungi and birds.
Auckland Botanical Society, $60 (hardback), aucklandbotanicalsociety@gmail.com

TALKING ABOUT NUCLEAR WEAPONS

President Vladimir Putin recently declared that Russia will halt participation in the New START nuclear arms reduction treaty, the last remaining nuclear treaty between the United States and Russia.

The treaty established limits on deployed strategic nuclear arsenals, capping nuclear assets at 1,550 deployed warheads and 700 deployed missiles and heavy bombers. The five-year extension of the treaty, announced in February 2021, elevated hopes for more amicable discussions to what US Secretary of State Antony Blinken called, "effective arms control that lowers the risks of war and helps prevent arms races".

However, Putin's announcement casts doubt on the narrative of control and stability advanced by the US, while drawing attention to the fragility of the mechanisms assumed to be regulating standard practices on nuclear weapons.

New START had meant both could inspect each other's nuclear arsenal a number of times each year, to ensure the pact was being followed. This was stopped initially because of Covid-19, but Russia is now refusing to resume its involvement.

As the Ukraine-Russia war grinds on and multilateral diplomacy fails to resolve the conflict, we are left with no choice but to hope nuclear weapons will not be used, while the world waits for a peaceful resolution.

Since the war began on 24 February 2022, there have been repeated reports of Putin saying that nuclear weapons, including tactical weapons, remain an option. He has also affirmed Russia would resume nuclear tests if the US conducted one first.

While Russia's threats are extraordinarily concerning and could lead to grave and unthinkable consequences, US President Joe Biden says Russia has made a "big mistake" and such actions are "not very responsible". But he reassures us that Putin is "not thinking about using nuclear weapons".

We are yet to see how the situation unfolds, but it is still vital to remain attentive to how casting doubt on Putin's nuclear intentions risks normalising and trivialising them. Rhetoric or not, dismissing the possibility of these weapons being used reduces nuclear threats to mere features of the war, not worth our concern. Neglecting the possibility of nuclear use naturalises such a threat, perpetuating the nuclear status quo and risking escalation. It may also lead Putin to think others are doubting his power.

Carolina Panico *Photo: Chris Loufte*

Of course, escalation can result from exacerbated perceptions of danger in which both sides believe the possibility of nuclear use is imminent. The Cuban Missile Crisis of 1962 showed nuclear threats can work to legitimise false perceptions and lead to catastrophic consequences.

However, it is crucial to pay careful attention to the language used to engage with the nuclear problem and its many meanings.

While President Biden's intention might not have been to trivialise nuclear threats, the language he used does so. As long as nuclear weapons exist, the possibility of nuclear use remains a reality, no matter the circumstances. There is no escape from the catastrophic humanitarian consequences a nuclear detonation would cause.

Where defence intellectuals and heads of state recognise the possibility of nuclear weapons being deployed, we have seen the reiteration of nuclear weapons' military might rather than messaging about the human costs of a nuclear detonation.

NATO's response to Russian nuclear threats highlights the idea that "nuclear war cannot be won and should never be fought" while drawing attention to "the severe consequences to Russia" if it decides to use a nuclear weapon.

While NATO's response reaffirms the unthinkability of a nuclear war, speaking of "severe consequences" also works to support the strategic role of nuclear weapons, and perpetuates a violent nuclear status quo.

Rather than speaking of the power to retaliate and the disastrous consequences to Russia, conversations need to include language reinforcing the humanitarian consequences a nuclear detonation will cause to the world and humanity.

So instead of reaffirming nuclear weapons' military value, it could reinforce the reality that nuclear security is unachievable.

Humanitarian language can also help de-escalate the conflict; it reinforces the claim that nuclear wars cannot be won, and the reality that humanity in its entirety would be harmed.

As the world wonders what Putin's next move will be, it is crucial to pay careful attention to how we can use language to create peace and reduce the military value of nuclear weapons. Nuclear use will only become unimaginable when nuclear weapons are eliminated.

An essential part of disarming is reducing the social value of nuclear weapons and changing the rhetoric that insists on saying these weapons are 'strategically beneficial'.

The catastrophic human and environmental cost of nuclear weapons, not their military might, must lead the conversation.

■ Carolina Panico is a PhD candidate in Politics and International Relations. She is a member of the Beyond Nuclear Deterrence Working Group, which is part of the Rethinking Deterrence Research Network, funded by the MacArthur Foundation and housed at Harvard University's Belfer Centre for Science and International Affairs.

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