The University of Newcastle and the University of Waikato

Partnership Seed Fund

Funded Projects

The seed fund supports staff at the University of Newcastle and the University of Waikato to develop collaborative research, teaching and/or professional services projects that clearly demonstrate measurable outcomes and a plan for how the collaboration will develop going forward.

Partnership websites: Waikato | Newcastle

Call 4 - 2026

Project	Waikato lead	Newcastle lead
From Manual to Scalable: AI-Augmented CVSS Risk Assessment	Dr Vimal Kumar	Dr Mark Wallis
Advancing Graduate Entry Midwifery Education through Heutagogical Innovation: A Trans-Tasman partnership project.	A/ Prof. Liz James	Dr Nicole Hainsworth
Indigenous spirituality in healthcare settings: Māori and Torres Strait Islander ways of knowing, being and doing.	Prof. Moana Waitoki	Dr Elissa Elveridge
Developing scalable virtual reality supports for autistic air travellers	Dr Amarie Carnett	Dr Ben Bailey
Supratidal Forests of Aotearoa New Zealand: Where are they, and what can their Australian counterparts teach us?	A/Prof. Joanne Ellis	Dr Christopher Owens
Indigenising Pacific HDR Supervision: Co-Designing a Pacific Cultural Capability Toolkit for Cross-Tasman Research Leadership	Dr Keaka Hemi	Dr Angela Page

Call 3 - 2025

Project	Waikato lead	Newcastle lead
Bio-engineered Hybrid Bone Implants for Rapid and Infection-free Tissue Integration	Prof Fei Yang	Associate Prof Behnam Akhavan
Exploring nurses' resilience, strategies and associated factors to enhance resilience	Associate Prof Anthony O'Brien	Dr Fiona Yu
Visualisation of University Degree Plans	Tricia Finn	Dr Ben Shelton
Creative Expression and Indigenous Storytelling in Midwifery Education	Anna Tiatia Fa’atoese Latu	Dr Katharine Gillett
Navigating space between Koori2, Mayi3 and Māori4 cultural embeddedness: Weaving together Indigenous worlds through story and song	Dr Ririwai Fox	Dr Jesse Hodgetts

Disordered eating prevention for adolescent females with type 1 diabetes: Qualitative insights	Associate Prof Hamish Crocket	Dr Kirrilly Pursey

Call 2 - 2024

Project	Waikato lead	Newcastle lead	Plain language outcome summary
Culturally appropriate palliative care for older Chinese in an aged residential care	Prof Matthew Parsons	Dr Minah Gaviola	This project explored the experiences of older people of Chinese ethnicity, their family member, and registered nurses, on the provision of culturally appropriate palliative care in an aged residential care setting in New Zealand. The data transcribed so far, indicates some similarities with data collected in Australia in a similar setting. Recruitment was very challenging with the number of participants recruited less than originally planned. The data collection period was extended to mitigate this and the data collected early this year are being transcribed. Data analysis and manuscript writing are in progress with planned submission for publication by December 2025.
Contraceptive access and use among LGBTQ+ women	Dr Sonja Ellis	Dr Melissa Harris	N/A
Light-Weight Active Security for Resource-Constrained Devices in Smart Farming	Dr Farzana Zahid	Dr Xiao Chen	Through this seed funding, the UoN and UoW teams achieved several key outcomes. 1. Two journal papers were submitted: 1) security technology readiness levels in smart farming IoT systems, and 2) federated learning model obfuscation, which proposes a novel approach to protect AI models on resource-constrained IoT devices. 2. The UoN team submitted an application to CSIRO's ON Prime program to explore commercialization opportunities. 3. The UoW team plans to submit a proposal for Strategic Research Funding to develop an intrusion detection dataset for the farming environment. 4. We are also planning an international workshop at IEEE/ACM UCC 2025 to strengthen global engagement and impact.
"Marine Invaders: Aussie Aliens": Development and	Ms Elizabeth Copeland	Dr Caelli Brooker	A 52 Card Deck Marine Biosecurity Card Game was produced with an Australian NSW coastal focus, underpinned by Indigenous knowledge, culture,

dissemination of an Australian Marine Biosecurity educational resource to regional schools in NSW			art, and design. The resource was co-developed with DeadlyScience, The Wollotuka Institute, and Department of Primary Industries and Regional Development DPIRD NSW to ensure it was fit for purpose for use in schools, as well as scientifically, regionally, and culturally accurate.
Moving From Awareness to Action: Advancing Cultural Safety and Indigenous Student Access to Medical and Health Education	Associate Prof Waikaremoana Waitoki	Dr Elissa Elvidge	This project brought together WERO and the Division of Health (Waikato) with the Thurru Indigenous Health Unit (Newcastle) to exchange learning on the provision of culturally safe care in health professional education at their respective universities. Elissa and Tameka visited Waikato in September 2024 during Kīngitanga Week and gave a presentation on Australian cultural safety to Te Pua Wānanga staff. Waikaremoana, Kyle, and Donna visited Newcastle in February 2025. They were invited to be part of a panel discussion at the Hunter Medical Research Institute about Indigenous knowledge in birthing. The visit facilitated collaboration on manuscript drafting and future funding application.
Combining 21st century geotechnologies to understand coastal evolution and predict shoreline behaviour	Dr Andrew La Croix	Dr Rafael Carvalho	Fieldwork occurred at Whakatane (NZ) in October/2024 and Stuarts Point (NSW) in November/2024 and January/2025 with visits from Carvalho and Kitazawa to NZ and students Rackham and Gardiner to AUS. Coring, GPR and sediment sampling occurred in NZ whereas only coring and sediment sampling was undertaken in AUS. Sediment analysis and dating are current underway. Results are expected mid-year 2025.
Interweaving Knowledge: Exploring Indigenous Perspectives on Medicinal and Edible Plants in Māori and Australian Aboriginal Cultures	Dr Sandi Ringham	Associate Prof Liz Cameron	N/A
Histories for the Future: Co-teaching global history for equity and sustainability	Dr Kate Stevens	Associate Prof Julie McIntyre	N/A

Call 1 - 2023

Project	Waikato lead	Newcastle lead	Plain language outcome sumamry
The Lab2Field RuralAI Kit - Real-time realization of hierarchical federated learning through in-field modular & portable sensor clusters	Dr Harish Devaraj	Dr Shaleeza Sohail	The main aim of the research proposal submitted was to extend the theoretical aspect of hierarchical federated learning (HFL) to real-world applications using RuralAI. We developed Lab2Field RuralAI sensor kits to create a real-world deployment of HFL in rural environments. Twelve prototypes (6 at UoN and 6 at UoW) were used to implement HFL architecture with sensor nodes communicating locally and transferring data to a cloud layer. This enabled the creation of models to optimize crop health monitoring and support dynamic crop management.
Exploring Stakeholder Perceptions of the Feasibility of a Multi-Sport, Child's Rights Sports Club: The Physical Literacy and Youth Rights Using Play (PLAY-UP) Club.	Mr Will Roberts	Associate Professor Narelle Eather	Forty-five children aged 7-12 attended play-based coaching sessions at the University of Waikato campus. They engaged in eight multi-sport sessions. Twelve undergraduate coaches were trained and supported to deliver child-centred, play-orientated sessions. To understand their perceptions of play; children produced drawings and were interviewed, with thematic analysis of children's responses. These themes highlighted the importance of: being with friends, quality relationships with coaches, a preference towards unstructured coaching, and the freedom to choose activities. These findings contrast with coaches, who when interviewed, surveyed, and observed, preferred more structured coaching environments with a focus on practice and skill development.
Seeds of Growth and Healing: Exploring the Healing Properties of Indigenous Native Plants.	Dr Mitchell Head	Mrs Jenn Rumbel	We know that traditional Aboriginal medicine in Australia is at risk due to colonisation. Before colonisation, traditional forms of healing, including traditional healers, healing songs, and bush medicines, were the primary source of healthcare. This project proposed that locally initiated research, led by Indigenous traditional owners in collaboration with modern-day scientists, could lead the way to potentially new plant-based products. The team was able to deliver on many fronts including: Building connections and yarning with Taree Elder and community, on country excursion of Saltwater, Taree, identifying an indigenous plant (Kangaroo paw apple - KPA), initiating chemical and imaging studies, engaging a natural history artist, and expanding collaboration to another university.

Enhancing Indigenous Cultural Capability and Student Engagement in Science and Health through Collaborative Learning and Animated Videos	Dr Joanna Hicks	Mrs Josephine Smith	Our teams established new collaborations and open relationships, sharing diverse perspectives in teaching and learning resulting in improved design and delivery of curriculum at both UoN and UoW. Both teams gained increased understanding of equity, diversity, indigenous knowledge, and ways of being by sharing knowledge, food, cultural ways of being and expert cultural guidance (Wollotuka Institute; Kīngitanga Day) with wider UoN and UoW inputs that supported this successful project. These understandings guide curriculum design, teaching practice, and a framework for Indigenisation of curriculum at UoN. UoW team was exposed to UoN LD&TI expertise in digital learning, improving online delivery at UoW.
Virtual Reality in Rehabilitation: Investigating the Impact of Virtual Reality on Mental Fatigue	Dr Merel Hoskens	Dr Jodie Marquez	This research developed and tested a protocol to compare cortical activity during the performance of functional tasks in VR and a real-world context in healthy participants, to establish initial insights into whether VR rehabilitation tools achieve similar physiological brain responses and cognitive demands. Subjective measures of mental fatigue and task demands indicate a higher cognitive demand after performing the functional tasks in VR. We predict that the objective brain responses (i.e., fNIRS) will reveal similar results, indicating higher brain responses during the functional tasks in a VR context (data still being analysed).
Developing and Validating a Data-Driven AI Algorithm for Rugby Collision Intensity	Dr Martyn Beaven	Dr Mitch Naughton	The project aimed to develop a collision intensity quantification algorithm using TekScan sensors. However, the sensors were inadequate for capturing the necessary data due to technical limitations discovered during quality assurance. This experience highlighted the importance of equipment evaluation and informed planning for future research with better-suited technology like pressure sensors.
Modification of an existing Australian weight management training survey for use by healthcare professionals in an Aotearoa New Zealand context and trans-Tasman undergraduate healthcare professionals	Associate Professor Lynne Chepulis	Dr Kirrilly Pursey	This project had two parts. First, UoW adapted the UoN healthcare professional survey for a New Zealand audience through stakeholder engagement. Second, both teams modified the survey for use with undergraduate students, incorporating cultural and clinical feedback. The modified student survey is now active at both institutions.