THE FUTURE OF FOOD

EATING SMART FOR THE PLANET

Phenomenal result
Campaign exceeds all our expectations

Fine tuning
Composing a curriculum for a modern musician

Rocketing along
Auckland space projects taking off
The University of Auckland City Campus grounds are a picture in spring. Photographer Elise Manahan captured this tui among dozens flocking to the Taiwan Cherry (Prunus campanulata superba) tree. Later the birds will seek the nectar from the kowhai as they come into flower.
28
Space cadets
Jim Hefkey and the Auckland Programme for Space Systems: why students are flocking to explore the final frontier

26
Dawn of a new era
Professor Dawn Freshwater will take up her role as the University’s Vice-Chancellor in 2020. She talks about her past and her vision.

12
The future of food: eating smart for the planet
There are many forces shaping the future of our food. So what is our role in creating a sustainable food future for the planet?

23
Organ donation of the keyboard kind
Organist and philanthropist Graeme Edwards tells why a new high-tech organ hits the right note.

37
Golden grads
It was a special day for a special group of alumni who graduated 50+ years ago, including a 93-year-old still winning awards.

7
Beyond expectations
The University’s For All Our Futures campaign has been a resounding success – funding research, innovation and student support.
INVESTMENT IN OUR FUTURE

In many universities around the world, the ‘impact agenda’ is becoming an important issue, reflecting the desire of those who invest in the universities – particularly governments and their funding bodies – to be assured that their investment is having a positive impact.

While the desire to see a ‘return on investment’ is understandable, it can be problematic for the universities. This is so for several reasons. First, the impact we have on our graduates is not immediate, but lasts through their lifetime and is often intergenerational. Second, even a major new research finding will often take many years before it has an impact on society. For example, a new therapy will have to go through exhaustive testing before it can be made available for clinical use. And third, each new finding depends on the knowledge creation that has gone before it, oftens over a long period of time, but without which that finding would not have been possible.

In short, attaching a particular impact to a particular investment is extraordinarily difficult. An alternative approach is to look more holistically at the impact of a whole institution. That was the approach taken by the 2019 inaugural Times Higher Education (THE) University Impact Rankings to assess the performance of each university against some of the 17 United Nations Sustainable Development Goals. The University of Auckland was ranked No.1 internationally, reflecting the strong desire of our people to make a positive difference to the lives of others in New Zealand and around the world.

Increasingly, our ability to make a difference depends not only on the investment by government and students, but also on the willingness of our alumni and friends to support us. This has been the basis of the For All Our Futures campaign, which has sought to increase alumni engagement and generate financial support for our students, teaching and research.

It has been stunningly successful, not only in meeting its direct objectives, but also in further enhancing the impact the University has on society. One hundred stories of that impact were highlighted to our community over the final weeks of the campaign. There could have been many hundreds more and each would illustrate very well how this University makes a difference.

What the campaign has shown incontrovertibly is that philanthropy has become a powerful vehicle for the University to achieve many things that would otherwise not be possible.

Because of the investment of our donors, the University is a different and more capable organisation. That investment in the creation and dissemination of knowledge, and in the support of our students, will produce dividends for many years to come. And for the hundreds of stories of impact there are hundreds of donors who contributed to them and to whom we owe a great debt of gratitude.

At the founding of the Auckland University College in 1883, the Governor, Sir William Jervois, noted the importance of “placing the advantages of a university education within the reach of every man and woman of Auckland”. Today he would have said, “of New Zealand and the world” and he would surely have referenced our research as well as our education. The work of our staff and students has, over many generations, had a huge impact.

Thank you for helping us make a difference.

Read about the 100 impacts at tinyurl.com/CampaignImpacts

STUART MCCUTCHEON
Vice-Chancellor

THE UNIVERSITY OF AUCKLAND
FOR ALL OUR FUTURES

Three years ago, the University of Auckland publicly launched its ambitious For All Our Futures fundraising campaign. The focus was to ask some of the biggest questions facing society today and to answer them, in partnership with our supporters.

BeYOND EXPECTATIONS

The University’s Campaign For All Our Futures has been an unprecedented success – raising an extraordinary $380,271,165 to fund research, fuel innovation and support students. The campaign was publicly launched in September 2016, to raise $300 million to answer important questions for the future of New Zealand and to actively engage with at least 50 percent of the University’s alumni. By the end of the campaign on 31 October 2019, the fundraising total had exceeded its goal by $80 million and 60 percent of alumni were actively engaged.

“The campaign has highlighted the power of partnership as we address the challenges and opportunities of the modern world,” says Vice-Chancellor Professor Stuart McCutcheon. “I sincerely thank the thousands of people who have contributed to this outstanding success, our staff for conducting and supporting wonderful teaching and research, our alumni for demonstrating the lifelong benefits of a University of Auckland degree, and our many friends and donors for making the work of this extraordinary institution possible.”

As a “thank you” event for key supporters on 21 November, Health Sciences student Tahirah Moton spoke about rising from a background of family breakdown and foster homes to successfully undertaking university study thanks to a scholarship from the Ralph and Eve Selaye Charitable Trust. She has now been awarded a prestigious Kupe Leadership Scholarship.

Alongside the Motor Neurone Disease Lab at the University’s Centre for Brain Research, talked about the Aotearoa Fellowship that funded her return to Auckland from a background of family breakdown and foster homes to successfully undertaking university study thanks to a scholarship from the Ralph and Eve Selaye Charitable Trust. She now receives support from the Motor Neurone Disease Association of NZ, Marcus Gebrich and Dr Amelia Pais-Rodriguez, and the Edensons.

The fundraising total was made up of 23,592 gifts, large and small, from 7,236 donors. Almost all were given for a specific purpose, nominated by the donor. Many of the major gifts were for medical research, including the largest-ever gift to the University, from the Hugh Green Foundation (see story on page 10). Numerous gifts supported donor-funded student scholarships, which nestled in number over the course of the Campaign.

The very last gift was an online donation of $220 towards the Student Emergency and Wellbeing Fund, from an Australia-based alumnus.

The campaign began by asking multiple questions, reflecting important needs across society. By its close, many of these “Can We…” questions had been turned into “Together, we have…” statements and history had been made, as For All Our Futures became New Zealand’s largest-ever fundraising campaign.
There have been more than 23,000 gifts to the For All Our Futures campaign and thousands of people have benefited, from students and faculties to the community, the country and ultimately the world. Ingenio talks to three pairs of donors and recipients.

**DONORS**

**JOHN AND LEONIE HYNDS**

**Recipients:** Unleash Space at the Business School, Peter Rachor, Hynds Entrepreneurial Fellow

If you’re the type who walks with your eyes fixed on the pavement, the name ‘Hynds’ may be familiar. It’s all over our streets, embedded on many metal drain covers. The Hynds family, through the Hynds Foundation led by John and Leonie Hynds, are major donors to the University, but their money most certainly isn’t going down the drain.

John Hynds’ company, Hynds Pipe Systems, was formed in 1973 and specialises in waste management. In 2017, the Hynds Foundation was one of six founding partners to provide large philanthropic gifts to set up the Unleash Space for five years, in the Centre for Innovation and Entrepreneurship (CIE). The Hynds gift was also used to fund the Hynds Entrepreneurial Fellow, leading to the appointment of Peter Rachor, who was director for entrepreneurship and innovation at the University of Portland in Oregon for 11 years.

“We’re so grateful to John and Leonie,” says Wendy Kerr, director of CIE. “Being able to employ someone like Peter Rachor allows us to teach concepts of innovation and entrepreneurship to students and staff.”

Peter, whose remit is to work with every faculty, is based in the Unleash Space on the corner of Grafton Road and Symonds Street. Within that area is the lively Maker Space, filled with useful tools and gadgetry, and there’s also a GoCreate Space. Everything is funded by donors.

“At the heart of the Unleash Space is that feeling that it’s everyone’s space,” says Wendy. “Leading universities overseas have innovation hubs and we’ve been able to replicate that here, thanks to philanthropy. In the Maker Space, anyone from any faculty can join, do a training session and then use the machines.”

“There’s everything from sewing machines to 3D printers and a laser cutter. Student ‘creative technologists’ are employed to assist.”

“When you have an idea in your head, it’s intangible,” says Wendy. “But when you make it, it becomes tangible. That’s a really important part of the innovation and start-up process.”

In the semester breaks, CIE runs experiential programmes such as Get Good Done (a social entrepreneurship programme), Summer Lab (for budding entrepreneurs) or Solve It, the corporate innovation challenge. Hynds was a sponsor in the 2018 Solve It challenge, in which companies gave students a tricky problem. Over the two-week break, students worked on how to get the public to learn about wastewater.

“The winning team came up with an interactive manhole cover they made on the laser cutter. It’s on display in the Maker Space.”

Wendy says CIE also runs workshops for the Hynds Company. “Our collaborators designed a drainage pipe and made the prototype on the 3D printer in an afternoon. Hynds’ innovation manager said normally they’d have to cast it in three and a half tonnes of concrete!”

“The physical space and programmes around it allow us to have a much deeper partnership with Hynds. We help them solve problems, too.”

John Hynds says even though he left school at 17, he always had an innovative streak. “I wasn’t so good with schoolwork, but I have a capacity to dream. Hynds is a creative and innovative company. Our Smarter Water project, led by my son Aaron, is a good example of linking modern technology with traditional infrastructure.”

John and Leonie met at Manurewa High School. Its students and staff visit Unleash Space and the University offers advice on how to run the Maker Space at Manurewa.

“Our Maker Space at Manurewa High School has inspired the students to develop their creative minds and understand entrepreneurial activities,” says John, who is also chair of the Manurewa High School Business Academy. He says there are important reasons for providing philanthropic support. “New Zealand can’t rely on being a commodity provider. Our future depends on our ability to innovate and be creative, to think laterally about solutions the world needs. Philanthropy not only provides money or resources, but it also gives us the chance to spend personal time with people to guide and influence the best result.”

**DONORS**

**ERIC AND PATRICIA TRACEY**

**Recipient:** CIE

In London, at the Cricket World Cup final in July 2019, Eric Tracey’s pride in being a New Zealander pumped through his veins. Alumnus Eric, a business graduate who lectured at Auckland in 1972-73, has had a successful career with Deloitte and he and wife Patricia have lived in London for many years. He is chair of the NZ UK Link Foundation. “I’m very proud of being a New Zealander and constantly want to live up to what being a good Kiwi requires. We were at the Cricket World Cup final. The Black Caps were magnificent in the way they played and in how they handled two ties being a defeat!”

Eric was the New Zealand Society UK’s New Zealander of the Year in 2014. He has given significant contributions to New Zealand trade and business, sporting and fundraising causes. One of those causes is the University of Auckland. “It’s good to do something that could make the world a better place,” says Eric. “I’m grateful to New Zealand for my education. Kiwi values are at the heart of my life, so I enjoy giving back a little as part of our philanthropy and charitable work.”

In another role, as chair of the UK Friends of the University of Auckland, he met Professor John Fraser, Dean of the Faculty of Medical and Health Sciences (FMHS). Around that time, Patricia was facing a serious health battle, with a ‘superbug’ in her leg following surgery. “Patricia was on antibiotics for nearly six years fighting this superbug, which had attached itself to the prosthetic in her leg,” says Eric. “The bug developed a film over it, which prevents antibiotics from getting to it. The antibiotics were stopping it spreading, but unable to kill the bug.”

While in Auckland, Eric told John about Patricia’s situation. “I referred him to some excellent infectious disease specialists in Auckland who advised what could be done,” says John.

The situation also got them talking about the need for more research on such infections. John presented Eric with a project in 2018 that was particularly relevant to Patricia’s condition. “The Traceys immediately and enthusiastically supported it because they could see the direct relevance,” says John. “Their generous donation provides long-term support for a research fellow.”

Eric says when the For All Our Futures campaign began, it was a “bit of a no-brainer” to want to support it. “Patricia and I knew first-hand there’s a need for research in the area of infectious diseases.”

The Traceys’ funding means Dr Ries Langley is now working on developing a new prophylactic vaccine that will reduce a patient’s risk of staphylococcal infection following surgery.

“Staphylococcus aureus is by far the most common bug in post-surgical infection,” says John. “It’s one of the best at developing resistance to antibiotics, so if you’re unlucky enough to get infected with a resistant strain, such as MRSA, antibiotics just don’t work as well.”

John says the Traceys are now family friends. “One of the pleasures of being a Dean is getting to know people like Eric and Patricia. They provide tireless ambassadorial support for the University and have a real love of New Zealand. They are lovely positive people – so down to earth – and Eric is an avid supporter of the Black Caps. He delights in telling the story of how he became 12th man for the Black Caps in 2001!”

There have been more than 23,000 gifts to the For All Our Futures campaign and thousands of people have benefited, from students and faculties to the country and ultimately the world. Ingenio talks to three pairs of donors and recipients.
anyone who met Hugh Green will remember his big personaliy. For a modest man he lived on a large scale, coming from an Irish family of eight children, farming large cattle, making his fortune from big property development projects after settling in New Zealand. So it's appropriate that the Hugh Green Foundation has now marked the biggest-ever single donation, of $16.5 million, to the University of Auckland.

Before Hugh's death in 2012, he came to greatly admire the work of Distinguished Professor Sir Richard Faull and his team at the Centre for Brain Research (CBR). The Foundation's first donation helped start the Hugh Green Biobank in 2011. One of a handful of institutions worldwide that's able to grow human brain cells, the Biobank uses these cell-culture methods to develop new drugs to treat brain disorders, such as Huntington's disease.

In late October, the Foundation signed a gift agreement for $16.5 million to fund the Hugh Green Biobank in perpetuity, and for a new Hugh Green Foundation Chair in Translational Neuroscience. The significant donation will transform the CBR to develop a four-day working week, using human brain-cell cultures to identify and develop effective medications for brain disorders.

The University sincerely thanks the Hugh Green Foundation for its partnership and generosity. Researchers look forward to developing new treatments to help the millions of people living with brain diseases.

Hugh's largesse continues with his family and the Foundation's commitment to philanthropy. He once said: “My real happiness is family, the farms, the cows and people. “You come in with nothing and you go out with nothing and you just need the bare essentials while you're here. And that's how I've lived my life.”

DONORS

CHARLOTTE LOCKHART AND ANDREW BARNES

Recipient: Patricia Pillay, Kupe Leadership Scholar

S

student Patricia Pillay is doing her masters in anthropology and is one of 14 Kupe Leadership Scholars who will also benefit from the financial support from donors for one academic year. The scholarship also provides leadership development and mentoring, in Patricia's case through close contact with Kupe donor, anthropologist Dame Anne Salmond. Patricia's scholarship has been funded by Charlotte Lockhart and husband Andrew Barnes, founders of New Zealand-based business Perpetual Guardian, who are also supporting an architecture student with a Kupe scholarship. As employers, they recently shifted their staff to a four-day working week. Charlotte says they like their staff to help out in the community.

“We encourage them to use one day every quarter to do charity or community programme. Being engaged with the community gives us a great basis for life and sets a good example for our children.”

That's one of the drivers for the couple's giving. Says Charlotte: “Andrew is an immigrant to New Zealand and firmly believes that if you live there, you have won the lottery of life and those who have the capacity should give back, whether it’s financially or through your time.”

Patricia was happy to learn Andrew has a deep interest in archaeology. “He and Charlotte really wanted to support an anthropology student because their insights into human behaviour translate to the workforce.”

Charlotte says insight can help build a leader: “A good leader is prepared to stand out and try new things, be different and care for others. Andrew and I value leadership in New Zealand and being part of something like this programme is important to us.”

Patricia, who went to Avondale College, is the first in her family to go to university and says the scholarship meant she could continue her study. She also feels privileged to have a mentor like Dame Anne. “She’s very supportive and has given me valuable advice about keeping my doses open and expanding my connections on a global platform. She’s also offered words of wisdom about studying overseas and the value of bringing that knowledge back to Aotearoa.”

Patricia is also learning more archaeologist Dave Veart, who has a masters in anthropology and law from Auckland and is a former student member: “Dave was involved with the Ihumātao situation and explained why that’s significant. He’s been teaching me about legislation and applying what you learn in uni to real-life issues.”

In October, the Foundation signed a gift agreement for $16.5 million to fund the Hugh Green Biobank in perpetuity, and for a new Hugh Green Foundation Chair in Translational Neuroscience. The significant donation will transform the CBR to develop a four-day working week, using human brain-cell cultures to identify and develop effective medications for brain disorders.

The University sincerely thanks the Hugh Green Foundation for its partnership and generosity. Researchers look forward to developing new treatments to help the millions of people living with brain diseases.

Hugh’s largesse continues with his family and the Foundation’s commitment to philanthropy. He once said: “My real happiness is family, the farms, the cows and people. “You come in with nothing and you go out with nothing and you just need the bare essentials while you’re here. And that’s how I’ve lived my life.”

In October, the Foundation signed a gift agreement for $16.5 million to fund the Hugh Green Biobank in perpetuity, and for a new Hugh Green Foundation Chair in Translational Neuroscience. The significant donation will transform the CBR to develop a four-day working week, using human brain-cell cultures to identify and develop effective medications for brain disorders.

The University sincerely thanks the Hugh Green Foundation for its partnership and generosity. Researchers look forward to developing new treatments to help the millions of people living with brain diseases.

Hugh’s largesse continues with his family and the Foundation’s commitment to philanthropy. He once said: “My real happiness is family, the farms, the cows and people. “You come in with nothing and you go out with nothing and you just need the bare essentials while you’re here. And that’s how I’ve lived my life.”
Consider the following: One in ten New Zealanders is going (mostly) meat free. By some estimates, 70 percent of millennials are cutting back on meat in their diet. Millennials, those born between 1981 and 1996, make up an increasingly dominant percentage of the global population, and more than half the populations in Asia. But in 2016, New Zealand’s beef exports earned more than $3 billion. About 47 percent of New Zealand’s beef goes to the United States where most of it gets turned into meat patties. In the US, 100 million hamburgers are consumed each day.

The often contradictory messages from demographics, consumer behaviour, export dollars and influencer comment tell different stories, but they are all about the future of food.

Dr Rosie Bosworth, a University of Auckland alumnus who featured in the 60 Under 60 in 2017, is a future of foods strategist. Rosie is adamant that it is time for New Zealand to “stop polishing the wrong paradigm”. The future of food comes down to what people choose to eat and she says global population shifts mean the immediate future will be dominated by millennials, estimated by Ernst Young to make up 75 percent of the global workforce by 2025.

She says the relationship that millennials have with their food has three big drivers: health, ethics and environment.

“When it comes to animal agriculture, New Zealand has a better system than most of the developed world but, even so, agriculture has a huge impact on our environment. Millennials and, to a lesser degree, baby boomers, are very conscious of the role of animal protein in our health.

“At the same time we’re seeing the rise of conscious consumers who are after ethical, sustainable and healthy options for protein, often with impactful meaning. This is what millennials want and they’ve moved beyond the commodity play of just buying food; they want their food to be a values-driven experience,” says Rosie.

Hot on the heels of the millennials are Generation Z, those born since 1997. They are estimated to surpass millennials as the dominant societal cohort by 2050.

“Gen Z are saying there are new ways to produce food that don’t have the environmental, ethical and sustainability baggage,” says Rosie.

“Oh are you funny, nutritious alternative that has the same sensory experience, that’s produced in your own country and eats no cost to a living animal!”

The University of Auckland’s Professor Boyd Swinburn, co-chair of the Lancet Commission on Obesity, says New Zealand can help lead the change in diet and environmental sustainability.

“Food systems are central to our wellbeing as New Zealanders. They are by far the biggest contributor to our diseases and premature death and they are our biggest source of environmental damage.

“At the same time they contribute enormously to our national wealth and diverse cultures. New Zealand can and, I think, should become a world leader in developing healthy, sustainable, equitable and prosperous food systems.”

Global food giants are hedging their bets. Tyson, the biggest meat producer in the US, has created an alternative protein nugget and a blended patty that combines beef with pea protein.

“At a branch in Atlanta, the fast-food giant KFC recently decided to trial a new line of nuggets and wings made from plant protein. Cars and queues blocked streets. The meatless nuggets and wings sold out in less than a day.

French dairy and drinks giant Danone has made a decisive shift towards plant-based products. Chief executive Emmanuel Faber told the Globe and Mail this year, “There is a huge trend of people moving to less animal protein and more vegetable protein. We believe this flexibility in diets is fundamental for the future, for the health of the planet.”

“We’re seeing the rise of conscious consumers who are after ethical, sustainable and healthy options for protein.”

Dr Rosie Bosworth, future of foods strategist

The report’s big takeaway is that the window to the UN’s Sustainable Development Goals.

“The Intergovernmental Panel on Climate Change recently released its Climate Change and Land report that covers food production and security. The report is decided big picture, with mind-boggling estimates of environmental loss. Agriculture utilises about 70 percent of the world’s fresh water. Soil on tilled fields is being lost at 100 times the rate it is being formed. About 25 to 30 percent of food production is lost or wasted. Meanwhile, two billion adults are overweight or obese and 821 million are undernourished.

The report’s big takeaway is that the window is open to reduce climate change by diversifying food production systems and what we eat. It says: “Balanced diets featuring plant-based foods … and animal-sourced food produced in resilient, sustainable and low greenhouse gas emission systems present major opportunities … while generating significant co-benefits in terms of human health.”

Joanne Todd (opposite page), the director of High-Value Nutrition, says as part of the criteria for funding, a business must provide evidence of how it responds to the UN’s Sustainable Development Goals.

Photo: Elise Manahan
The EAT-Lancet Commission on Food, Planet and Health was published in January. Food in the Anthropocene: The EAT-Lancet Commission on Healthy Diets from Sustainable Food Systems is the work of 37 world-leading scientists from 16 countries. It builds on a large body of research on the environmental impact of various diets and outlines a preferred future of food as one with far less meat. It says: “Most studies conclude that a diet rich in plant-based foods and with fewer animal-source foods confers both improved health and environmental benefits.”

The report comes up with a “planetary health plate”, the best diet for human health and environmental sustainability. Half the plate would be vegetables and fruits, the other half would be food made from whole grains, plant- and sustainably produced meat. Completely optional are modest amounts of animal protein.

The EAT-Lancet report concludes that business as usual for food production and diet is not an option. “Without action, the world risks failing to meet the UN Sustainable Development Goals (SDGs) and the Paris Agreement, and today’s children will inherit a planet that has been severely degraded and where much of the population will increasingly suffer from malnutrition and preventable disease.”

New Zealand’s red meat interests have not been sitting on their hands. Beef and Lamb NZ commissioned Antedote, a San Francisco innovation consultancy, to look at how our red meat sector should respond to the rise of alternative proteins.

The report acknowledges how consumers increasingly want food that is healthy, sustainable and ethical, a trend driven by the backlash against “broken food systems, e.g. factory farming and big food”. There is the common echo about the influence of millennials and those who influence them directly via social media feeds. For example, the tennis powerhouse Williams sisters, Serena and Venus, promote a vegan diet in training to boost performance. The alt-meat supporters include billionaire influencer Bill Gates, who has said: “The future of meat is vegan.”

The report does find a silver lining in the otherwise gloomy scenario it paints for the meat industry. The authors argue: “The same considerations that are leading consumers to consider alternative proteins are the ones that give us confidence that there is a strong opportunity for New Zealand red meat. There is a desire for better food at all levels, which supports a strong future for ‘real’ red meat.”

Take this counterfactual: in our biggest beef market, the US, and second-biggest market, China, consumers are happily chomping down quality red meat, with sales of grass-fed beef from New Zealand doubling every year since 2012 to the US, with China on a similar trajectory.

If the future of food is more accurately framed as the clash of protein, all protein versus meat, a glimpse of the future for New Zealand comes with the lesson that not all of our beef is created equal and it doesn’t have to be consigned to the fast-food hamburger chains of the US. Firstlight Foods has pioneered the development of a Wagyu-cross beef with a network of Kiwi farmers. The cattle are raised on pasture to create quality beef cuts that have collected international awards.

The twist is that grass-fed Wagyu cuts also deliver a bounty of complex lipids and healthy omega-3 fatty acids, the so-called ‘good fats’ that help prevent heart disease.

Another company looking at the future of food is a2Milk™ which, on the basis of a different protein in its milk, has grown into our biggest listed company. A clinical trial at the University of Auckland’s Liggins Institute in 2018 found that a2Milk™ was at least as effective as lactose-free milk at preventing or easing some symptoms of lactose intolerance.

Firstlight Foods and a2Milk™ are examples of New Zealand businesses to benefit from research funding from High-Value Nutrition (HVN), one of two National Science Challenges (NSCs) hosted by the University of Auckland. In 2014, 11 National Science Challenges, each a nationwide research collaboration, were established to tackle the biggest science-based issues and opportunities facing this country.

HVN’s job is to deliver the research required to switch us from being a largely commodity food producer to one that exports high-value premium foods for health and wellbeing.

The University also hosts A Better Start, the NSC seeking to lift the health and life outcomes for children.

The idea to “let food be thy medicine”, attributed to Hippocrates, has been updated for the 21st century as the prime research driver for HVN and over ten years it will have invested $60m in top food and nutrition sciences. HVN’s focus is on foods for affluent consumers in China, where eating specific foods for health reasons is commonplace. So it has invested in research at the Malaghan Institute in Wellington, led by Dr Olivier Gassey, to look at the impact of diet on lung health. The aim is to create foods to help the good people of Shanghai breathe a little easier in polluted winters, all protein versus meat, a glimpse of the future for New Zealand comes with the lesson that not all of our beef is created equal and it doesn’t have to be consigned to the fast-food hamburger chains of the US. Firstlight Foods has pioneered the development of a Wagyu-cross beef with a network of Kiwi farmers. The cattle are raised on pasture to create quality beef cuts that have collected international awards.

The twist is that grass-fed Wagyu cuts also deliver a bounty of complex lipids and healthy omega-3 fatty acids, the so-called ‘good fats’ that help prevent heart disease.

Another company looking at the future of food is a2Milk™ which, on the basis of a different protein in its milk, has grown into our biggest listed company. A clinical trial at the University of Auckland’s Liggins Institute in 2018 found that a2Milk™ was at least as effective as lactose-free milk at preventing or easing some symptoms of lactose intolerance.

Firstlight Foods and a2Milk™ are examples of New Zealand businesses to benefit from research funding from High-Value Nutrition (HVN), one of two National Science Challenges (NSCs) hosted by the University of Auckland. In 2014, 11 National Science Challenges, each a nationwide research collaboration, were established to tackle the biggest science-based issues and opportunities facing this country.

HVN’s job is to deliver the research required to switch us from being a largely commodity food producer to one that exports high-value premium foods for health and wellbeing.

The University also hosts A Better Start, the NSC seeking to lift the health and life outcomes for children.

The idea to “let food be thy medicine”, attributed to Hippocrates, has been updated for the 21st century as the prime research driver for HVN and over ten years it will have invested $60m in top food and nutrition sciences. HVN’s focus is on foods for affluent consumers in China, where eating specific foods for health reasons is commonplace. So it has invested in research at the Malaghan Institute in Wellington, led by Dr Olivier Gassey, to look at the impact of diet on lung health. The aim is to create foods to help the
Traditional sources of nori (Porphyra spp) are in short supply because of reduced harvests in the Northern Hemisphere through climate change. One day the partners want to harvest, process and export karengo, an indigenous seaweed, as a premium and sustainable food with evidence-based health benefits. HVN has adopted a wait-and-see approach to alternative plant proteins that mimic animal meat. “We’re not going down that road, because we need to look at what New Zealand can do at scale and efficiently.”

Joanne agrees that the trend towards alternative proteins in the US is driven by millennial behaviour, but also by factors New Zealand lacks. “They can do it because they have the money to do it and the land to grow it.”

Even if the Canterbury Plains could grow peas to turn into Beyond Burger patties, any harvest would be disfigured by production from the American Midwest. It is not in HVN’s brief to invest in commodity foods either. As well as the karengo, HVN has looked at hemp seed, a rich source of protein when made into flour. “We’re definitely open to looking at emerging protein sources, but they have to be ones that New Zealand can grow sustainably. Speaking as a nutritionist, Joanne urges consumers to think hard about their food choices. Plant-based “meat” is derived largely from imported pea protein and so comes with food miles. The Impossible Burger, showcased to alternative plant proteins that mimic animal meat. “We’re not going down that road, because we need to look at what New Zealand can do at scale and efficiently.”

Joanne agrees that the trend towards alternative proteins in the US is driven by millennial behaviour, but also by factors New Zealand lacks. “They can do it because they have the money to do it and the land to grow it.”

Even if the Canterbury Plains could grow peas to turn into Beyond Burger patties, any harvest would be disfigured by production from the American Midwest. It is not in HVN’s brief to invest in commodity foods either. As well as the karengo, HVN has looked at hemp seed, a rich source of protein when made into flour. “We’re definitely open to looking at emerging protein sources, but they have to be ones that New Zealand can grow sustainably. Speaking as a nutritionist, Joanne urges consumers to think hard about their food choices. Plant-based “meat” is derived largely from imported pea protein and so comes with food miles. The Impossible Burger, showcased

“...what exactly?”

beef burger you know is grown on grass and on know where our food comes from works both ingredient list of additives. She says the need to be invested in commodity foods either. As well as the karengo, HVN has looked at hemp seed, a rich source of protein when made into flour. “We’re definitely open to looking at emerging protein sources, but they have to be ones that New Zealand can grow sustainably. Speaking as a nutritionist, Joanne urges consumers to think hard about their food choices. Plant-based “meat” is derived largely from imported pea protein and so comes with food miles. The Impossible Burger, showcased

“...what exactly?”

beef burger you know is grown on grass and on know where our food comes from works both ingredient list of additives. She says the need to be invested in commodity foods either. As well as the karengo, HVN has looked at hemp seed, a rich source of protein when made into flour. “We’re definitely open to looking at emerging protein sources, but they have to be ones that New Zealand can grow sustainably. Speaking as a nutritionist, Joanne urges consumers to think hard about their food choices. Plant-based “meat” is derived largely from imported pea protein and so comes with food miles. The Impossible Burger, showcased

“...what exactly?”

beef burger you know is grown on grass and on know where our food comes from works both ingredient list of additives. She says the need to be invested in commodity foods either. As well as the karengo, HVN has looked at hemp seed, a rich source of protein when made into flour. “We’re definitely open to looking at emerging protein sources, but they have to be ones that New Zealand can grow sustainably. Speaking as a nutritionist, Joanne urges consumers to think hard about their food choices. Plant-based “meat” is derived largely from imported pea protein and so comes with food miles. The Impossible Burger, showcased

“...what exactly?”

beef burger you know is grown on grass and on know where our food comes from works both ingredient list of additives. She says the need to be invested in commodity foods either. As well as the karengo, HVN has looked at hemp seed, a rich source of protein when made into flour. “We’re definitely open to looking at emerging protein sources, but they have to be ones that New Zealand can grow sustainably. Speaking as a nutritionist, Joanne urges consumers to think hard about their food choices. Plant-based “meat” is derived largely from imported pea protein and so comes with food miles. The Impossible Burger, showcased
“Are we breeding a generation who are used to consuming only soft foods?”

Associate Professor Clare Wall, Faculty of Medical and Health Sciences

“I today’s children are tomorrow’s food shoppers, what do we know about their diet and the foods they might favour?”

Associate Professor Clare Wall of the Faculty of Medical and Health Sciences leads the nutrition department.

“The infant diet has changed in a similar way to the adult diet,” she says. “More processed food, more salt, more sugar, more fat.”

Parents do their best, but as the infant grows up, it naturally becomes more and more part of the family and its food environment. “There’s less time and so it becomes harder to prepare separate meals for infants.

“Your food preferences and behaviour start in early childhood. Often if a child has done well, they get a sweet, so we associate sweets with being good. The foods we crave are those that influence our pleasure,” says Clare. If you happen to be raised in a family with limited access to healthy foods, it is harder to change these habits later.

“We have overweight children who will grow up to be obese adults.”

Clare is one of the authors of Infant Feeding in New Zealand, commissioned by the Ministry of Social Development. Prior to the report there was no national data collected on what the country’s infants are eating. The data comes from the Growing Up in New Zealand study, hosted by the University of Auckland, which has followed a cohort of 6,432 children since birth. Those children are now ten and the study has produced a wealth of data and insight into their lives. The report looks at what families actually do when compared with a set of ideal infant feeding guidelines from the Ministry of Health. The good news is that, on average, these infants are okay. About 94 percent are eating three or more solid meals a day at time months of age, and more than 80 percent of infant meals had no added sugar and salt. The bad news is that almost half of the nine-month-olds had tried sweets, chocolate, hot chips and potato crisps and only about a third were eating vegetables or fruit twice or more daily as recommended.

The contemporary young Auckland family lives in a blur of working parents, day care, commutes from hell, drop-offs and pick-ups. Convenience, in all spheres of life, including cooking, becomes highly desirable.

But convenience can have unwanted consequences. Clare and Professor Bryony James, from the Faculty of Engineering, are investigating potential effects on a rising trend in convenience food for infants: puree foods in plastic pouches.

“The idea is that the product is only to be squeezed into a bowl and eating it with a spoon, but people give it to infants to feed themselves,” says Clare.

But shaping your food means not developing the dexterity to manage a spoon. As well, puree is more energy dense and processed than a whole food, such as a slice of apple. Clare and Bryony have designed a trial to test whether infants feeding from pouches can change the development of a child’s bite. A good bite is essential for the development of jaw muscles and teeth, which in turn are important for language development. Delayed language development and motor skills have big implications for brain development and learning.

“So, the question is, are we breeding a generation who are used to consuming only soft foods … who are missing development windows?” asks Clare.

From Clare’s perspective, the food business pull is often much stronger than consumer push. The time-poor family faces a barrage of marketing, and what’s best for baby is not always the same thing.

“The marketers are already looking closely at the next generation of consumers. Babies born since 2010 have earned themselves a cohort-definition descriptor, ‘Generation iPad’.

Although they are true digital natives, growing up with iPad, Siri and Alexa, they are inheriting a troubling epidemic: obesity. New Zealand has the third-largest percentage of overweight or obese children in the OECD, after Greece and Italy. About a third of our children are overweight, with about one in ten classified as obese. The World Health Organization is concerned that by 2025, there will be 70 million overweight or obese infants and young children. As they age, they face higher rates of heart disease, diabetes, degenerative disease of the joints and some cancers. For Generation Alpha, faced with climate change, global obesity and malnourishment, the future of food looks to become more complicated than ever. Siri is unlikely to have the answers on what to do about it.

Auckland Art Gallery’s Principal Conservator Sarah Hillary is a heroine of art. She’s been hard at work in the conservation laboratory at the Gallery, saving neglected works of art for 36 years. Some of her high-profile rescues include repairing canvases damaged during thefts – works by James Tissot and Colin McCahon – while her research into painting techniques has identified several fakes, some in public collections. International journals have featured her in-depth research in technical art history, which involves the scientific analysis of artworks to establish how and when they were made. Her meticulous work contributed to a re-evaluation of the painting of Saint Sebastian by Italian 17th-century master Guido Reni that’s held in the Auckland Art Gallery. That painting is now considered to be the original work while others that exist in galleries around the world are copies.

As well as being an exhibiting artist at the Anna Mills Gallery in Auckland, Sarah regularly contributes to the exhibition programme at the Auckland Art Gallery. Her displays provide insights into how paintings are made, showing how microscopic analysis of minute cross-sections can reveal the number of layers on paint on the surface of a painting.

“I showed visitors to the Frances Hodgkins exhibition how techniques of analysis revealed a figure painting beneath a still life, and how the artist built up her surfaces with up to 40 layers of oil paint,” says Sarah. “Similar techniques also revealed the use of photography to produce Gottfried Lindauer’s startlingly accurate portraits … we examined them under infrared light.”

Sarah’s collaborations with researchers at the Tate Gallery in London and the Getty Conservation Institute in Los Angeles have contributed significantly to the understanding of how artists based in Aotearoa used modern materials to produce their work.

“It’s really important to bear in mind the intentions of the artist.”

By Linda Tyler

“Tape: Sarah Hillary with Colin McCahon’s Upper Road Chapel windows – a huge conservation job to match paint to the glass surface. Below: Sarah meticulously restoring artworks.”

All this has taken years of training. Excelling academically at high school, Sarah enrolled at university directly from sixth form. She began her medical intermediate year at Otago in 1974, but her study was interrupted by the death of her mother, Louise, and sister Belinda in a plane crash in Nepal in 1975. They’d been on the way to meet up with Sarah’s father, Sir Edmund Hillary. Later, Sarah studied psychology and chemistry for an undergraduate degree, then switched to the University of Auckland to get married and be closer to family. It was there she graduated in art history. Volunteering at the Auckland Art Gallery, she applied for the Conservation of Cultural Materials course at the Canberra College of Advanced Education where she completed a Bachelor of Applied Science.

“That gave me a grounding in the three areas of object, paper and painting conservation, which was vital before I could do what I do.”

She then specialised in painting conservation.

“I decided to return to New Zealand in 1983 to take up an internship, working with the incumbent conservator at the Auckland Art Gallery, and was later given a permanent role.”

After working on numerous paintings from provincial and regional galleries as part of the gallery’s Northern Regional Conservation service, Sarah won a Getty Advanced Internship at the Williams Regional Art Conservation Laboratory in Massachusetts in 1986. Returning to work at the gallery, she now manages a staff of six and knowledge of her skills has spread through the conservation service the gallery provides for artworks owned by other institutions, corporations and members of the public.

“It’s important to keep learning,” she says. “I update my knowledge by going to conferences and scientific meetings. There are always new techniques or improvements.”

Her working methods must also adhere to international standards: each examination of a painting’s surface under raking light reveals every scrape and accretion recorded in a condition report. “It’s also really important to give careful consideration to the treatment approach … to bear in mind the intentions of the artist and the originality of the artwork.”

Reversibility is also important. “In the future, our understanding of an artwork might surpass current knowledge, so we need to be able to make sure the treatments we use today don’t hinder the work of conservators in the future.”

“Saving art”
The School of Music revamped its programme this year aiming to turn out Auckland music graduates with different strings to their bows. Denise Montgomery finds out why.

A ssociate Professor Martin Rummel hopes that in a decade there will be recognition that recent changes at the University of Auckland School of Music will go down as a turning point in music education in New Zealand. The school, in Creative Arts and Industries (CAI), underwent a redesign of music education in New Zealand. Music will go down as a turning point in a decade there will be recognition that recent changes were essential to devise a music degree that creates a versatile music graduate.

The school was frozen in a time warp,” he says. “The University has now set up a curriculum that is structurally flexible enough to not have to fiddle with what you can fiddle with the content. You don’t have to touch the structure.”

Martin, an internationally acclaimed cellist who has been Head of School since 2016, is leaving the University in February 2020 and believes the school is now well-positioned to attract more students to a higher-quality degree that prepares graduates for today’s music world. Associate Professor James Tibbles has been appointed to take over as Head of School when Martin leaves.

“Our entire education system was based on the conservatory model, developed in the 19th century,” says Martin. “The model definitely works for a certain type of musician, but that’s maybe about 5 percent of all the people working in the industry. We therefore left 95 percent behind. And we constantly added content without taking anything out, but the degree duration hadn’t got longer.”

The redesigned curriculum began in Semester One 2019 and Martin says the programme aims to give students skills in all areas of music from composition and production to performance, and proficiency with the relevant technology.

“People don’t need to learn to play every single Beethoven violin sonata just because they play the violin,” he says. “For example, as well as playing in a symphony orchestra, a freelance musician might be gigging in a film orchestra, teaching or performing with electronics.”

Martin says it’s also important to bring down ritualised barriers to performance so that the audience don’t worry about not knowing when to clap or what to wear, for example.

“If, after a performance, musicians sit with the audience and interact socially, the performance becomes a part of our communication from one human to another. The big task for the next generation of musicians is to finally throw out the tuxedo.”

A number of new appointments have been made, some from overseas, including internationally recognised composer David Chisholm, a specialist in 21st-century composition training, who is a senior lecturer and composition convenor. He has created long-form works ranging from orchestral to chamber, choral, electronics, film, theatre, dance and installation and web projects as well as curating festivals in Australia.

Another is Dr Fabio Morreale, a lecturer and co-ordinator for today’s music world. Like David, he began in January 2019 and has been researching and teaching courses, such as sound synthesis and generative art, and preparing new courses for 2020. His areas of expertise include music and artificial intelligence, digital musical instrument design and human-computer interaction. He wants to take students beyond the traditional means of music making.

“Computers are used for composing, performing and also analysing music,” says Fabio. “They can be used to analyse quantitatively and are especially useful for pieces that don’t have a typical Western notation that relies on scales. We have a very good musicology department here.

“Artificial Intelligence (AI) can help trace the evolution of a genre to help you understand the practices of performers and composers.”

“While that’s great, we are also making students aware of the pros and cons of using AI. For instance, some videos on YouTube have AI-generated soundtracks so people don’t have to pay royalties on real music. They’re not well composed or produced but we’ve so used to hearing them.

“Our students need to learn what is good production because we are submerged by very badly produced music all around us.”

Fabio is creating new courses in music computing and musical interface design.

“For example, students will make a physical instrument by themselves through coding and physically crafting. We also have critique of music technology at honours and masters. It’s important students develop an understanding of when music technology is to be used and when we should resist some innovations.”

But when would we resist innovations? Fabio points to the likes of apps sold on the internet that claim to be able to teach music. He’s undertaking research on some of those apps to understand whether they are effective ways of learning music.

Fabio came to New Zealand from Queen Mary University of London, and previously of music technology.
“For most people, solely performing is not going to be your entire life.”

– Dr Morag Atchison, lecturer in voice, School of Music

I lecturer Dr Morag Atchison knows all too well the benefits of working overseas and then bringing your knowledge back home.

The leading soprano, who this year appeared to much acclaim in New Zealand Opera’s The Barber of Seville, spent seven years in the UK doing postgraduate study at the Royal Academy of Music then working in London. Now she’s teaching classical vocal performance at the New Zealand Youth Choir and the University of Auckland Chamber Choir.

“It’s very hard to just do the pure classical performance degree because, for most people, solely performing is not going to be your entire life,” says Morag.

“There’s going to be teaching, admin, music technology … so much more to your portfolio.

“This new degree is a modern degree. You can still do pure performance or composition but you can dabble a bit more. You don’t have to stick to classical … if you want to take a jazz paper or something, that’s there too.

“It’s really exciting to see the opportunities students are getting and how that’s going to knock on to postgraduate-study as well.”

Martin also sees great benefits in students going away on overseas scholarships and bringing back valuable knowledge.

“We are blessed with a relatively high number of scholarships that support our students to go abroad for short or long-term postgraduate studies, master classes or whatever. They come back and add their new knowledge to the local music scene.”

But he says he’d like to see more scholarships available for overseas students to come here to study, for good reason.

“It would be great to see more recognition of what overseas students bring in. If you have a cohort of 120 first-year students, some will be from South Auckland, some from Northland, some from Christchurch, so the socialisation is different but still all Kiwi.

“But if you add a couple of North Americans, a couple of Asian kids or students from anywhere else in the world, you get a completely different cohort.

“It leads to different conversations in lectures, different experiences when they make or compose music together and when they talk about how they create music.”

He says despite what some may think, a scholarship for an international student doesn’t just benefit that student. It benefits their domestic peers and the school as a whole.

“It means lectures need to think about how to deal with students from diverse cultural and social backgrounds, so it’s a win all round to have different cultures learning here. We end up being more informed and it’s richer and more inspiring for everyone.

“And there are more connections to be made in the world. People of different cultural backgrounds work together to create music, musical theatre and other musical genres.”

Martin says it’s knowledge like this that is needed in a modern music degree, with musicians needing to become skilled at more than one thing.

“That’s the fundamental change to what was done for the past 100 years, where people were forced into one choice and told this is who you are for the rest of your life,” he says.

“You would get a job as an academic or a music teacher or an orchestral musician or in a jazz ensemble or, if you’re lucky, a solo career. But that’s not how it works any more.”

That memory informed Graeme’s thinking when he decided to fund the purchase of a virtual organ for the University’s School of Music this year. “We give a couple of dollars to quite a few different things and the School of Music seemed to be a very worthy one.

“I was talking to James Tibbles [Head of the Early Music Department] about this idea. I know there are quite a number of technically very competent pianists qualifying, which means it’s not that easy to make a living. One or two float to the top … Stephen Dr De Pledge [now a lecturer at the University] is starting to gain some ground now, but in general, it’s hard.

“I thought maybe the organ could give them another income stream … that they could do what I did. I also thought it’s very helpful for the school to be able to offer that facility. Quite a few people have taken to it … they want to play it.”

The organ Graeme purchased isn’t just any organ. It’s a virtual organ made by innovative Dutch company Noorlander Orgels, and although it has draw stops like a traditional pipe organ it doesn’t have pipes. Its computer is loaded with the sampled sounds of European organs from across the ages.

Music School Head Martin Rummel says the purchase has delighted everyone, especially Associate Professor James Tibbles, a pre-eminent organist and historic keyboard expert.

“Now we effectively have 17 organs in our theatre,” says Martin. “So, if a lecturer is talking about French Renaissance music, they can switch on the Cooperin original organ from Rozay-en-Brie and say, ‘this is what it sounded like’."

Martin says previously students had to go off-campus or to the MacLaurin Chapel. “To integrate proper organ teaching, you need an organ on site. And this is a very special one.”

The organ also captures the acoustics of the church in which each organ is found – creating further realism to the soundscape in which the music is conceived.

“It’s funny seeing an organ that brings out the same kind of sounds, but doesn’t have pipes,” says Graeme. “The sound is very true, too.”

His late brother, Emeritus Professor John Edwards, who lived in the US, also bequeathed a harpsichord to the School.

The fact that Graeme’s father used to play in the orchestra as accompaniment to the silent movies he had in his collection – he listened to music in digital format through speakers embedded in the walls of his home. Couldn’t be more modern. ■

Graeme also established the Graeme Edwards Award in Organ Studies. The inaugural recipient is Rebecca Sonyang Lee.

KEYBOARD

Nombre de son… par moi car la partie de l’orgue venait du grand orgue de Saint-Jean de Pau qui a été vendu en 1945. Il n’y avait pas de son organique pour le chœur.

Graeme’s passion is chamber music, which his dad introduced to him when he was 14, and his favourite instrument is the organ. With a mother who was a pianist and father who played the cello, he grew up with music.

“If I learned piano then moved on to the organ, I was nuts on it. I’d drive around the country, going to churches to try different organs.”

The family bought a small pedal organ and, in years to come, Graeme became deputy organist at St Andrew’s Church in Epsom.

“That gave me access to a very good organ,” Graeme remembers fondly.

Even as a young man, Graeme had an astute business mind. Money was tight until he realised playing the organ could change that.

“I started to play elsewhere, such as St John’s in Ponsonby. I did weddings and funerals when the chief organist wasn’t available.

“If I got paid 10 bob for playing at a funeral and 10 shillings and sixpence for a wedding that doubled or tripled my income. The figure sounds silly now, but that was enough to fill the car with petrol and go to the movies!”

Although at 85 Graeme Edwards listens to music at home with the volume up a few notches, his love of live performance has never left him.

The fact that Graeme’s father used to play in the orchestra as accompaniment to the silent movies he had in his collection – he listened to music in digital format through speakers embedded in the walls of his home. Couldn’t be more modern. ■

Graeme also established the Graeme Edwards Award in Organ Studies. The inaugural recipient is Rebecca Sonyang Lee.
The changing of the guard is under way at the Auckland Cancer Society Research Centre (ACSRC), but the goals remain the same.

Associate Professor Michael Hay has been appointed the new Director of the ACSRC within the Faculty of Medical and Health Sciences (FMHS), commencing January 2020. Michael joined the ACSRC as a Research Fellow in 1991. With 30 years’ experience in medicinal chemistry and cancer drug development, he was an obvious choice for the role.

“Michael is an outstanding medicinal chemist and a respected senior member of ACSRC. Most importantly, he convinced the selection panel that he understood what would be needed for future success following on from the impressive legacy of Distinguished Professor Bill Denny’s leadership as Director,” Bill Denny will say at the University part-time to continue his cancer research work.

“Our primary focus, as a pre-eminent cancer drug discovery centre, remains to bring new cancer therapies to the clinic and to develop drugs that will benefit cancer patients.”

The ACSRC is a renowned research lab and has developed 15 drugs to clinical trial.

SUSTAINABILITY SUMMIT

Educators say knowledge of sustainability is key to achieving it.

The second national multi-sector summit on the UN Sustainable Development Goals (SDGs) was co-hosted by the University of Auckland with AUT in September. The theme was ‘Accelerated Action, Together’ and featured a day of panel discussions and addresses from the likes of Russell Norman, Kevin Hague and Jeffrey Sachs.

In the welcome address, Pro Vice-Chancellor Pacific, Associate Professor Damon Salesa, said the University recognises its main mission is to provide knowledge of sustainability and the 17 goals agreed to by people from 196 countries.

“We need to educate the leaders of our future and also model sustainable practices.”

Rt Hon Helen Clark and Dr Dan Hikuroa (Faculty of Arts) gave the keynote addresses. She used the University Foundation’s divestment commitment as an example.

“Michael is an outstanding medicinal chemist and a respected senior member of ACSRC. Most importantly, he convinced the selection panel that he understood what would be needed for future success following on from the impressive legacy of Distinguished Professor Bill Denny’s leadership as Director,” Bill Denny will say at the University part-time to continue his cancer research work.

“Our primary focus, as a pre-eminent cancer drug discovery centre, remains to bring new cancer therapies to the clinic and to develop drugs that will benefit cancer patients.”

The ACSRC is a renowned research lab and has developed 15 drugs to clinical trial.

COLOMBIAN CONNECTION

PM’s scholarship builds Latin American links for Auckland.

Twenty students and two academics left for South America on 3 November for an opportunity of a lifetime. They’re undertaking a programme delivered by University of Auckland partner the Universidad de Los Andes in Bogotá, Colombia. It’s a four-week intensive course on peace-building efforts across Colombia. The trip was enabled by the University receiving a Prime Minister’s Group Scholarship for Latin America that allowed the academics to select students to take on the trip. Most are working towards their Master of Conflict and Terrorism Studies (MCTS).

Dr Chris Wilson and Dr Thomas Gregory, senior lecturers in Politics and International Relations are leading the group. Chris is the coordinator of the MCTS programme. Thomas says the trip is a fantastic opportunity for everyone to learn about the conflict and peace process in Colombia. “They’ll study the causes and consequences of the conflict, meet with people involved in various peace-building initiatives and may even get to interview former combatants. We have also organised an exciting cultural programme for them, including a trip to the historic town of Cartagena and a game of Tejo with students from Los Andes University – it’s like ten pin bowling, but rather than hitting pins, the targets contain gunpowder!”

The relationship between New Zealand and Colombia is gaining importance, indicated by the opening in 2018 of the New Zealand Embassy in Bogotá. The agreement with Los Andes is the University’s first exchange agreement with a Colombian university.

INTELLIGENCE OF ALL SORTS

New Dean of Law Penelope Mathew is up for any challenge.

Professor Penelope Mathew, an internationally renowned expert in human rights and refugee law, took up her role as Dean of the Law School earlier this year. Penelope moved to New Zealand from Griffith University in Queensland. She says the legal profession faces a number of challenges in the future, including the impact of Artificial Intelligence (AI).

“Law firms around the world are already using AI to undertake time-consuming research and conduct due diligence. “We need to ask how will AI affect the legal profession and what the curriculum should look like in order to help students deal with the changing nature of the legal profession,” Penelope says. “I don’t have answers to that yet, but it’s a challenge I look forward to grappling with.”
In March 2020, Professor Dawn Freshwater will take over from Vice-Chancellor Stuart McCutcheon. She talks about her past and her vision.

Professor Dawn Freshwater has been asked a few times about the significance of becoming the University of Auckland’s first female Vice-Chancellor. While it’s a milestone, she says the appointment of a woman is not entirely unexpected. “I wouldn’t make a particular deal out of it,” she says. “New Zealand has a fantastic record of firsts where women are concerned. There is already significant progress addressing gender issues. It was bound to happen at some point.”

Professor Freshwater’s picture is inclusive leadership, not just gender. But I do address the gender issue in my work, for example on the [Australian National Health and Medical Research Council] Women in Science committee. I make sure we try to address any imbalance.”

She is also a member of ‘CEOs for Gender Equity’ in Western Australia, and the first female chair of the Australian ‘Group of Eight’ universities. Dawn Freshwater (pictured) grew up in Nottingham, England, and the ill-health of her parents meant she had to look after her siblings from a young age. She dropped out of school at 15 to support the family. She was encouraged to return to education several years later – to a nursing diploma, degree and PhD. “I have very ambitious ideas about what universities can achieve, because education changed my life – and it also changed my family’s life as a result of changing my own life.”

“I was the first in my family to go to university. It led not only to improved opportunities for my family, but ultimately for my daughter and grandchildren. It’s a matter of family history. In fact, my brother ended up going to university very late in life, so I think we set off a chain of events.”

She says mentors’ encouragement can be far-reaching, and an important way of supporting Māori and Pacific students in post-secondary education. “Leaders and educators have such an opportunity. Sometimes it’s difficult for an individual to carry their own sense of confidence or their own awareness of their capability and the opportunities before them. Often as educators we’re in a privileged position, not only working with a postgraduate student or one of our children, to be able to encourage them in a way that can change outcomes.”

After several decades working in mental health research, and contributing to hundreds of publications, she’s no stranger to hard work and challenge. “My backstory tells you that, I really like to roll up my sleeves, as you would expect from somebody who’s also worked in health.”

That could include major research, but you may also find her at the lecturer as she did while at the University of Western Australia (UWA) where she worked for the past five years, the last two as Vice-Chancellor. “It’s important because getting myself on the ground brings credibility to what I do and helps me ascertain where the tensions are.”

Understanding the impact of education on her own life, she looks at education’s opportunities in a wider sense, especially for the disadvantaged. “I see what education can do, not just personally but globally in terms of supporting the Sustainable Development Goals (SDGs). I see the big picture.”

She says tertiary education needs to consider the role of their institution. “We have a global civic responsibility and it’s really important to strike a balance between serving our communities, serving the region and the nation, but also serving the globe in terms of the SDGs.”

She says global rankings of universities, such as Times Higher Education and QS, are important. “Because we’re in a global landscape, we have to make sure we have an internationally renowned reputation. But we need to be strategic about what we want to be known for.”

Dawn says there have been accusations of universities being “graduate factories” because of the way in which the sector has grown in terms of volume. “But the pipeline is actually much wider. We have high-school students coming onto campuses undertaking a project or they’re engaged in some small way and we’re also working way beyond the postgraduate sector in terms of continuing professional development. We have to recognise that it’s much more than providing bachelor programmes and the people who want to study right into their old age.”

She is proud that UWA implemented a strategy that addressed real-world issues while still being a research-intensive place. “UWA students were involved in developing its strategy as well as staff, the community, industry and alumni. We had a distinct focus on our place in the world and people in this region. That’s an important thing to think about for Auckland too.

“At UWA, we positioned ourselves as a knowledge hub on the Indian Ocean rim because that was our focus. Just as Auckland is strategically positioned in the Pacific to be able to do something really distinct.”

On the issue of free speech in universities all over the world, she has said university is all about seeking out people to have difficult conversations with, not people who confirm your worldview. “We’ve done a huge amount of work on this for the Group of Eight in Australia. My view is that you have to be exposed to ideas that challenge your own views and thinking. If you don’t, then you can never really fully articulate the architecture of your thinking and you’re also never subjected to scrutiny or interrogation.

Universities support critical thinking. We subject our own ideas and those of others to scrutiny and interrogation. We may end up thinking the same way as we did in the beginning, but we’re much better at articulating why we’ve come to that point.”

Dawn is excited about heading up the University of Auckland and says it’s a great time to be living in New Zealand. “There are many people looking to New Zealand with envy in terms of what it’s achieving, both in innovation and punching above its weight for what such a small nation can achieve.”

She will visit Auckland several times before she takes over from Vice-Chancellor Professor Stuart McCutcheon in March and hopes to meet a few people and learn a bit more about her new role.

The seven-time London marathoner is also looking forward to trying out new walks in Auckland, but another marathon isn’t an option. “A marathon takes about 18 weeks’ training and a lot of effort. Since I’ve been in this role, I’m reduced to a few kilometres now and then.”

But when it comes to achieving goals as the Vice-Chancellor, she says it’s very much a team marathon, not a solo sprint. “It’s the journey, not always the destination. The journey on the way, the process on the way, is just as important. That means bringing people with you, being clear about your purpose and helping people understand why we’re on this path.”
There’s no shortage of enthusiasts – students and teachers alike – keen to be involved in space research at the University of Auckland. Owen Poland meets some of those launching themselves into the final frontier.

They’re something about firing a miniature satellite the size of a cube tissue box into space that captures the imagination, but few would have imagined that a satellite design competition would help propel the University of Auckland to the forefront of space research in New Zealand.

Launched in 2016, the extracurricular Mission Proposal Competition organised by the Auckland Programme for Space Systems (APSS) has attracted more than 400 enthusiastic undergraduates despite the absence of any course credits.

“I just love space, who doesn’t?” says science student Julianne McCoun, a member of the winning 2019 Team Koios, whose aim is to create an open-source platform for future competitors. “It really got me excited about being able to inspire and influence the next generation.”

As a member of Team Kessler, which won the 2018 competition for its mission to create an electrodynamic tether that captures and removes space junk, engineering student Jonathon Mace is rapt to be part of a programme that incubates start-ups and “throws people out into the space ecosystem.”

APSS Director Jim Hefley says because we don’t know what the future holds, the competition is designed to expose them to new and complex problems. “Space is an excellent analogue for that.”

The event requires multidisciplinary teams to identify a societal need and design a solution using a 10 x 10 x 10cm satellite called a CubeSat. The resulting collaboration encourages the development of transferable skills Jonathon is grateful for. “I’m picking up so much that I just don’t have the opportunity to learn through my normal degree pathway.”

As well as breaking down barriers, Julianne says the multi-faculty approach encourages diversity of thinking – even if you don’t get along with everyone on your team.

“You still have to work with them and that’s a really important skill in life.”

What sets Auckland’s CubeSat challenge apart from similar events overseas is the degree of testing involved before a satellite is launched. Around half the CubeSats sent into space are never heard from again and become “experimenter rocks”, according to APSS co-founder Professor Richard Easther. “One of the things we’ve worked hard on is making sure that the payload has been tested and we understand how it’s going to behave.”

Expected to be launched in early January, the APSS-1 Waka Amorangi o Aotearoa, designed by Team QuakeTec, is the first mission-ready CubeSat. It will test whether ionospheric disturbances can predict earthquakes. As the launch provider, Rocket Lab founder Peter Beck (see page 30) says it’s great to see students doing really good spacecraft work. “We’ll be supporting the University, making sure we can get students’ spacecraft up in orbit and I think it’s going to be really exciting to see what comes out.”

The APSS has also inspired alumni to get involved. Having graduated with a masters in mechanical engineering in 1962, Dr Neil Paton left for the United States to pursue a career in aerospace. He says the experience was invaluable. “It was a fantastic place to work. Any kind of experience you get working on robotics is very useful to apply to companies and organisations back in New Zealand.”

That opportunity isn’t lost on Anastasiya Kiddle from Team Kesler, who sees space as “literally the next frontier”, providing “all these chances for us.” Likewise, Team Koios leader Matthew White believes New Zealand’s space ecosystem is just ramping up and in a few years “it’s going to be just crazy exciting because we’re going to have so many people involved”.

Although the APSS is primarily designed to increase student engagement, it has also boosted collaboration at an academic level and Richard Easther says the CubeSat challenges have grown expertise and driven organic change among staff. “It’s got people talking to each other in ways that might not have been the case.”

The extracurricular teaching programme has also been the basis for the Bedlington Te Pūnaha Ātea – the Auckland Space Institute at the University, making sure we can get students’ spacecraft up in orbit and I think it’s going to be really exciting to see what comes out.”

The APSS has also inspired alumni to get involved. Having graduated with a masters in mechanical engineering in 1962, Dr Neil Paton left for the United States to pursue a career in aerospace. He says the experience was invaluable. “It was a fantastic place to work. Any kind of experience you get working on robotics is very useful to apply to companies and organisations back in New Zealand.”
BECK HONOURED

“Think really big” about the issues and theories facing science and engineering and “go after them”. That was the advice from Rocket Lab founder Peter Beck in September, following his appointment by the Faculty of Engineering as an adjunct professor in aerospace engineering. The appointment is recognition of his outstanding contributions to aerospace, entrepreneurship and technical innovation.

Described by Dean of Engineering Professor Nic Smith as a “unique talent” with “an ability to do the extraordinary”, Peter has an association with the University that dates back to the early part of his career working for Industrial Research Limited and then more recently working on structures for Rocket Lab. Having left school at 17 to take up an apprenticeship rather than study, Peter says it was “truly a great honour” to become an adjunct professor.

“The University is always a go-to-place if we have particular questions,” he says. The next challenge is to recover the company’s Stage One Electron rockets for reuse through a narrow re-entry corridor. “We’ll enjoy working with the University on this problem.”

Peter says space has never been more accessible and he encourages those opportunities into some of the big international programmes.

“Crazy ideas are really only crazy ideas until you pull them off.”

Professor Suvi Nenonen has seven tips for devising better strategies in business that can translate well into everyday life.

TIPS ... TO RETHINK YOUR Strategy

1. Fight your biases

We are all prone to cognitive biases. As a strategist, you need to be keenly aware of your biases and fight them at every turn. Was that a genuinely reliable fact or did you just fall victim to a confirmation bias, embracing information that corroborates your existing beliefs while shunning facts that would require you to rethink your world view? Is it really a good idea to continue with that project or are you a walking example of “sunk cost fallacy”, not wanting to accept that historical investments are not necessarily any indication of future success?

2. Don’t use the same approach every time

In strategy, it is horses for courses. The right strategic approach is largely determined by your wider context. If your environment is relatively predictable, then go ahead and use your analytical skills to figure out the best course of action. But if your context is highly unpredictable, action trumps analysis. Uncertain situations, peppered with unknowns, is highly unpredictable, action trumps analysis. Uncertain situations, peppered with unknowns, is highly unpredictable, action trumps analysis. Uncertain situations, peppered with unknowns, is highly unpredictable, action trumps analysis. Uncertain situations, peppered with unknowns, is highly unpredictable, action trumps analysis.

3. Separate actions from objectives

The most common way to go awry in strategy work is to mistake objectives for strategies. Strategy is not an objective. Strategy is a set of cohesive actions to achieve that objective. So, the next time someone presents an objective masquerading as a strategy such as ‘our strategy is to grow’, feel free to speak out. Life is too short for ‘strategies’ that don’t even have the basics right!

4. Question your objectives

Even though objectives are not strategies, you should pay special attention to your objectives and constructively question them from time to time. So, for example, you might want to consider if the best objective for your company is to aim for more revenue or whether a better objective might be to improve customer satisfaction. Or should you finally launch that new product or service?

5. Deliberately do nothing

We tend to have a preoccupation for action. The world is not ready yet … let’s do something! Any action is better than standing still! However, as a savvy strategist you understand that movement is not always progress. In fact, tremendous amounts of time, money and energy are wasted every year when organisations implement ‘improvements’ that do not improve anything other than the project owner’s personal key performance indicators. Sometimes doing nothing can be the best strategy.

6. Change the rules of the game

Most strategy textbooks follow the same basic formula: (1) analyse your environment and (2) create a strategy where you take advantage of the current lay of the land. But what to do if the current lay of the land is clearly out of whack – killing our planet or leaving millions impoverished? As George Bernard Shaw quipped: “The reasonable man adapts himself to the world; the unreasonable one persists in trying to adapt the world to himself.” Therefore, all progress depends on the unreasonable man.” Sometimes it is possible to craft truly genius strategies by being such an unreasonable (wo)man.

7. Don’t go it alone

The popular press loves stories of heroic leaders who single-handedly save the day, the organisation or even the world. However, it is much more likely that you will come up with a winning strategy if you collaborate with others. It is also quite likely that you will need the help of others – your colleagues, customers, suppliers, friends and/or family – to turn your strategy into reality. The ideal is to trust them to be part of the strategy process in the first place rather than ask them to implement a strategy they were not allowed to be part of creating and therefore don’t believe in.
Feeling the groove: Device for hearing impaired recognised at Design Awards.

A wearable device developed by researchers at the University, which allows the hearing-impaired to feel music, won gold in the Student Public Good category at the recent Best Design Awards.

Technician B.H. Srikanth, a Silicon Valley engineer doing his masters here, has been working on MuSS-Bits (musical sensory substitution bits) under the supervision of principal investigator Associate Professor Suranga Nanayakkara in the Augmented Reality Institute. His idea to use the larvae from a black soldier fly to reduce organic waste has been working on an improved version. The MuSS-Bits gadget is worn like a watch and has been trialled by Hamilton woman Marama Bowyer, who lost her hearing three years ago. It vibrates the beat of the music.

“It is honestly life changing,” says Marama. “Suranga asked me to choose a song on YouTube. The first song that came into my head was ‘Uptown Funk’ by Bruno Mars. The minute it started its first beat, I started crying. It was like I was fully listening to the song.”

Marama, who has been wearing the device for six months, has provided suggestions for the next iteration of MuSS-Bits, including having it accurately inform her of the direction a voice is coming from, or the sound of her dog barking.

Suranga, who was the University’s first appointee under the Government’s Entrepreneurial Universities programme, has worked on a proof of concept design that includes Marama’s suggested features. He has been working on improvements to the device since he first came up with the idea while at the Singapore University of Technology and Design. His Auckland Human Lab has a team of 25 from nine countries working on assistive technology projects that make an impact in the community.

MAGGOT FARM CLEANSING UP

Student’s pilot plant in India reduces food waste in landfills.

A treatment plant in India is the first place to use a Kiwi innovation that uses maggots to process waste into fertilizer and chicken feed.

Hexacycle is the brainchild of PhD student Neil Birrell, an entomologist in the Faculty of Science. His idea to use the larvae from the black soldier fly to reduce organic waste in landfill won the social entrepreneurship category of the University’s Velocity challenge in 2016. Since then, Hexacycle has received support from Velocity to upscale, training it from a prototype fly hatchery in Neil’s backyard to India’s first black soldier fly treatment plant.

The treatment plant is in the south-western coastal state of Kerala, with plans to introduce the system to other waste-processing plants in developing countries. The plant processes 200kg of food waste a day, from local restaurants.

“Our pilot plant is entirely sustainable and zero-waste,” says Neil. “The larvae are used as a high-protein poultry feed for the chickens on-site, and the excrement processed into frass, a type of organic fertilizer.”

Neil set up the plant in India after chatting to a taxi driver on Waiheke Island. “It turned out he owned an import/export business and a plantation in Kerala and had a cousin who owned a large poultry farm,” says Neil. “Six months later, I was on my way to India.”

The taxi driver helped Hexacycle navigate the language barriers. The initiative now has two co-founders in New Zealand, who mostly work on the venture in the evenings. Three employees in Kerala have been trained on the use of the black soldier fly larvae and processing the waste.

Read the full story: tinyurl.com/MaggotFarm

AIMING TO KILL THE PAIN

Treatment for excruciating affliction of the pancreas one step closer.

Dr Jiwon Hong, a Hugo Charitable Trust Research Fellow in the Department of Surgery and the School of Biological Sciences, has received funding to test new drugs for a potentially lethal, abdominal disease—acute pancreatitis. She received a grant from the US-based National Pancreas Foundation (NPF) and that, along with ongoing support from the Hugo Charitable Trust, allows her to carry out world-first, lab-based testing of three new drugs she has already identified in promising pilot studies. If results are positive, the next step will be clinical trials in patients.

Acute pancreatitis is a very painful inflammation of the pancreas for which no specific treatment exists. It comes on suddenly and affects about 2,800 New Zealand adults and is more common in the middle-aged and elderly. The incidence rate (58.4 per 100,000 people each year) is higher than the global incidence rate (33.7 per 100,000) and the rate among Māori is worse (59.5 per 100,000).

About a quarter of patients develop a severe form that can cause organ failure, and the risk of death in these patients is as high as 50 percent. “In the past few years, I have been investigating the reasons some patients develop organ failure,” says Jiwon. “New drug treatments are desperately needed.”

Her study examines whether one or more of the three drugs she has identified, which each target a different aspect of inflammation, reduces tissue damage and failure in vital organs. Jiwon is based in the University’s Surgical and Translational Research (STAR) Centre, a multidisciplinary network of researchers and surgeons focused on the development of new treatments. It’s a time when diseases requiring surgical treatment, which include many cancers, account for almost a third of the global disease burden. Results from the drug study are expected in late 2020.

STUDY INTO MĀORI DEMENTIA

Cultural identity is key to helping Māori with dementia.

The largest-ever study of Māori affected by dementia has found that those of Māori ancestry are more accurately diagnosed and treated. It’s a time when diseases requiring surgical treatment, which include many cancers, account for almost a third of the global disease burden. Results from the drug study are expected in late 2020.

Health Board held seven hui with kaumātua around the country and interviewed 250 people, eight of them living with dementia, to find out what the disease is like and what particular challenges they faced. Lead author Dr Margaret Dudley, from the University of Auckland’s School of Psychology, says the research designed to understand dementia (māte wāhine) from a Māori perspective, including how whānau were coping with the diagnosis of the disease. She says the study found the caregiver burden can be greater in Māori communities and knowledge of the disease is poor, with a widespread belief that everyone gets dementia eventually. The study also found that pain, or spiritual wellbeing, was a key factor in helping those affected by dementia—and their whānau and communities cope. “Participation in cultural activities, especially on the marae, seemed to really help people with mate wāhine and lifted what they called the ‘cloudiness’ associated with it,” says Margaret. Care services therefore needed to be culturally appropriate, with cultural identity a key component of management and treatment. The researchers are developing a tool that will more accurately diagnose dementia for Māori.

Full story: tinyurl.com/MargaretDudleyDementiaStudy
UNRELIABLE MECHANISM FOR POLICY ISSUES

Dr Matheson Russell

R
ceived wisdom treats referenda as the gold standard in democratic decision-making. But this piece of received wisdom is dubious. Referenda are not a reliable mechanism for resolving contentious policy questions (witness Brexit) and, despite what is often claimed, they don’t tell us much about ‘the will of the people’. For example, many people won’t have strong views about the pros and cons of legalising personal cannabis use. Yet the 2020 referendum will elicit from us a preference, tentative though it may be, and will tell us whether we are the same as everyone else’s. Even if we do have firm views about the issue, chances are these views will not have been formed on the basis of an independent assessment of the relevant evidence and arguments, but by relying on shortcuts. We will have followed the lead of trusted voices in our social networks, extrapolating judgments based on fragmentary information or misinformation picked up through the media. For the few who do the hard work to develop an informed view on the issue, the referendum will misrepresent our views by forcing us to express a yes/no response to a predetermined proposal. A moment’s scrutiny and the aura of unquestionable democratic authority surrounding referenda vanishes.

There are more promising democratic processes that can be used if legislators require a more solid democratic mandate. In 2016, the Irish government commissioned 99 ordinary citizens, broadly representative of the diverse Irish population, to consider the contentious issue of abortion law reform. This Citizens’ Assembly interviewed experts, heard first-hand testimony, weighed medical, moral and legal considerations, deliberated together and finally drafted a set of recommendations. Irish citizens were able to see people like themselves conscientiously working through a matter of complexity and gravity. Politicians were impressed by the rigour of the process and the quality of the recommendations. Ultimately, the Citizens’Assembly was instrumental in moving Ireland forward on a deadlocked issue and abortion law was successfully liberalised through a constitutional amendment in 2018.

As we head to the polls, we should resist the temptation to treat the referendum as a divine oracle. Take a moment to imagine how new modes of democratic participation could both improve the quality of political decision-making and deepen our democracy.

CHANCE TO PARTNER WITH MĀORI

Dr Lara Greaves

T
he process may not be perfect, but this may be our only chance for a generation to change a discriminatory law. While we don’t know the exact wording of the legislation we will vote on, we know that the current prohibition arrangement disproportionately impacts Māori. Māori are only slightly more likely to use cannabis than others – but are considerably more likely to face prosecution. Given efforts in the eradication of cannabis crops, particularly in the economically deprived regions of Northland and the East Coast, it is Māori who appear to be taking the risk growing the cannabis that students pass around their Grey Lynn flat with little fear.

Legalisation of cannabis presents an opportunity to partner with Māori and those with, shall we say, the necessary horticultural skills. These people also have existing networks and a customer base, and despite cannabis being illegal, are earning an income. It is those same people and their families who stand to lose out if cannabis is legalised. Part of building equity into cannabis law reform will involve ensuring those operating outside the current law, to a place where they are able to operate effectively within it. The Helen Clark Foundation proposed expunging cannabis convictions so people can work in the legal market. But how will they access the resources necessary for licensing and compete with well-funded start-ups? If commercial licences are restricted in number, then one way to partner with Māori would be reserved licences. The flow-on effects could allow for kuspapa Māori education around cannabis use.

Ultimately, the process has not been perfect, but if cannabis isn’t legalised in 2020, it is likely that these inequalities will continue and compete with well-funded start-ups. If cannabis is legalised, a framework to regulate key details, to keep those who use it safe and to protect young people’s wellbeing.

WHAT DO WE NEED TO THINK ABOUT AS WE APPROACH THE 2020 CANNABIS REFERENDUM?

Dr Matheson Russell is a senior lecturer in Philosophy who specialises in social and political philosophy, Faculty of Arts.

Dr Lara Greaves (Ngāpuhi, Ngāti Kuri) is a lecturer in Politics and International Relations, specialising in NZ Politics, Faculty of Arts.

“Resist the temptation to treat the cannabis referendum as a divine oracle.”

BETTER SAFEGUARDING THE YOUNG AND VULNERABLE

Professor Benedikt Fischer

A
bout a quarter of our population is under 18, so parents need to be well informed about the implications for and against cannabis legalisation. Most cannabis use occurs in those aged 15-29. More than half have tried it and as many as a third may be active users. People don’t want to see youngsters experience cannabis-related harm, so parents may be hesitant to support policy changes that – even subjectively – suggest any increase in risk. But it is erroneous to think that the referendum is a vote for, or against, the availability and use of cannabis. Cannabis is already widely available and used, albeit illegally. Rather, the referendum is about whether to bring illegal cannabis use and supply into a realm of legality, with overarching public health goals to regulate key details, to keep those who use it safer and so to protect young people’s wellbeing.

While cannabis use results in less severe health harm overall than alcohol or tobacco, it comes with risks such as cognitive or neutral impairment, injury or death from cannabis-impaired driving, educational attainment problems and dependence. But science has demonstrated consistently that these are largely limited to those who begin cannabis use early in life, use intensively (daily) as well as consume high-potency (high-THC) cannabis products. Today’s cannabis products are unregulated and of uncertain properties. Most procurement involves an illegal transaction from questionable sources and no teacher or health professional can legally give advice on how to use cannabis more safely. Furthermore, prohibition’s consequences mean any young person – but especially the socio-economically marginalised – may become entangled in the criminal justice system and, with the powers of law enforcement on what is really a health and education issue, however the proposed age limit of 20 for use means many young users will be excluded from its prospective benefits. ‘Home-cultivation’ of cannabis is a misguided concept in a ‘public health’ framework. Cannabis production does not belong in people’s – and especially non-users’ – living environments.

The Helen Clark Foundation proposed creating a place for the growing of cannabis. It is those same people and their families who stand to lose out if cannabis is legalised.

The Helen Clark Foundation proposed removing the prohibition of cannabis convictions so people can work in the legal market. But how will they access the resources necessary for licensing and compete with well-funded start-ups? If commercial licences are restricted in number, then one way to partner with Māori would be reserved licences. The flow-on effects could allow for kuspapa Māori education around cannabis use.

Ultimately, the process has not been perfect, but if cannabis isn’t legalised in 2020, it is likely that these inequalities will continue and compete with well-funded start-ups. If cannabis is legalised, a framework to regulate key details, to keep those who use it safe and to protect young people’s wellbeing.

WHAT DO WE NEED TO THINK ABOUT AS WE APPROACH THE 2020 CANNABIS REFERENDUM?

Dr Matheson Russell is a senior lecturer in Philosophy who specialises in social and political philosophy, Faculty of Arts.

Dr Lara Greaves (Ngāpuhi, Ngāti Kuri) is a lecturer in Politics and International Relations, specialising in NZ Politics, Faculty of Arts.

“Resist the temptation to treat the cannabis referendum as a divine oracle.”

BETTER SAFEGUARDING THE YOUNG AND VULNERABLE

Professor Benedikt Fischer

A
bout a quarter of our population is under 18, so parents need to be well informed about the implications for and against cannabis legalisation. Most cannabis use occurs in those aged 15-29. More than half have tried it and as many as a third may be active users. People don’t want to see youngsters experience cannabis-related harm, so parents may be hesitant to support policy changes that – even subjectively – suggest any increase in risk. But it is erroneous to think that the referendum is a vote for, or against, the availability and use of cannabis. Cannabis is already widely available and used, albeit illegally. Rather, the referendum is about whether to bring illegal cannabis use and supply into a realm of legality, with overarching public health goals to regulate key details, to keep those who use it safer and so to protect young people’s wellbeing.

While cannabis use results in less severe health harm overall than alcohol or tobacco, it comes with risks such as cognitive or neutral impairment, injury or death from cannabis-impaired driving, educational attainment problems and dependence. But science has demonstrated consistently that these are largely limited to those who begin cannabis use early in life, use intensively (daily) as well as consume high-potency (high-THC) cannabis products. Today’s cannabis products are unregulated and of uncertain properties. Most procurement involves an illegal transaction from questionable sources and no teacher or health professional can legally give advice on how to use cannabis more safely. Furthermore, prohibition’s consequences mean any young person – but especially the socio-economically marginalised – may become entangled in the criminal justice system and, with the powers of law enforcement on what is really a health and education issue, however the proposed age limit of 20 for use means many young users will be excluded from its prospective benefits. ‘Home-cultivation’ of cannabis is a misguided concept in a ‘public health’ framework. Cannabis production does not belong in people’s – and especially non-users’ – living environments.
40 under 40

Once a year we meet a new batch of 40 alumni under the age of 40 who are making their mark on the world. Here are just three of those who’ve impressed.

Sjoerd van Ballegooij

When Sjoerd van Ballegooij was a second-year engineering student, he was offered a summer holiday research project. It involved looking into improving the measurement of wastewater outflows from WaterCare’s Cossey Creek dam spillway. Sjoerd became fascinated by the water resources aspect of civil engineering and in his final undergraduate year, he decided to concentrate on water resources engineering. He graduated with first-class honours, which led to his PhD.

He joined environmental and engineering consultants Tonkin + Taylor, and later, he worked in the dams group, but on the day he started he was ‘temporarily’ placed in the geotechnical group. Sjoerd studied, but after a while he learnt the ropes.

Soon he was working on complex projects such as bridge and tunnel design and slope stability, all of which involved an element of earthquake engineering. He became an expert in liquefaction when the Canterbury earthquakes struck in 2010/11 and 900,000 tonnes of liquefaction – 45,000 truckloads – devastated the region. Sjoerd was one of the first geotechnical specialists there and later advised government agencies on how to rebuild.

He also oversaw the development of the Canterbury Geotechnical Database system – an online portal that geotechnical engineers use to share information. The database is now used by engineers and geologists countrywide.

Sjoerd used what he learned in the Canterbury and Kaikoura quakes to help improve resilience in other earthquake-prone areas around the world. In 2013, he was awarded the Queen’s Service Order, Honorary Companion for his services to geotechnical science.

Reina Va’ai

Reina Va’ai’s family moved here from Samoa in 1993, when she was three, after a cyclone wiped out their home. The family of six slept on the floor of one room in the early days when money was tight. But Reina worked hard and won a scholarship and was accepted into first-year law. “I knew how lucky I was to have this opportunity. My goal was to help others and going into law felt like my calling after an experience in my final year at school.

“We had visited the Otara Community Law Centre and a cleaner came in. Her job had just been terminated at short notice simply because she’d brought her daughter to work as she’d been unable to find a babysitter. The experience made me realise how vulnerable many people are when they are unaware of their rights.”

A chance to work for Judge Soana Moala proved a turning point. “Before my interview, I wasn’t even looking to practise law. My interests had switched to journalism, but I applied anyway because it was a chance to work for an incredible Pacific woman whom I greatly admired.”

“During the interview I told them they probably wouldn’t hire me, given the calibre of applicants they had. “I told them my weaknesses and pointed out I wasn’t a top student. I don’t think they knew what to make of me.”

She was hired. It was while working for Judge Moala she started blogging about successful Pacific women. That led to a call from the producer of Tagata Pasifika, Ngaiire Puaa, who offered her a role as a reporter.

But her days as a lawyer weren’t over. “I never considered it was possible to have two careers simultaneously. But my boss, Lynn Hughes, the Public Defender for South Auckland, taught me you don’t have to fit in a box … she believed in my ability to work in two very different careers.”

Reina has worked on Tagata Pasifika at the same time as being a lawyer for two years. She has also written a children’s book, The Incaute, and directed her first documentary as part of the Daughters of the Migration series on Black Ferns captain and police detective Fiona Fa’amausili.

Reina gained several other qualifications during her time at the University, from first-year psychology to a certificate in drama, and directed her first documentary as part of the Daughters of the Migration series on Black Ferns captain and police detective Fiona Fa’amausili.

Reina gained several other qualifications during her time at the University, from first-year psychology to a certificate in drama, and directed her first documentary as part of the Daughters of the Migration series on Black Ferns captain and police detective Fiona Fa’amausili. She enrolled in a conjoint Bachelor of Law and Health Sciences degree and graduated in 2015. At the same time, she was completing a bachelors degree in Tikanga Māori and Social Sciences for Public Health. Pania also gained several other qualifications during her time at the University, from Te Whare Wānanga o Awanuiarangi and Te Wānanga o Aotearoa in the fields of Maori Food Sovereignty Practices and Performing Arts.

Pania Newton

Anyone following the recent occupation of Ihumātao will know the name Pania Newton (Ngāpuhi, Te Rarawa, Waikato, Ngati Mahuta). She was the voice of calm interviewed by media as the spokesperson for the SOUL (Save Our Unique Landscape) campaign.

Pania, with her cousins, created SOUL four years ago, to protect and preserve the land at Ihumātao. Her quest began after the discovery of survey pegs on the historic ancestral land on the shores of the Manukau Harbour, where Pania had grown up. She was thrust into the national spotlight when thousands of protesters occupied the land, wanting the Government to buy it back from developers. The battle has seen her plans to join a law practice put on hold but Pania’s actions have been consistent with her belief in the importance of being a good kaitiaki (guardian).

“Given the cultural significance of this land and its unique history, it was my responsibility to fight for its preservation.”

From an early age, Pania was interested in the idea of justice. She wrote a letter to herself when she was nine, declaring she would become a lawyer. Hard work saw her gain a Vice-Chancellor’s scholarship in her final year of high school at Te Kurau Māori o Ngā Tapuwae in Mangere.

She enrolled in a conjoint Bachelor of Law and Health Sciences degree and graduated in 2015. At the same time, she was completing a bachelors degree in Tikanga Māori and Social Sciences for Public Health. Pania also gained several other qualifications during her time at the University, from Te Whare Wānanga o Awanuiarangi and Te Wānanga o Aotearoa in the fields of Maori Food Sovereignty Practices and Performing Arts.

Pania says her time at the University came with challenges as well as opportunities. “Coming from a small school, I initially found university quite isolating. But I soon developed a good group of supportive friends and began to get involved in various sporting groups and clubs as well as student politics. Those politics helped me changed my view of the world and opened my mind to many of the injustices faced in Aotearoa, which greatly influenced my future pathway.”

Pania, who says she is committed to her advocacy and her role as kaitiaki, holds a number of ‘board and trustee positions on groups that empower communities to lead healthy lifestyles and contribute to wellbeing.

As well as being involved in the campaign to protect Ihumātao, Pania is an active member of the youth arm of Matike Mai Aotearoa Rangatahi, the Independent Working Group on Constitutional Transformation led by Moana Jackson and Professor Margaret Mutu.
AROUND THE GLOBE

Ingenio catches up with three alumni living overseas and finds out what they are up to and where. By Wendy Colville.

JENNY HARLEN SWEDEN AND MYANMAR

“Learning not to let fear get in the way of anything. Always choosing what feels right, rather than what other people think is right. Never choosing the path of most money, but always the path of the most interesting challenge.”

These are Jenny Harlen’s life lessons. The girl from Raumati Beach today runs sustainability businesses in both Sweden and, lately, Myanmar. It’s a place with challenges in spades. “Myanmar’s a country where more or less nothing works, a political disaster, but the future has to wait. For five years after graduation she backpacked around the world. There were a few odd jobs and when she met her Scandinavian partner, they moved to Sweden.

Jenny says she fell into a business degree at the University of Auckland. “Straight from school, and without any clear career goals, I just saw it as a way of being able to support myself in the future – somehow.”

But the future had to wait. For five years after graduation she backpacked around the world. There were a few odd jobs and when she met her Scandinavian partner, they moved to Sweden.

She found her passion 11 years ago in creating Bokashi Sweden. Getting the business to the point where it’s turning over a million euros annually has been a hard slog, but Jenny runs it now as an online business. That freed her up to focus on “saving soils” in a new place.

“Myanmar is one of the countries that will bear the brunt of climate change,” she says. “It’s very real here, made all the more tragic by the lack of basically any infrastructure.”

She says everything is a challenge. “Language, culture, educational backgrounds, the works. I live in hostel dorms, sleep on bamboo mats in our staff houses, and sometimes end up house-sitting in fancy lakeside houses and apartments with pools. A lot of contrasts!”

It’s been a 30 years plus learning curve, but a rewarding one. Her advice is to learn the elements of business early on, and set your goals. “Having done that, let it all go and do what you think makes sense. Because then, one day, you can look back and see that it really does make sense and that you have lived your life in the way you were always meant to.”

JANE MCGUIRE KETCHUM HONG KONG

A Bachelor of Arts can take you many places – just ask Jane McGuire Ketchum. Jane is a Hong Kong-based director and regional editor for one of Japan’s biggest financial companies, Daiwa Capital Markets. She admits it’s one of the most uniquely careers for an arts major, but it’s thanks to the grounding she got at the University of Auckland.

“I credit my arts degree with giving me the confidence and skills to take on a number of different and interesting jobs. That’s the beauty of a BA, it prepares you for anything!”

Jane majored in Japanese in the early 1980s, and was there it was an unusual choice. There were just eight in her final year Japanese class.

“At the time, Japan was New Zealand’s largest trading partner and my parents encouraged me to pick up the language because they thought it offered a promising career path.”

Hedging her bets, she added some business and economics papers to her degree. After teaching English in Japan, and doing a variety of jobs around the world, Jane returned to Japan in 1992. Her fluent Japanese – and access to an MSc on the study of plants and animals sparked his interest in social sciences. He began work on taro is a way to examine the evolutionary history of taro, and his work throws up the big questions.

He and his wife and son live in an apartment on the boundary of Kyoto City that borders some farmland and they enjoy growing vegetables in a community garden. He continues to examine the complex cultural and evolutionary history of taro, and his work throws up the big questions.

“Seeing the past can be fun, scary and useful. The past is not finished, but I am glad that the metaphorical ocean is deep. Forests can also be deep, but they are too easily cut and burned. Fortunately, they can also regenerate. The living world is powerful. I am a pessimistic optimist in the face of climate change.”

PETER MATTHEWS JAPAN

Tracing the path of taro around the world has taken Peter Matthews on his own epic journey. Peter is a professor, researcher and curator at the National Museum of Ethnology, Japan (Minpaku) and his work on taro is a way to examine the human journey.

“The essential question that guides me is ‘how can we see the past?’” he says.

Taro is an ancient crop not just used by Polynesians. It has also been a staple in Asia and Africa for thousands of years.

Peter’s first degree was a BSc at the University of Auckland. But an archaeology field trip sparked his interest in social sciences. He began an MSc on the study of plants and animals as tracers of human migration. With a PhD scholarship in Australia, he focused on taro. Looking back, he is a great believer in keeping your options open.

“I was cutting my own path through the forest, and sometimes you have to do that. I found challenging, and that allows me to live in one of the most dynamic cities in the world.”
The University’s inaugural Volunteer Impact Week (VIW) in June saw about 500 people participate in many voluntary events. One of those was donating to the Books4Tonga charity, and the books are now sitting on library shelves in Tonga being explored by readers of all ages.

Thanks to the generous donation of about 7,000 books from the University of Auckland community, Books4Tonga has now established its first libraries in a number of villages. Volunteers were involved in donating, collecting, packing and shipping off the boxes.

Teaching Fellow and Books4Tonga board member Stone Taita and Group Services team leader Herena Newall at the Business School managed the collection site there as part of the University-wide book drive. “It was just informal networking initially, asking a few people on our floor and around the building if they had books to spare, but we were amazed at the response,” Herena says.

When other sites popped up at other faculties, networking initially, asking a few people on our floor and around the building if they had books to spare, but we were amazed at the response,” Herena says.

When other sites popped up at other faculties, networking initially, asking a few people on our floor and around the building if they had books to spare, but we were amazed at the response,” Herena says.

When other sites popped up at other faculties, networking initially, asking a few people on our floor and around the building if they had books to spare, but we were amazed at the response,” Herena says.

When other sites popped up at other faculties, networking initially, asking a few people on our floor and around the building if they had books to spare, but we were amazed at the response,” Herena says.

When other sites popped up at other faculties, networking initially, asking a few people on our floor and around the building if they had books to spare, but we were amazed at the response,” Herena says.

When other sites popped up at other faculties, networking initially, asking a few people on our floor and around the building if they had books to spare, but we were amazed at the response,” Herena says.

When other sites popped up at other faculties, networking initially, asking a few people on our floor and around the building if they had books to spare, but we were amazed at the response,” Herena says.

When other sites popped up at other faculties, networking initially, asking a few people on our floor and around the building if they had books to spare, but we were amazed at the response,” Herena says.

When other sites popped up at other faculties, networking initially, asking a few people on our floor and around the building if they had books to spare, but we were amazed at the response,” Herena says.

When other sites popped up at other faculties, networking initially, asking a few people on our floor and around the building if they had books to spare, but we were amazed at the response,” Herena says.

When other sites popped up at other faculties, networking initially, asking a few people on our floor and around the building if they had books to spare, but we were amazed at the response,” Herena says.
A book of hidden depths

Colin McCahon
There Is Only One Direction 1919-1959
Peter Simpson, AUP, RRP $75

This self-illustrated memoir by Dr Selina Tusitala Marsh, associate professor in Arts, tells the story of a 10-year-old teased for her frizzy hair that led to her playground nickname of ‘mophead.’

The Chinese Dream: Educating the Future
This collection is based on a series of articles written by Dr Michael Peters, former head of the Faculty of Education and an honorary research fellow at Auckland, exploring the concept of the Chinese Dream popularised by President Xi.

Mophead
Selina Tusitala Marsh, AUP, RRP $26.99

The Protection of Merchant Ships Against Moored Mines
Bruce Hayward
Published in 1917 during the First World War, this book has aerial photos of each volcano showing how they've been modified and damaged, where they all are, what they look like now and what they can see if they go out to explore them.

Volcanoes of Auckland: A Field Guide
Bruce W Hayward, AUP, $49.99

Females in the Frame: Women, Art, and Crime
Penelope Jackson
This book is a guide. Photos by wildlife-photographer Mike Ashbee. Published in 1917 during the First World War, this book has aerial photos of each volcano showing how they've been modified and damaged, where they all are, what they look like now and what they can see if they go out to explore them.

WIN: COLIN McCAHON
Email your details to Ingenio@auckland.ac.nz by 27 January with Colin McCahon in the subject line. (One to give away.)

WIN: MOPHEAD
Email your details to Ingenio@auckland.ac.nz by 27 January with Mophead in the subject line. (Two to give away.)

From the Archives

At just 26 pages, this slim book doesn’t look like a weighty tome, but it is. It was the ‘Secret & Confidential’ warning on the cover that grabbed my attention, but the real surprise came when I picked it up in the University of Auckland Special Collections.

Females in the Frame: Women, Art, and Crime
An earlier work by alumna Penelope Jackson (Art History), Art Thieves, Fakers & Fraudsters: The New Zealand Story entered the world of art crime in New Zealand. Most of the people in it were men, so in Females in the Frame: Women, Art, and Crime, Penelope tells the fascinating stories of women involved in art crimes all over the world.

Penelope Jackson, Palgrave Macmillan, RRP $45

It’s been eight years since Bruce Hayward’s last handy field guide to Auckland’s volcanoes. Since then, science has made many volcanoes even more exciting. Bruce is an honorary research associate in the School of Environment, but is semi-retired.

Bruce’s favourite Auckland volcano is Mangere Mountain. “It’s one of the best-preserved and has so many facets to look at and try to understand how the volcano was formed.” It is the only one with an extruded lava plug that has been squeezed out of the vent by the last build-up of gas pressure beneath it – this forms the small hill in the middle of the crater.

Bruce hopes his book will be very useful for teachers and schoolchildren. “It will help them better understand how volcanoes were formed, how they’ve been modified and damaged, where they all are, what they look like now and what they can see if they go out to explore them.”

The book has aerial photos of each volcano or its site by nature photographer Alastair Jamieson – who has a Masters in Geography from Auckland. It also features old black and white photos and illustrations that show how the land around Auckland’s volcanoes has changed.

#NoFly: Walking the Talk on Climate Change
Award-winning University of Auckland Professor of Physics Shaun Hendy avoided flying for a year. The frequent traveller took trains and buses in his carbon footprint by 93 percent.

Shaun Hendy, BWB, $14.99

Here’s a perfect guide to take with you if you’re exploring Auckland’s volcanoes.

Bruce W Hayward
Volcanoes of Auckland: A Field Guide
Aerial photography by Alastair Jamieson

Volcanoes of Auckland: A Field Guide
Aerial photography by Alastair Jamieson
Bruce W Hayward, AUP, $49.99

WIN: A copy of Volcanoes of Auckland: A Field Guide
Email your details to Ingenio@auckland.ac.nz by 27 January with Volcanoes of Auckland in the subject line. (Two copies to give away.)
THIS AD IS ABOUT HOW YOU CAN CHANGE THE WORLD

The world’s number 1 ranked university for sustainable development impact.

2019 TIMES HIGHER EDUCATION UNIVERSITY IMPACT RANKINGS