



UNIVERSITY OF
AUCKLAND
Waipapa Taumata Rau
NEW ZEALAND

Sustainable Development Goals Report 2022



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FOREWORD

I orea te tuatara ka puta ki waho.

A problem is solved by continuing to find solutions.

Kia ora koutou,

The Māori whakatauki “I orea te tuatara ka puta ki waho” speaks to the need for creative thinking, adaptability and perseverance in problem-solving. Achieving the Sustainable Development Goals will require all those things.

The challenges of these past few years have put our creativity, adaptability and perseverance to the test. The disruption caused by the Covid-19 pandemic has required us to find new solutions and new ways of doing things, accelerating innovation. As we settle into ‘the new normal’, we have an opportunity to take that lateral thinking and flexibility with us as we focus on the urgent task of realising the vision of the Sustainable Development Goals to end poverty and inequality, and build peaceful, just, inclusive, prosperous and sustainable societies by 2030.

Creativity, adaptability and perseverance are also reflected in the work that Waipapa Taumata Rau, the University of Auckland, is doing to contribute to the Sustainable Development Goals. While it is impossible to include every activity that is of relevance, this report presents a selection of the University’s activities over the past year. It showcases our contribution to solving sustainability challenges through research, teaching, student support, community engagement and operations, from the local to the global. Our University is dedicated to a sustainable future for all.

Dawn Freshwater

Vice Chancellor





The Pensions and Intergenerational Equity Hub

Associate Professor Susan St. John and her colleague Dr Claire Dale lead the Pensions and Intergenerational Equity or PIE Hub, as part of the new Economic Policy Centre (EPC). The broad goal of the EPC is to encourage economists to translate their academic work into accessible policy input to help solve pressing economic and social issues in New Zealand, and to engage in public dialogue on policy issues. The work of the PIE Hub takes over from the Retirement Policy and Research Centre (RPRC) and builds on 12 years of RPRC archival policy work. As its name suggests however, PIE has a broader lens than just retirement policies. The attention is on policies that affect the distribution of resources between children, young adults, families, and older persons, in the context of a rapidly changing demographic structure. This intergenerational focus highlights the way the fortunes of the older generation are connected with, and are crucially dependent on, the fortunes and skills of the younger working population. Policy design of income support for older people has been relatively successful, especially in poverty prevention.

Pensions in New Zealand are universally available to over-65s, are indexed annually to wage inflation, and are largely politically uncontroversial. By comparison, support for families with young children comprises a highly targeted and conditional tax-credit scheme. New Zealand has been relatively unsuccessful in addressing child poverty, and there are severe issues of intergenerational inequity in housing. Other areas of interest for the hub are the intergenerational transfer of asset wealth (for example, via housing), and the implications of various government policy initiatives, or the lack thereof. To support its outreach goals, the PIE Hub provides technical policy briefings to central government and accessible general commentary to the media on relevant issues. As did the RPRC, the PIE hub makes submissions on proposed legislation, runs public forums, talks and events on relevant issues, and appears before parliamentary select committees to provide expert advice. The goal is to promote cross-party, depoliticised consensus on significant issues of income and equity for people of all ages.

Sustainable Development Goal 1:

END POVERTY IN ALL ITS FORMS EVERYWHERE



79
publications based on
UoA queries

33%
national share of publications
based on UoA queries

29
publications based on
Elsevier mapping

15
courses based on
UoA queries

Two new free healthcare initiatives on campus

The Student Well-being Team at the University of Auckland has launched two new initiatives which remove the financial barriers to healthcare that many of our students face. 'Need a Plan B' enables students to access a fully funded morning after pills and pregnancy tests through our Campus Pharmacy or through Student Health and Counselling Services, while 'Got your period? We've got you' provides students access to free menstrual cups and reusable pads at all of our Student Hubs sites.

Medical student uses TikTok to teach Kiwis about personal finance

Junius Ong, a University of Auckland medical student, delivers key financial lessons and advice in easy to understand, bite-sized videos on MoneyHub's Tiktok. MoneyHub is a free online resource dedicated to helping New Zealanders make important financial decisions, and the idea to take MoneyHub onto TikTok was pitched to its founder by Junius. The account has accrued over 23,000 followers since its launch in August. "I'm glad we're addressing this need by ensuring that anyone with an internet connection can learn to become more financially literate for free," Junius says. "Financial literacy is so important for Kiwis because money is such a big stressor for so many people and it does not get discussed enough."



Sustainable Development Goal 2:

END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION, AND PROMOTE SUSTAINABLE AGRICULTURE



247
publications based on
UoA queries

27%
national share of publications
based on UoA queries

57
publications based on
Elsevier mapping

17
courses based on
UoA queries

Study on sugar wins Explorer Award

Dr Simone Rodda, a specialist in addiction from the University of Auckland's medical school won a prestigious Explorer grant from the Health Research Council to investigate whether or not (or to what extent) sugar is addictive. In particular, she is interested in understanding whether sugar produces similar effects of craving, withdrawal or loss of control as we see in substances such as nicotine, alcohol, and caffeine. Excessive consumption of sugar has been linked to a

range of health problems, including diabetes, tooth decay, and a variety of metabolic disorders. Despite significant population health efforts focussed on education and food labelling, more than half of New Zealanders are consuming double (or more) the recommended proportion of their daily energy as sugar. In essence, although their total caloric intake might be adequate (or even excessive), the composition of their diet is not healthy and balanced. Dr Rodda's

research aims to understand why this is, or, put another way, what factors make it difficult for people to say 'no', and what factors might predict whether or not a person finds themselves in this position. Although sugar has traditionally been seen as non-addictive, an addiction-model has the potential to explain the failure of existing public health measures, and to open up new avenues of treatment that focus more on psychology than diet.

Introducing the world to Aotearoa's native berries

Native Harvest is a start-up created by University of Auckland students that is exploring the use of edible native plants as novel high-value foods. The team are currently focused on wild-harvested totara berries, which have the potential to grow abundantly on Northland farms and have a unique flavour with potential health benefits. Their goal is to make totara berries have the cultural capital and brand power of manuka honey. Co-founders Supannika Chotirat, Luke Liddell and Danarta Sanyata met in 2021 at Summer Lab, a month-long entrepreneurship programme administered by the Business School's Centre for Innovation and Entrepreneurship (CIE). When Summer Lab finished, the group decided to continue working together to turn their idea into a reality. Native Harvest are currently preparing for their next big harvest early next year. Their goals for 2023 are to scale up their harvesting, improve the storage, transport, and processing of the berries, obtain a forager's license, and conduct tests to ensure their berries can be safely sold.

Kiwis quite keen on eating insects, study finds

A survey by University of Auckland researchers found that 59% of New Zealanders have tried eating insects in the past, and of those 80% would be happy to do so again. Neil Birrell, PhD candidate in the School of Biological Sciences, says the findings are very positive for a potential future switch to protein other than animals in the New Zealand diet. "These survey results suggest New Zealanders might be much more flexible about what they eat than we suspected," Neil says. Alongside climate benefits, reducing the proportion of animal protein in our diets can help alleviate food poverty.

Business case competition won by hydroponic farming team

University of Auckland's UN Sustainable Development Goals Business Case Team Competition was won by a team from Narsee Monjee Institute of Management Studies (NMIMS), Mumbai, whose initiative used hydroponic farming to promote sustainable farming and conscious living. It focused on developing small-scale greenhouses in residential complexes, in order to take healthy and fresh salad greens to consumers and to the markets on the same day produce was harvested. In total, 20 teams from universities and colleges across India submitted business cases addressing at least one of the 17 SDGs in their local area. New Zealand's High Commissioner to India, David Pine, commented: "I have been impressed by the calibre of this year's submissions and their innovative approach to addressing some of the biggest challenges of our time."





Delshad Kalantary

Sustainable Development Goal 3:

ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

3 GOOD HEALTH AND WELL-BEING

2328
publications based on UoA queries

34%
national share of publications based on UoA queries

1027
publications based on Elsevier mapping

449
courses based on UoA queries

Brain Box

Doctoral candidate Delshad Kalantary from the Centre for Brain Research and the Faculty of Medical and Health Sciences has built, from scratch, an optogenetic device that can be used to manipulate and record gene expression in the brain by transmitting light through a fibre-optic cable. The goal of her doctoral project will be to test this device on animal models, with the intention of investigating whether it can be used to treat – or even reverse – memory loss in

sufferers of Alzheimers and other forms of dementia. This heterogeneous group of degenerative diseases degrade a person's cognition and memory, and affect tens of millions of people around the world, including an estimated 70,000 New Zealanders. Various pharmaceutical treatments have been trialled over the past few decades, but the diseases have thus far resisted efforts to develop a true cure. Delshad, and her supervisors Dr Andrea Kwakowsky, Associate

Professor Deborah Young and Professor Sir Richard Faull hope that this work will provide a fruitful new avenue for pursuing this goal. Delshad's doctorate is a truly transdisciplinary project, bringing together her skills in mathematics, coding, and physics in service to a fundamentally medical issue. She has also written a user-friendly programming guide to help other neuroscientists analyse the output data in situations where they do not have a programming background themselves.

High-tech tools to beat asthma attacks

School of Pharmacy senior clinical research fellow Dr Amy Chan has initiated a project to develop a risk-prediction tool to help patients and whānau (family) predict asthma attacks. The project has won funding from the Health Research Council, for \$250,000 over three years. "Asthma attacks are still the main cause of loss of life from asthma and loss of quality of life," Amy says. "We don't have any good tools that can predict when someone will have an attack." She will develop a real-time tool that takes information from the environment and smart devices and uses it to help patients and whānau predict and prevent asthma attacks. The tool will then be integrated into a smartphone app, and tested in a clinical trial.

Knighthood for Collin Tukuitonga

Associate Professor Collin Tukuitonga, of the Faculty of Medical and Health Sciences, was made a Knight Companion of the New Zealand Order of Merit in recognition of his services to Pacific and public health in the Queen's Birthday Honours. Sir Collin was born in Niue and is just the third Niuean to be knighted. Among his extensive contributions to health, Sir Collin has had many roles on advisory, strategic and public health groups and committees in Aotearoa and the Pacific. He has been an important voice for the Pacific community through Covid-19 and led the Pacific response. One of the achievements he is most proud of is the first Pacific-owned healthcare clinic, now known as The Fono, which he co-founded in 1989. "To see The Fono, now the largest Pacific provider in Auckland, grow to what it is now, has been wonderful," Sir Collin says.

New Zealand's first mobile optometry clinic launched

Vision Bus Aotearoa, run through the School of Optometry and Vision Science and funded entirely by philanthropy, launched on 10 June, and is now delivering full eye tests and glasses to Aucklanders of all ages through marae and other community organisations. "We know that across greater Auckland, one in ten schoolchildren needs glasses but doesn't have them," says Professor Steven Dakin, former head of the School of Optometry and Vision Science, who has been working on the project. "This is concerning because they can't see whiteboards, which impacts educationally. More worryingly, we see potentially blinding conditions regularly going undiagnosed in children, with Māori and Pacific students disproportionately affected." Veeran Morar, professional teaching fellow in Optometry and Vision Science, says: "Everything a modern optometry clinic has, we have on board. It's a New Zealand first."



Dr Amy Chan

Brain implant technology could spark a health revolution

Researchers in the Implantable Devices Group at the Auckland Bioengineering Institute (ABI) are developing a medical pressure sensor that could be implanted into the brains of patients with hydrocephalus. If successful, it would be the first New Zealand-designed fully implanted electronic medical device. Hydrocephalus is a condition characterised by an increase in fluid around the brain which, unless treated, is fatal. Treatment involves a thin tube surgically implanted in the brain to drain and divert excess fluid. However, the tube often blocks, and it is difficult to tell when this begins to happen, other than by waiting to symptoms to develop. "In children, 50% of the tubes will have blocked within two years, and they will need further invasive surgery to fix the blockage," says Professor Simon Malpas, who is leading the team developing the device. The device would offer patients and caregivers both peace of mind and early warning of a likely blockage, thus preventing unnecessary hospitalisations.

Care and support through Te Papa Manaaki | Campus Care

Te Papa Manaaki | Campus Care, which supports the health, wellbeing and safety of everyone at the University, expanded its team from two to nine case managers. The case managers work with students to better understand their concerns and needs, streamlining interactions with campus services, and developing a care and support plan that works in the best interests of each individual. Te Papa Manaaki | Campus Care works closely with Māori and Pasifika cohorts, and in collaboration with the Pro-Vice Chancellor Māori and Pro-Vice Chancellor Pasifika offices, to develop initiatives and ways of working that support the success of these cohorts.

Team awarded with Prime Minister's Science Prize

The Prime Minister's Science Prize, which recognises 'transformative science' that has had a significant social, economic, health or environmental impact, has been awarded to a multidisciplinary team led by Distinguished Professor Dame Jane Harding. The team's research has investigated why high and low blood-sugar levels occur in newborns, how to monitor those levels, how they affect a child's development, and what to do. Dame Jane is particularly thrilled that the prize is awarded for the efforts of the entire team, and says all are enormously honoured to be recognised. "We are talking about trying to prevent brain damage in newborn babies, which is so obviously important," she says. The team plan to use the \$500,000 prize money to continue to do long-term follow-up research with the babies they have worked with, and to develop national best practice guidelines.

New study finds connection to te ao Māori supports exclusive breastfeeding

A study by University of Auckland researchers, recently published in the *New Zealand Medical Journal*, found that mothers with greater connections to te ao Māori (broadly translated as the Māori world) are more likely to exclusively breastfeed their babies for the recommended six months. The research drew on information from over a thousand wāhine (women) Māori participating in 'Growing Up in New Zealand', New Zealand's largest study of child development. Dr Denise Bennett, one of the authors of the study, says that the findings contribute to evidence on the impact of colonisation on Māori, and how te ao Māori offers specific benefits for pēpi (babies) and wāhine Māori. Co-author Dr Gilchrist says the findings can inform interventions to protect, promote and support Māori women to exclusively breastfeed their babies.

Breakthrough in search for tinnitus cure

Researchers at the University of Auckland have generated encouraging results from a clinical trial of a mobile-phone-based therapy to treat tinnitus. The study randomised 61 patients to one of two treatments, the prototype of the new 'digital polytherapeutic' or a popular self-help app producing white noise. On average, the group with the polytherapeutic (31 people) showed clinically significant improvements at 12 weeks, while the other group (30 people) did not. "This is more significant than some of our earlier work and is likely to have a direct impact on future treatment of tinnitus," says Grant Searchfield, Associate Professor in Audiology. Dr Phil Sanders, Audiology Research Fellow, found running the trial personally rewarding. "Sixty-five percent of participants reported an improvement," he says. "For some people, it was life-changing." The results have been published in *Frontiers in Neurology*.

Medal for Māori health advocate

The Royal New Zealand College of General Practitioners (RNZCGP) awarded its annual Community Service Medal to Associate Professor Matire Harwood (Ngāpuhi), in recognition of her tireless advocacy for Māori health, especially during Covid-19. "Dr Harwood is well-known as a hauora (health) Māori leader and her passion for improving Māori health outcomes through research, advocacy, education and clinical practice is really making a difference," says RNZCGP president Dr Samantha Murton. Dr Harwood is a senior lecturer in the Department of General Practice and Primary Care at the University of Auckland, supervises doctoral candidates and also works as a general practitioner at Papakura Marae Health Clinic, among other roles. She has undertaken medical research on asthma, heart disease and diabetes. She says that the medal came as a complete surprise: "You feel you are just doing your job, trying to help out as much as you can, being a voice for your community and supporting whānau (families) to access the Covid vaccine."

Top cancer award

Cristin Print, professor in molecular medicine and pathology in the Faculty of Medical and Health Sciences, has won the New Zealand Society of Oncology (NZSO)'s prestigious Translational Research Award, presented annually to 'an eminent New Zealand investigator who has made outstanding contributions to translational cancer research'. Cristin has many roles, including Head of the University's Genomics into Medicine strategic initiative, Bioinformatics Director of Grafton Clinical Genomics, Deputy Chair of the New Zealand Institute of Environmental Science and Research (ESR), and lead researcher in the Healthier Lives National Science Challenge. In the Maurice Wilkins Centre of Research Excellence, he also co-leads the centre's cancer theme with Associate Professor Adam Patterson.

Improving access to healthcare with digital people

Researchers at the Auckland Bioengineering Institute (ABI) have received over \$4 million to investigate how 'digital people' could be used in healthcare. The funding comes with access to animated digital people pioneered by Soul Machines, a New Zealand AI company. Professor Merryn Tawhai, deputy director of the ABI, will lead an international consortium to explore how digital people could be used to support the management of Type 2 diabetes and cardiovascular disease (CVD). "Many patients struggle to understand their condition and how they should manage it, and very often don't comply with treatment strategies recommended by their doctor," says Merryn. "While we know intensive interventions with clinical and personal coaching are effective, their cost puts them out of the reach of most people." Her team aims to create a platform of interconnected digital tools, starting with a culturally appropriate digital health navigator to coach patients in understanding and self-managing their condition.





Sustainable Development Goal 4:

ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL



326
publications based on
UoA queries

32%
national share of publications
based on UoA queries

125
publications based on
Elsevier mapping

126
courses based on
UoA queries

Learner Success Plan

The University recognizes that its students come from diverse backgrounds, and with different levels of preparedness for tertiary study. This presents particular challenges for Māori and Pacific students, who are more likely than average to come from high schools in economically disadvantaged areas where there are limited opportunities to complete the curricular and co-curricular activities that could best prepare them for university life. In partnership with the New Zealand Tertiary Education Commission, the University has developed a Learner Success Plan (LSP), which aims to address historical disparities that continue to affect these students. In

particular, the plan targets undergraduate pass rates, first-year undergraduate retention, and the transition of undergraduate students to postgraduate programmes, with the aim of achieving parity across ethnic groups within the next three years. The plan is far-reaching, and seeks to support students both before and after they enrol at university. For pre-university students, the University offers programmes like New Start, the Foundation Certificate, the Pacific Academy (for mathematical skill development), and the Certificate of Health Sciences for Māori and Pacific students. For current students, targeted actions have been created in both the academic and non-

academic spheres. On an academic level, new accountabilities and reporting mechanics have been developed to monitor student engagement, with a view to identifying and supporting students who are struggling at the earliest opportunity, for example through an extension of the Tuākana programme, which is named after a Māori term for an older sibling, and offers culturally-appropriate tuition services to Māori and Pacific students. In terms of wider university life, the University is working to expand accommodation, recreation, and pastoral services, and has developed Oranga Tauira, which is a comprehensive student well-being plan.

Curriculum Framework Transformation Programme

The University has established the Curriculum Framework Transformation Programme to support the delivery of our Education and Student Experience priorities: accessible, equitable lifelong higher education opportunities; student-centric learning, co-curricular and extra-curricular cultures; education that is research-informed, transdisciplinary, relevant and with impact for the world; and graduates who make the world better tomorrow than it is today. The Programme is focused on four intersecting core components for curriculum: structure (improving pathways and access for students and incorporating new hallmark content); content (including mātauranga Māori pathways, Te Tiriti o Waitangi principles and accountabilities and kaupapa Māori; sustainability; transdisciplinarity, innovation and entrepreneurship; and work- and community-integrated learning); signature pedagogical practices (relational learning, assessment for learning, technology enhanced learning); and the social, cultural and emotional needs of students, staff and communities to which they belong. Alongside supporting the achievement of the strategic priorities, the Curriculum Framework Transformation Programme aims to assist in addressing academic workload issues by ensuring effort is focused on priority areas, increase student satisfaction, success, completions and graduate employment rate for student cohorts, in particular Māori and Pacific students; and support a sustainable future for the University.

Graduate Profile refreshed

The Graduate Profile, a critical foundational statement for teaching at the University, has been refreshed this year. The Graduate Profile captures our aspirations for our students: at the heart of that vision is that the University fosters graduates who make the world better tomorrow than it is today. The University's aspirations for our students are embodied by our Māori name, Waipapa Taumata Rau, which was gifted to the University by Ngāti Whātua Ōrākei, te ahi kā of Tāmaki Makaurau. This name signals a call to excellence in scholarship and the pursuit of knowledge, sustainability, relevance, fairness and a positive impact in all we do. In particular, the theme Waipapa ki Uta: The Landing Place – one of the five themes that articulate graduates' educational journey – speaks to connecting to place for sustainable and enduring partnerships, and fostering a range of capabilities around sustainability.

SDG4 event at the THE Impact and Innovation Summit

At the 2022 Times Higher Education Impact and Innovation Summit, held in Stockholm, the University of Auckland hosted a pre-summit event focusing on how institutions can ensure that they meet the goals of SDG4 by 2030. Delegates included global decision-makers, influencers and leaders from academia and industry, all with a shared goal to better understand the opportunities and challenges posed by SDG4, and how collaboration across sectors could result in impact that matters. Throughout the event, sessions prompted the attendees to think differently about the role of technology, collaboration and sustainability in providing education for all. Recordings of the pre-summit event are available to watch on the University website.



Youth Advisory Group launched

The University of Auckland has teamed up with a number of high schools to create the Youth Advisory Group, to learn how to better engage with incoming rangatahi (youth) students. The Youth Advisory Group comprises 19 students from Auckland and nine from Wellington. It is the first of its kind to be launched at the University of Auckland. Schools and Community Engagement Adviser Max Murray believes a group like this is an effective way to understand what students look forward to as part of a university experience: "We want to improve our engagement at high school level and better support young people into university, and we want hear from young people directly. The advisory format gives us the opportunity to talk to a varied group of students from all secondary school year levels and allows them to provide feedback about our engagement initiatives, and about their university pathways in general."

A year of Academic Aid

The University of Auckland's Faculty of Arts offered some of its Korean and Asian studies courses online and in real-time at the Kyrgyzstan campus of the University of Central Asia, through academic aid. The University of Central Asia serves developing nations in the region, including Afghanistan and northern Iran. "What is special about this is that we were able to 'aid' this rather special university in Kyrgyzstan with our courses, which the University of Central Asia could not offer due to its lack of staff in this field," says Dr Changzoo Song, senior lecturer in Korean Studies. The initiative was facilitated by faculty funding with assistance from the Academy of Korean Studies grant, which is sponsored by the Republic of Korea's Ministry of Education. The one-year trial project was positively received by University of Auckland students and University of Central Asia students.

Maker space empowers Māori and Pacific students

The University of Auckland's UniBound academic enrichment programme is designed to help Māori and Pacific school leavers achieve a smooth transition into University life through practical workshops, team building activities and peer mentoring over the summer. This year, the UniBound programme was split into two cohorts – Tōia ki Waipapa (UniBound Māori) and UniBound Summer (UniBound Pacific). As part of this year's programme, students had the opportunity to take part in two creative workshops at Kura Matahuna (Unleash Space), the University of Auckland's innovation hub and maker space run by the Business School's Centre for Innovation and Entrepreneurship. Unleash Space Manager Sean Kelly worked closely with the UniBound team to design workshops that would provide not only an educational experience to each group of students but a culturally meaningful one too.

School students inspired to pursue STEM through practical workshops

The Auckland chapter of Robogals organised three interactive STEM workshops for primary and intermediate school students at Unleash Space, the University of Auckland's state-of-the-art innovation hub and maker space run by the Business School's Centre for Innovation and Entrepreneurship. Robogals is a non-profit global organisation that aims to inspire, empower, and educate youth to pursue STEM and promote diversity in STEM fields, and Robogals Auckland is a student-run club based at the University of Auckland, running fun, practical workshops in primary and secondary schools throughout the city. "All the kids were so enthusiastic about the different workshops and genuinely seemed to have a lot of fun," said Sabina Aquino, Mechatronics Engineering student and Secretary of Robogals Auckland.

Education technology firm set up by UoA students helps teachers during pandemic

During the pandemic, education technology firm Kami, which originated from Auckland University, offered its products for free to its 32 million teachers and students in 180 countries. Kami's software lets teachers share learning resources, conduct virtual classes, provide feedback, and more. The concept was first devised in 2012 by three University of Auckland students as a way to collaborate on their study notes. They went on to develop their idea through the Velocity \$100k Challenge business planning competition, administered by the Business School's Centre for Innovation and Entrepreneurship. Following success in the competition, the team behind Kami evolved their product to create a cloud-based platform that allows educators and students to annotate, view, edit, and collaborate on digital documents from anywhere, transforming the way educators engage and interact with their students.





Associate Professor Jemaima Tiatia

University welcomes new Ihonuku te Moana-nui-a-Kiwa Jemaima Tiatia

In June this year, the university officially welcomed its new Ihonuku te Moana-nui-a-Kiwa, Pro Vice-Chancellor Pacific, Associate Professor Jemaima Tiatia, in a pan-Pacific ceremony at the Fale Pasifika. The celebration included a Cook Island Turou, aspects of a Fijian Yaqona ceremony and was led by Samoan, Tongan, Niuean and Cook Island staff and students.

Jemaima is the first woman in the role of Pro Vice-Chancellor Pacific, as well as the first Pacific woman to be a Pro Vice-Chancellor at the university. Jemaima is the eldest child in her immediate 'aiga (family) and eldest grandchild on her mother's side, with gafa (genealogy) belonging to the Sāmoan villages of Tāga, Sālelologa, Vaimoso and Si'umu. Her gafa connects her to the leader of the Mau movement and she comes from a prominent Sāmoan 'aiga.

Her academic career began with a BA, majoring in education and then an MA honours. Her masters thesis was published as a book, *Caught between Cultures* (1998), a controversial insight into the tension between the traditional role of the church and its impact on young Pacific people's mental, emotional and spiritual well-being. The book discussed uncomfortable and ongoing truths within Pacific communities and wider systemic inequities. Her PhD in Community Health was funded by the Health Research Council of New Zealand, and focused on suicide prevention among youth. Before she took up the Pro Vice-Chancellor Pacific role, she was teaching six courses including a postgraduate course on Intervention, Prevention and Promotion of Pacific Well-being. She is a leading Pacific expert on Pacific peoples' mental health and well-being and suicide prevention, and a board member on the inaugural Mental Health and Well-being Commission. Going forward, she will continue her research alongside her role as Pro Vice-Chancellor Pacific.

Jemaima says she will be an effective leader by bringing her whole authentic self to the table. "To be a strong leader you do need to be comfortable with going against the grain." She describes her own leadership style as 'fearless and respectful', a testament to her 'aiga and their love.

Jemaima's role in the Pasifika Rainbow community has strengthened her leadership skills and empathy. "Pacific peoples are born to be leaders and shine, however, at times, there is always a 'but'. My 'but' was my sexuality and removing the 'but' has been life changing. I'm more fearless and really trust who I am, who my ancestors are and who my descendants will be," she says. "I know I can make a difference and that my ancestors opened this door and probably pushed me in. We are only here for a short time; every second counts."

Sustainable Development Goal 5:

ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

5 GENDER EQUALITY



83

publications based on UoA queries

85

publications based on Elsevier mapping

32%

national share of publications based on UoA queries

14

courses based on UoA queries

Professor Christine Woods – Chair for Women in Entrepreneurship

Professor Christine Woods has been appointed as the Inaugural Theresa Gattung Chair for Women in Entrepreneurship. She will be establishing the Aotearoa Centre for Enterprising Women, with a focus on creating opportunities for PhD and post-doctoral research. In addition, she will be looking to engage with international scholars in the women in entrepreneurship space, with a view to bringing eminent academics to the Business School to share their research. "Going forward, I am very much looking forward to working with colleagues across the University and in the wider business community to engage and encourage the entrepreneurial potential of girls and women in Aotearoa," she says.

Secondary school students unleash their creativity at Women in Engineering camp

Fifty secondary school students participated in a Creative Inspiration and Design workshop at the University of Auckland's Unleash Space, as part of a 3-day Women in Engineering holiday camp. The Engineering faculty's Women in Engineering Network launched in 1993 to support more young women into careers as engineers, and the University of Auckland now has one of the highest participation rates of women in tertiary-level engineering in Australia and New Zealand. "While this is great progress, we cannot be complacent and there is more work to be done so that the engineering industry reflects the diversity we have in New Zealand communities," Women in Engineering Project Manager Ashleigh Fox says. "This is why the Faculty of Engineering puts such great effort into encouraging young women into engineering careers through outreach and academic support programmes at secondary schools, open days at the University of Auckland, our Women in Engineering network, mentoring and other support once on campus."

Pacific documentary series by an all-female film crew

Litia Tuiburelevu, a Research Fellow in the Faculty of Law, led an all-female Pacific filmmaking team creating a new documentary series called 'Still Here 09'. She is of Fijian, Tongan and Pākehā descent, and grew up in Central Auckland. A large cohort of Pacific people migrated to New Zealand and settled in the inner city suburbs between 1950 and 1980, but with the onset of gentrification, the large majority of these families had to leave and move further away to areas such as West and South Auckland. The series tells the stories of four Pacific whānau (families) who still live in Central Auckland, highlighting their strengths, challenges and cultural shifts they have faced. "I always wanted to make films and have had a passion for film in general, but, you know, being a good Pacific girl I listened to my parents and being a lawyer was the safe option," Litia says. "I found that the Pacific issues I saw in law practice and law research such as racism, gentrification and inequitable systems gave me a strong foundation that worked in with my filmmaking ideas too."



Sustainable Development Goal 6:

ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL



107
publications based on
UoA queries

23%
national share of publications
based on UoA queries

71
publications based on
Elsevier mapping

13
courses based on
UoA queries

A revolutionary method of safeguarding our waterways

A group led by Dr Alex Risos, of the Faculty of Science, won a seed grant in the 2021 Velocity Innovation Challenge, an initiative run by the Faculty of Business and Economics, for their proposal to develop a new way of testing water quality. The proposal was also a finalist in the KiwiNet awards. Dr Risos believes that access to clean water is a basic human right, but notes that about a billion people globally do not have access to a reliable source, and that around a hundred thousand New

Zealanders fall ill every year from water-borne illnesses and contaminants. A particular challenge in this area is that current testing methods are prohibitively expensive, slow (often taking days to return results), and sometimes inaccurate, in that they do not always capture the full range of chemical and microbiological contaminants. To that end, Dr Risos and his colleagues are working on the Waicorder™, named for the Māori word for water (wai) and the hand-held

sensor device used in Star Trek, the tricorder. This device is intended to allow anyone, anywhere, to obtain detailed water quality data in a matter of seconds, rather than days. This would benefit not only individuals and communities, but also private industry, especially beverage manufacturers who can suffer significant losses when their source water is contaminated. With the Waicorder™, Dr Risos and team aim to boldly do what no one has done before.

Smart eco-solution to reduce phosphorus in waterways

Senior Lecturer Wei Yu and Research Fellow Bing Li of Chemical and Materials Engineering at the Faculty of Engineering are preparing to pilot their process for phosphorus recovery, extracting struvite from wastewater on a commercial scale, to create environmental and financial benefits. If all goes well with their planned pilot plant in China, Yu and Li anticipate their technology will be ready to commercialise internationally within a few years. First, though, the researchers are looking for support and partners to launch a pilot in New Zealand, where fertiliser runoff is an especially big problem. Livestock farmers interested in reducing water pollution could be partners, as could fertiliser companies. In addition, Yu and Li are also looking for government support because their work could help meet national environmental goals.

Research to toilet train cows for positive environmental impact

University of Auckland-affiliated researchers have successfully demonstrated that cows can be toilet trained, helping to reduce both water contamination and greenhouse gas emissions. Lindsay Matthews and Douglas Elliffe's research with German colleagues has been published in the prestigious journal *Current Biology* and is profiled in *Science*. "People's reaction is, 'crazy scientists,' but actually, the building blocks are there," says Lindsay. Their next step will be to bring their research to the New Zealand context, where cows spend more time outdoors. There is interest in the dairy industry to explore this as a potential way of meeting emissions targets, and a further application of the research may be to extract and reuse nutrients from the collected cow urine.

Harnessing technology for water monitoring

One of the winners of the 2022 Velocity \$100k Challenge, the University of Auckland VentureLab incubator programme, was Delta Waterways. Their product, driven by the latest in satellite imaging and machine learning technology, significantly enhances the frequency, resolution, coverage, and accessibility of environmental monitoring data. It represents a radical paradigm shift in the monitoring of freshwater and enables a much better understanding of environmental degradation, informing policy and driving positive change.



Dr Alex Risos



Making geothermal energy truly sustainable

Associate Professor Sadiq Zarrouk, Dr Eylem Kaya and their colleagues are working on a new technology to improve the environmental sustainability of geothermal energy. New Zealand is the fifth largest producer of electricity from geothermal energy in the world, and energy from this source makes up around 18% of the total electricity market in the country. Although geothermal energy is much cleaner than fossil fuels in terms of greenhouse gas emissions, there is still an emission cost due to the natural presence of carbon dioxide (CO₂) and hydrogen sulfide (H₂S) in the underground geothermal sources that are used to drive turbines in geothermal power plants. Although these plants cycle waste water back into the underground reservoirs in order to maintain pressure in

the system, some of the gases inevitably escape, which has both environmental and economic impacts, in that the plant must then purchase offset credits. Exactly how much the plant emits is highly variable and depends on the nature of the geothermal source. This has led the Climate Commission to recommend the closure of some of the most polluting plants, which would be a significant loss of expensive infrastructure. The team are hopeful that they can make the plants more environmentally friendly to keep them operational. While previous and current work in this area has focussed on re-dissolving the gases into the wastewater and sending them back underground, this still leaves the risk that the gases may escape in the future or travel underground to the production wells. What Associate Professor

Zarrouk and Dr Kaya aim to do instead is to inject ions into the wastewater that will force the gasses into a stable, mineral (fossilised) form that is at no risk of entering the atmosphere, even under extreme conditions such as an earthquake rupturing the reservoir. Although this will not completely eliminate the emissions, it can make geothermal energy even cleaner and raise the possibility of expanding the geothermal power network to replace the far more polluting fossil fuel plants in New Zealand and many other countries. The new mineral entrapment technology also has the potential to be applied to other carbon-intensive sources such as fossil fuel power plants. The work will be done in close consultation with local Māori communities and will involve recruiting Māori PhD students.

Sustainable Development Goal 7:

ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL

7 AFFORDABLE AND CLEAN ENERGY



135

publications based on UoA queries

36%

national share of publications based on UoA queries

141

publications based on Elsevier mapping

11

courses based on UoA queries

Chemical sciences researcher wins James Cook award

Associate Professor Geoffrey Waterhouse from the School of Chemical Sciences has been awarded a James Cook Research Fellowship, by the Royal Society Te Apārangi, to pursue his work which will help New Zealand decarbonise the energy sector. The key technologies in the Green Hydrogen Economy involve two electrochemical reactions - the 'oxygen evolution reaction' and the 'oxygen reduction reaction'. Through the Fellowship, Associate Professor Waterhouse will explore the potential of a new type of catalyst - metal single-atom catalysts - for driving these reactions. The development of metal catalysts based on earth abundant elements, capable of driving these reactions efficiently, is essential for the growth of a Green Hydrogen Economy in New Zealand and elsewhere.

Improving methane capture and energy generation

University of Auckland's Associate Professor Saeid Baroutian and PhD graduate Dr Mazdak Rasapoor have been working with EnviroNZ to improve landfill gas generation at Hampton Downs Power and Resource Recovery Centre (PARRC). Dr Rasapoor's PhD research focused on maximising the site's landfill gas capture at a consistent rate to avoid the summer slowdown, and has allowed EnviroNZ to capture increased volumes of methane, directly leading to year-on-year increases in renewable electricity generation. In the first eight months of 2021, the landfill exported an additional 3,000 megawatts of energy and lowered its unique emissions factor (tonnes of carbon dioxide emitted per tonne of waste) by 5.5%.

Preventing energy price spikes with hydro storage

Researchers from the Energy Centre at the University of Auckland have been investigating ways to prevent energy price spikes caused by the fluctuating capacity of renewable electricity sources, concluding that with sufficient hydro storage capacity, a hydro/wind power combination could provide New Zealand with an ideal renewable low-carbon power solution. While the government has set a target of achieving 100% renewable electricity by 2035, the growth in wind powered generation has raised concerns about price variability arising from intermittent supply. Le Wen, Kiti Suomalainen, Basil Sharp, Ming Yi, and Mingyue Selena Sheng looked at ways of mitigating renewable power's price volatility in their paper 'Impact of wind-hydro dynamics on electricity price: A seasonal spatial econometric analysis'.



Sustainable Development Goal 8:

PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL



87
publications based on
UoA queries

21%
national share of publications
based on UoA queries

62
publications based on
Elsevier mapping

36
courses based on
UoA queries

Virtual Micro Internship Programme for International Students

The University of Auckland runs a virtual micro internship programme for international students. This is a work-integrated learning initiative, providing international students (on-shore and off-shore) with the opportunity to work on real business challenges while being supported by interactive learning content and dedicated mentors.

The programme is designed to support students in building confidence and competency, critical thinking, communication

skills, and social and environmental responsibility.

The virtual micro internship programme launched in July 2020 and has successfully delivered 6 editions, with the most recent edition running across June and July 2022. This edition included 236 International students, with 70% based off-shore. An evaluation survey found that 92% of respondents felt the programme increased their employability.

“This program has developed my communication and collaboration skills and given me a valuable learning experience as a team leader,” says Maya Wambukomo, who completed the internship. Camilla Dominique Hilario, another intern, said “[The internship] has provided me the opportunity to improve my research, writing, and presentation skills; and gain insights on the New Zealand working culture and market.”

Doctoral Entrepreneurial Leadership Programme launched

The University of Auckland has launched its inaugural Doctoral Entrepreneurial Leadership Programme, designed to equip doctoral candidates from all disciplines with an entrepreneurial mindset and skills. Programme Manager Judith Marecek says: “Doctoral students have a unique skill set that, when combined with an entrepreneurial mindset and capability, can lead to increased impact from research, leading to a wide range of benefits for the economy and society.” Dr Heidi Collins, Doctoral Experience Manager at the University’s School of Graduate Studies, sees the programme as a valuable opportunity for students to create meaningful change from their research. She says: “Not only can this programme open new career pathways for candidates, but developing an entrepreneurial mindset can help them to better identify opportunities in the research landscape and creative ways to make a real-world impact.”

Start-up Interns programme a win-win situation

The University of Auckland Business School’s Centre for Innovation and Entrepreneurship (CIE) runs a Start-up Interns programme, matching student applicants with ventures participating in CIE’s VentureLab incubator, which accommodates the five winning teams from CIE’s Velocity \$100k Challenge business planning competition. Internship opportunities are open to students of all faculties, and their wages are paid for by CIE. Kyle de Thier, a second year Bachelor of Commerce student who interned with Fistbump, says: “The internship has shown me the things I like to do and the things I don’t like to do. This is extremely valuable to me, as it taught me more about myself and has allowed me to create an even clearer path for what I want in the future.” Max Johansson-Pugh, studying for a Bachelor of Commerce and Bachelor of Arts conjoint degree and interning with MedTech venture SuperCarbon, says: “The connections I made and the warm working environment we created was the highlight of my experience.”

Entrepreneurship centre staff present entrepreneurial campus at major conference

Staff from the University of Auckland Business School’s Centre for Innovation and Entrepreneurship (CIE) represented New Zealand at the 2022 World Congress of the International Council of Small Business, the world’s largest international SME organisation dedicated to small business and entrepreneurship. The theme for the 2022 ICSB World Congress was the Entrepreneurial Revolution. CIE Director Darsel Keane and Innovation and Entrepreneurship Engagement Manager Naomi Bradshaw delivered a workshop based on their co-written paper ‘Creating an Inclusive, Cross-Disciplinary, Entrepreneurial Campus’. “It was invigorating to meet with peers who are similarly driven to create graduates who will be the change makers the world needs,” Darsel says. “I return to New Zealand with new knowledge, networks and ideas and am excited for what’s next.”



UniServices launches new internship programme

A new UniServices internship programme is giving rangatahi (youth) Māori a chance to learn about the commercialisation process and contribute their voices and skills to UniServices. The programme brings in the lived experience, skills and ideas of rangatahi Māori while helping emerging leaders build their skills and experience, says UniServices Kaiārahi Tui Kaumoana, who had the idea of creating a Māori internship programme. Te Rina West (Te Arawa, Ngāti Awa, Ngāti Tūwharetoa, Ngāi Tūhoe) is UniServices' inaugural Kaitātari Tauhokohoko | Commercialisation Analyst. "A lot of what I was doing at the University was oriented towards Māori student success," says Te Rina. "Working for UniServices was stepping outside my comfort zone, but knowing the company put value in the Māori culture made me want to challenge myself."

Bringing the Property Services team back together after Covid

To facilitate the post-Covid transition from distance working back into the office, the Property Services team signed up for the BeneFit Programme, a wellness initiative incorporating group exercise sessions and nutrition coaching. Exercise as a team-building activity is a proven way to increase productivity, motivation and an overall feeling of oneness. Matthew Newey, who runs the programme, says: "The connection and encouragement that the teams experience is a major reason for the programme's success." The Property Services team agrees that a significant benefit has been the positive team support of each other as they work through the programme, along with heaps of friendly banter. Emmett Mackle, Associate Director – Property Services, says: "This is an opportunity for colleagues from all our different teams to work out together and get to know one another. We don't all work in the same office, and many have outdoor jobs like security and grounds staff. This creates a great team environment where different teams mingle and have fun."

Europe Institute Seminar on Sustainable Trade and Climate Change

The New Zealand Centre for Environmental Law (NZCEL), hosted by the University of Auckland Law School, co-hosted an expert panel seminar with the Europe Institute on 12 May 2022, focusing on Sustainable Trade and Climate Change in the New Zealand-EU Free Trade Agreement. The panel consisted of Caroline Lambert (Head of Trade for the EU Delegation to Aotearoa), Brett Longley (Senior Policy Analyst, Trade Policy and Negotiations Division, Ministry of Foreign Affairs and Trade) and NZCEL's Caroline Foster. Professor Foster focused on alternative approaches to advance climate and sustainable development objectives through a plurilateral 'pathfinder' agreement, the Agreement on Climate Change, Trade and Sustainability, currently under negotiation.



Te Rina West



Andrew Eberhard

Sustainable Development Goal 9:

BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALISATION AND FOSTER INNOVATION

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

134
publications based on UoA queries

34%
national share of publications based on UoA queries

148
publications based on Elsevier mapping

14
courses based on UoA queries

Hikina kia Tutuki: flagship University research centres

The University has established seven flagship University Research Centres to respond to persistent and urgent challenges faced by Aotearoa New Zealand.

The University's strategy *Taumata Teitei* focuses researchers and professional staff on four impact areas: sustainability; health and well-being; advancing just, cultured, and engaged communities; and ethical innovation and technology.

Each impact area brings a raft of complex and interlinked issues. In response the University

has initiated the Hikina kia tutuki fund. The Māori name, gifted to the University, means 'Rise to the challenge'. The initiative signals a new approach to research by funding transdisciplinary and interdisciplinary approaches with deep community engagement to develop innovative responses to multi-layered problems.

The Hikina kia Tutuki flagship research centres are:

- Centre for Pacific and Global Health
- Māpihi: Māori and Pacific Housing Research Centre

- Ngā Ara Whetū / Centre for Climate, Biodiversity, and Society
- Centre for Co-Created Ageing Research CCREAT-AGE
- James Henare Research Centre (the University's leading Māori transdisciplinary research centre)
- Centre for Brain Research
- Te Aka Mātauranga Matepukupuku / Centre for Cancer Research

New Technology Hub to help students and staff design the future

The University of Auckland Business School is set to open a Technology Hub with cutting-edge technology for education and research, with support from Vodafone. The Hub will prepare graduates for the future of work by providing a unique learning experience not offered by any other business school in New Zealand. As the University's first space utilising 5G, the Technology Hub will initially feature technologies including augmented reality/virtual reality, internet of things, and 3D printing, which will be incorporated into extra-curricular and curricular programming. "My vision is to have a space where staff, as well as students, can freely explore and experiment with emerging tech," says Andrew Eberhard, the Business School's Associate Dean Technology. "I'm most excited to see what students come up with. I am always amazed by how much creativity and passion the student body has, and I'm incredibly excited to see how they unleash that in the Technology Hub."

TechWeek: Translating research into successful start-ups

In May, the Auckland Bioengineering Institute (ABI) held an event for TechWeek, highlighting the successes and challenges

of harnessing the commercial potential of research. 'Translating research into successful start-ups' featured Sonia Dupuch, presenting the Kiwrious Science Experience, the first "Kiwi made" science learning tool of its kind in New Zealand; Professor John Windsor, demonstrating in person the FaceHAP, a wearable 'personal trainer' he and his team developed to discourage people from touching their face to stop the spread of Covid-19; and Dr Vickie Shim, discussing her research into the long-term effects of concussion, including computational modelling of the brain, and the model's commercial potential. For more than 20 years, researchers at the ABI have been breaking boundaries to improve the diagnosis and treatment of injury or disease and in the development of new technologies, and their research has led to the development of more than 20 spin-off companies.

Using solar energy to enhance equipment lifetime

One of the winners of this year's Velocity Innovation Challenge was a project making use of solar energy to protect metallic material in industrial constructions (such as buildings) to enhance equipment lifetime, with batteries and/or capacitors regulating the flow of electricity to keep it constantly running when sunlight is not available. The annual Velocity Innovation Challenge gives participants the opportunity to win \$1,000 for 1,000 words articulating an idea for a

start-up. Run out of the Business School's Centre for Innovation and Entrepreneurship, it is open to students and staff of all faculties, providing participants with an opportunity to think about innovative solutions to a problem of their choice.

Harnessing the internet of things to raise trust in sustainability reporting

Researchers from the University of Auckland and the University of South Australia have outlined a way for businesses to improve their sustainability information gathering and reporting by harnessing blockchain and the internet of things, making the information more transparent and accessible. Transparent reporting on SDGs is problematic, and verifying where individuals' carbon-offset payments are going and how they are being used is difficult, but this framework can help businesses to improve outcomes. "In our research paper, we outline the business opportunity for enterprises to provide measurement technology, linked to the internet of things, which feeds information into a blockchain, providing reliable and trusted data and an incentive for other parties around the globe to contribute towards progress on the Sustainable Development Goals," says Charl de Villiers, University of Auckland Professor of Accounting.



Māori Language Revitalisation Plan

Te reo Māori is the indigenous language of New Zealand, but due to many decades of neglect and harmful government policies, it is spoken by only around 4% of the population, and is listed as 'vulnerable' in the UNESCO Atlas of Languages. As part of its plan to support the growth and revitalisation of te reo, the University has committed to having all eligible permanent and fixed term staff participate in professional development for te reo Māori learning by 2025, with the

goal that by 2040, 50% will have the ability and confidence to demonstrate a basic level of competence in the language. The University council has likewise committed to publishing statistics on progress towards this goal in its annual reports. To facilitate these goals, a range of learning options were developed especially for staff. These include a self-paced online course (*Te Reo Māori Pronunciation Online*), a group-learning option (*Te Akoranga Kairangi*),

and a credit-bearing paper, MĀORI131 *Te Taumata Ngaio*. Initial uptake has been promising, with several hundred staff successfully completing one or more of these courses over the past year, and many more enrolled for current or future periods. All three courses aim to give staff the tools they need to correctly pronounce Māori words, understand simple Māori sentences, and to deliver a basic pepeha, or personal introduction.

New equity policy

The University of Auckland has drafted a new Equity Policy, which is framed by the ideas of manaakitanga – the obligation to uphold the mana (broadly translated as status) of others; and of whakawhanaungatanga – the establishment and maintenance of respectful relationships. The policy deliberately does not provide a list of groups, and instead identifies the University's responsibility to dismantle barriers and discrimination by eliminating "-isms and -obias", particularly for groups that are and have been historically disadvantaged or marginalised. Associate Professor Te Kawehau Hoskins, Ihonuku Pro Vice-Chancellor Māori, says the new policy makes it clear that achieving equity is everybody's responsibility: "We are all connected, either by kin ties or by our shared history and connection to this place; by the complex web of relationships across time that locate people and groups in society. ... by focusing on relationships you foreground a sense of responsibility to others, and to possibilities for more equitable lives for all."

Landmark health survey of rainbow Pasifika community

The Manalagi Project, a three-year Health Research Council-funded project, ran its landmark health and wellbeing survey to capture who the rainbow Pasifika community of New Zealand are, to help policymakers and health practitioners better serve rainbow Pasifika. Following over a year of groundwork, the survey ran for six months, gathering responses from people who identify as both Pasifika and of the rainbow community – LGBTQI+ and/or MVPFAFF+ (MVPFAFF+ refers to the indigenous island terms for the third genders of the Pacific). The Pasifika rainbow communities are 'multiply marginalised' and an underserved population when it comes to research. "And what does exist does not make for very good reading," says Seuta'a'fli Dr Patrick Thomsen, senior lecturer at the University of Auckland and the principal investigator of the project. In particular, the survey aims to fill in research gaps on reliable statistics around MVPFAFF+ people and cultural nuance around their identities.

New Rainbow Support Worker advocates for student rainbow communities

Michael Heard (he/they), the new Rainbow Support Worker at the University of Auckland, offers pastoral support and advocates for the diverse student rainbow communities on campus, and hopes to become a connector across the University and contribute to a better student experience. "I love connecting one-on-one with students, hearing about their experiences and figuring out how we can best support them together," Michael says. "I look forward to developing relationships and fostering an environment of empathy on campus. I hope to develop networks of rainbow students on campus further, creating regular opportunities to connect, clear pathways to rainbow support, and spaces where everyone feels welcome. I would also love the chance to create greater visibility of the services available within UoA and to work towards reducing accessibility barriers for students."



Sustainable Development Goal 10:

REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES

10 REDUCED INEQUALITIES

295
publications based on UoA queries

33%
national share of publications based on UoA queries

166
publications based on Elsevier mapping

53
courses based on UoA queries

Report for Human Rights Commission outlines roadmap to a violence-free future

Dr Debbie Hager, from the School of Population Health in the Faculty of Medical and Health Sciences, led a report for the Human Rights Commission, Whakamahia te Tūkino kore Ināianeī, ā Muri Ake Nei (Acting Now for a Violence and Abuse Free Future). This sits alongside another report Whakamahia Te Tiriti, Whakahaumarutia te Tangata (Honour the Treaty, Protect the Person). The reports set out the evidence on the causes and impacts of violence and abuse against tāngata whaikaha (disabled people) Māori and disabled people. They outline the gaps in systems, knowledge and services, and set out a roadmap for systemic change, including 20 recommendations to ensure actions are grounded in Te Tiriti o Waitangi and human rights. "Stopping violence against disabled people demands changes from all of us – in the ways that we think about and understand disability, and significant changes to the systems that have, up until now, enabled this harm to occur, without consequences for those who perpetrate violence," says Dr Hager.

Health and wellbeing app co-designed with Pacific and Māori communities

A team lead by the National Institute for Health Innovation (NIHI) developed the OL@-OR@ health and wellbeing app, utilising extensive co-design with Pacific and Māori communities to base it on their priorities. As a result, the app was developed with a holistic view of health, including culturally tailored information not only on diet and exercise but also on spirituality and cultural connection. NIHI, run by UniServices and based on University of Auckland research, is strong on co-design, which ensures digital tools meet the needs of the communities they're meant to serve, with a priority focus on Māori and Pacific peoples and other communities experiencing health inequities. "By operating a human-centred design process and co-designing with Māori through partnerships and engagement, we're ensuring Māori have a greater role in designing health services that meet their needs," says Vanessa Ding, General Manager of NIHI, adding that similar principles apply to engagement and co-design with other communities.

Maths challenge helps Māori and Pacific students shine at regional competition

South Auckland Mathematics Challenge (SAMC), the brainchild of Josephina Tamatoa, Professional Teaching Fellow in the School of Mathematics, and Katalina Ma, Assistant Principal of Māngere College, is a competition for South and West Auckland schools that have high numbers of Māori and Pacific students, to help them prepare for the regional Mathex competition. "The statistics of South Auckland teams who competed at Mathex have historically been low. Our experiences were that the lack of exposure to competitive math was behind this result," says Josephina. Josephina credits having a strong team and support through Pacific networks as part of the reason SAMC has been so successful. In addition, by giving high school students the opportunity to be exposed to the University through this event and also to the Pacific Academy, university is seen as a viable option for them after high school.





Sustainable Development Goal 11:

MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

11 SUSTAINABLE CITIES AND COMMUNITIES

261
publications based on
UoA queries

28%
national share of publications
based on UoA queries

187
publications based on
Elsevier mapping

94
courses based on
UoA queries

Wireless EV Charging Technology will be a Game Changer

Professor Grant Covic from the University of Auckland's Faculty of Engineering is the Lead Principal Investigator of the MBIE-funded Inductive Power Transfer (IPT) Roadway Project. He heads a multidisciplinary research team at the University of Auckland that includes power electronic, mechanical and transportation engineering and business teams, supported by material engineers at the Robinson Research Institute at the Victoria University of Wellington and GNS Science, developing new ways to build robust systems for placement in road to help charge electric vehicles (EVs).

Inductive power transfer technology systems, or charging pads, wirelessly top up vehicles – enabling EVs to top up on energy throughout the day on dedicated motorway lanes, in car parks, on taxi stands and bus stops. The technology will reduce EV disincentives such as waits at charging stations, range anxiety, remembering to plug in, safety, and wear and tear on electric cables. It will also reduce the anticipated overnight pressure on the energy grid.

"It means we can focus on removing the huge EV barriers for commercial fleet owners, which are the time it takes for plug-

in charging and the size and weight of the battery packs needed to power heavy loads and long-distance travel," says Professor Covic. "Wireless charging on the move will mean less downtime for vehicles and smaller battery packs. It's what fleet owners need if they have any chance of meeting Climate Change Commission advice to switch to electricity by 2035."

The technology is currently beginning to be deployed overseas in private vehicles, and new systems are being evaluated for heavy duty vehicles. When operational it will help reduce greenhouse gas emissions.

Student Hubs provide one-stop service points on campuses

The University has opened five new Student Hubs, which act as accessible, one-stop service points in central spaces across the University campuses. At the hubs, students can receive support and advice to work through tasks such as exploring study options, support with applications and enrolment, course selection and enrolment, fees and much, much more. The one-stop service point avoids the 'run-around' and having to meet with multiple staff at various locations, and the concept has been designed in response to student needs and feedback on existing services. "Our taura (students) told us they desire to be at the centre of the University experience, to have safety and wellbeing," says Abigail McClutchie, Kaiārahi for Te Tumu Herenga | Libraries & Learning Service. "They want a sense of belonging, and to feel comfortable and supported regardless of their background, identity, culture, or ways of being."



Students tackle scooter safety

Team Connect, the winning team in this year's Solve It With 5G challenge designed a software solution to make shared paths safer for electric scooter riders and pedestrians, by alerting people with a bicycle bell sound via their phone or a purpose-designed tag if another device was detected within a specific range. Team Connect member Cissy Xiang says: "5G positioning technologies can provide better location resolution than existing GPS and we looked at how we could use existing Internet of Things networks, such as those Auckland Transport and several of the scooter companies use, to provide a service that alerts people to any potential obstacles, especially when they don't have a clear line of sight." Team Connect member Andi Liu says the pilot solution works by predicting the immediate future location of shared-zone users, and warns the users if these overlap, especially from blind angles. "Our solution is a people-centric dynamic network, and a person's safe zone would adjust automatically depending on their speed and the speed of anyone approaching."

Creating Cultures of Consent and Respect

The University of Auckland has developed a 'Creating Cultures of Consent and Respect' Action Plan, contributing to the creation of positive cultures of consent and respect at the University, specifically to advance and expand the University's work in the area of tackling Harmful Sexual Behaviour (HSB). The Action Plan builds on the processes and services already in place at the University to further prevent and respond to HSB. The outcome of the Action Plan will be to provide an environment where staff and students have the choice to access the support that suits them best, including culturally and diversity appropriate resources and services. The Action Plan is a living document and will evolve over time in response to the needs and concerns of the University community.

A tree for the Vice-Chancellor

The Vice-Chancellor, Professor Dawn Freshwater, planted a native evergreen *Nestegis apetala* (coastal maire) together with the University gardeners on the first day of spring (1 September) to honour her appointment. The tree planting was held on a sunny grassed area to the rear of the Clock Tower. Professor Freshwater said she felt honoured to contribute to the planting of the University grounds. She said: "This is a lovely gift. It celebrates our natural environment. This tree and the many other trees and plants we are privileged to have in our grounds are an important part of the University's work towards sustainability." Grounds manager Stanley Jones chose *Nestegis apetala* to complement the space and because it is an evergreen Indigenous tree.

Collaborative art exhibition showcases Wāhine Māori creative practitioners

Gus Fisher Gallery, the University of Auckland's flagship art gallery, held the exhibition 'Kei waenganui o ngā Atua Wāhine' between 30 April - 9 July 2022. This was a collaborative exhibition which brought together stories and voices of Wāhine Māori (Māori Women) creative practitioners. It was centred on an audio archive, featuring artists Elisapeta Hinemoa Heta, Qiane Matata-Sipu, Te Ara Minhinnick, Nikau Hindin, Hana Pera Aoake, Zoe Black, Heidi Brickell and Cassie Hart, sharing advice they wish they had been given as emerging practitioners and offering their hopes for future generations. The audio was surrounded by writings of Saskia Sassen, Ariana Sutton, and Cassie Hart, telling their stories of Papatūānuku, Hinetiāma, and Hinenuitēpō. Gus Fisher Gallery, which is free to visit, focuses on socially engaged exhibitions that showcase international and local artists.



Grounds Manager Stanley Jones and Professor Dawn Freshwater



Sustainable Development Goal 12:

ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

137
publications based on UoA queries

24%
national share of publications based on UoA queries

75
publications based on Elsevier mapping

18
courses based on UoA queries

Disinfecting PPE for Safe Reuse

While Personal Protective Equipment (PPE) has been a key part of most countries' response to Covid-19, it has also created a significant amount of medical waste. Because of its use in a medical setting during a pandemic, under most circumstances it is not safe or desirable to re-use such equipment. Adding to this the fact that much PPE is made of non-recyclable materials, and that existing sterilisation practices render the items unusable, the outcome is a significant amount of waste that simply ends up in a landfill (or, worse, in waterways and other ecosystems).

To combat this, Dr Yvonne Anderson and Dr José Derraik from the Faculty of Medical and Health Sciences recruited a team of colleagues including Dr Daniel Pletzer (University of Otago), Dr Gale Brightwell (AgResearch), Professor Miguel Quiñones-Mateu (University of Otago), and Associate Professor Mark Staiger (University of Canterbury.) Their goal was to find a way to sterilise the PPE in such a way that it could be safely reused, with no risk of contamination or infection. To achieve this, they set about testing a range of non-destructive sterilisation processes, before

settling on a dry-heat method, which was found to be effective against SARS-CoV-2, the causative agent of Covid-19. Their current programme of work is to investigate whether this method is effective against other human pathogens that are common in hospital settings, and to confirm that the process does not impact on the integrity of the equipment in any way. The project was co-funded by the Ministry of Business, Innovation and Employment and the Medical Assurance Society Foundation.

Scientists work on Aotearoa's own wellbeing diet

A team of researchers, including scientists from the University of Auckland, is developing a uniquely Aotearoa New Zealand wellbeing diet, He Rourou Whai Painga, consisting chiefly of locally produced foods that reflect our unique environment and can improve the health of our communities. The \$4 million project is part of the High-Value Nutrition Science Challenge, which is based in the University of Auckland's Liggins Institute. Project collaborators include the University of Otago, as well as a number of other institutes and organisations, and food and beverage industry partners. "We have a unique opportunity to show that consumption of a healthy dietary pattern based on predominantly New Zealand-produced foods and beverages can improve health," says High-Value Nutrition Challenge director Joanne Todd.

Harnessing 5G to incentivise sustainable shopping

One of the winning teams in the University's 2022 Solve It With 5G challenge developed a way to incentivise the purchase of sustainable products with the help of 5G technology. They created a prototype using Imagr trolley technology to track what was put into shopping carts. A tablet screen could be installed to provide augmented reality wayfinding and information on sustainable products. Every sustainable item scanned would earn points in a loyalty system, and if a

cart had more than 60% sustainable items, the shopper could skip the queues at the checkout and pay on the tablet attached to the trolley. The team wanted to find a way to help Aucklanders recognise and utilise their buying power, and help Auckland move towards a thriving circular economy.

Plastic re-use project to promote a circular economy

An \$11.7 million project to increase the re-use of plastic by businesses was the single largest allocation to University of Auckland researchers in government funding announced on 8 September. The five-year plastics project will be led out of the Faculty of Engineering and the Business School, with a wide array of partners including RMIT University in Melbourne and crown research institutes Scion and GNS Science. Key goals are influencing businesses to become more circular in their plastics use, and deploying new techniques to make plastics more recyclable, says Associate Professor Johan Verbeek, of the Department of Mechanical Engineering in the Faculty of Engineering. New Zealand's current system for collecting and recycling plastics is inadequate to generate sufficient 'raw materials', according to the scientists. Effective manufacturing methods are needed to re-manufacture the plastics collected, along with a functioning circular market.

Better Kai project highlights healthier food options on campus

The Better Kai (kai is the te reo Māori word for food) initiative, led by Dr Rajshri Roy from the Department of Nutrition and Dietetics at the Faculty of Medical and Health Sciences, helps students and staff easily identify healthier options, marked with Better Kai stickers, at food outlets on campus. Better Kai is a research driven initiative, where a small team of student dietitians have worked behind the scenes to identify which menu items are the healthiest options, typically lower in saturated fats, processed sugar and salt; containing more fruit, vegetables and/or wholegrain; using more nutritious spreads and/or reduced fat cheeses in smaller quantities, or having controlled portion sizes.

Vegan Manuka honey project shines at Velocity Innovation Challenge

One of the winners of this year's Velocity Innovation Challenge was a project by the Food Alchemists to produce a Vegan Manuka Honey without bees which is nutritionally equivalent to Manuka honey. The University of Auckland's annual Velocity Innovation Challenge, run out of the Business School's Centre for Innovation and Entrepreneurship, is open to students and staff of all faculties and provides participants with an opportunity to think about innovative solutions to a problem of their choice. Participants can win \$1,000 for 1,000 words articulating an idea for a start-up. The Food Alchemists' Vegan Manuka Honey project was one of the winners in the United Nations Sustainable Development Goals category.



Sustainability Strategy: Sustainable University by 2030

The University has developed Te Rautaki Aronga Toitū, Sustainability Strategy 2022-2030. The goal of the Sustainability Strategy is to enable the University of Auckland to transition into becoming a sustainable university by 2030.

The aim of the ambitious Strategy is to integrate sustainability into teaching, research, operations and engagement, and to translate the University’s vision into action by identifying targets and priority actions.

The Sustainability Strategy focuses on both environmental and social sustainability, recognising that these are interrelated and inseparable. It is based on three interconnected pou (pillars), which set out the university’s commitment, contribution and responsibility to sustainability: commitment to embed sustainability into all university activities and demonstrate measurable progress; contribution to

sustainability through research, teaching and policy; and responsibility to operate the university in a sustainable manner.

Through these three strands, the Sustainability Strategy identifies not only the University’s own responsibility to make our organisation’s operations sustainable, but also the wider contribution that the University can make, through research and education, contributing to sustainability in our local communities, in Aotearoa New Zealand, and on a global scale.

The Sustainability Strategy is accompanied by Te Taumata Tukuwaro-kore, the university’s Net Zero Carbon Strategy, which sets out the university’s commitment to a net zero carbon future, and commits the university to a path towards net zero emissions. Te Taumata Tukuwaro-kore includes commitments to halve the carbon emissions from the University’s work-related air travel, waste and recycling, and energy, by 2030 against a

2019 baseline, and to include international students’ air travel in our profile.

The Net Zero Carbon Strategy is enriched by Te Ao Māori and the concepts of Kaitiakitanga (integral and all-encompassing guardianship of taonga for current and future generations), Manaakitanga (caring, nurturing and supporting our tāngata comes with the responsibility to both take action and promote action) and Whanaungatanga (connected by a common bond and working together and sharing this journey and its responsibilities).

The development of the strategies has been led by the Dean of Science alongside the Pro Vice-Chancellor Māori and the Pro Vice-Chancellor Pacific, and implementation will be overseen by the Deputy Vice-Chancellor Strategic Engagement – demonstrating the university’s commitment and leadership on sustainability.

Sustainable Development Goal 13:

TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS



167
publications based on UoA queries

18%
national share of publications based on UoA queries

92
publications based on Elsevier mapping

33
courses based on UoA queries

Ngā Ara Whetū: Centre for Climate, Biodiversity and Society

The University has established Ngā Ara Whetū: Centre for Climate, Biodiversity and Society, a cross-faculty research centre which will respond to the pressing environmental and humanitarian challenges of our time. Researchers with expertise in law, the social, natural and health sciences, engineering, and economics, have worked together on this flagship research centre. Hosted by the Faculty of Science and co-hosted by the Faculties of Arts, Engineering, and the Business School, Ngā Ara Whetū provides an enabling mechanism to connect the University’s research strength with knowledge and wisdom of ngā iwi Māori, interested parties, and collaborators to reduce climate risk, enhance resilient and biodiverse spaces, and create fairer and healthier societies. “Working beyond traditional University borders for local and global impact, the Centre recognises that its three pou – climate, biodiversity and society – are inseparable from each other and must be treated together,” says Associate Professor JR Rowland, Deputy Dean of Science.

Global Changemakers programme piloted with Study Abroad students

The innovative Global Changemakers programme, which merges sustainability education with an introduction to social entrepreneurship, has been piloted with the latest influx of University of Auckland Study Abroad students. The programme was delivered by the International Office and facilitated by Alisa Lamont, co-founder and president of the Climate Action Network for International Educators (CANIE). The students learned about the scale of the climate challenge, the carbon footprint of studying abroad and how to travel more sustainably, as well as developing a personal climate action plan, assessing their carbon footprint using a carbon calculator, and sharing ideas for climate action on campus. They also explored climate leadership and innovation, including concepts of changemaking, social innovation and social entrepreneurship, and took part in a climate design challenge that included a pitch contest, with prizes awarded to the best three pitches.

Chief Science Advisor joins School of Environment as Honorary Academic

Alison Collins, Chief Science Advisor, Ministry for the Environment, has joined the School of Environment as an Honorary Academic. During her tenure she will work with the School and the new flagship research centre Ngā Ara Whetū | Centre for Climate, Biodiversity and Society, to build pipelines at the science-advisory nexus. This work will lead to improved educational pathways from undergraduate to postgraduate and into the workforce, with the aim of improving decision making and capacity toward reduced climate risk, resilient biodiverse ecosystems, and a fairer and healthier society.

Climate challenge tackled in space

University of Auckland will be involved in New Zealand's first national space mission, MethaneSAT, which aims to help solve the climate challenge by reducing methane gas leaks around the world. The state-of-the-art satellite will identify, monitor and report emissions, mainly from gas and oil industry pipelines and industrial agriculture, from an orbit 585km above Earth. Initially, the satellite will be operated by Rocket Lab, and once established, spacecraft operations will pass to the University of Auckland, controlled from the Mission Operations Control Centre in Te Pūnaha Ātea. Data on oil and gas sector emissions will be delivered to a research team from Harvard University, while data on agricultural methane emissions will be delivered to a New Zealand science team. "MethaneSAT will be a real catalyst for our growing space sector and the university's partnership on the mission will bring a huge benefit to the education and training we can offer young engineering and science students," says Chris Jackson from the Space Institute.

Making the case for congestion charging

Business School academics Dr Ryan Greenaway-McGrevy and Dr James Allan Jones at the Economic Policy Centre have produced a paper which concludes that improvements to rapid transit in Auckland will need to be paired with a congestion charge or other options to disincentivise commuting by private vehicle, if meaningful reductions in private car use are to be achieved. Their modelling showed that an additional rapid transit line in Auckland would likely result in an increase in vehicle kilometres travelled, as the city grows in response to the improved transportation network. Their findings are outlined in their forthcoming paper 'Mode Choice and the Effects of Rapid Transit Improvements on Private Vehicle Use and Urban Development'. "Our findings underscore the need for policy coordination for cities such as Auckland to meet their emissions and energy reduction targets," says Dr Jones.

Scientists find animals can evolve faster than expected

A new study, led out of Australian National University by Dr Timothée Bonnet and co-authored by Dr Anna Santure from the University of Auckland, suggests that wild animals are able to adapt faster than previously thought, potentially at two to four times the rate previously assumed, pointing to better odds of survival. The study, published in *Science*, applied new statistical methods to data relating to 19 populations of wild animals around the world, including the threatened New Zealand hihi (stitchbird). The individual studies had been running for an average of nearly 30 years each, generating a remarkable resource of detailed records on wild animal populations. The research showed that the majority of the 19 populations were able to adapt rapidly. "Hihi are one of the unluckier species, with a lower capacity to adapt," says Dr Santure. "However, this research suggests that many species can adapt quickly, provided they're not totally outpaced by habitat loss and climate change."

Minister of Climate Change speaks on climate negotiations

The New Zealand Centre for Environmental Law, hosted by the University of Auckland Law School, co-hosted the 8th Annual Global Affairs Lecture, which is run annually by the New Zealand Centre for Global Studies. New Zealand's Minister of Climate Change, Hon James Shaw, gave the lecture on 'The UN and Climate Negotiations: Implications for our Planet and Country'. Minister Shaw had just returned from the UN's COP26 negotiations in Glasgow and spoke alongside Catherine Leining from the NZ Climate Commission, Wellington, and Alex Kazaglis from Vivid Economics, London.





Riley Elliott with a blue shark. Photo: Amber Jones

Riley Elliott: scientist from the school of shark public relations

Despite their fearsome reputation, sharks are a vital part of marine ecosystems, and have existed in Earth's oceans for hundreds of millions of years, predating even the dinosaurs. Due to human activity such as shark finning and culling, however, their numbers have dropped by around 70% in the past 50 years. Dr Riley Elliott, who completed his doctorate in Marine Science at the University of Auckland in 2021, is on a mission to change the public's

perceptions of sharks. He argues that, although it is reasonable to exercise a bit of healthy caution around sharks, in most cases, they are no threat to humans, and that it is both possible and desirable for us to simply co-exist. A key element of Dr Elliott's approach is science communication – rather than focusing on journal publications that would only be read by other academics, he prefers to engage directly with the public. This could involve

lobbying politicians to prohibit harmful fishing practices, hosting his docu-series/reality show *Shark Academy* for Discovery Channel, where contestants compete for a place in his research team, being interviewed by news outlets, or giving talks on the public speaking circuit. While not traditional fare for an academic, Dr Elliott believes in using whatever channels of communication are available to protect a vital group of oceanic animals.

Social media helps scientists monitor rarely sighted whales

Annabelle Cranswick, a masters student in the Faculty of Science, led a research project utilising social media posts to monitor one of New Zealand's rarest whale species, the infrequently sighted southern right whale, or tohorā. Photographs shared by members of the public, via Facebook and nature-watching network iNaturalist, helped the research team assess how the species is faring around the mainland. Carried out in cooperation with the Department of Conservation and published in the journal *Ocean and Coastal Management*, the study reveals that southern right whales are slower than expected at re-establishing a habitat in mainland waters. "Photos supplied on social media and by citizen scientists are proving so important for us to monitor populations of these recovering whales," says Cranswick. "We can assess that yes, this is a southern right whale, and discover how long a whale stayed in a particular area."

Rare manta-ray nursery confirmed by University of Auckland scientist

University of Auckland PhD student Edy Setyawan led a team including scientists from Konservasi Indonesia, Conservation International, the University of Auckland and Macquarie University, on a study which confirmed the existence of a globally rare manta-ray nursery in the Raja Ampat islands in Indonesia. Their research, published in *Frontiers in Marine Science*, is the most comprehensive description to date of a manta

ray nursery anywhere in the world. Satellite and acoustic tracking showed newborn and juvenile reef manta rays had limited home ranges, staying for extended periods in the Wayag lagoon. Scientists usually lack proof of long-term and continuous stays by the young rays, which is one of the requirements for confirming a nursery. "The authorities are already revising management of the lagoon to create a manta nursery zone," says Setyawan. "Around the world, there's much work to be done in confirming and protecting manta ray nurseries, and hopefully this study will encourage researchers and conservationists to take on more of these projects."

Sustainable Development Goal 14:

CONSERVE AND SUSTAINABLY USE THE OCEANS, SEA AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

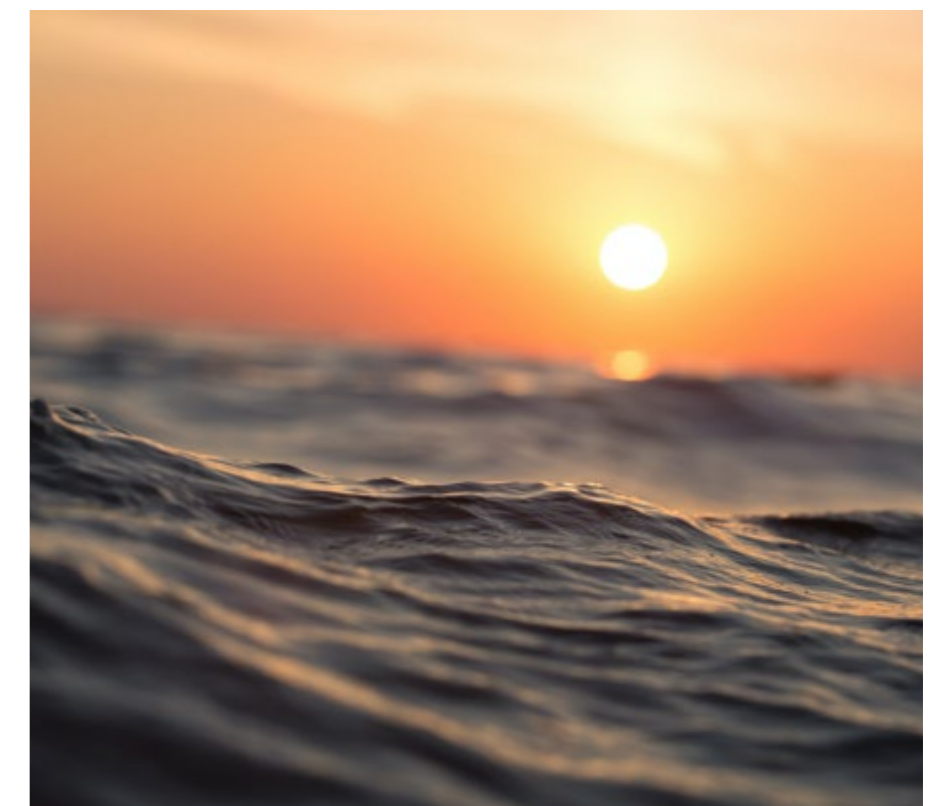


187
publications based on UoA queries

23%
national share of publications based on UoA queries

110
publications based on Elsevier mapping

26
courses based on UoA queries



Having our fish and eating it too

The world can protect biodiversity and threatened species and also catch enough fish for humans to eat if nations cooperate on where fishing takes place, University of Auckland PhD student Tamlin Jefferson and colleagues conclude in a paper recently published in *Frontiers in Marine Science*. Protecting almost 90% of biodiversity and threatened species would leave access to fisheries that provide almost 90% of catch. The study combined fishing catch data from the University of British Columbia's 'Sea Around Us' research initiative with information on threatened species and biodiversity. "From a conservation standpoint, protecting as much as possible is the ideal, but we've got to keep fish on the dinner table and fishermen and women have to pay the bills," says Tamlin. "Continued access for small-scale fisheries is vital as they are typically more sustainable than larger fishing operations," the scientists write. "Additionally, small-scale fisheries account for around half of all wild capture seafood and employ 90% of fishers and fish workers."

Endangered dolphins benefit from marine sanctuary

University of Auckland research suggests that the rare Māui dolphin finds food more easily since the establishment of a marine sanctuary in 2008, which restricted fishing in the dolphins' habitat. Scientists checked tiny skin samples collected from the dolphins between 1993 and 2020 for microchemical markers revealing their diet, and found that the dolphins' meals became less diverse after the marine sanctuary was established. "We think that the sanctuary increased the amount of food available to the dolphins," says the lead author of the paper, PhD student Courtney Ogilvy. "That meant they were able to get more of their preferred prey, and not work so hard to get many different types of food." A temporary change in diet occurred during the El Niño weather event in 2015 and 2016. "Overall this is good news for the Māui dolphin," says co-author Associate Professor Emma Carroll. "They are able to find their preferred prey and so far they are adapting when conditions change."

Creating a sound library of the underwater world

A group of international scientists including the University of Auckland's Associate Professor Craig Radford, of the Faculty of Science, aims to set up a Global Library of Underwater Biological Sounds, or GLUBS. A scientific paper by 17 experts, 'Sounding the Call for a Global Library of Biological Underwater Sounds', sets out the case in the journal *Frontiers in Ecology and Evolution*: "At a time when worldwide biodiversity is in significant decline and underwater soundscapes are being altered as a result of anthropogenic impacts, there is a need to document, quantify, and understand biotic sound sources – potentially before they disappear." Their goal is a vast reference library of underwater sounds that anyone can access. With sound, "biologically important areas can be mapped; spawning grounds, essential fish habitats, and migration pathways can be delineated ... These and other questions can be queried on broader scales if we have a global catalogue of sounds."





Eastern coast of Nuku Hiva, Marquesas Islands, French

Sustainable Development Goal 15:

PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, HALT AND REVERSE LAND DEGRADATION AND HALT BIODIVERSITY LOSS



230
publications based on
UoA queries

17%
national share of publications
based on UoA queries

96
publications based on
Elsevier mapping

38
courses based on
UoA queries

Cross-Disciplinary Study of Medieval Marquesan Biomes

The University of Auckland's Professor Melinda Allen and Dr Nick Porch, along with their colleague Tara Lewis from Deakin University, conducted a unique transdisciplinary study of 12th century plant and arthropod biodiversity on the island of Nuku Hiva, in French Polynesia. Their goal was to understand what species were present at the time the earliest Polynesian settlers arrived, and to compare this with modern biodiversity on the island. To do this, the researchers looked at a single deposit on the eastern coast of the island, where they were able to identify over a hundred different types of organism,

from more than 39 taxonomic families of arthropods, including a variety of ants, flies, spiders, and mites. Radiocarbon dating placed the deposit at about nine hundred years old, and the presence of charcoal and adzed timber also demonstrated the existence of humans on the island at this time. The range of species found was also distinctive in that it included some species no longer found on the island, as well as exotic species that likely came to Nuku Hiva with the earliest human settlers, including one that is also found in New Zealand, and is believed to have been brought by early Māori. The plant species

that the researchers found in the deposit also allowed them to reconstruct what the Marquesan rainforest would have looked like prior to the introduction of rats and other nineteenth century mammalian pests. This included traces of a unique Marquesan fruit that is now extinct in the wild, but whose leaves were once used by the indigenous population for thatching roofs. This research is significant, because it allows us to understand a terrestrial ecosystem as it was centuries in the past, to compare this with the current state, and to situate early human settlement in the context of this natural history.

Scientists model pest control

University of Auckland researchers modelled mammal pest control across all of New Zealand to reveal which tools will work in each area, identifying what can be achieved with existing methods and which areas require further research. "The good news is

that we can achieve much more with existing pest control tools," says doctoral student Zachary Carter, who led the research. The key challenge highlighted by the study is controlling pests in rugged and remote places. Professor Dan Tompkins, the science director of Predator Free 2050 Ltd., says: "This research shows that current tools and approaches are insufficient even for national predator suppression. That's a

critically important finding. A focus is urgently needed on scientific breakthroughs to ensure Predator Free 2050's national eradication goals can be reached on time." These are ambitious goals to eliminate rats, possums, ferrets, stoats and weasels by 2050 to save our wildlife and allow endangered birds such as the kākāpō to spread across the nation instead of being confined to small predator-free islands.



Nuku Hiva east coast

Research funding for work on pests

Dr Florian Pichlmüller at the School of Biological Sciences has been awarded \$640,000 to carry out leading-edge research into pest and predator control, as part of a nation-wide pest research campaign funded by Predator Free2050 and Jobs for Nature over three years. Dr Pichlmüller will investigate genomic applications for invasive species control with a particular focus on mustelids such as stoats. He will undertake a study to investigate the different types of viruses carried by stoats, weasels and ferrets, enabling assessment of their potential risk to native wildlife. "This funding is the perfect opportunity to combine my knowledge of population genomics with my growing interest in wildlife diseases and it allows me to determine indirect threats that viruses could pose to our native wildlife," Dr Pichlmüller says.

Business school staff turn conservationist for a day

The University of Auckland's Business School's health, safety and well-being committee teamed up with Conservation Volunteers New Zealand to organise a volunteering day for staff where colleagues from different units of the school came together to volunteer and plant more than 600 trees and plants. Anastasia Timoshkina, Student Development Adviser, was the event organiser and was amazed to see the staff's enthusiasm and camaraderie. "No one was complaining about the challenges we faced like the steep walk, the muddy ground, and the process of planting itself. Instead, people were chatting, motivating each other, and making the most of the day out," says Anastasia. It also created a sense of fulfilment amongst the volunteers knowing that the area they worked in will eventually grow into bushland, rejuvenating the surroundings.

Secrets of seabird feathers

Maira Fessardi, a masters student in biosecurity and conservation at the Faculty of Science, is working on validating a new monitoring method, which measures the levels of stress hormones in seabird feathers to infer information about the impact of environmental changes in their habitat. As rapid environmental change is causing some seabird populations to decline to critical levels, monitoring their health is a crucial task, but it can be difficult and expensive. Recording stress signs from feathers is a low-cost, non-invasive tool that can reveal information about the state of our environment. Maira's research compares the patterns of stress hormone deposits in the feathers with data on the birds' overall population stability and the effects of climate change. "The feathers and their findings help us complete a big puzzle in the world of seabird ecophysiology, while also having promising potential for how we might use this new information to monitor the effects of climate change on our oceans and biodiversity," Maira says. "My research helps validate this new monitoring technology, so it can be used with precision and confidence."

Eradicating island invaders brings boost to biodiversity

A study by the University of Auckland and Manaaki Whenua, investigating more than 100 years of invasive species eradication, found that New Zealand is a world leader in island pest eradication and creating island sanctuaries. The study covered all reported efforts to eradicate invasive vertebrates on islands worldwide, looking at 1,550 campaigns on 998 islands. The team's analysis found that eight countries were responsible for 80% of all documented eradications, with New Zealand achieving nearly a quarter of the world's island pest eradications, and Australia in second place with just over 12% of global eradications. "There is an amazing global impact by summing these local conservation interventions," says Nick Holmes, who co-authored the study. "This synthesis shows the remarkable conservation gains that have been collectively made on islands and builds on past work showing the tangible benefit to biodiversity."





Sustainable Development Goal 16:

PROMOTE PEACEFUL AND INCLUSIVE SOCIETIES FOR SUSTAINABLE DEVELOPMENT, PROVIDE ACCESS TO JUSTICE FOR ALL AND BUILD EFFECTIVE, ACCOUNTABLE AND INCLUSIVE INSTITUTIONS AT ALL LEVELS

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

120
publications based on
UoA queries

25%
national share of publications
based on UoA queries

131
publications based on
Elsevier mapping

55
courses based on
UoA queries

Indigenous Knowledge in Intellectual Property

Historically, views of intellectual property (IP) have tended towards the relatively binary conception that if a person has created or collected something, then it is their IP, and they own it and the rights to it. While this approach works for discrete creations like patents, books, or media, it is problematic with traditional or indigenous knowledge, which are presently afforded very limited recognition under western legal frameworks. This can be seen, for example, when a non-Māori business attempts to use an aspect of Māori culture, such as the tā moko (traditional tattoo),

for marketing purposes. Because these cultural aspects were not created by any specific living individual, current IP legislation does not protect their use. In an effort to address this, UniServices, the commercialisation wing of the University has been working on a new policy to cover intellectual property and data sovereignty that takes indigeneity into account, and affords protection for data, ideas, and concepts that come from Māori culture or are collected from Māori people. A practical example would be if a person developed a cosmetic product using a native plant from

rongoa, Māori healing practices. In such a situation, the policy would require the developer to form a reciprocal partnership with local Māori before releasing the product, and to make sure that these local communities are included and consulted. Will Charles, UniService's executive director of commercialisation, has said that he hopes the policy will make people think, but also that it will encourage researchers to engage more deeply with the Māori world, by providing clear guidelines, rather than avoiding research related to Māori out of fear of accidentally causing offence.

Law team take top spot in Transatlantic Negotiation Competition

A team of students from the University of Auckland Law School have come out on top for the 2022 Transatlantic Negotiation Competition, undefeated in every round. The Transatlantic Negotiation Competition, in its second year, was conceived by New York's Syracuse University Advocacy Honour Society and Queen's University of Belfast Alternative Dispute Resolution Society to give students across the world an opportunity to hone their negotiation and communication skills. Professor Penelope Mathew, Dean of Law says: "We are extremely proud of the team. They have done a superb job representing the University on the global stage." Students Heidi Bernard, Libby Gane, Kelsey Haub and David Lee negotiated agreements relating to a range of matters including international diplomacy and cross-border commercial disputes. Many aspects of their performance earned commendation from the judges.

In pursuit of social justice

Te Whaingā i te Tika Award for Social Justice is a new annual award of \$2500, recognising an outstanding contribution to social justice, in honour of the legacy of Professor Emeritus Jane Kelsey, who mentored and inspired thousands of students during her time at the University of Auckland, before recently retiring. This award will recognise a student-driven work or project that demonstrates the most outstanding contribution to social justice in New Zealand or internationally in that year. Individuals, and groups made up of a majority of enrolled students, with the remainder former students of the University of Auckland, that can demonstrate their work and impact within the area of social justice are encouraged to apply. Social justice is broadly defined, with applicants asked to outline their own understanding and vision of social justice and to describe how their project has contributed to achieving it. The new award is named after an eye-opening report that Professor Kelsey, together with other members of an advisory committee, researched and wrote in 1987.

First ever Eid celebration for University staff

The first ever Eid celebration for staff at the University of Auckland took place at the Maclaurin Chapel Hall on Thursday 14 July. Mrs Shahela Qureshi, the chaplain in the Maclaurin Chaplaincy, organised the event, which was attended by both Muslim and non-Muslim staff. "It was a special feeling to bring everyone together to celebrate and learn about one of the most special days for the Muslim staff members of the University," Shahela says. "It was also an opportunity for the staff to meet the Muslim Student Association team members." Guests described the event as educational, informative, casual and diverse.



Professor Emeritus Jane Kelsey

University brings Mayoral debate to a large audience

The University of Auckland, together with Newsroom, hosted a debate for the four top polling candidates for the Auckland mayoral election, before a public audience of 190 people, the largest public debate in the campaign in September. An expert panel comprising Jennifer Curtin, Professor of Politics and International Relations and director of the School of Public Policy, Auckland University Students Association president Alofa So'olefai and Newsroom managing editor Jonathan Milne gave their verdict after the debate. Professor Curtin took the candidates to task for not talking about the city's housing affordability crisis, while Alofa So'olefai said none of the candidates had policies to appeal to younger voters. The expert panel's verdict was that Efeso Collins, seeking to be the first Pacific mayor of the city had won the debate. The debate ended with a strong plea for people to vote.

Honorary Professor Dr Penelope Ridings elected to the International Law Commission

University of Auckland Honorary Professor Dr Penelope Ridings, MNZM, has been elected to the International Law Commission – the United Nations global body tasked with the progressive development and codification of international law. Nominated by New Zealand, Australia, Canada and Sierra Leone, Dr Ridings has been elected for a five-year term starting 1 January 2023. Regarded as one of New Zealand's most distinguished international lawyers, she has worked with New Zealand's Ministry of Foreign Affairs and Trade, and been both Chief International Legal Adviser and an Ambassador. During her 30-year career, she has advocated for fair and enduring legal solutions to difficult problems, and has advised on a range of international law issues from human rights and the environment to trade and security. She has a strong track record in negotiating, collaborating, and finding common ground to forge solutions to complex legal issues.

Telling history from the ground up

Lucy Mackintosh's PhD evolved into a book on the history of key geographical features in Auckland, with *Shifting Grounds: Deep Histories of Tāmaki Makaurau Auckland* exploring the histories of three iconic places – the Ōtuataua Stonefields Historic Reserve at Ihumātao, Pukekawa/Auckland Domain and Maungakiekie/One Tree Hill. "These places tell multi-faceted and nuanced stories that are important to know alongside the more familiar histories of the city," says Lucy. Prior to her PhD, Lucy was learning about Auckland history while working as a historical and museum consultant for local and central government agencies. "The histories I came across were very different from the ones I had learnt at university or read about in books. They were layered, deep, complex and often unresolved. They had shaped local communities and wider Auckland, yet they were invisible in published histories of the city." Walking across and through the places described in the book has been an important process, and Lucy continues to guide people to these sites and "tell history from the ground up" so they can have the same experience.

Navigating a new course for Pacific learners

Professional learning and development (PLD) on the Tapasā cultural competencies framework is now available to early childhood centres and schools with high numbers of Pacific learners. PLD will be provided by Tui Tuia| Learning Circle, using a programme developed by University of Auckland Pacific researchers, along with Tui Tuia's Pacific team, and co-delivered with Tautai ole Moana, a programme designed to improve outcomes for Pacific learners. The Tapasā cultural competencies framework for teachers of Pacific Learners was produced by the Ministry of Education, and is designed to support educators become more culturally aware, confident and competent when engaging with Pacific learners and their families and communities. The Tapasā (a Samoan word for a compass or a guide) framework is still relatively new to teachers, as its wider dissemination was disrupted in by Covid-19, says Jacoba Matapo, researcher at the Faculty of Education and Social Work. "Tapasā is quite unique in that it goes right across from early childhood into secondary school and also from student teacher to school leader. It's a very comprehensive framework."





Professor Maurice Curtis

Sustainable Development Goal 17:

STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALISE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT



Students' sustainability projects shared at United Nations workshop

Professor Niki Harré from the School of Psychology in the Faculty of Science is the co-ordinator of the University's sustainability module. This is a three-course set spanning first, second, and third-year undergraduate study, with the first course being available to any student in any faculty. These courses cover a range of concepts, including kaitiakitanga (guardianship), the psychology of sustainability, and consumerism and consumption, spanning from the individual all the way up to global

approaches. Each of these papers calls on students to create a proposal connected with sustainability. In the first year, they design a game, in the second, they propose a programme to "green" the campus, and in the final year, they invent a political party with a suite of policies. The idea, according to Professor Harré, is to teach students to collaborate across disciplines so that they can confront what she refers to as the "wicked" problems facing society, because these cannot be solved by any individual

academic area, as they are traditionally defined. Recently, Professor Harré had the opportunity to present projects by students in these courses to an online United Nations Academic Impact workshop. These included, for example, an idea to 'gamify' litter collection, by allowing users to scan items of rubbish and gain a score, and a proposal for a container-lending programme for students on campus, to cut down on the number of disposable plastic food containers in use.

Partnering to support vaccination in the Pacific

The Immunisation Advisory Centre (IMAC), based at the University of Auckland and run by UniServices, took on the task of delivering Covid-19 vaccines to Tokelau, Tonga, Samoa, Niue, the Cook Islands and Fiji, as part of the Polynesian Health Corridors programme led by the New Zealand Ministry of Health and Ministry of Foreign Affairs and Trade. Alongside the logistical challenge of maintaining the cold chain, IMAC needed to ensure (while unable to enter the countries) that local healthcare professionals know how to store, prepare and administer the vaccine, as well as knowing what to do if someone had an adverse reaction. Tokelau presented the biggest logistical challenge. Vaccines were initially transported on a chartered naval ship, with IMAC working closely with the New Zealand Defence Force and Ministry of Health. Subsequently, vaccines were flown in and transported by chartered boat to Tokelau. "Being able to get it there in the ultra-cold state is a huge gain for the Pacific Islands in terms of having more transport time to their outreach centres," says Bernadette Heaphy, IMAC's cold chain lead.

University steps up to Matatini partnership

The University of Auckland has entered a partnership with the national kapa haka society, Te Matatini. The biennial Te Matatini National Kapa Haka Festival, the most significant cultural festival for Māori performing arts, will be held from 22-25 February 2023 at Ngā Ana Wai (Eden Park). As well as contributing to the event financially, the University will play an active part in the event including co-creating the

Mātauranga Village, which will showcase the impact of education. Pro Vice-Chancellor Māori, Professor Te Kawehau Hoskins, said: "In 2020, the University introduced a new strategy – Taumata Teitei – which includes a strong focus on te ao Māori principles of manaakitanga, whanaungatanga, and kaitiakitanga. These values very much reflect in this partnership with Te Matatini, and we look forward to our staff, students and iwi stakeholders seeing us walk the talk in our commitment to Te Tiriti and a sustainable and real partnership with iwi of Tāmaki Makaurau and throughout Aotearoa."



Dr Niki Harré

Trans Tasman Brains Trust

The University of Auckland Centre for Brain Research (CBR) is set to work collaboratively with Macquarie University's new Australia CTE Biobank. The CBR will establish a similar world-class CTE (chronic traumatic encephalopathy) biobank which will work closely with Australian CTE researchers. Biobanking is the collection and storage of large amounts of clinical data and biological samples to advance scientific understanding and the development of novel treatments for neurological disease. Professor Maurice Curtis, co-director of the CBR Neurological Foundation Human Brain Bank will co-direct the New Zealand CTE Biobank with Professor Lynette Tippett from the School of Psychology.

Empowering Cook Islands teens to contribute toward a better future

A University of Auckland research group, partnering with a team from Cook Islands Education and Health, is working on the trans-disciplinary Pacific Science for Health Literacy Project, which aims to engage young people in the Cook Islands in exploring evidence from science, health, and social histories. "Teachers are taking local and international research evidence and making it accessible to young people in the Cook Islands," says Senior Lecturer Jacquie Bay. "It's an exciting way of teaching that supports teenagers to explore multiple perspectives on issues." The learning programme incorporates exploration of locally-led research into the health of Cook Islands communities and the social histories of the Cook Islands. This combination of local and international evidence challenges teenagers to consider how our biological and social histories contribute to complex issues, and challenges the next generation of leaders to identify and initiate evidence-based actions.

University of Auckland and Fiji National University make collaboration official

The University of Auckland and the Fiji National University (FNU) have signed a memorandum of understanding that will pave the way for greater academic cooperation. The agreement's aim is to facilitate collaboration between staff, introduce joint research ventures and provide greater opportunities for student development. The partnership, led by Associate Professor Collin Tukuitonga and Associate Professor Stephen Howie for the University of Auckland, and Associate Professor Donald Wilson for FNU, comes after 18 months of work. "The Memorandum of Understanding ... opens the door for wider relationship-building as it is an 'Institution to Institution' agreement rather than 'Faculty to Faculty', so it brings with it huge potential," Dr Howie says. FNU Acting Vice-Chancellor, Dr William May, said that the MoU provides FNU with the opportunity to engage in collaborative research on national and regional priorities, and to build teaching and research partnerships.

Sharing knowledge to support indigenous students through dance education

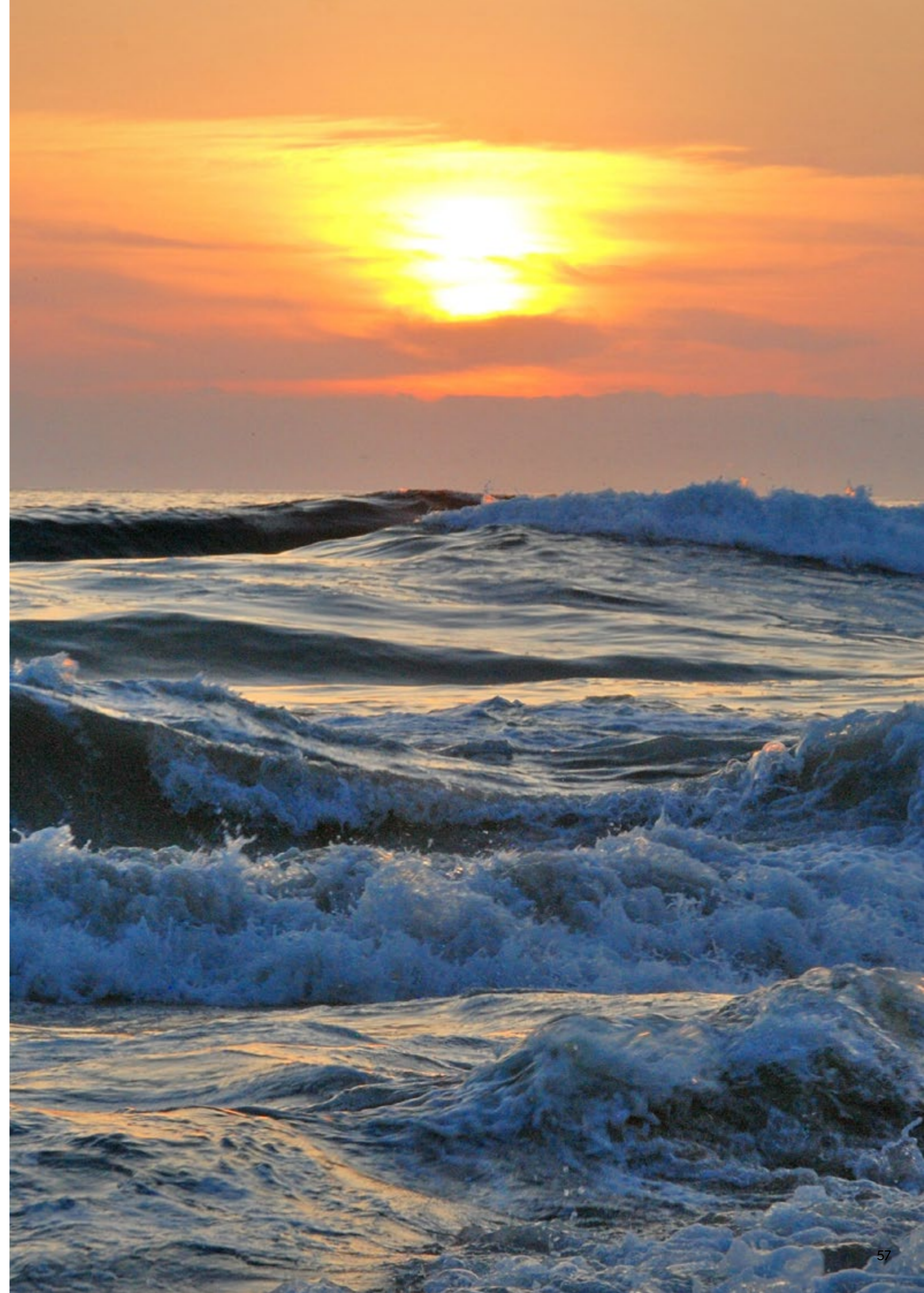
The Dancing Ocean project, funded by UNESCO and led by Professor Nicholas Rowe, is a collaboration between Vou (Nadi, Fiji), the Institute of Papua New Guinea Studies (Port Moresby, PNG), National Aboriginal and Islander Skills Development Association -NAISDA (Darkinjung land, Australia) and Waipapa Taumata Rau University of Auckland Ngā Akoranga Kanikani Dance Studies Programme (Tāmaki Makaurau Auckland, Aotearoa New Zealand). Each of these institutions has a key responsibility to educate the next generation of indigenous dance teachers within their regions. The growing relationship between these institutes presents a strong opportunity to contribute meaningful and valuable knowledge on how dance education can support indigenous students and indigenous communities.

Frontiers in Environmental Law Colloquium

The New Zealand Centre for Environmental Law, hosted by the University of Auckland Law School, worked with Macquarie University and the Global Network for Human Rights and the Environment to co-host the three-day 8th Frontiers in Environmental Law Colloquium on 9-11 February 2022. The conference theme was 'Environmental Law and Responsibilities in the Anthropocene'. Conference participants considered what it might mean to shift the approach of environmental law from 'what we can get out of nature' to 'what we can and must do for it'. In addition, the Colloquium provided a valuable forum for environmental law academics and practitioners to share and discuss their experiences, research, and teaching practices.

Addressing climate change adaptation in the Pacific

The University of Auckland hosted the Association of Pacific Rim Universities information session, on 14 April 2022, to promote the United Nations Framework Convention on Climate Change (UNFCCC) University Partnership Programme, which aims to strengthen collaboration between the UNFCCC and research institutions to address critical knowledge gaps that remain a barrier to the implementation of climate change adaptation measures. The information session was attended by academics from a wide range of research areas, including Environmental Law, Science, Māori Studies, Climate, Urban Planning, and Architecture.



ABOUT THIS REPORT

This report summarises a range of activities that the University of Auckland undertakes to meet the Sustainable Development Goals (SDGs). These activities all relate in some way to one of the core elements of the University's function, spanning research, teaching, operations, engagement and partnerships. We have substantiated the report with quantitative research and teaching-related SDG metrics, as well as a range of qualitative case studies. While the impact of Covid-19 was somewhat attenuated in 2022, the year still brought its share of challenges that our staff and students have worked hard to combat. The University of Auckland has continued to work towards reducing inequalities, poverty, and hunger among our staff, students and the wider community, as well as contributing to solutions for a wide range of social, economic, environmental, and health-related challenges. This year's report is a list of activities and initiatives, capturing both our ongoing commitment to addressing a variety of global challenges, as well as a range of other activities that we have adapted to suit the current circumstances. We remain committed to the Sustainable Development Goals and believe that the underlying principles of the SDGs are more relevant than ever in the current global climate.

SDG metrics

Publications and related research metrics are reported for each SDG based on a hybrid approach. In addition to reporting research publications captured by Elsevier's 2022 **SDG mapping**, the University of Auckland is also committed to reporting SDG research publications using the 'Auckland Approach', which represents the effort of the University to localise SDG mapping to account for the context within which our research activities take place. What our method adds is the ability to capture relevant but very locally specific terms. These may include, for example, specific geographical locations, or locally used terms for general academic concepts. This method builds on the SDG mapping partnership with Elsevier, Aurora, and the University of Southern Denmark in which best practices for SDG mapping are shared. This SDG localisation effort has extended our understanding of the SDG research activities that are unique to the University of Auckland, our Māori and Pacific communities, Aotearoa New Zealand, and the Pacific region. In 2021, the University of Auckland made a further attempt to generalise the Auckland SDG research mapping approach to understand our learning and teaching activities. Courses taught in 2020 are mapped onto the SDGs based on metadata contained in the course catalogue. This course mapping effort identified 735 SDG-related courses out of 2,814 courses in total offered by the University of Auckland in 2021. More information about the University of Auckland SDG Mapping project is available at: www.sdgmapping.auckland.ac.nz

Case studies

Striving to pick a diverse range of initiatives from across the University, we shortlisted a diverse set of case studies based on comprehensive consultation with key stakeholders undertaking these activities. These case studies cover examples of research, teaching, operations, engagement and partnerships, and were chosen because they highlight clear contributions to the respective SDGs involved. This SDG report lists only a few of the many initiatives undertaken by the University of Auckland. Our sustainability news and opinion pages are regularly updated with the latest information about University of Auckland initiatives and activities towards the SDGs and Mātātaki | The Challenge explores some of these initiatives in-depth. This year has also seen the launch of both a formal Sustainability Strategy / Te Rautaki Aronga Toitū, as well as a Net Zero Carbon Strategy / Te Taumata Tukuwaro-kore. Both of these documents can be found on our **website**.

UNIVERSITY IMPACT RANKINGS

The 17 Sustainable Development Goals (SDGs) were established in 2015. They set a 15-year agenda and call to action for all countries to end poverty, fight inequalities, and build peaceful, just, and sustainable societies by 2030.

Launched in 2019 by Times Higher Education (THE), the University Impact Rankings measure how universities worldwide are performing against the SDGs.

The University of Auckland was ranked No. 1 globally in both 2019 and 2020, and retained a position in the top ten in 2021 and 2022. These outstanding results recognise and reaffirm the University of Auckland's strong commitment to sustainability and making a positive social impact through its partnerships, research, teaching, operations, community engagement and knowledge transfer.

Sustainable Development Goal	Our Rank 2022
Overall ranking for impact	6
SDG 1: No poverty	24
SDG 2: Zero hunger	4
SDG 3: Good health and well-being	10
SDG 4: Quality education	=68
SDG 5: Gender equality	10
SDG 6: Clean water and sanitation	43
SDG 7: Affordable and clean energy	25
SDG 8: Decent work and economic growth	=25
SDG 9: Industry, innovation and infrastructure	=24
SDG 10: Reduced inequalities	11
SDG 11: Sustainable cities and communities	=13
SDG 12: Responsible consumption and production	31
SDG 13: Climate action	=43
SDG 14: Life below water	12
SDG 15: Life on land	4
SDG 16: Peace, justice and strong institutions	=21
SDG 17: Partnerships for the goals	=44



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Waipapa Taumata Rau
NEW ZEALAND



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DEVELOPMENT
GOALS**

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