



2021
ANNUAL REPORT
www.kiwinet.org.nz

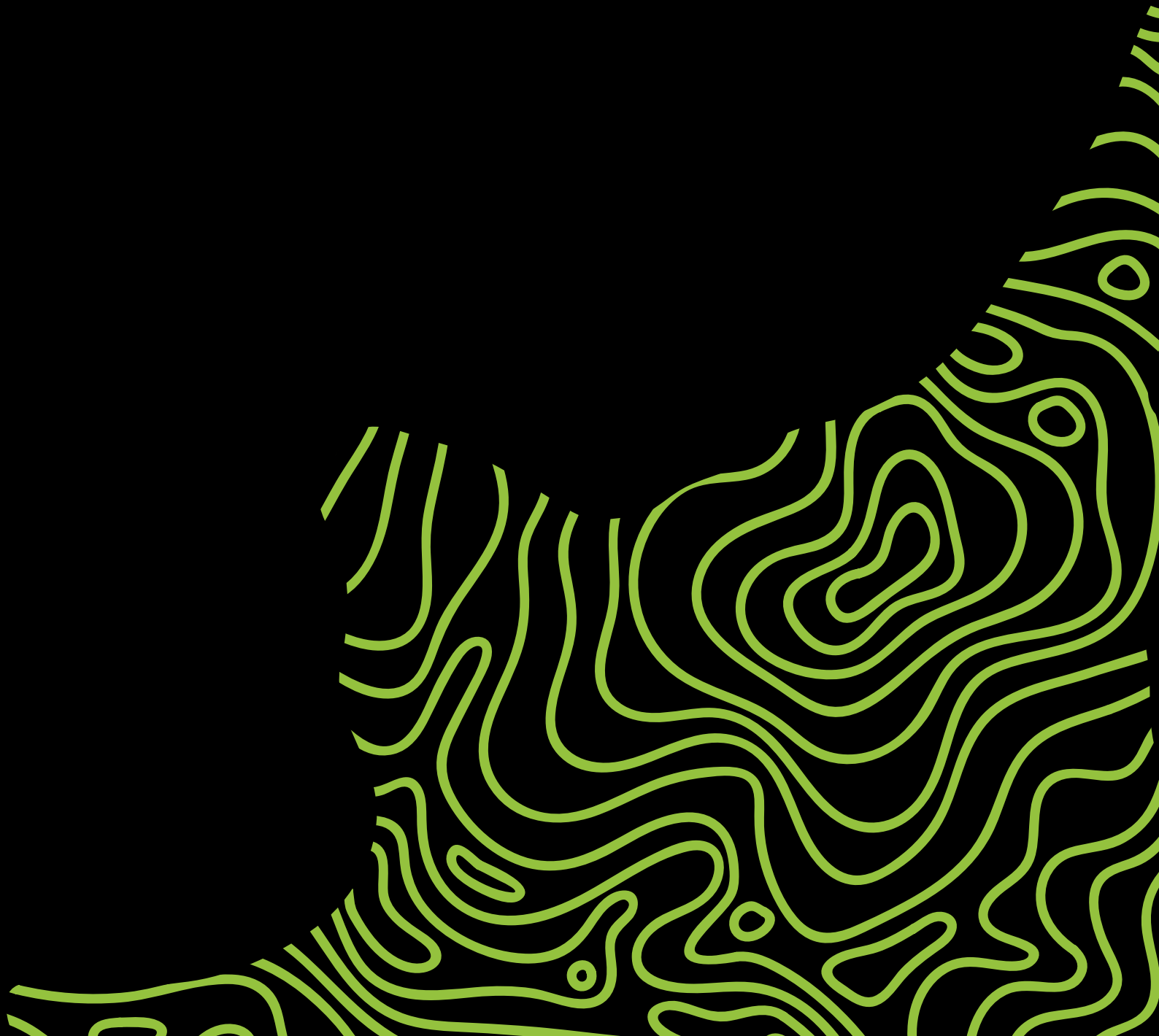




COVER IMAGE

The Rākau, or tree, adorning the cover page of our Annual Report represents key elements of KiwiNet's cultural narrative.

WE BELIEVE IN THE
**POWER OF NEW
ZEALAND SCIENCE**
TO TRANSFORM
LIVES AND CHANGE
THE WORLD





TRANSFORMING SCIENTIFIC DISCOVERIES INTO NEW BUSINESS



ABOUT KIWINET

KiwiNet is the combined power of New Zealand's Universities, Crown Research Institutes and other research organisations who receive public funding. Together these research organisations represent a total combined research expenditure of over \$800 million and represent 80% of the publicly funded researchers in New Zealand.

Through KiwiNet, the commercialisation offices of these organisations are pooling knowledge and resources to support and accelerate research commercialisation. This support means that Aotearoa New Zealand's clever scientific discoveries can be developed further, ready for private investment, so they can ultimately become the new products, services and clever start-up companies that are transforming lives and changing the world.

FUNDING

KiwiNet is funded from the shareholder research organisations, corporate partners, and the Ministry of Business, Innovation and Employment.

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A map of New Zealand is shown in a light green color. Several dark green squares are placed on the map, indicating the locations of various research and innovation partners. Surrounding the map are the logos of these partners, including:

- AUT VENTURES**
- Plant & Food Research** (Rangahau Ahumāra Kai)
- waikatolink** (University of Waikato Commercialisation)
- agresearch** (āta mātai, mātai whetū)
- SCION** (FORESTS • PRODUCTS • INNOVATION)
- CallaghanInnovation**
- WELLINGTON UNIVENTURES**
- CAWTHRON** (The power of science®)
- GNS SCIENCE** (TE PŪ AO)
- E/S/R** (Science for Communities)
- Lincoln University** (Te Whare Wānanga o Aarāhi, CHRISTCHURCH, NEW ZEALAND)
- Manaaki Whenua Landcare Research**
- UC UNIVERSITY OF CANTERBURY** (Te Whare Wānanga o Waitaha, CHRISTCHURCH NEW ZEALAND)
- Massey Ventures** (Supporting Research Innovation)
- OTAGO INNOVATION** (A UNIVERSITY OF OTAGO COMPANY)

Shareholders (Universities, Crown Research Institutes, Entities and independent research organisations) as at 30 June 2021.

KiwiNet works to ensure that all publicly funded research discoveries with commercial potential are delivering maximum impact and growing Aotearoa New Zealand for all.

Opportunity waits for no one.

Chair's Report



The year that promised unprecedented economic downturn has been redefined as one of outstanding opportunity for deep tech discoveries, as we witness the meteoric rise of the investor.

KiwiNet has spent the past 10 years creating an extraordinary pipeline of projects, accelerating our most promising ideas to market. Now the stars are aligning, and great opportunity awaits:

- We've seen the emergence of a robust innovation ecosystem around spin out companies, with four new tech incubators actively engaged.
- Entrepreneurial scientists have unprecedented access to 'best fit' investors, offering more than financial investment.
- Investors have the best chance to engage early, invest their expertise and shape the technology and team for success.
- There is a greater appetite to explore and apply different commercialisation models and we have creative commercialisation teams up for the challenge to bridge the gap between discovery and enterprise.
- A korowai of cultural enrichment now envelops our space, shaping the environment for inclusivity and better decision making.

All this places us at a real inflection point. There is an appetite and a willingness for all parts of the ecosystem to work together to grow the pipeline of entrepreneurs, ideas and inventions.

Deep tech discoveries are truly poised to solve global problems and - in doing so - to create wealth for New Zealand on a scale not seen before. KiwiNet is ready to facilitate that growth.

We remain single minded in our focus to build and accelerate a pipeline of deep tech discoveries and entrepreneurial people to deliver prosperity to New Zealand. We have proven we are resilient, adaptable and ready to navigate whatever the future may hold.

Last year I closed with a call to arms, to embrace uncertainty and make change for the better. Without a doubt KiwiNet has done this with an eight-fold return to New Zealand from the PreSeed Accelerator Fund to date.

The KiwiNet Board has been bolstered with the fertile and clever minds of our new directors, Mark Cleaver, Vignesh Kumar and mentored observer, Zoe Murphy.

KiwiNet's management team continue to do us proud with their passion and mammoth contribution to the ecosystem. The Board and team thank our Shareholders for their willingness to leverage their collective wisdom for the benefit of all and their relentless ambition to see clever ideas become commercial reality.

KiwiNet plays an active and growing part in unlocking the promise of scientific discoveries. We're proud to support the people who are championing the best ideas to make a difference for Aotearoa New Zealand.

Ngaio Merrick / June 2021
Chair, KiwiNet

Now is the time for new ideas.

CEO's Report

It's time to create some new beginnings for Aotearoa New Zealand, to tackle things like health inequity, environmental sustainability, food production, climate change, and not to mention future pandemics... and doing so while rebuilding our economy.

What if we could also do this in a way that walks alongside Māori from the outset, as collaborators towards a shared purpose? Embedding Māori principles of kaitiakitanga that aim to care for our land, our environment and our people, not just now but far into the future. I believe that we could create something that is very unique to Aotearoa New Zealand, at a time when our 'competitive advantage' on the international stage is front of mind.

Across the KiwiNet whānau, we are embracing this superpower and beginning to walk more confidently in te Ao Māori, the Māori World. By further opening ourselves to a Māori worldview, we have discovered new perspectives on innovation and commercialisation, including using the practice of personification to represent the KiwiNet world as a rākau (tree).

Our ancestors, our founding partners that formed KiwiNet 10 years ago, are the pūtaka (the roots) of our rākau.

The branches are our member organisations, the commercialisation offices of the 18 universities and research institutes that make up our immediate whānau - helping New Zealand grow by turning scientific research into market ready opportunities.

The trunk is our Investment Committee, our core strength that brings together our whānau in one place and drives what we do - pooling funding and resources to support and accelerate research commercialisation. Our rākau draws up nutrients (scientific discoveries) from the rich soil (our public research base) and with water (our funding), transforming these scientific discoveries into the putiputi (the flowers) and huarākau (the fruit) - these are the new products, services and clever start-up companies that are having a positive impact in the world.

And many manu (birds) have come to nest in our rākau - these are our Emerging Innovators, commercialisation professionals, mentors, investors and other stakeholders that provide vital pollination of ideas and that help to disperse new seeds to grow new rākau to diversify and strengthen the rainforest (our economy).

Indeed, the KiwiNet rākau is healthy, thriving and poised for growth. We are currently seeing unprecedented growth in the KiwiNet pipeline as result of our maturing and sophisticated commercialisation ecosystem. There are many more buds forming on our branches and many more manu coming to nest.

Now is the time to harness this momentum and grow to that we can maximise the contribution that our cutting-edge kiwi science can make to the future prosperity of Aotearoa New Zealand.



Dr James Hutchinson / June 2021
CEO, KiwiNet



We're in the midst of a global pandemic and economic upheaval - what better time to diversify our economy and change up what we do.

HONOURING TE TIRITI O WAITANGI

The Treaty envisages the Crown-Māori relationship as a partnership, in which the Crown is entitled to govern and Māori retain tinorangatiratanga over their taonga.

Ko Aotearoa Tēnei, the Waitangi Tribunal Report on the WAI 262 claim, encouraged the establishment of genuine partnerships in which Māori interests and those of other New Zealanders are fairly and transparently balanced, in a positive and future-focused way.

As we accelerate our best scientific discoveries to technological and commercial maturity, we do so to enrich the health and well-being of our people and the environment, now and for future generations to come.

For KiwiNet, honouring the Te Tiriti o Waitangi opens up a world of opportunity to enrich and add value to all we do, for the benefit of Aotearoa New Zealand. We are guided by the framework of Vision Mātauranga, working alongside Māori, through joint and agreed action, to achieve mutual benefit based on a shared purpose.

This shared purpose is the basis for a vital partnering relationship between Te Ao Māori and Te Ao KiwiNet, evolving a historical relationship that sees Māori as 'end users' of research and commercialisation to one as collaborators and leaders. Developing a consistent shared language and sense of purpose around commercialisation is important and, for KiwiNet, our journey is only beginning.

In practice, this means we're proactively building cultural capability in our people and tikanga into our research commercialisation processes, from the start.

We seek to recognise and value of cultural knowledge and expertise, alongside scientific knowledge and expertise.

We're supporting our commercialisation whānau to better identify mātauranga Māori and early opportunities to partner with Māori throughout the commercialisation journey.

Building on our core strengths, the KiwiNet constellation represents a meeting of the minds:

- We're providing a platform for Māori leadership from our stakeholder organisations to meet, collaborate and share practices on a regular basis. As a collective, their kaupapa bears the fruits of shared knowledge and expertise, the combination more than the sum of its parts.
- We are building cultural awareness and capability into our policies and investment committee practices.
- We have appointed Nathan Bryant-Taukiri to enhance Māori perspectives of the conversations around the Investment Committee table, alongside his commercialisation expertise.
- We believe a partnered approach is important to realising shared benefits for Māori from research commercialisation and are encouraged by the open korero we're already hearing, leading to better decision making.

“Of particular interest to me is the opportunity to connect with the amazing people emerging from Aotearoa’s research organisations. They are working on some incredible projects, but – he tangata, he tangata, he tangata – it is people, it is people, it is people. And always will be. I’m eager to actively support them as individuals and, if possible, to positively impact the culture that binds them. That’s where the real power is.”

Nathan Bryant-Taukiri

Independent Member of the KiwiNet Investment Committee



HIGHLIGHTS

KiwiNet Investment and Pipeline Committee

The Investment Committee met eight times across New Zealand and reviewed a 57 new commercialisation projects. KiwiNet PreSeed Accelerator Fund investments are generating a greater than eight-fold return to New Zealand, in terms of business revenue to New Zealand firms and jobs created. Five Pipeline Committee meetings have been held and are a valuable mechanism for efficiently managing projects and increasing the quality of their execution.

KiwiNet Awards

The eighth KiwiNet Research Commercialisation Awards brought together the innovation community to celebrate successes and inspire others. Tickets sold out in advance with 329 people attending in person and 35 logins for the live stream. The 12 finalists and winners were showcased in style. The event reinforces the value of research commercialisation in the innovation ecosystem, the value of the Commercialisation Partner Network, and the importance of KiwiNet as a champion of the pre-commercial space.

KiwiNet Emerging Innovator Programme

The Emerging Innovator programme has gone from strength to strength with a total of 68 innovators having progressed through the programme to date, 16 in the year to May 2021. Over this past year, four past Emerging Innovators founded deep tech start-ups, with one winning the Callaghan C-Prize, and another the ChristchurchNZ Food, Fibre and Agritech Challenge.

Auaha Innovation Platform

Launched in June 2021, Te Tūāpapa Auaha Innovation Platform (Auaha) is designed to build connectivity across the whole ecosystem. Auaha is a powerful customisable platform which works primarily by facilitating 'challenges' – a call for ideas or proposals that aim to problem solve grand and global issues. Prior to its official launch, Auaha attracted over 600 registered users, and four initiatives were completed through the ChristchurchNZ Supernode Challenges.

Operational Funding

MBIE confirmed an allocation of \$8.7M CPN funding for four years through to 30 June 2023, towards KiwiNet operations to provide a solid platform for KiwiNet to target strategic initiatives and ramp-up its investment, to strengthen the research commercialisation ecosystem.

Building Commercial Capability

More than 338 researchers and commercialisation professionals took part in KiwiNet commercialisation capability initiatives last year as well as events led by our partners. Events included the 10-week online Rewa Pre-accelerator, Pipeline Investment committees, online LinkedIn learning programmes, Te Ao Māori workshop, Covid-19 workshop, KCA virtual and in-person networking events, and Market Validation workshops.

KiwiNet Management Team

KiwiNet has nine FTE staff, to enable delivery. The team works in partnership with research organisations and commercialisation professionals across New Zealand to deliver KiwiNet's strategic objectives. KiwiNet staff run the Investment and Pipeline committees, work with our partners to prepare business plans for PreSeed investment, curate events and champion a range of initiatives to support the ecosystem. They also activate timely researcher and the private sector engagement in the commercialisation process.



KiwiNet Board and Team, May 2021

STRATEGY

OUR PURPOSE

KiwiNet exists to drive prosperity from science and innovation.



STRATEGY

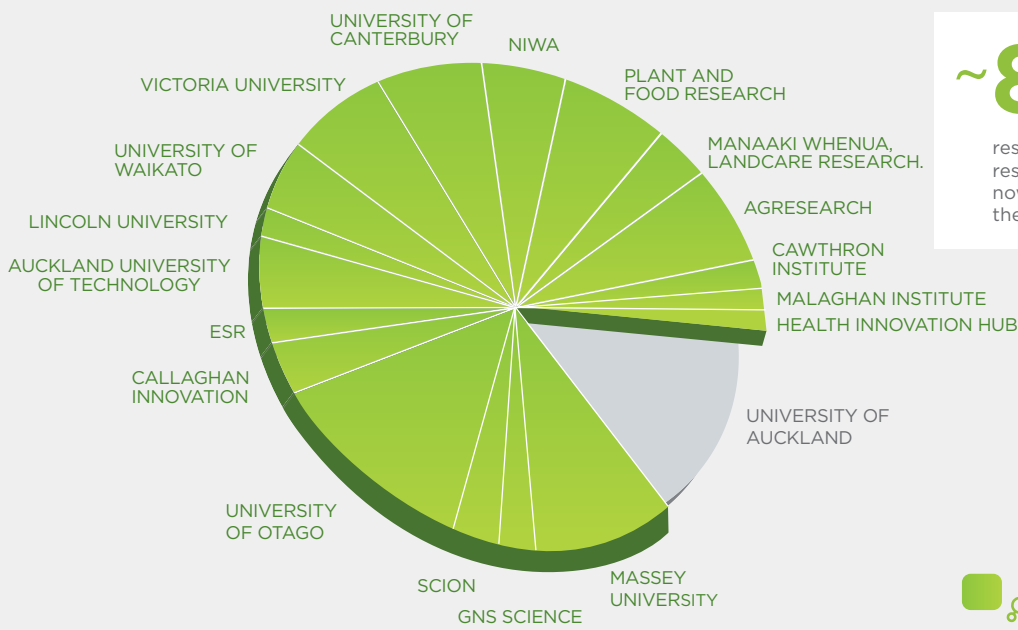
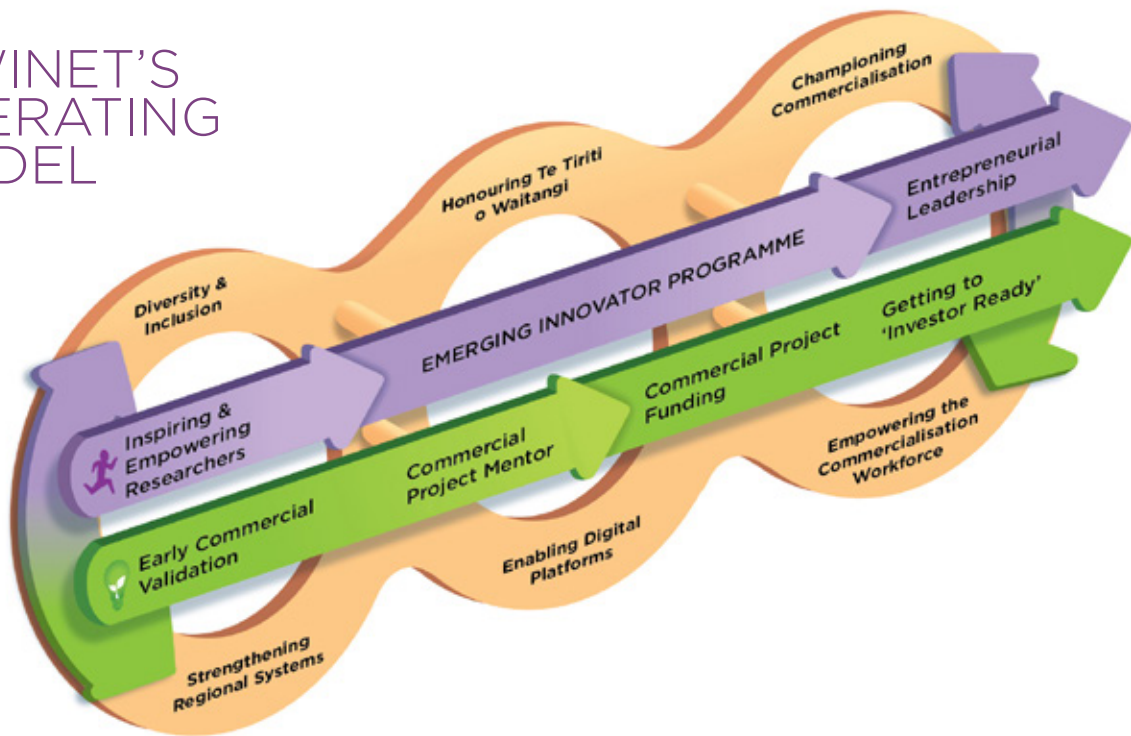
OUR VISION

A globally competitive technology sector, driving a high-value economy for New Zealand.

OUR PASSION

We believe in the power of New Zealand science to transform lives and change the world.

KIWINET'S OPERATING MODEL



~8,000
 researchers from NZ's public research organisations are now represented around the KiwiNet consortium.

KIWINET INVESTMENT AND PIPELINE COMMITTEES

A thriving commercialisation community & PreSeed pipeline, delivering massive impact for New Zealand.



+



KIWINET INVESTMENT COMMITTEE HIGHLIGHTS

PRESEED INVESTMENT

In November 2020, the Ministry of Business Innovation and Employment (MBIE) announced an extension to PreSeed Accelerator Funding (PreSeed) allocation of an additional \$9.94M through to July 2023. PreSeed funding is a vital mechanism for transforming discoveries from New Zealand’s top research organisations, into investable propositions on their journey towards tomorrow’s deep-tech products and services.

INVESTMENT COMMITTEE PARTNERSHIPS

With 18 research organisations collaborating through the KiwiNet Investment Committee, it now represents approximately 80% of researchers in public research organisations in New Zealand. Since 1 July 2019, 264 projects have been presented to the Investment and Pipeline Committees from 17 different research organisations. Committee meetings were successfully held in virtual and hybrid formats, with the arrival of the Covid-19 pandemic.

“We’ve invested in some globally significant life science technology out of New Zealand in the past and I’m excited to help find and develop the next generation projects and entrepreneurs. Plus, I really enjoy working with Kiwis!”

Brigitte Smith / Independent member of the KiwiNet Investment Committee - Founder and Managing Director at GMS Venture Partners.



1420

PROJECTS REVIEWED BY KIWINET INVESTMENT COMMITTEE

*(and its predecessor UniCom, since July 2003)



\$48.4M

PRESEED INVESTMENT RESULTING IN (SINCE 2003)



490

COMMERCIAL DEALS SINCE 2003 AND



\$415.6M

FROM ALL PRESEED INVESTMENTS



\$508M

OVER THE NEXT FIVE YEARS



524

FTE JOB OPPORTUNITIES SUSTAINED IN NEW ZEALAND.



THESE FIGURES REPRESENT A RETURN TO NEW ZEALAND OF EIGHT-TIMES GREATER THAN THE PRESEED INVESTED.



98

Proposals, project previews and Emerging Innovators presented to the Investment and Pipeline Committees. (SINCE 1 JULY 2020)



16

Public organisations pooling PreSeed investment.



16

Different research organisations presented projects to the Investment and Pipeline Committees. (SINCE 1 JULY 2020)

\$19.9m
PRESEED TO INVEST*

NIWA
Massey Ventures
Plant & Food Research
waikatolink
OTAGO INNOVATION
SCION
Lincoln University
health
WELLINGTON UNIVENTURES
Manaaki Whenua Landcare Research
E/S/R
AUT VENTURES
MALAGHAN INSTITUTE OF MEDICAL RESEARCH
GNS SCIENCE
UC UNIVERSITY OF CANTERBURY
CAWTHRON
CallaghanInnovation
agresearch

*To be invested by June 2023

KIWINET PIPELINE COMMITTEE HIGHLIGHTS

The KiwiNet Pipeline Committee (PC) is proving to be invaluable, as a complementary mechanism to the KiwiNet Investment Committee, to advance partner projects. Five meetings were held to support the increased demand for project review and advice. The committee is proving an important forum for strengthening commercial capability and growing the next generation of IC members. Committee members are passionate about collectively accelerating deep-tech opportunities to market.

“The Pipeline Committee is starting to play a critical role among the KiwiNet whānau – a gathering and sharing of the people at the coal face of commercialisation – the ones who build the deals and lend shoulders to them. It’s a group that’s actually improving the way stuff happens.”

Dr Andrew Kelly / Chair of the KiwiNet Pipeline Committee, Independent member of the Investment Committee and Executive Director of BioPacific Partners.



ACTIVITIES

OUTCOMES

INVESTMENT COMMITTEE PARTNERSHIPS

With 18 research organisations collaborating through the KiwiNet Investment Committee, it now represents approximately 80% of researchers in public research organisations in New Zealand.

Since 1 July 2020, 57 projects have been presented to the Investment and Pipeline Committees from 17 different research organisations.

PIPELINE COMMITTEE

A joint committee of commercialisation professionals from research organisations, who review and support commercialisation projects and design initiatives to strengthen commercialisation.

Over the year to April 2021, five Pipeline meetings were held with an average of 17 attendees at each. Projects were discussed among the research organisation representatives, combining expertise and connections to help accelerate commercialisation.



Investment Committee Meeting - 14 August, 2020

“The Investment Committee has stepped up to the challenges of the past year, with renewed purpose to get the best of Kiwi science out into the world to make a difference. We have engaged actively with the four Callaghan Innovation technology incubators, and with the wider investor community to build connections; and continued our drive to nurture an army of entrepreneurial researchers through growing numbers of Emerging Innovator grants. Our project pipeline remains strong, as we grapple with using our limited resources to support our partner organisations to accelerate their projects to investor-readiness. These innovations will indeed change the world - and support a science-led recovery for New Zealand.”

Debra Hall / Chair of the KiwiNet Investment Committee



MAKING IMPACT



New way of sensing becomes commercial reality for Scentian Bio

Dr Andrew Kralicek was the first researcher to complete KiwiNet's Emerging Innovator Programme in 2016 and secured \$266,000 in PreSeed funding from KiwiNet to launch his discovery on the path of commercialisation. In 2020, Andrew became the CTO of Scentian Bio, which successfully raised \$1M in capital to further develop a world-leading biosensor technology.

Andrew spent the past 19 years at Plant & Food Research determining how smell receptors in insects work. Kralicek's team investigated whether insect smell receptors could be combined with electronics to create an "insect nose/tongue". This led to a ground-breaking discovery - a panel of synthesized insect receptors could be used to create a device to smell and taste chemical compounds. A new spin-out company, Scentian Bio, has been formed to develop this novel technology for commercial use in medical, food or industrial settings.

"We know this technology detects volatile organic chemicals which is the basis of a completely new sensor technology that no one else can do," explains Dr Kralicek. "This deep tech, hard-core science will have a massive impact, detecting and analysing

complex aroma and taste profiles. The technology can be used to detect variation in water, wine or food quality for example, or even detect the presence of disease in humans."

Scentian Bio attracted \$1 Million investment from Sprout and its investment partners - Finistere Ventures, Fonterra and OurCrowd with funding from Callaghan Innovation's Tech Incubator Programme. Sprout provided mentoring and start-up expertise to help guide Scentian Bio with approaching customers needing composition and quality analysis of food ingredients. The global opportunity is worth more than \$1 Billion.

Scentian Bio is a great example of how ideas from Crown Research Institutes can be developed into a commercial success. David Hughes, Chief Executive of Plant & Food Research says, "The creation of Scentian Bio is a great milestone for Plant & Food Research and its technology development strategy taking fundamental science through to a point where it can deliver value in the real world."

"The creation of Scentian Bio is a great milestone for Plant & Food Research and its technology development strategy taking fundamental science through to a point where it can deliver value in the real world."

DAVID HUGHES, CHIEF EXECUTIVE OF PLANT & FOOD RESEARCH



MAKING IMPACT



XFrame™ - The X factor inside waste-free buildings

Ged Finch is throwing out today's 'low-cost' 'carbon intensive' single-use 'irreversible fixing heavy' construction handbook and replacing it with systems inherently designed for the future. An alumnus of KiwiNet's Emerging Innovator Programme, this Victoria University of Wellington PhD student is fast-tracking the commercialisation of XFrame™, a structural frame solution for waste-free buildings.

Approximately half of all New Zealand's waste—about 1.6 million tonnes every year—is generated by the construction sector. Ged's game-changing building design, a self-braced interlocking wood design that clips together eliminating the need for single-use fixings, has the potential to eliminate waste and reduce the amount of raw materials being used by the building industry.

With support from Wellington UniVentures and strategic commercialisation partner Innovyz, Ged is commercialising his framing system, which can be disassembled and re-used at the end of a building's useful life, meaning zero waste. His work has attracted significant industry interest both locally and internationally, with businesses and investors backing his prototyping and independent structural testing.

In 2019, KiwiNet's Investment Committee awarded Ged a place in the Emerging

Innovator Programme and provided him with introductions to scientists from Scion, who are developing natural adhesives from forest waste products, plus network connections with Auckland-based company Fastmount, which manufactures reusable clips that connect interior wall linings with the structure. These materials perfectly complement Ged's technology. KiwiNet also provided Ged with a business mentor, Rob Bernstein, to provide ongoing one-on-one advice. Ged describes these connections as "magic!"

Ged and his team have completed multiple prototype buildings and actual projects. To date they have sequestered 20 tonnes of CO₂ and made available 1500m² of fully interchangeable and reusable wall framing panels (alongside 550 swappable wall lining panels). When compared to conventional building techniques XFrame™ has reduced the quantity of waste sent to landfill at the time of construction by 86% and achieved a direct material recovery and reuse rate of greater than 96%.

Tests indicate that XFrame™ can be deconstructed 40% faster than conventional building methods. Importantly, these constructed parts do not require 'processing or cleaning' - they are ready to be directly reused. The result is a time saving of more than 50% to recover and reuse building materials.

XFrame™ is now a funded start-up business with three full-time technical staff, a general manager and is generating revenue through multiple product streams. XFrame™ has been deployed in Otago, Canterbury, Wellington, Auckland and Adelaide with further projects planned internationally.

When compared to conventional building techniques XFrame™ has reduced the quantity of waste sent to landfill at the time of construction by 86%.



MAKING IMPACT



Partnering to cultivate taonga - New Zealand's native mushrooms

Christopher Smith, mycologist and now the founder of 'The Mushroom Smith' says KiwiNet has been fundamental to his journey from scientist to scientist, business owner and authentic partner with iwi.

The technical consultant, producer and supplier of mushroom spawn remembers harbouring entrepreneurial ambition from a young age - an instinct which did not always seem compatible with the funding model and deliverables of lab-based science. It was PreSeed Funding and an invitation to KiwiNet's Emerging Innovator Programme which provided a pivot allowing the researcher from Manaaki Whenua - Landcare Research to pursue his investigations into native edible fungi.

Over three years Christopher developed a process to successfully produce three unique species of New Zealand mushrooms at commercial scale. Through his endeavours, he identified nutritional profiles, a neat fit within the growing global trend for protein-rich meat alternatives, and a commercial appetite from local high-end restaurateurs.

While most New Zealand palates remain unacquainted to the unique tastes and textures of these fungi, the mushrooms had been known as a food source for Māori from pre-European times. With the support of an Emerging Innovator mentor

and Manaaki Whenua, Christopher forged and now maintains strong relationships with manawhenua. In line with tikanga, he consults with iwi providing scientific and technical support while iwi manage the primary production of this taonga and determine its future direction.

Christopher believes that engaging with the commercial world is not limited by a scientist's capacity to learn a new field, but rather having faith in oneself and a clear signposted starting point. The exact type of guidance provided by KiwiNet through the Emerging Innovator mentoring and workshops, and the Exponential Founders Programme - all of which he says are still paying dividends and have led him to where he is today - a state of "wonderful".

As The Mushroom Smith goes from strength to strength, Christopher is excited and curious to explore more entrepreneurial opportunities around genomics and the fantastic diversity of mushrooms in New Zealand. He says it has been an honour and a humbling experience to work alongside iwi and effect authentic Tiriti engagement for this taonga. It is a rich future.

"It has been an honour and a humbling experience to work alongside iwi and effect authentic Tiriti engagement for this taonga."

CHRIS SMITH - 'THE MUSHROOM SMITH'

MAKING IMPACT



Building Northland's regional economy with a new manufacturing industry based on tōtara

The Northland Tōtara project is opening up a new paradigm in forestry for New Zealand and a new model for land use pioneered and led by Māori. The project represents a cohesive package of technologies spanning the tōtara tree to market value chain.

Tōtara is special to the people of Northland, and they are planning for tōtara to play a significant role in their path to tino rangatiratanga. Many iwi are seeking to exit from radiata pine and re-establish land in native species from which they will generate cultural, environmental and economic benefits for generations to come.

Four funding agencies supported this two-year feasibility study: Te Uru Rākau via the One Billion Trees Programme, MBIE via PreSeed funding, Northland Regional Council via its Project Development Fund, and Scion. Scion secured support of the KiwiNet Investment Committee. The collaborative project looked to de-risk technical aspects, prove sustainability of supply, establish a value chain and product stewardship, and secure an early market position. The project aimed to deliver high valued timbers into specialised markets demanding unique timber properties that are branded to prove sustainability.

This technology unlocks the currently unavailable Northland tōtara resource which has a collective resource base of over

200,000ha (for stands that contain tōtara at various levels). It also opens the opportunity to move from the existing commodity forestry and processing model to a niche high-value manufacturing model that encourages planting of trees important to New Zealand.

A conservative market validation and financial modelling indicated that a new manufacturing industry could produce revenues of up to \$5.1 million per annum after 10 years (requiring no changes, focused on the domestic market only). Higher value is projected with higher volumes and higher value product mixes, including for premium export markets.

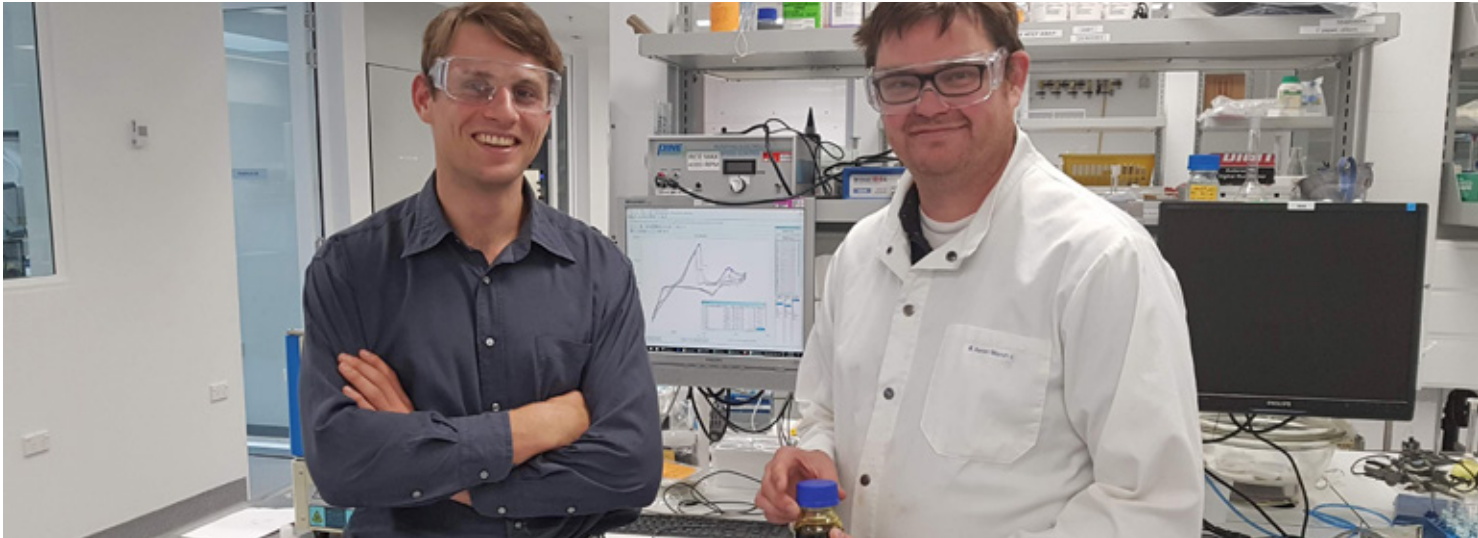
A comprehensive team was formed to undertake and manage this work and ensure the best capability is provided for each component including: Scion, Tāne's Tree Trust, Northland Tōtara Working Group, Te Taitokerau Forests Inc, Te Uru Rākau within the Ministry for Primary Industries, and Northland Inc, along with NorthPine as an industry representative.

The tōtara project speaks directly to the He Kai Kei Aku Ringa Crown-Māori Economic Development Strategy in particular realising the full potential of the Māori economy and growing activities that go beyond business as usual. Rolling this new model out over New Zealand could provide the resource to address very large international markets.

"Business opportunities start small and grow over time, with a total estimated value to New Zealand after ten years of \$5million to more than \$30million a year, depending on harvest rate and product mix."



MAKING IMPACT



Jonathan Ring (left) and Aaron Marshall (right)

Zincovery for a cleaner, green future

Useful and ubiquitous, loved for its durability, galvanised steel has provided industry, homes, hospitals and critical infrastructure with an attractive, corrosion-resistant, hygienic, material for 150 years. Few have given a passing thought to the toxic environmental impact of this process or the cost of recovery.

Fewer still have made inroads to a solution. But, a mere two years after presenting the KiwiNet Investment Committee with an idea to find an environmentally friendlier solution to improve the galvanising process and recover waste, Jonathan Ring is CEO of Zincovery.

With the support of University of Canterbury and academic supervisor Aaron Marshall, the Engineering alumnus has moved rapidly from research to initial start up, attracting capital injection and winning the prestigious Callaghan Innovation C-Prize challenge for the development of New Zealand deep tech companies in the circular economy. Currently, Zincovery is commissioning a pilot plant to prove the technology is scalable and can function in an industrial environment. The next step is market entry with its first commercial plant.

Jonathan believes there is a danger in a narrative that scientists and engineers “can’t do the commercial side”. “They are smart people who just need to learn a

completely different skills set.” Fast-tracking this missing piece between scientific research and bringing ideas into the business world is KiwiNet’s sweet spot.

The Emerging Innovator programme has proven an ideal way for Jonathan to gain knowledge and understanding of the commercial environment. With timely exposure to the technical language of business and commercialisation, exploration of business models, and demystified cultural norms and systems surrounding investment and intellectual property. It also linked Jonathan with commercial mentor, Michael Lakeman. Armed with a raft of new knowledge, data, and expert support, the engineer was better equipped to make confident bold business decisions.

From there, Jonathan joined KiwiNet’s Exponential Founders programme. He likens the three month programme to elite high performance training and coaching. He was introduced to the important processes of reflection as well as shaping sales and decision-making mindsets in order to propel the business forward quickly.

Jonathan now finds himself giving encouragement and advice to other research students who are embarking on the challenge of turning their ideas into something that could change the world.

Part of Zincovery’s accelerating rise has been Jonathan’s participation in KiwiNet’s Emerging Innovator and Exponential Founder programmes, enabling him to span the technology and business worlds.

ZINCOVERY

UC
UNIVERSITY OF
CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

STRENGTHENING THE ECOSYSTEM

Collaborating with the research community, Government stakeholders, Callaghan Innovation, CPN partners, investors, and private sector stakeholders, to create the best supportive environment for research commercialisation.



Photo credit: Wellington UniVentures

ADVOCACY

ACTIVITIES

GOVERNMENT AGENCY ENGAGEMENT

KiwiNet engages with government departments and agencies who are working in similar and complementary areas to promote and realise the value of investment into research commercialisation as a key mechanism for supporting intergenerational sustainability and prosperity for New Zealand.



KiwiNet and Wellington UniVentures provided Minister Megan Woods with a site tour of three startups on 2 June 2021. Founders of XFrame™, Inhibit Coatings and Liquium showcased the great technologies that they have successfully commercialised, strengthening the case for ongoing investment in this space.

COMMERCIALISATION PARTNER NETWORK ENGAGEMENT

KiwiNet is collaborating with our Commercialisation Partner Network (CPN) partner Return On Science (ROS) to accelerate our common goal of achieving better economic outcomes from the commercialisation of publicly funded research in New Zealand.

PARTNERING WITH MĀORI

We aim to build meaningful and longstanding relationships with Māori and upskill both our member organisations and Māori stakeholders to scale the partnership between the research commercialisation world and *Te Ao Māori*.

OUTCOMES

KiwiNet works closely with the Ministry of Business Innovation and Employment (MBIE), to provide a clear picture of research commercialisation activities in New Zealand. Reports provided to MBIE include:

- An annual report on KiwiNet's PreSeed portfolio.
- An annual report on Commercialisation Partner Network outcomes.
- A report on Real Life Practices in Commercialisation, highlighting approaches used within NZ's public research organisations.

MBIE's ongoing support demonstrates a strong commitment to realising the value that can be created from publicly funded research. It is a clear acknowledgement of the success that has been generated since KiwiNet's inception in 2008.

- Return On Science is supporting KiwiNet in celebrating the 2021 KiwiNet Research Commercialisation Awards with the very popular Momentum Student Entrepreneur category.
- KiwiNet's Seumas McCroskery and Alexandra Stuthridge support Return On Science as members of three Momentum Investment Committees.

- In March 2021, KiwiNet convened a Te Ao Māori workshop attended by 53 stakeholder representatives.
- We also held a hui for 12 Māori Engagement Representatives from our partner organisations to strengthen collaboration.
- We worked with Māori innovation stakeholders to develop a mechanism to begin incorporating Te Ao Māori into Investment Committee meetings.
- On 22 June 2021 Otago Innovation Ltd led a workshop on Research Commercialisation and Indigenous IP: Principles, Policies and Engagement. Seven in-person meeting 'nodes' were facilitated around New Zealand and connected together via Zoom.

EMPOWERING THE COMMERCIALISATION WORKFORCE

KiwiNet is proud to champion research commercialisation professionals, who work tirelessly behind the scenes to find a more effective pathway for science discoveries to make an impact. Together we're building a community of capable and driven commercialisation professionals, delivering a robust pipeline of investable research propositions.

ACTIVITIES

KNOWLEDGE COMMERCIALISATION AUSTRALASIA (KCA)
 KiwiNet supports KCA to deliver their annual conference and facilitate events for New Zealand members. KCA events provide a valuable opportunity to bring together technology transfer professionals virtually and in-person from across New Zealand and Australia to learn from each other and drive best practice.



COMMERCIALISATION PROFESSIONAL DEVELOPMENT
 KiwiNet provides a range of in-house and partner-led training solutions to help develop core commercialisation skills.

Online Learning Platform - LinkedIn Learning
 KiwiNet has created "Learning Pathways" – a series of online learning content that enables Commercialisation Professionals to upskill, at a time and place that suits them.

Commercialisation Internships
 Interns work on real technology commercialisation projects, gaining early experience in commercialisation. They work with local commercialisation teams to develop business plans, cases to support the development of new technologies, and impact analysis of emerging science technologies.

WOMEN IN LEADERSHIP DEVELOPMENT (WILD) PROGRAMME
 Delivered in partnership with Brandon Capital, this six-month programme offers a range of initiatives to boost leadership and governance capabilities of STEM based women.



OUTCOMES

- KiwiNet's Investment Committee Chair, Debra Hall, delivered a keynote address at the 2020 KCA Digital Conference.
- KiwiNet's Operations Manager, May Low, is part of the KCA 2021 organising committee for the next annual conference and involved in forming the indigenous inclusion and diversity session for this.
- KiwiNet's Commercialisation Manager, Alexandra Stuthridge, was appointed NZ KCA Network Chair in January 2020 and has held two networking events: Christchurch in December 2020 for 34 attendees and Auckland in April 2021 for 38 attendees.

100 people within our partner organisations have access to KiwiNet's LinkedIn Learning platform (over 14,000 certified online courses) e.g. market validation, pitching and financial analysis and many more. Already 2334 videos have been viewed and 87 training courses completed.

KiwiNet actively promotes internship opportunities to potential interns who seek placement via KiwiNet's 'Talent Portal'. Five people have secured internships with AUT, Wellington UniVentures, AgResearch, and WaikatoLink as of 31 March 2021.

Ten participants were chosen to take part in a governance course tailored to shape directorship and decision-making skills. Key topics include discussion, debate, and review of boardroom dynamics; finance concepts; risk; strategy; culture; and developing a foundation for greater inclusion and impact. They also attend and participate in board meetings as unpaid non-voting observers. Personal mentors help guide and progress their development throughout the programme.

STRENGTHENING REGIONAL ECOSYSTEMS

KiwiNet relies on core ecosystem building blocks to provide commercialisation projects and teams a secure base from which to grow. This includes supporting regional ecosystem activity to raise our profile and to connect our members across the wider innovation ecosystem and its change agents, providing access to digital systems to facilitate access to funding, resources, support and opportunities to collaborate on projects.

ACTIVITIES

REGIONAL SUPPORT

KiwiNet has worked in partnership with ChristchurchNZ and its regional partners to deliver several Supernode Challenges in Canterbury. KiwiNet has actively driven strategy and engagement at the heart of the Supernodes to streamline commercialisation activities and better connect our members across the wider innovation ecosystem.

- In June 2020, the HealthTech Supernode Challenge was launched by KiwiNet and ChristchurchNZ.
- In November 2020 KiwiNet supported the delivery the Food, Fibre and Agritech Supernode Challenge.
- Aerospace and Future Transport, and High-Tech Services have been identified as strategic growth areas for Canterbury.



OUTCOMES

Significant benefits have resulted in the pilot, including 14 researcher project challenge applications, two Tier 2 applications presented to the IC, an additional project going straight to due-diligence, and upskilling of research commercialisation teams and researchers.

Food Fibre and Agritech Challenge results:

- Overall winner, On-Farm Systems (\$13,000) and Research Grand Prize (\$30,000) - Cameron Craigie from AgResearch for Clarospec - a tool to deliver consistent lamb meat quality.
- Overall winner, Value Added Product (\$13,000) and Research Runner Up (\$15,000) Maryam Shojaei from University of Canterbury for KarbenFibre - a battery technology optimising large scale energy storage.



AUAHA PLATFORM

Launched in June 2021, Te Tūāpapa Auaha Innovation Platform (Auaha) is designed to build connectivity across the whole ecosystem.

Auaha is a powerful customisable platform which works primarily by facilitating 'challenges' - a call for ideas or proposals that aim to problem solve grand and global issues. These are progressed from idea through selection to funding and delivery. Based on a sophisticated evaluation judging module, Auaha can also help organisations curate and progress ideas and proposals, or to promote, collect, manage, and track investment. Auaha can also facilitate and promote competitive funding processes for research organisations, industry sectors, and government.

Auaha's wrap-around support provides tools, resources, access to expertise and funding pathways, plus an "open innovation" community-based environment, enabling a collective and collaborative approach to manage investment funds, and projects with commercial promise.

- Prior to its official launch, Auaha attracted over 600 registered users, and four initiatives were completed through the ChristchurchNZ Supernode Challenges.
- Pilot scale successes include the: Food Fibre, and Agritech Challenge, WILD programme, StartMeUP MSD Challenge, Space for Planet Earth and Spacebase Challenge.
- Auaha's first paying clients were secured in June 2021 signalling a clear demand for an enabling platform to support the ecosystem.
- Project pipeline growth, thanks to accelerated "market-pull" innovation calls, and increased PreSeed applications.
- New Emerging Innovator applications, as researchers participate in challenges facilitated through the Auaha platform.



PRIVATE SECTOR ENGAGEMENT

An engaged and supportive investment & business community working alongside research organisations creates new successful deep-tech ventures and licensing arrangements. Engaging early and often, with the private sector builds the best possible expertise around technologies to maximise chances of success.

ACTIVITIES

SPINOUT PROGRAMME

KiwiNet is trialling a pilot of this programme in 2021 and we aim to scale it to support three to four founders annually. The programme fast tracks commercially viable discoveries, from KiwiNet's partner research organisations, into fully formed investor-ready spinout companies. It enhances the rigour of the project and spinout by providing the inventors and research organisations with the necessary tools and knowledge to become founders, attract investment and accelerate the growth of their spinout companies. KiwiNet's corporate partners, BNZ, MinterEllisonRuddWatts, AJ Park and PwC provide invaluable guidance and advice to projects.

INCUBATOR ENGAGEMENT

KiwiNet works closely with each of the four Callaghan Innovation Technology-focused Incubators as a key provider and facilitator of potential deal flow.

INVESTOR CONNECTIONS

KiwiNet engages with the investor community to help transform scientific discoveries into investor ready opportunities.



COMMERCIAL MENTORS

KiwiNet commercial mentors support researchers and organisations with everything from identifying new commercial opportunities to mentoring high potential projects. Commercial mentors are driving significant pipeline growth while helping research organisations overcome limited commercialisation resources.

OUTCOMES

The comprehensive programme leverages KiwiNet's commercial mentors and corporate partners to achieve key objectives through a rigorous four-stage process, from securing internal organisational support to preparing for a capital raise. First cab off the rank is the AUT Ventures team and Dr Sandra Grau Bartual. They are commercialising a new smart humidification technology with the aim of reducing the spread of viruses like COVID-19 in hospital settings.

Our engagement with the technology incubators continues to develop, with strong interest in the KiwiNet pipeline. With the announcement of four new incubator contracts in April 2020, each incubator has a representative observer of KiwiNet Investment Committee meetings and they receive the meeting info pack delivering greater visibility of the pipeline. KiwiNet has presented several opportunities which have resulted in pre-incubation interest for two projects. Sprout and its investment partners have invested \$1M into Scention Bio, a spinout from Plant & Food Research.

KiwiNet actively engages with the Angel, High Net Worth, and investment fund community. This included sponsorship of the Angel Summit, on 6 November 2020.

KiwiNet also has on-going regular meetings with NZGCP, Callaghan Innovation and NZTE through the Investor Heartbeat team. This initiative is a cross agency forum developed to accelerate capital raising activities.

Through our regular Pipeline Post emails to the investor community, KiwiNet has attracted 130+ enquiries into projects to date.

KiwiNet has placed 60 commercial mentors to support researchers and provide commercial direction for projects over the year to June 2021.

CELEBRATING SUCCESS

Showcasing the impact of outstanding research commercialisation.



+



01 // Where
Auckland, Aotea Centre

02 // When
Thursday 15 October 2020

NEW ZEALAND'S 8TH ANNUAL RESEARCH COMMERCIALISATION AWARDS

The KiwiNet Awards celebrate the ability for science to drive our prosperity, putting the spotlight on those who successfully commercialise clever Kiwi ideas. This PREMIER EVENT is highly anticipated on New Zealand's innovation calendar, raising the profile of research commercialisation nationwide.



CELEBRATING INVENTIVE AND ENTREPRENEURIAL KIWI TALENT

329 ATTENDEES

12 FINALISTS

4 WINNERS



2020 KIWINET AWARDS WINNERS

01 //

Baldwins Researcher Entrepreneur Award

This award recognises an entrepreneurial researcher who has made outstanding contributions to business innovation or has created innovative businesses in New Zealand through technology licensing, start-up creation, or by providing expertise to support business innovation.

02 //

BNZ Supreme Award

This award celebrates the supreme entry which demonstrates overall excellence in all core areas of research commercialisation as voted by the Awards Judges and the audience. It recognises research commercialisation excellence that demonstrates the impact that can be achieved through commercialised Kiwi science - the spirit of the KiwiNet Awards!



A world-renowned inorganic and materials chemist focused on commercial outcomes

Professor Jim Johnston, School of Chemical and Physical Sciences, Te Herenga Waka — Victoria University of Wellington is a world-renowned inorganic and materials chemist and applied scientist. Professor Johnston is passionate about adding value to industry and the New Zealand economy through high quality research. He has pursued the commercial application of his research as a matter of course, founding a number of innovative companies and industry partnerships as a result.

Professor Johnston has either founded, or been involved with, countless new ventures and technologies throughout his long and outstanding research career. These include spin-out companies Wetox Limited, Noble Bond Limited and, most recently, Inhibit Coatings Limited.

During his extensive and much-awarded research career, Professor Johnston has spent the majority of it at the interface between academia and industry. He has worked closely with businesses in New Zealand and overseas to utilise applied chemistry, materials science and nanotechnology to make new high-value products and generate new chemical process technologies that can be taken to market where they can help to meet business needs and create impact.

In addition to his success with research and commercialisation, Professor Johnston is equally passionate about developing his undergraduate and postgraduate students, nurturing them both academically and commercially, and making both career pathways available to them.

Professor Johnston is a textbook example of what can happen when excellent researchers are also committed to commercialising their work.



03 //
Norman Barry Foundation
Breakthrough Innovator
Award

This award recognises an upcoming entrepreneurial researcher who is making outstanding contributions to business innovation or is creating innovative businesses in New Zealand through technology licensing, start-up creation or by providing expertise to support business innovation.



Antimicrobial coatings keeping people safe in food and healthcare industries

Dr Eldon Tate, Co-founder and CEO of Inhibit Coatings Limited, has developed antimicrobial technology that can be applied to surfaces. Designed for use in areas that require high hygiene, such as food processing, the technology creates a safer environment by removing the dangers associated with persistent bacterial contamination (the places where germs can live and multiply). Not only does the technology increase food safety but it also reduces the cost of cleaning and maintenance for food manufacturers.

Eldon developed the leading-edge technology during his PhD studies at Te Herenga Waka—Victoria University of Wellington, which he completed in 2016. Having seen the potential impact for his discovery from the outset, and with the encouragement of his supervisor, Professor Jim Johnston, Eldon co-founded Inhibit Coatings later in 2016. The company, initially funded through the Callaghan Innovation technology incubator scheme, has since gone on to develop a number of commercial products including floor coatings that are being trialled with excellent results in New Zealand food processing plants.

This is just the beginning, with Inhibit setting its sights on using cutting edge technology to improve public safety across sectors, targeting applications like contamination in the food and beverage industry, hospital acquired infections and protecting the vulnerable in aged care facilities.

Under Eldon's leadership, Inhibit Coatings raised \$1.5M follow-on capital last year from the New Zealand investment community (the round was over-subscribed). Eldon and the Inhibit Coatings team also continued to develop the company's product offerings and forged valuable connections with international partners. Eldon has demonstrated truly remarkable leadership and enthusiasm for commercialising his research and growing a company that contributes to the New Zealand economy.



2020 KIWINET AWARDS WINNERS

04 //

MinterEllisonRuddWatts Commercialisation Professional Award

This award recognises a commercialisation professional working in a New Zealand research organisation, who has made an outstanding contribution to the commercialisation of publicly funded research.



WINNER

BROOKE MARSHALL,
AGRESEARCH

Creating impact from AgResearch's world class science

Brooke Marshall, Commercialisation Manager at AgResearch, is a lawyer by trade, but a commercialisation champion at heart. Brooke has vigorously applied a lean startup mindset to transform the commercialisation capability of AgResearch since her appointment in July 2018.

Acting as an "intrapreneur" within the organisation, Brooke has instigated a range of key initiatives to fast-track cultural change within AgResearch and strengthen its commercialisation capability, while increasing revenue and deal-flow along the way. In Brooke's first year at AgResearch she increased royalty and licensing revenue by 349% and pipeline activities by 33%. She also developed the "A-Prize" competition to stimulate a culture of innovation within AgResearch, generating a novel pipeline of 17 commercialisation opportunities in 2019 and a newly minted team of entrepreneurs who have recently completed KiwiNet's inaugural Rewa Tran-Tasman Pre-Accelerator programme.

Brooke's impact upon the way AgResearch does business is significant, with a key stakeholder noting that AgResearch is bringing more realistic, flexible, and innovative commercialisation options to them.

Brooke is a rising star within the commercialisation profession and is poised to make a substantial contribution to New Zealand's innovation ecosystem as her career develops.



05 // PwC Commercial Impact Award

This award celebrates excellence in research commercialisation delivering outstanding innovation performance and the potential for generating significant economic impact for New Zealand.



WINNER
MASSEY UNIVERSITY:
'FERRI PRO' IP SALE

A partnership to help address the global problem of iron deficiency

Scientists from the Riddet Institute, a Centre of Research Excellence hosted at Massey University, developed a unique technology (FERRI PRO) to help address global iron deficiency, a problem that affects more than 1.6b people around the globe. Anaemia affects 25-30% of the population and about half of the cases are due to iron deficiency.

The novel protein-iron complex, made using food-grade materials, enables fortification of food products and beverages without compromising the quality and taste, a common problem with many other fortification methods.

The commercialisation process involved engaging with Nestle headquarters in Switzerland, establishing an exclusive trial period and ultimately negotiating the sale of the intellectual property. The negotiation involved face to face meetings in Switzerland and regular video conferencing over an 18-month period.

The final agreement, signed in December 2018, involves the assignment of the IP to Nestle in exchange for payments against technology transfer, commercial launch and regulatory milestones. By using a risk sharing model we were able to substantially increase the potential value to Massey.

In January 2019, a senior delegation from Nestle headquarters visited Palmerston North to better understand the capability and capacity of the Riddet Institute, Massey University and the wider science system through Food HQ. The Riddet Institute presented a portfolio of 19 other market informed R&D projects. The close working relationship with the world's largest food company could provide significant and on-going benefit to New Zealand.



RESEARCHER ENTREPRENEURSHIP

Championing Kiwi researchers to find a more effective pathway for their discoveries to be recognised and make a difference in the world.



EMERGING INNOVATOR PROGRAMME

Over the past five years the Emerging Innovator Programme has effectively fast-tracked Kiwi scientists with entrepreneurial DNA to commercial success.

It provides a wide range of initiatives and resources to support recipients on their commercial journey. These include commercial mentors, coaching in media engagement, and training courses in pitching for investment and commercialisation.

Many Emerging Innovators have progressed along the KiwiNet commercialisation channel securing PreSeed Accelerator Funding, with four forming new start-up companies in the year to June 2021. We have already seen a direct impact on deal flow from the programme, as well as a recruitment effect. Emerging Innovators can powerfully influence colleagues, growing an entrepreneurial, commercial culture among researchers.



KIWINET TEAM WORKS WITH GETFUNDED PARTICIPANTS
AT CREATIVEHQ IN WELLINGTON - 21 MARCH 2020

To be eligible

Scientists must have a real desire to see their discoveries creating impact in the world. They must also be working within a New Zealand public research organisation. Recipients receive a tailored package of commercial mentoring, funding towards project costs, entrepreneurship training workshops, and publicity valued at \$25,000



EXPONENTIAL FOUNDERS PROGRAMME FOR BUDDING STARTUP FOUNDERS

80% OF PARTICIPANTS ARE SEEKING DIRECT PRIVATE INVESTMENT FOR THE NEXT STEPS IN THEIR PROJECTS AND 5 HAVE SPIN OUT COMPANIES.

The Exponential Founders programme provides a kickstart for many of our Emerging Innovator graduates, as they embrace the social license to commercialise their work. The programme is directed towards our commercial champions to support their leadership, team-culture building, mindset, and pitching skills needed to grow a high growth deep tech company. Unlike mentoring or incubation that focus on building business skills, this programme focuses on the “strong skills” necessary for successful decision making.

The Exponential Founders programme provides participants with the confidence that makes them uniquely qualified to take the lead and initiative to make bold decisions as they navigate their unique commercialisation journeys. Exponential Founders programme has a strong peer-support focus which often continues long after the programme has concluded. Excellent coaches, who flex with the participants, support their needs in a virtual setting. Our first two cohorts with 10 participants have been very successful, with participants saying that it has enhanced their entrepreneurial drive and confidence - making decisions they would not have made before.

MAKING IMPACT

Andrea Bubendorfer

Creating an innovation culture to transform science into prosperity

In addition to transforming her amazing discoveries into ground-breaking technologies for industry, Andrea Bubendorfer has embraced a newly created role within Callaghan Innovation as an agent of change – championing other scientists to pursue their commercialisation dreams, to deliver great prosperity for New Zealand.

Andrea's passion for deep tech was realised in MicroMaker – a novel scalable 3D printing type of technology, co-invented with colleague Andrew Best, for making devices for applications in sensors & electronics. It resulted from work to democratise access to the miniaturisation industry, levelling the playing field for New Zealand businesses to enter this lucrative industry.

\$684,000 KiwiNet PreSeed investment accelerated MicroMaker's commercialisation journey and Andrea was awarded a place in KiwiNet's Emerging Innovator and Exponential Founder programmes to support her entrepreneurial development. Here she learnt valuable commercialisation skills and also how to develop a resilient, entrepreneurial mindset which helped her navigate significant challenges along the commercial pathway. Andrea was named a finalist in the 2019 KiwiNet Awards Breakthrough Innovator category. MicroMaker was enormously successful, garnering many accolades including the inaugural Engineering New Zealand Engineering Innovation award and generating a high level of excitement which led to interest from half a dozen investors.

Andrea's MicroMaker experience opened the door internally within Callaghan Innovation for fresh discussions around commercialisation as a pathway to create impact from science. The need for cultural change was recognised and to drive this, a new type of leader was required. Vic Crone identified Andrea as someone who graciously and persistently tackled challenges head on, both in-house and in the ecosystem.

Andrea has been promoted to Group Manager of the Data and IoT Group of over 40 people, to support a transformational organisational change. She is well placed to do this, having worked on many strategic initiatives over the last two years including technical and operational projects, and putting supportive structures in place. A core project has been a multimillion-dollar cleanroom to support commercial ideas from prototype to production.

Andrea's "bigger picture" view of science commercialisation celebrates the value of our natural resources and our remarkable people. On the 'people' front, Andrea notes, "I believe that harnessing that diversity gives us strength, and I often see that the most exciting innovations happen at the extremes. I aim to lift up as many people as I can - this way we all win."

Andrea's outreach beyond her organisation is wide and she is proud to have created a thriving diversity & innovation group at Callaghan Innovation with the aim of creating a culture where people can bring their whole selves to work.



Vic Crone, CEO Callaghan Innovation

"Over my past four years as CEO, I have noticed some special qualities about Andrea. She is very open minded and willing to give things a go... She is a champion of new ways of doing things, always willing to provide constructive feedback along the way that not just improves these ideas but smooths the way for more scientists to get on board. Incredibly committed, she also perseveres in what can be a challenging work environment. Andrea is passionate and committed to her staff, their development and influencing for the environment they work in to be improved. And finally, she is an excellent scientist, shown by the work her and her team have done with MicroMaker. I rely on Andrea to give me honest feedback on where our science workforce is at - I'd be lost without her".

MAKING IMPACT



With Tier 1 PreSeed funding, Cameron and the AgResearch team extended investigations around an early prototype measurement system developed as part of the MBIE Endeavour programme. The support allowed Cameron to expedite extensive market validation for the promising disruptive technology.

AgResearch

Clarospec

Straddling the roles of AgResearch Strategy Lead - Next Generation Consumer Products and Senior Scientist in the Consumer Interface Innovation Centre of Excellence, Cameron Craigie used his place in the KiwiNet Emerging Innovator Programme to road test an agritech solution which is now attracting attention in New Zealand and overseas.

'Clarospec', trademark pending, is a system comprised of a hyperspectral imaging camera, broad spectrum illumination hardware and software. This game-changing technology captures and processes data on a raft of carcass attributes in real time and at scale. It assesses attributes such as tenderness, water and fat content and marbling. There is potential to more closely define meat and fish products with high-end customers.

Sprout Agritech's Warren Bebb linked up with Cameron as his Emerging Innovator mentor and along with KiwiNet's knowledge base, opened a 'world of opportunities'. In turn this helped to build what Cameron refers to as 'commercial literacy' skills and capability across the AgResearch team. It also provided them with the impetus to make decisions, plan methodology and pursue short and mid term goals with a commercial view.

The Emerging Innovator Programme served as a launch pad into the KiwiNet-supported Canterbury Supernode Food Fibre and Agritech Challenge. Clarospec took out Overall Winner of the On-Farm Systems category and the Grand Research Prize. Beyond the financial impact, Cameron see this success as an industry-backed 'peer review' giving additional credibility to the AgResearch work.

Now in a co-design phase with industry, the next big step is to put forward a Tier 2 PreSeed application to KiwiNet to advance more computational modeling and test functional applications for two product configurations: one to suit the New Zealand market and one international.

Cameron sees the ultimate outcome as a cultural shift towards more open innovation and a drive to form a community of practice which leverages experiences and brings commercially-oriented thinking earlier into research discussions.



Matt Miller

BrakeAce is a world first braking sensor and app combo for mountain biking performance and safety

Dr. Matthew Miller is pursuing an exciting entrepreneurial journey to maximise market traction for his revolutionary BrakeAce mountain bike technology. Designed to help mountain bikers get faster without getting fitter, BrakeAce is the world's first braking sensor and app combo.

The BrakeAce sensor measures every aspect of a rider's braking, while the app analyzes their ride. The software turns complex data into simple, actionable metrics to improve rider safety and performance.

While lecturing at Massey University's School of Sport, Exercise and Nutrition, Matt was awarded a place in KiwiNet's Emerging Innovator Programme, which helps early career scientists develop clever new ideas to take to market.

The Emerging Innovator Programme immersed Matt in the world of commercialisation. It has enabled him to develop a solid platform of skills, experience and contacts to progress his proof-of-concept brake sensor towards an investor-ready stage. Massey Ventures, a fully owned subsidiary of Massey University, provided support to protect the IP, and Rick Gain provided commercial mentor support.

Through the EI programme Matt met with over a dozen big players within the cycling industry to determine the best applications for his IP for the fast-growing bicycle market, which is forecast by

some analysts to hit \$95.2 billion in revenue by 2028. From the outset Matt's ongoing advancement of his technology has seen him regularly fielding enquiries from bicycle manufacturers eager to incorporate his sensor and data delivery into their products.

Completing KiwiNet's Exponential Founders Programme enabled Matt to further develop a resilient and entrepreneurial mindset which fueled his natural business flair. Valuing the support of peers on similar commercialisation journeys, Matt and fellow Exponential Founders alumni meet every fortnight to work on mindset development and to empower each other to make bold decisions.

Matt is now backing himself to make BrakeAce a commercial success. He has a Kickstarter launch in his sights to help raise market awareness of his amazing innovation and raise capital to develop his business. Matt's story is one of perseverance and an unshakable belief in his ideas. This is set to pay off with market traction, thanks to his great talent and hard work, plus timely support from Massey Ventures, KiwiNet and his peers.

Xuxu & Aida

Amoozegar-Montero

Today, knitting is witnessing a revival in textile and industrial application for its ease of three-dimensional contouring and its almost limitless capacity for creative complexity. Now, two sisters and doctoral candidates, Xuxu and Aida Amoozegar-Montero, from Te Herenga Waka—Victoria University of Wellington, see the merit of this technique to create bras which address the emotional and physical needs of women after mastectomy and breast reconstruction surgery.

Support and good fit are essential ingredients to any endeavour. Thanks to Wellington UniVentures and PreSeed funding from KiwiNet, these researchers are investigating women's retail behaviour and existing B2C, online and B2B sales channels including via hospital and care providers; as well as attracting a cohort of women to trial their technology before looking to scale.

Xuxu and Aida are collaborating to make use of their complementary skills. Xuxu is pursuing Industrial Design research into bra construction using 3D scanning and knitting focussing on post-surgical needs; and Aida is completing a sociological exploration into women's post-surgical experiences with respect to altered body image and identity.

United in ambition, Xuxu and Aida plan to digitally manufacture garments tailored to each women's individual body measurements providing ideal sizing and seamless shapes. Women who have experienced surgery will provide the beachhead for garments which will also respond to specific fit and design challenges and alleviate concerns of the wearer.



Bras themselves, are complex structures. What makes a good bra in terms of function and desirability includes a plethora of attributes: good fit, comfort, breathability, manoeuvrability, contour, lift, stability, grip, and protection. Women who have undergone surgery and reconstruction have more acute needs from these garments including bolstering their personal perceptions of their post-surgical bodies, body image, and femininity.

Thanks to KiwiNet's relationship with expert mentors, Xuxu and Aida have been connected with Nicole Bussion. It is a unique and ideal match. As a (then) Director of New Zealand bra company Rose and Thorne, and with her experience in start-ups acceleration, investment management, and international market strategies, Nicole's guidance around Xuxu and Aida's project is 'made to measure'.



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