



UniServices Annual Review 2022

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A message from the Board Chair

2022 was a year of transition. We started the year in midst of the Covid Omicron wave, but over time, the focus shifted from the pandemic response to looking forward.

Among our areas of focus was the future of New Zealand's research, science and innovation system. Both UniServices and Waipapa Taumata Rau, University of Auckland submitted input that helped inform the government's Te Ara Paerangi Future Pathways White Paper, a pivotal paper in shaping our future research environment.

UniServices and the University have long been key players in Aotearoa's research and innovation ecosystem. We look forward to helping further strengthen this ecosystem.

James Metson

Strategic Advisor, Newmarket Campus
2022 UniServices Board Chair and
Deputy Vice-Chancellor Research



A message from the CEO

In 2022, UniServices was proud to play a part in two critical transitions: towards genuine Te Tiriti o Waitangi partnership and towards a low-carbon economy.

We doubled the University of Auckland Inventors' Fund to \$40 million, both to increase its impact generally and to focus more on Māori innovation. We instituted a Māori IP policy and, through new senior hires, committed to better engaging with Māori in research and service delivery.

We were also proud to bring together entrepreneurs, policymakers, researchers, investors and social innovators from New Zealand and the United States for the inaugural Blue & Green Technology Conference. We expect the connections forged there to result in concrete climate action.

Andy Shenk UniServices CEO

UniServices by the Numbers

7

new companies launched in 2022

31

patents licensed in 2022

\$64.6M

Net asset value of the University of Auckland Inventors' Fund at the end of 2022

\$226.8M

External research funding in 2022

28,592

Covid-19 vaccinator course completions through IMAC since 2021

5,047

whānau participated in Growing Up in New Zealand's 12-year data collection in 2022

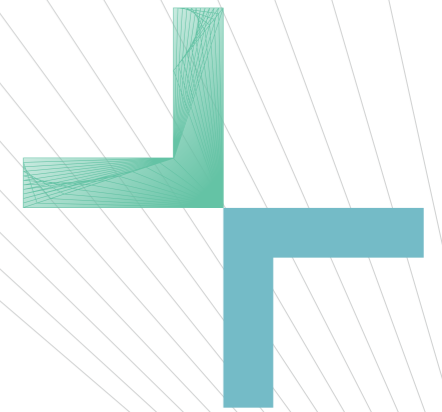
4,078

educators received professional training and development through Tui Tuia | Learning Circle in 2022

4,222

MRI scans performed by CAMRI in 2022

Rangahau kia whai hua Ideas to Life



Honoa te tangata ki te tangata, te tangata ki te taiao, te tangata ki te rangahau, rangahau kia whai hua.

Linking people to people, people to the world around us, people to research, research that brings ideas to life.

UniServices is the research application, investment and commercialisation company of Waipapa Taumata Rau, University of Auckland. Since 1988, we have acted as the kaihono – those who link people to people and people to projects. We do this through:

Advancing Research

We help researchers advance their work and develop their careers, all with the goal of turning their ideas into impact. We help identify funding opportunities, develop winning proposals, liaise with governments and industry, negotiate contracts and manage stakeholder relationships.

Investing and Partnering

We manage the University of Auckland Inventors' Fund, a \$40 million pre-seed and seed stage investment fund that works to transform University research into high-growth global companies. We also work with partners to license technologies and co-invest in start-ups.

Commercialising and Protecting Ideas

We help researchers disclose and protect their ideas, learn about the commercialisation process, secure patents and start companies. We help fledgling companies get expert advice, refine their business plans and access start-up capital.

Delivering Positive Community Impact

We deliver projects, programmes and services that build on Waipapa Taumata Rau, University of Auckland research to create positive impacts in areas such as education, training, health and informing public policy.

He hononga whai take

Partner with Purpose

Māori Hononga Māori Partnership

In 2022, with guidance from Kaiārahi Tui Kaumoana, UniServices journeyed further towards being an authentic and engaged Te Tiriti o Waitangi partner.

In doubling the University of Auckland Inventors' Fund to \$40 million, we not only increased our impact on University-based entrepreneurship in general, we set aside funds to support Māori entrepreneurship. We also enacted a policy to protect Māori intellectual property and data.

To support our journey, we recruited new Māori leaders to our team, including Dion Peita as **Manutaki Whanaketanga Umanga Māori**, Māori Business Development Director; Tama Davis and Bernie O'Donnell as joint **Poutaki Mātauranga Māori** to advise our services and projects; and Tori McNoe as **Poutaki Hononga, Investment Development Lead**.



Dion Peita



Partner for Impact

Partnership is at the heart of everything UniServices is and does – we maintain strong relationships with researchers, investors, entrepreneurs, government, industry, students, tangata whenua, and diverse communities and organisations.

Because we contribute to the University's achievements, we share pride in its honours, including having placed in the world's top 10 in the **Times Higher Education (THE) University Impact Rankings** and **Quacquarelli Symonds (QS) Sustainability Rankings**. The University also placed in the top 100 and top 150 overall in the **QS World University Rankings** and **THE World University Rankings**.





U.S. Ambassador Tom Udall and Andy Shenk

Partner for Sustainability

Blue & Green Technology Conference

The inaugural **Blue & Green Technology Conference**, which UniServices developed in partnership with the United States Embassy & Consulate New Zealand, saw some 240 leaders of various fields come together to share their cleantech ideas and expertise. The event took place in December 2022 in Tāmaki Makaurau Auckland and was supported by Callaghan Innovation, New Zealand Trade & Enterprise, Tātaki Auckland Unlimited and Ara Ake.



Velocity \$100K Challenge Finals 2022

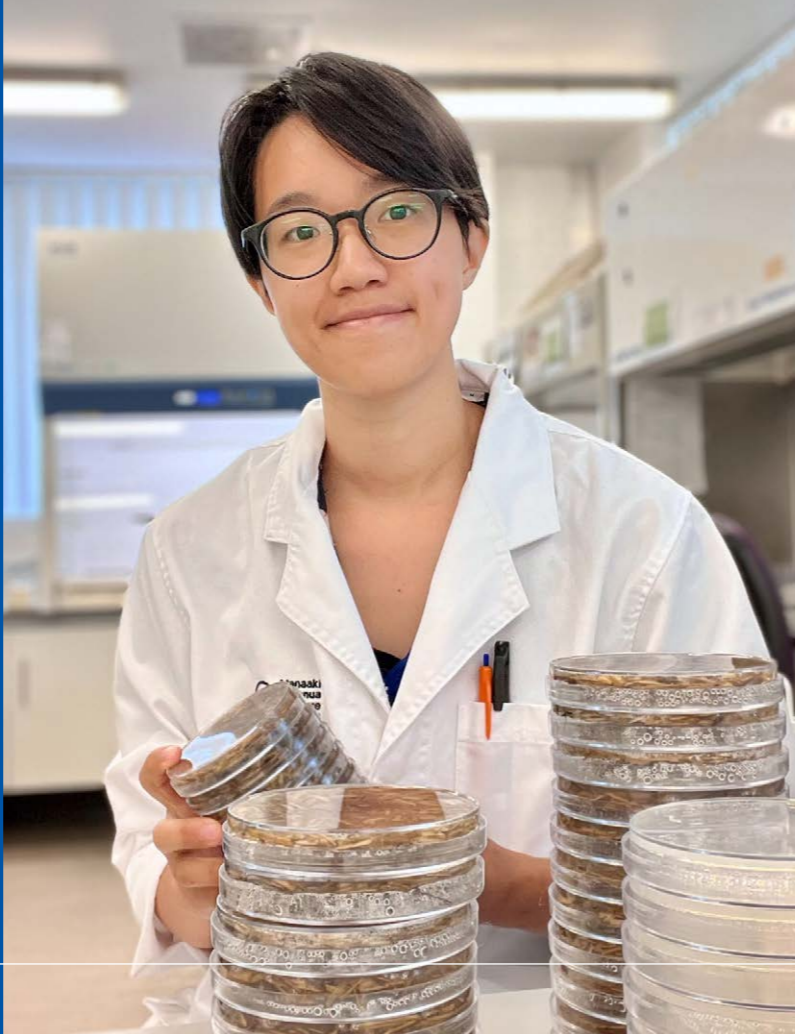
Student innovation

UniServices is part of the ecosystem supporting sustainability-focused ventures such as **Delta Waterways**, which is working to monitor waterways using satellite data, and **BioFab**, co-founded by PhD student and Momentum chair **Jessica Chiang**, which aims to turn fungi into packaging. Student sustainability projects were also shared with global educators at a **United Nations workshop**.



Delta Waterways

Jessica Chiang



Partner for the Future

UniServices is a key partner of the Business School's Centre for Innovation and Entrepreneurship (CIE), supporting programmes such as the **Velocity** entrepreneurship development programme. The 2022 winners of the **Velocity \$100K Challenge** included ventures focusing on neurosurgery, mental health, water quality, satellite communication and sexual consent. Winners participate in the 2023 **VentureLab incubator programme**.

In 2022, the CIE and the Business School launched the 5G-powered **technology hub Te Ahi Hangarau** and the year-long **Doctoral Entrepreneurial Leadership Programme**. The University was named one of the **world's top maker schools** and a finalist (later **winner**) of the international **Entrepreneurship Education Excellence Awards**.



Doctoral Entrepreneurial Leadership Programme

Research Impact

Hangaia te ā mua
Create the future

UniServices helps University researchers grow and amplify their impact. In 2022, we supported the development of **Hīkina kia Tutuki**, seven flagship university research centres focused on Aotearoa's most pressing challenges.



Dame Margaret Brimble won a top international chemistry prize, the Pedler Award



Professor Mark Billinghurst was recognised for augmented reality research

We were proud to see our top researchers win awards including **New Year Honours**, **Queen's Birthday Honours**, **Rutherford Fellowships** and **Royal Society Te Apārangi** and **Health Research Council** awards. Four University researchers were recognised as among the **top two percent of social scientists worldwide**. Individual researchers received prestigious national or international awards for their work in **chemistry**, **augmented reality**, **cancer research**, **nanotechnology**, and **fire and earthquake-resilient structures**.



Health Research

Mauri tū, mauri ora

A vibrant soul is a healthy soul

Staph researchers John Fraser, Ries Langley and Fiona Radcliff meet with Prime Minister Jacinda Ardern, Feb. 2022

Infectious Diseases

Researchers welcomed the government announcement of \$40.7m nationally in funding over four years for the development of novel mRNA vaccines and other therapies. The University is a leader in this area, with a team led by Professor John Fraser working to develop an mRNA vaccine for staph, a sometimes deadly 'superbug'.

Other University-led teams also made strides in infectious diseases research. The **Sex and Prevention of Transmission Study (SPOTS)** team won a major Australasian award for its innovative approach to HIV prevention. A team led by Sir Bill Denny continued its globally collaborative work on developing better, safer tuberculosis drugs.

Cancer

Set up in 2021, Te Aka Mātauranga Matepukupuku | Centre for Cancer Research became a Hīkina kia Tutuki flagship University Research Centre in 2022. It brings together 300 researchers from across backgrounds and disciplines.

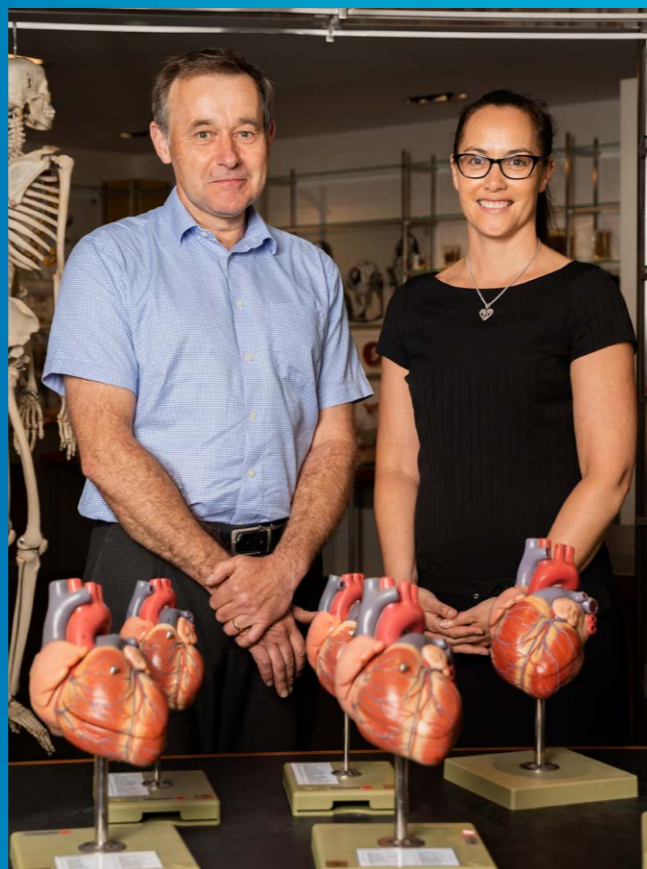
Dr Hayley Reynolds is leading research on **personalised radiotherapy for prostate cancer**. Current treatment delivers a uniform dose of radiation therapy to the entire prostate gland. Advanced imaging techniques could be used to better target tumours.

The **Auckland Cancer Trials Centre** doubled the number of patients receiving experimental treatments, some originating from the University. Some patients have done almost miraculously well, living years longer than expected.

Heart Health and Diabetes

The link between diabetes and hypertension

University researchers led by Professor Julian Paton, along with international collaborators, discovered a common mechanism linking high blood pressure and diabetes. The team's goal is a medication to control both hypertension and high blood sugar. They've already been successful in animal studies. Two-thirds of people with diabetes also have hypertension.



Professor Julian Paton and Dr Anna Rolleston

Heart health equity for Pacific peoples

Dr Sandra Hanchard was named the inaugural Heart Foundation - Pūtahi Manawa Pacific Research Fellow in December 2022. The researcher of Tongan heritage is focusing on how disparities in outcomes for Māori and Pacific people develop following discharge after heart failure. Her goal is to improve discharge planning with an equity lens.



Dr Sandra Hanchard

\$8m for community-engaged heart research

Pūtahi Manawa | Healthy Hearts for Aotearoa New Zealand is funding six major research projects that aim to combat cardiovascular disease among Māori and Pacific communities. The projects, led by University researchers and totalling more than \$8m over three years, focus strongly on mahitahi, partnerships and collaboration with communities.

A puzzle at the heart of diabetes

Researchers at the Auckland Bioengineering Institute (ABI) uncovered a mystery that, if solved, could prevent or delay heart disease in people with diabetes. In early-stage diabetes, the heart contracts better than expected despite a decrease in contractile proteins. The researchers aim to find a way to preserve that function.

Brain Health

The Centre for Brain Research was named a Hīkina kia Tutuki flagship research centre.



Parkinson's Disease

Parkinson's has long been seen as a disease of the brain, but groundbreaking research shows a key may be genetic changes affecting biological pathways in the body's tissues. The study, led by doctoral candidate Sophie Farrow and Professor Justin O'Sullivan, improves scientists' understanding of genetic risk factors for developing Parkinson's and could lead to ways to treat and even prevent Parkinson's based on individual genetics.



Professor Justin O'Sullivan & Sophie Farrow

Dementia

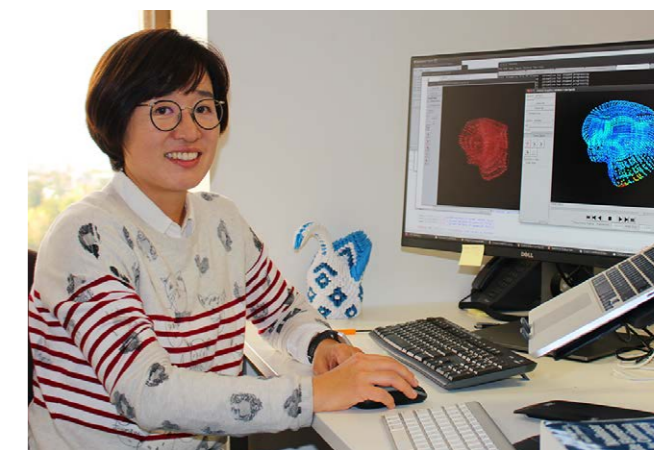
Auckland researchers working with American researchers published the groundbreaking finding that poor mental health in earlier life is a strong indicator of risk for later dementia. The study followed 1.7 million New Zealanders for 30 years. Another team led by Dr Makarena Dudley embarked on a \$1.1 million, three-year study to determine the prevalence of mate wareware (dementia) among Māori.



Dr Makarena Dudley

Traumatic brain injury

Researchers at ABI led by Dr Vickie Shim, in collaboration with Mātai, a Gisborne-based research centre, are using advanced biomechanical modelling to better understand the impact of concussion in a study involving teenage rugby players over the course of a season. Using data from MRI brain scans and high-tech mouthguard sensors, the team aims to identify the pathways that cause severe cognitive impairments.



Dr Vicki Shim

Infant Health



Dr Hamid Abbasi

Cerebral palsy and perinatal brain injury

Groundbreaking work by University researchers has found [slowly developing brain injury after preterm birth](#) – often linked to [cerebral palsy](#) – [may be treatable](#) using anti-inflammatory drugs. Another project aims to [prevent bone deformation in children with cerebral palsy](#). A separate team is working to pilot an [early diagnosis hub](#) for cerebral palsy.

Dr Hamid Abbasi received a Research Honours Aotearoa medal for [developing a method to automatically identify biomarkers of childbirth-related brain injuries](#). Subtle electrical brain signals can suggest these injuries, leading to quicker treatment. In related work, Professor Alistair Gunn and Dr Joanne Davidson received funding for research to [detect and treat perinatal brain injury](#).

Rapid genetic tests

At any given time, there are babies in intensive care with rare genetic conditions that doctors struggle to diagnose. Liggins Institute researchers aim to change this through a project to [rapidly sequence the genomes of sick babies](#), leading to faster treatments that could save lives or at least give parents certainty.

Prime Minister's Science Prize

A team led by Distinguished Professor Dame Jane Harding has been nationally honoured for work on [blood sugar imbalances that can cause brain damage in newborns](#). The Neonatal Glucose Studies Team's finding that sugar gel rubbed inside a baby's cheek improves low blood-sugar levels has become a first-line treatment around the world.



Distinguished Professor Dame Jane Harding

Health Equity



Vision Bus Aotearoa

Māori and Pacific health

New studies suggest why Māori face health inequities – gaps in culturally appropriate care at every stage from [pregnancy to adolescence to palliative care](#).

University staff working to overcome those gaps include Associate Professor Matire Harwood, who won a [Community Service Medal for Māori health advocacy](#), and Dr Te Aro Moxon, who won a [Te Whatu Ora award for clinical equity teaching](#). A team co-led by Dr Tia Reihana won funding to pilot a [te ao Māori approach to injury recovery](#).

Pacific health research also advanced – the Centre for Pacific and Global Health became a new [Hikina kia Tutuki](#) flagship research centre, a [Pacific Health Research Symposium](#) took place and a [memorandum of understanding between the University of Auckland and Fiji National University](#) paved the way for more collaboration.



Associate Professor Matire Harwood

Taking healthcare to people

Geographic and cost barriers cause health inequities. [Vision Bus Aotearoa](#), run by the School of Optometry and Vision Science, started taking free eye tests and treatment to communities. Meanwhile, research by Matire Harwood suggested [telehealth reduces health inequities for whānau Māori](#).

Rainbow community wellbeing

The first national survey of rainbow youth in Aotearoa, led by Dr John Fenaughty, highlighted major concerns for wellbeing. The Manalagi project led by Dr Patrick Thomsen aims to [build a safe space for Pacific rainbow communities](#).



Dr John Fenaughty



Sustainability Research

Whatungarongaro te tāngata, toitū te whenua

As people disappear from sight, the land remains

Sustainability covers environmental, social and economic dimensions. To bring those together, Ngā ara whetū | Centre for Climate, Biodiversity and Society was established as a new Hīkina kia Tutuki flagship research centre.



Ngā Ara Whetū flagship research centre

Building a circular economy

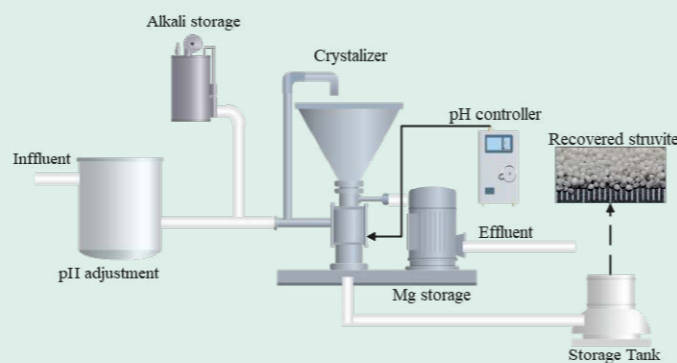
Academics from Engineering and the Business School are collaborating to [shape a circular market for plastics](#). With \$11.7 million in funding over five years, the team is working on a multipronged approach including developing ways to make plastics more recyclable, improve manufacturing methods for recycled plastics and help businesses change their processes.

The Covid-19 pandemic resulted in huge amounts of disposable personal protective equipment (PPE) – not only masks but also isolation gowns, face shields, gloves, etc. A team of researchers led by Dr Yvonne Anderson found a way to [safely sterilise PPE](#) using dry heat, while collaborators led by Associate Professor Saeid Baroutian found a way to break down what can't be reused into water and harmless chemicals.



PPE disinfection structure

Recovering resources is also important in building a circular economy. A team led by Dr Wei Yu has developed a way to [recover phosphorus from wastewater](#) in the form of the mineral struvite, which makes an effective fertiliser. The result could be both cleaner waterways and richer soil.



Struvite phosphorus recovery process

Sustainable transport

Making transportation greener involves many approaches. The lowest-carbon way to get around is walking, so Dr William Cheung is [analysing neighbourhood walkability](#), amenity and the resulting impacts on wellbeing and the housing market.

With concrete playing an important role in infrastructure, Dr Enrique del Rey Castillo is working to [produce a low-carbon concrete using local pumice](#) to replace some of the high-carbon cement normally used.

Auckland researchers are key members of the [Micromobility Research Partnership](#) formed in 2022 across New Zealand and Australia. One project aims to [trial a 'bike or scoot and ride' hub](#) near Auckland's Panmure Station.

University researchers are also working on ways to charge electric vehicles wirelessly as they're moving. A new study used a traffic simulation framework to [investigate the feasibility of embedding charging pads in a section of Auckland motorway](#), including factors such as cost, length and strength of charging lanes, effects on traffic flow and energy consumption.



Dr Enrique del Rey Castillo



Improving geothermal energy

Geothermal energy has a green reputation – but it's not zero-carbon because it releases naturally occurring underground gases. With \$6 million in funding, a team at the University's Geothermal Institute aims to [turn greenhouse gases into rock](#), permanently trapping it underground. The technology could be applied to other industries too.

Mātauranga Māori

Kokiri kia rapua
Success through commitment



Māpihi: Māori and Pacific Housing Research Centre

With the Māori economy booming, as per work by Associate Professor Rachel Wolfgramm, celebrating and building on mātauranga Māori is a major focus at Waipapa Taumata Rau. In 2022 the James Henare Māori Research Centre and Māpihi: Māori and Pacific Housing Research Centre were named Hīkina kia Tutuki flagship research centres. The University hosted its first annual [Mātauranga Māori Symposium](#), with this year's focus on Te Ao Toi (Māori arts) and creative expression.

Māori researchers received funding to investigate community wellbeing – Dr Kiri Dell is looking at [the impact of te reo revitalisation strategies](#), while Associate Professor Mohi Rua is examining [how mainstream sports can become mana-enhancing spaces for Māori](#).

Constitutional Kōrero

Nearly 400 Indigenous rights and law experts from around the world came together for the once-in-a-decade [Constitutional Kōrero](#), a wānanga organised by Law School academic Dr Claire Charters to discuss what a constitution based on Te Tiriti o Waitangi (the Treaty of Waitangi) would look like and how to realise it.



Dr Claire Charters

Reviving mīmiro

Researchers led by Professor Anthony Hoete of the School of Architecture and Planning are [reviving an ancient Māori construction technique](#) and testing its seismic resilience. The mīmiro technique gave whareniui and other buildings remarkable structural stability, but with perhaps only one remaining whare in Aotearoa built with the method, the knowledge is endangered.



Professor Anthony Hoete

Engineering and Digital Tech

Kei ō tātou ringaringa te ao
The world is ours to behold



Soul Machines

Space communications

University researchers are teaming up with the German Aerospace Center, DLR, to research [free-space optical communications](#) – laser light technology – to transmit information from spacecraft down to Earth. Project leader Dr Nick Rattenbury says lasers can transmit more information, more securely, than traditionally used radio waves.

Digital health

Researchers at ABI, in partnership with UniServices-backed company Soul Machines, received \$4 million to investigate [how 'digital people' can be used in healthcare](#), monitoring people's health and providing support in managing conditions. UniServices is also a [leader in digital health](#), both through National Institute for Health Innovation research and investing in digital health start-ups.

New Chief Engineer

Professor Ken Elwood was appointed to the new role of [Chief Engineer for the Earthquake Commission and the Ministry of Business, Innovation and Employment](#). His role will focus on improving building resilience against natural hazards, including examining how engineers assess the expected seismic performance of existing buildings and design retrofits.



Professor Ken Elwood

Industry 4.0

Prolific [Industry 4.0 research](#) led by Professor Xun Xu led to an excellent Times Higher Education impact score for the University on United Nations Sustainable Development Goal 9: Industry Innovation and Infrastructure. Xu's team aims to develop and apply smart technologies across industries to reduce energy and resource consumption while increasing efficiency and worker wellbeing.

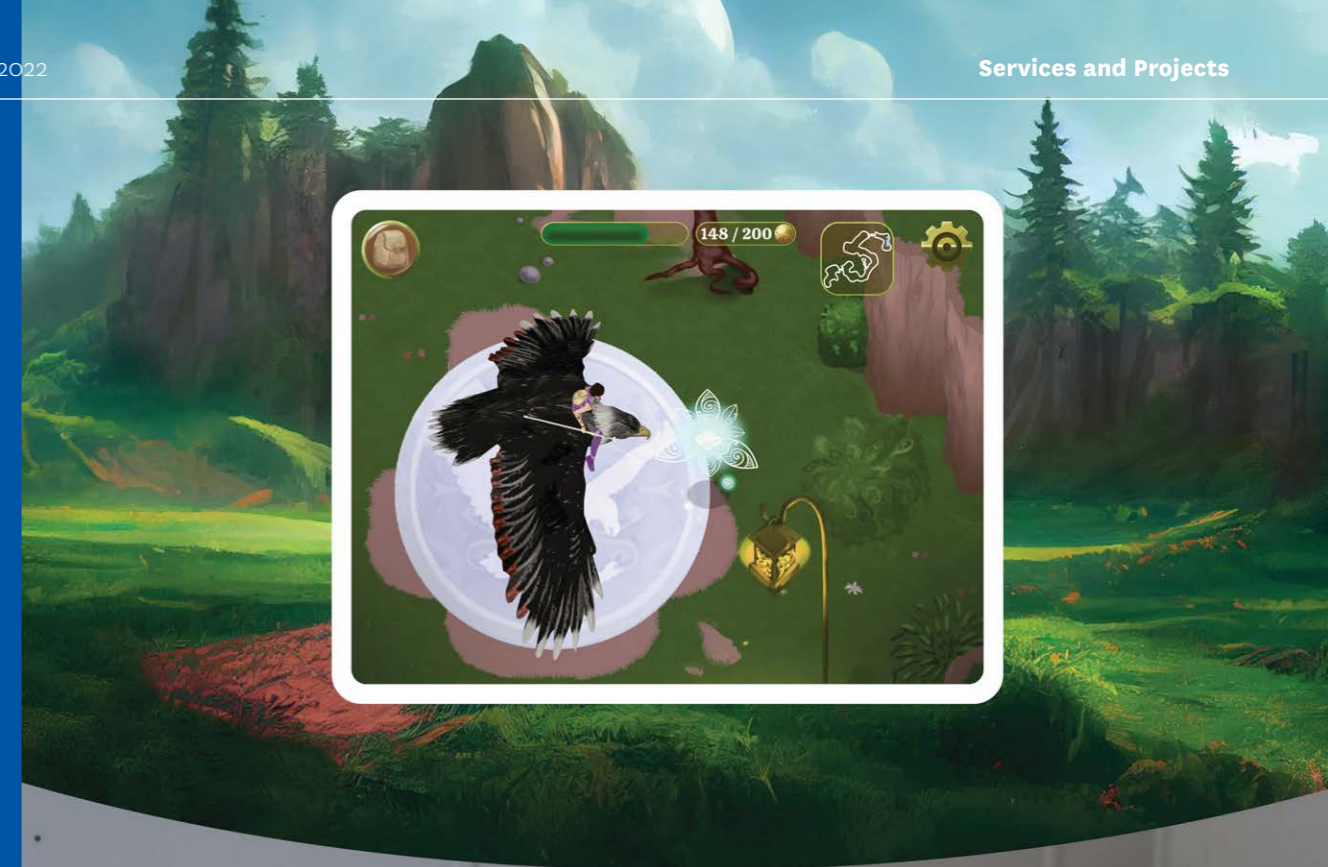


Professor Xun Xu

Services and Projects

He waka eke noa A canoe which includes us all

UniServices manages a portfolio of **services, programmes and projects** that build on Waipapa Taumata Rau, University of Auckland research to deliver positive impacts on communities in areas such as education, health and informing public policy.



SPARX, a NIHI project providing an e-therapy game for youth

In 2022, the teams that focus on workforce development and data access worked together on an ambitious digital transformation programme to deliver services for a post-Covid world that has embraced online and blended learning as well as digital data access.

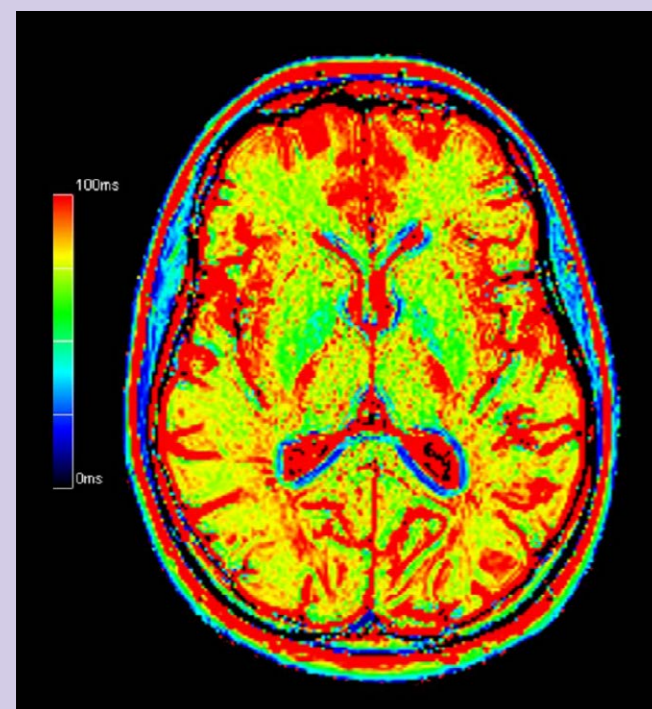
The new digital campus platform seamlessly brings together different systems, resulting in superior user experience and streamlined access to information and services across teams.

Centre for Advanced Magnetic Resonance Imaging

The Centre for Advanced MRI (CAMRI) offers imaging for research and clinical needs. It is home to two scanners of different magnetic strengths plus a mock scanner to allow children and people who may be anxious about the procedure to get used to being in a scanner environment.

In 2022, CAMRI upgraded the more powerful of the scanners. The new scanner has inbuilt physiological monitoring capabilities, which allows technicians to time scans precisely – for example to capture a heart pumping or lungs expanding – without having to use more intrusive equipment. It also allows for faster, quieter scanning.

At the same time, the scanner room and mock scanner room were renovated to improve patient experience. The computer system was upgraded to allow for faster image processing and the use of AI to speed up scans without compromising quality.



CAMRI by the Numbers, 2022

- 4,222 MRI scans
- 67 active research programmes
- 546 research scan participants
- 3 scanners



English Language Academy



English Language Academy (ELA) offers English-language instruction for students aiming for entry to the University of Auckland’s undergraduate and postgraduate programmes as well as group programmes for students from partner universities.

For ELA, 2022 was a transitional year, with programmes continuing online, largely for students who couldn’t travel due to Covid-19 border restrictions, and face-to-face programmes returning once borders reopened.

Among the first to return was a group from Hong Kong that took part in in the ELA’s six-week Cultural and Language Immersion Scheme. As part of the programme, the students participated in volunteer work to bring them into contact with the community and build their English proficiency.

ELA students studied a total of 4,646 weeks in 2022.



Global Vaccine Data Network

The Global Vaccine Data Network (GVDN) is a multinational investigator-led network that evaluates the safety and effectiveness of vaccines using common protocols during real-world use across hundreds of millions of people.



GVDN co-directors Jim Buttery, Helen Petousis-Harris and Steve Black with Julianne Gee of the CDC (second from left) and Greg Murison of UniServices (far right)

GVDN by the numbers, 2022

The GVDN network includes:

- 29 sites
- 27 countries
- 6 continents
- >250 million people



Growing Up in New Zealand

Growing Up in New Zealand is the largest longitudinal study of child development in Aotearoa New Zealand, regularly collecting information from more than 6,000 families since 2009. The data provides rich insights into child health and wellbeing and is used to inform policy and service development.



In 2022, Associate Professor Sarah-Jane Paine (Tūhoe) was appointed as the new research director. The first wahine Māori in the position, Paine is also a faculty member at Te Kupenga Hauora Maori, the Department of Māori Health.

The year saw the completion of the 12-year data collection wave, with over 40,000 questionnaires completed and more than 11 million pieces of data collected. Culturally appropriate practices were used to foster engagement with Māori and Pacific families.



Associate Professor Sarah-Jane Paine

Findings

Highlights of 2022 research findings using Growing Up in New Zealand data:

- Paracetamol use during pregnancy could be linked to childhood depression
- Connection to Te Ao Māori supports exclusive breastfeeding
- Almost all Kiwi preschoolers eat junk food, not enough fruit and veg
- Concerns about the effects of IVF on children's development are unwarranted
- It's easier for children and families to fall into disadvantage than to climb out



Immunisation Advisory Centre

The **Immunisation Advisory Centre (IMAC)** serves as a source of independent, evidence-based information regarding vaccine-preventable diseases and immunisation. In addition to providing national strategic and policy advice, it educates New Zealand's vaccinators and provides clinical standards and engagement opportunities for health professionals.



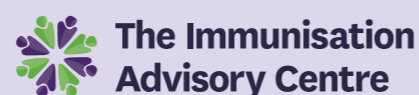
In 2022, IMAC continued to provide Covid-19 vaccination training, advice and support, particularly through the Omicron wave. This was true not only in Aotearoa – IMAC also supported six Pacific nations with their vaccine rollouts, including helping with cold chain logistics and training trainers in administering the Pfizer vaccine.

As the year went on, IMAC increased its focus on supporting routine childhood immunisation in New Zealand and the Pacific.

IMAC supported six Pacific nations in rolling out the Pfizer Covid-19 vaccine: Cook Islands, Niue, Samoa, Tokelau, Tonga and Tuvalu

IMAC by the numbers, 2022

- **28,592** Covid-19 vaccinator course completions since 2021
- **15,745** Covid-19 immunisation call queries to IMAC's Clinical Communications Centre in 2022
- **8,420** newsletter subscribers



National Institute for Health Innovation

The **National Institute for Health Innovation (NIHI)** works to improve health in Aotearoa and the Pacific through supporting research, informing policy, health service delivery and evaluation. **Vanessa Ding** became NIHI's new general manager in January 2022.



2022 Highlights

Foetal Alcohol Spectrum Disorder

Dr Joanna Chu received funding from the Health Research Council to investigate the link between young people with FASD and appearances in youth justice. With the NIHI digital solutions team, she began work on a virtual reality tool to raise awareness about FASD. She also appeared in the media discussing FASD-related issues.

Tobacco control

NIHI, long a leader in smoking cessation research, was tasked with evaluating an Auckland Council project to empower communities to develop smoking cessation solutions. It also began the Cess@tion study to evaluate the effectiveness of cytisine, a natural compound found in plants including kōwhai, in helping smokers quit.

Assessing mental health needs in the Pacific

NIHI is leading the operational delivery of Pacific Mental Health Surveys, research led by Sir Collin Tukuitonga's team and Pacific partners to comprehensively assess mental health needs in Samoa, Tuvalu and beyond.

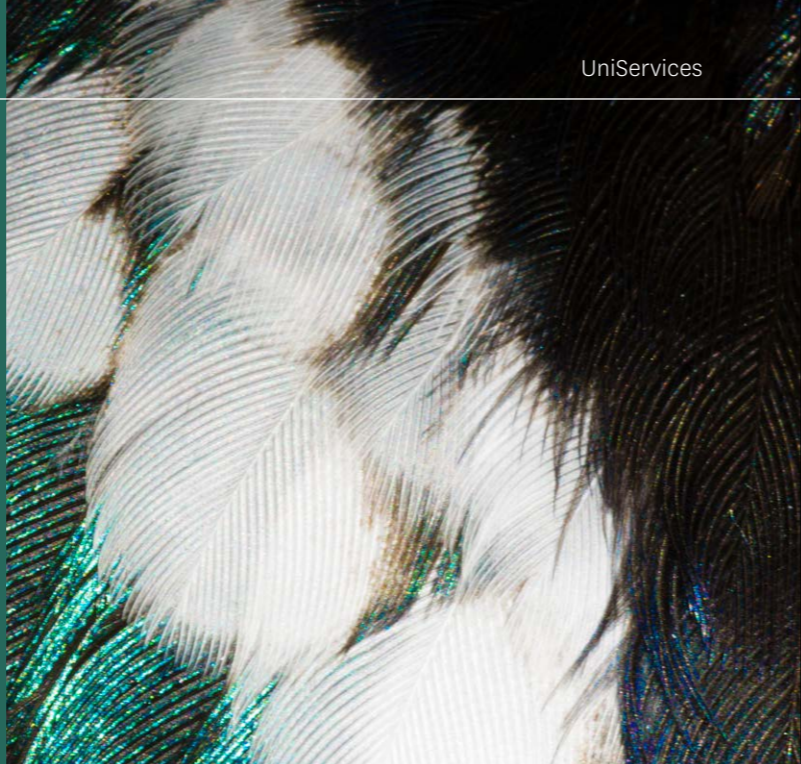


Sir Collin Tukuitonga



Tui Tuia | Learning Circle

Tui Tuia is Waipapa Taumata Rau, University of Auckland's evidence-based professional learning and development (PLD) service for educators.

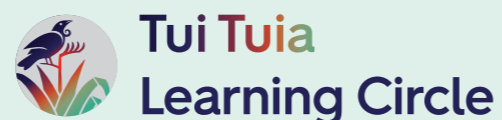


2022 Highlights

- Tui Tuia began offering PLD to help early childhood education centres (ECEs) and schools better support Pacific learners. The PLD is based on the Ministry of Education's Tapasā cultural competencies framework and is tailored to the needs and goals of each educational setting.
- The Languages team completed more than 100 workshops to support language teaching – a record number.
- Tui Tuia led the way in developing UniServices' new digital campus platform. Among the first groups to use it were principals in Abu Dhabi participating in the Growing Great Leaders programme.
- A new PLD version of the Learning Schools Model was successfully piloted in one secondary school, resulting in the approach being extended to ten schools across Auckland, with more extension planned in 2023.
- Reading Recovery and Early Literacy Support continued to be further extended in schools, helping teachers use evidence and ongoing monitoring to support all children to experience literacy success.
- Te Mātaiaho, the refreshed framework for the New Zealand Curriculum, gives effect to Te Tiriti and its principles, which ensures the right to belong and flourish for all ākonga through high-quality learning experiences.



Tapasā training team with ECE in Hawkes Bay



Whāraurau

Whāraurau provides national training and workforce development within the infant, child, youth and whānau mental health and addiction sector. In 2022, **Abigail Milnes** became its permanent director.



2022 Highlights

New workstreams

Whāraurau was successful in its bid for three pieces of new work including perinatal workforce development, online learning for school staff to enhance student wellbeing (in collaboration with Tui Tuia) and talking therapies.

Supporting parents through the pandemic period

The coordination of free access to the online Triple P Positive Parenting programmes during the Covid-19 pandemic resulted in 17,500 whānau being supported during a time when parents were facing significant challenges.

Single Session Family Consultation training

Whāraurau achieved a significant milestone in 2022 when community-based trainers and Whāraurau trained over 1,000 people in Single Session Family Consultation (SSFC), a framework for involving family and whānau in the individual's care, taking into account their unique needs.



New Zealand Family Violence Clearinghouse

The New Zealand Family Violence Clearinghouse is the national centre for research and information on family, whānau and sexual violence, working alongside Whāraurau. In 2022, funding under a

new contract with Te Puna Aonui enabled the NZFVC team to grow. New roles include a Kaupapa Māori research lead, a policy lead and a project support coordinator.



Investment and Commercialisation

Tectonus



Te wairua rakahinonga Entrepreneurial spirit

As the research application and commercialisation company of Waipapa Taumata Rau, University of Auckland, UniServices identifies groundbreaking research with commercial potential and helps bring it to an industry-ready stage.

Through the **University of Auckland Inventors' Fund**, which doubled to **\$40 million in 2022**, we invest in research-backed ideas that generate value and positive impact in Aotearoa New Zealand and the world.

A report released in 2022 by **Knowledge Commercialisation Australasia** found the University to have the highest commercialisation revenue out of 49 publicly funded research institutions, the second-most active start-ups and spinouts, and the second-highest number of intellectual property licences, options and assignments.

Award Winners

Alimetry

It was a big year for Alimetry, which makes advanced clinical solutions for investigating gastric disorders. It won a record three awards at the prestigious NZ Hi-Tech Awards. (The Insides Company, another UniServices portfolio company co-founded by Alimetry CEO Greg O’Grady, was a finalist.) Alimetry also won a KiwiNet Research Commercialisation Award in the ‘breakthrough project’ category, and was among five Asia-Pacific winners of the Medtronic APAC Innovation Challenge.

Earlier in the year, Alimetry received U.S. FDA approval for its flagship Gastric Alimetry device, a non-invasive tool to diagnose disorders of the upper gut. It also raised \$16.3 million in Series A funding.

Alimetry CEO Greg O’Grady (left)



Commercialisation Icon

Professor Cather Simpson of the University of Auckland was named Commercialisation Icon, the highest honour of the KiwiNet Research Commercialisation Awards. Simpson is a physicist, chemist and serial entrepreneur who has spun out two companies backed by UniServices.

Engender Technologies developed technology to separate X- and Y-chromosome-bearing bull sperm cells. It was acquired by multi-genetics company CRV International in 2018. Orbis Diagnostics is developing a testing platform that uses microfluidic platform technology to miniaturise and automate lab testing for high-volume, non-laboratory environments.

Professor Cather Simpson



StretchSense

StretchSense, which is building ‘the world’s best motion capture glove’, placed Highly Commended in the Endace Most Innovative Hi-Tech Hardware Product category of the NZ Hi-Tech Awards. It also raised \$13.3 million to accelerate its global expansion. StretchSense was spun out from the Auckland Bioengineering Institute in 2012.



Evelyn Body



Commercialisation Professional Award

Evelyn Body, who was Director of Commercialisation at UniServices until September 2022, received the KiwiNet Commercialisation Professional Award. After starting at UniServices in 2012 as an intellectual property advisor, Body went on to negotiate some of UniServices’ largest deals as well as innovative bespoke solutions.

Kara Technologies

Kara Technologies, which creates digital sign language avatars, placed Highly Commended in the Visa Best Hi-Tech Solution for the Public Good category of the NZ Hi-Tech Awards. It also raised \$1.3 million in seed funding and was accepted into the Startmate Accelerator in Australia and the Alchemist Accelerator in the United States.



Student innovation award

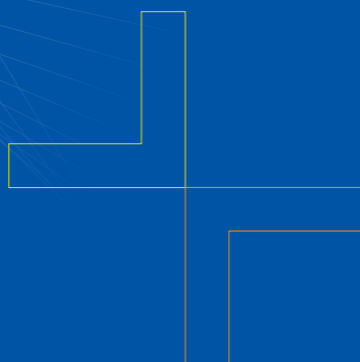
A young company with Gen-Z founders, eVouch is a marketing automation tool to structure, build and scale word of mouth marketing for businesses. In 2022, it raised \$500,000 in a pre-seed round aimed at scaling both team and product. Co-founder Alonzo Nieves won a Most Meritorious Innovation Blues Award.



eVouch video

New Investments

UniServices invested in seven research-based companies in 2022. These include:



Opo Bio

With the meat industry facing questions about climate and ethics, there is rising interest in cultivating meat from animal cells. **Opo Bio**, which emerged from 'stealth mode' in 2022, is based on University research by Dr Laura Domigan and Dr Vaughan Feisst. It focuses primarily on producing cell lines from livestock.

Dr Laura Domigan

TheiaNova

New University spin-out company **TheiaNova** is working to introduce a groundbreaking, non-invasive **treatment for the eye disease keratoconus**, which causes collagen in the cornea to break down. Current treatment involves surgery or transplant, but researchers led by Professor Emeritus Colin Green have discovered a way to strengthen the cornea using eye drops.

TheiaNova researchers Professor Trevor Sherwin, Dr Carol Greene and Professor Emeritus Colin Green

TamoRx

TamoRx, a new company founded by Dr Joanna Mathy and Professor Rod Dunbar from the School of Biological Sciences, **raised \$15.25 million to develop an immunotherapy drug** to help patients' immune systems destroy cancer cells. The team will focus on combatting a mechanism that restricts the immune system from fighting cancer.

Professor Rod Dunbar

TrueSilence

TrueSilence, founded by Professor Grant Searchfield and U.S. partners, aims to commercialise a digital therapy that a **clinical trial has shown to be promising in relieving the symptoms of tinnitus**. The smartphone app uses active and passive sound therapy to 'rewire' the brain to de-emphasise ringing in the ears.

Professor Grant Searchfield

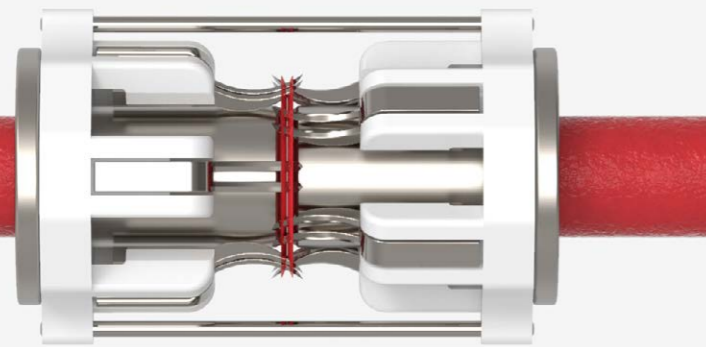
Ceryx Medical

Ceryx Medical was co-founded by Professor Julian Paton and colleagues in the UK. In 2022, it began human trials of the **Cysoni 'bionic' pacemaker**, developed in collaboration with Auckland Bioengineering Institute scientists. Unlike existing pacemakers, Cysoni re-establishes the heart's naturally irregular beat. Researchers say it could reverse heart failure.



Successful Raises

Several **UniServices portfolio companies** successfully raised funds in 2022. These include:

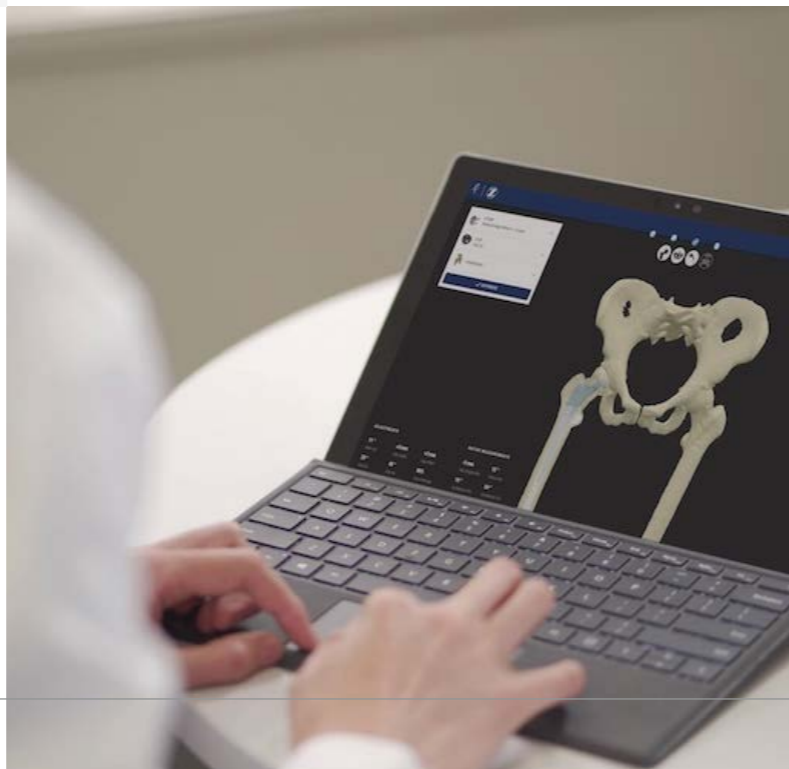


Avasa

Avasa, incubated at the Auckland Bioengineering Institute, is developing a coupler to safely connect arteries in microvascular surgery much more quickly than currently possible. After successfully reconnecting a live pig's femoral artery using the coupler in 2021, Avasa raised seed funding from Bridgewest Ventures in 2022.

Formus Labs

Formus Labs, which grew out of Auckland Bioengineering Institute research, developed the world's first AI-automated 3D planner for joint replacement surgeries. It raised US\$5 million to commercialise its cloud-based platform and released its inaugural product, Formus Hip, in Australia and New Zealand, in partnership with global orthopaedic technology leader Zimmer Biomet.



Tectonus

Tectonus's self-centring damper technology allows structures to withstand earthquakes, reduce damage and return to normal functioning more quickly. It raised \$8 million in a Series A round to expand into the North American market. It also hired Clark Beck as CEO, allowing co-founder Professor Pierre Quenneville to become CTO.

Professor Pierre Quenneville (left) and Andy Van Houtte, Project Engineer



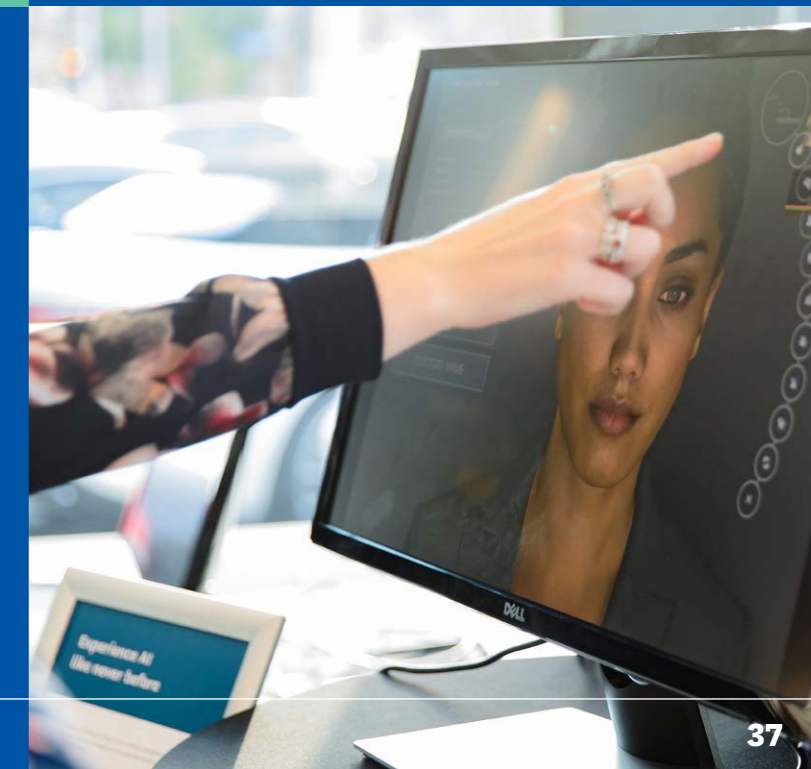
Quantifi Photonics

Quantifi Photonics, an emerging leader in high-density photonics test and measurement, raised US\$15 million in Series C funding to accelerate the development of test solutions for datacom and telecom equipment manufacturers. It also acquired SmarTest Electronics, giving it research and manufacturing facilities in Thailand.



Soul Machines

Soul Machines, which creates 'the world's most astonishing digital people', raised US\$70 million, bringing total investment in the company to US\$135 million. It also announced a new entertainment division to allow fans to interact with celebrity avatars. Co-founder Mark Sagar was named Innovator of the Year in the New Zealander of the Year awards.



Finances

Having navigated through the challenges and residual impact of Covid-19, we were able to sustain a strong result with an operating margin of \$5.4 million or 7.0% on operating revenue of \$77.9 million.

UniServices exceeded shareholder expectations in:

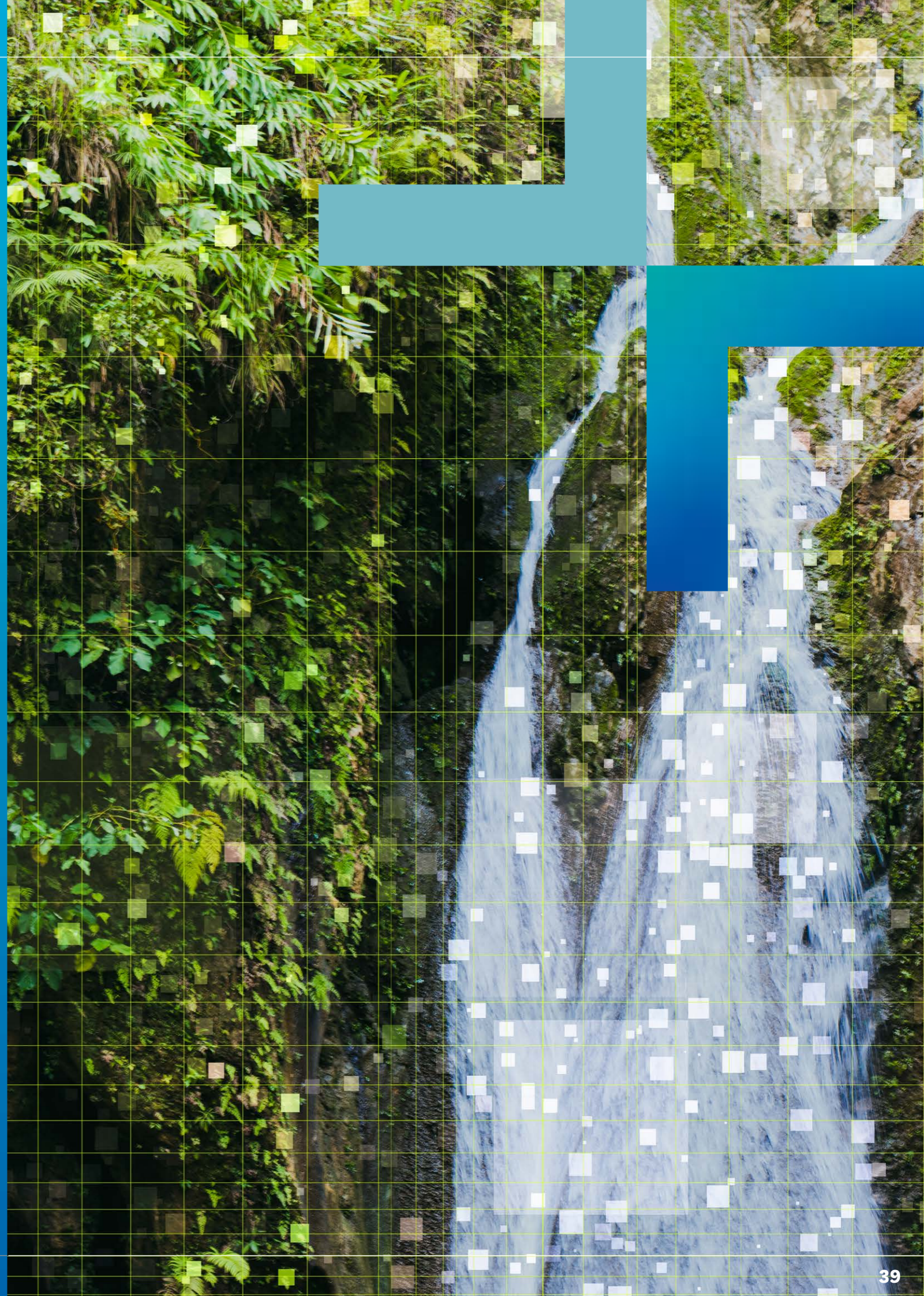
- Business Units surplus: Achieved target net margin of 4.0%.
- Commercialisation surplus: Achieved net margin of \$810,000 vs. break-even target.
- Research revenue surplus: Achieved net margin of 5.3% vs 1.4% target.
- Research contracts: Achieved \$226.8 million of booked agency contracts vs. \$217 million target (\$9.8 million above target).

There was investment-related income of \$6.4 million and interest income of \$849,000, which resulted in total other income of \$7.2 million and contributed to the overall profit of \$6.1 million or 7.2% on total revenues of \$85.1 million. This included:

- \$5.1 million of income less \$690,000 of expense for the University's share of investment provision, mainly due to a \$3.6 million movement resulting from the write-down of Soul Machines shares in line with the general tech market downturn seen in 2022.
- \$1.2 million income on sale of Rain Therapeutics shares, which was partially reduced by an offsetting revaluation impairment of \$665,000 resulting in a net gain of \$535,000.
- \$794,000 expense due to investment write-off of SapVax as a result of the recommendation from SapVax's board to wind down the company.

Our investment portfolio has reduced to \$64.6 million due to the valuation write-down of Soul Machines, sale of Rain Therapeutics and write-off of SapVax.

The UniServices balance sheet remains strong with net assets of more than \$89 million. For more information, find us on [Charities Register](#).



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