agenda

Te Komiti Rangahau o Unitec | Unitec Research Committee

Date:	**2025-04-10**
Scheduled Start:	1300h
Scheduled End:	1500h
Location:	Microsoft Teams

SECTION 1 NGĀ KUPU ARATAKI | PRELIMINARIES

1. Karakia Tīmatanga | Opening Prayer
2. Mihi Whakatau | Welcome from the Chair
3. Membership
4. Terms of Reference

SECTION 2 STANDING ITEMS

1. Ngā Whakapāha | Attendance, Apologies & Quorate Status
2. Pitopito Kōrero o Ngā Hui | Minutes of the Previous Meetings
3. Mahia Atu | Matters Arising

SECTION 3 MEA HEI WHAKAAE | ITEMS TO APPROVE

N/A

SECTION 4 WHAKAWHITI KŌRERO | ITEMS FOR DISCUSSION

1. Supporting Research at Unitec – Jamie Smiler, Pounuku Rangahau | Director Rangahau and Research, Te Pūkenga

SECTION 5 NGĀ TUKUNGA | ITEMS TO RECEIVE

1. Science System Advisory Group Phase 2 Consultation
2. 2024 ECR Contestable Funding Final Reports
    a. A/P Kristie Cameron
    b. Dr Mary Yan
    c. Hinewaimarama Reihana-White

SECTION 6 KUPU WHAKAMUTUNGA | CLOSING

1. Ētahi Kaupapa Anō | Any Other Business
2. Komiti Self-Assessment
3. Karakia Whakamutunga | Closing Karakia

SECTION 1 NGĀ KUPU ARATAKI | PRELIMINARIES

Item 1.1 Karakia Tīmatanga | Opening Prayer

KARAKIA TĪMATANGA	**OPENING PRAYER**
Manawa mai te mauri nuku	*Embrace the power of the earth*
Manawa mai te mauri rangi	*Embrace the power of the sky*
Ko te mauri kai au	*The power I have*
He mauri tipua	*Is mystical*
Ka pakaru mai te pō	*And shatters all darkness*
Tau mai te mauri	*Cometh the light*
Haumi ē, Hui ē, Tāiki ē!	*Join it, gather it, it is done!*

Item 1.2 Mihi Whakatau | Welcome from the Chair

Item 1.3 Te Komiti Rangahau o Unitec Membership

Hadley Brown (Chair)	Nominee of Director Research & Enterprise
Daisy Bentley-Gray (Emerging)	Nominee of Interim Manager Pacific Success
Hinewaimarama Reihana-White (Early Career)	Nominee of Taharangi | Director Māori Success
Dr Helen Gremillion (Professor)	Healthcare and Social Practice
Xinxin Wang	Architecture
Kambiz Borna	Building Construction
Dr Lian Wu (Associate Professor)	Healthcare and Social Practice
Dr Hamid Sharifzadeh (Professor)	Computing, Electrical and Applied Technology
Dr Leon Tan (Associate Professor)	Creative Industries
Dr Kristie Cameron (Associate Professor/ Early Career)	Environmental & Animal Sciences
Khaled Ibrahim	Applied Business
Dr Norasieh Md Amin (Subject Librarian)	Library
Kathryn George	Student Representative
Arun Deo (Research Advisor)	Tūāpapa Rangahau
In attendance: Brenda Massey (Acting Secretary)	Tūāpapa Rangahau

Up to two members from the MIT Research Committee	MIT

Item 1.4 Te Komiti Rangahau o Unitec Terms of Reference

The powers and functions of Te Komiti Rangahau o Unitec (URC) shall be to:

a. Foster the conduct of research, and support the achievement of Unitec's strategic research, enterprise and innovation priorities.
b. Propose and advise on strategic directions and priorities for research, enterprise, and innovation.
c. Provide expert advice on institutional policy.
d. Develop protocols and guidelines and make recommendations in relation to the conduct of research, enterprise, and innovation.
e. Oversee the Grants Advisory Committee and the reporting of funded projects.
f. Encourage and enhance the development of the research, enterprise, and innovation culture along with student and staff research capability, with emphasis on the development of Māori and Pacific research capability.
g. Oversee the monitoring of research outputs and research reporting.
h. Foster Māori and Pacific, transdisciplinary, collaborative and externally engaged research, enterprise, and innovation.

SECTION 2 STANDING ITEMS

Section 2.1 Ngā Whakapāha | Attendance, Apologies & Quorate Status

RECOMMENDATION
That the committee accepts the apologies of today's meeting.

Section 2.2 Pitopito Kōrero o Ngā Hui | Minutes of the Previous Meetings

refer to pg5

RECOMMENDATION
That the committee approves the minutes of the meeting of 2025-03-13.

Section 2.3 Mahia Atu | Matters Arising

refer to pg14

SECTION 3 MEI HEI WHAKAAE | ITEMS TO APPROVE

N/A

SECTION 4 WHAKAWHITI KŌRERO | ITEMS FOR DISCUSSION

Section 4.1 Supporting Research at Unitec – Jamie Smiler, Pounuku Rangahau | Director Rangahau and Research, Te Pūkenga

refer to pg16

SECTION 5 NGĀ TUKUNGA | ITEMS TO RECEIVE

Section 5.1 Science System Advisory Group Consulation Phase 2

refer to pg17

Section 5.2 2024 ECR Contestable Funding Final Reports

refer to pg19

a) A/P Kristie Cameron *pg20*
b) Dr Mary Yan *pg27*
c) Hinewaimarama Reihana-White *pg35*

SECTION 6 KUPU WHAKAMUTUNGA | CLOSING

Section 6.1 Ētahi Kaupapa Anō | Any Other Business

Section 6.2 Komiti Self-Assessment

refer to pg45

Section 6.3 Karakia Whakamutunga | Closing Karakia

TE KARAKIA WHAKAMUTUNGA	**CLOSING PRAYER**
Ka wehe atu tātou	*We are departing*
I raro i te rangimārie	*Peacefully*
Te harikoa	*Joyfully*
Me te manawanui	*And resolute*
Haumi ē, Hui ē, Tāiki ē!	*We are united, progressing forward!*

minutes

Te Komiti Rangahau o Unitec | Unitec Research Committee

Date:	2025-03-13
Scheduled Start:	1300h
Scheduled End:	1500h
Location:	Microsoft Teams

MEETING OPENED: 1300h

SECTION 1 – NGĀ KUPU ARATAKI | PRELIMINARIES

Item 1.1 Karakia Tīmatanga | Opening Prayer

Item 1.2 Mihi Whakatau | Welcome from the Chair

The chair warmly welcomed members of the committee to the meeting, including Nikolay Popov (proxy for Xinxin Wang) and new student representative Kathryn George who is currently undertaking a Masters in Creative Practice.

SECTION 2 – STANDING ITEMS

Item 2.1 Ngā Whakapāha | Attendance, Apologies & Quorate Status

Members Present

1. Hadley Brown (Chair)
2. Kristie Cameron
3. Norasieh Md Amin
4. Hinewaimarama Reihana-White
5. Hamid Sharifzadeh
6. Helen Gremillion
7. Leon Tan
8. Khaled Ibrahim (until 2pm)
9. Kambiz Borna
10. Nikolay Popov (proxy for Xinxin Wang)
11. Lian Wu
12. Daisy Bentley-Gray
13. Kathryn George
14. Arun Deo (from 1.15pm)

Total members represented: 14 members

Apologies

1. Xinxin Wang
2. Mel Wong

Total apologies: 1 member + 1 invited guest

MOTION

That the committee accepts the apologies for today's meeting.

Moved: Helen Gremillion
Seconded: Lian Wu

MOTION CARRIED

Quorate Status

A minimum of seven representatives is required; the meeting was quorate.

Hunga Mahi | Staff in Attendance

1. Brenda Massey, Acting Secretary
2. Marcus Williams, Director Research & Enterprise (from 1.10pm)
3. Aiono Manu Fa'aea, MIT Research Committee (from 2.10pm)

Item 2.2 Pitopito Kōrero o Ngā Hui | Minutes of Previous Meeting

MOTION

That the committee approves the minutes of the 2025-01-30 meeting as a true and accurate record.

Moved: Kristie Cameron
Seconded: Hinewai Reihana-White

MOTION CARRIED

Item 2.3 Mahia Atu | Matters Arising

Agenda Item(s)	Action	Responsible	Outcome
1.2	Update all URC documentation to reflect Hinewaimarama Reihana-White's new name.	Brenda Massey	Complete
2.3	Establish a working group to scope the mahi required to update the current Unitec Scholarly Communication Guidelines. Present the results of the scoping work to the committee mid-2025.	Nora Md Amin / Arun Deo / Hamid Sharifzadeh	In progress. Nora and Arun have started to look at the updates required but need to consult with Ngā Wai a Te Tūī (NWaTT) on Section 4.7 of the guidelines "Māori culture and identity". NWaTT has expressed a desire to make this section more relevant.
2.3	Invite Jamie Smiler, National Research Director,	Hadley Brown / Brenda Massey	Complete. Unfortunately, Jamie was unable to attend today's meeting but

	to attend the URC's next meeting.		will endeavour to attend the April meeting.
3.1	Advise the nominators of the approval of Dr Mary Yan and Dr Jacques de Satge as Unitec Honorary Research Fellows.	Brenda Massey	Complete
3.3	Present the finalised definition of a Presentation (non-conference) at the committee's next meeting 'for information'.	Arun Deo	Complete, refer to section 5.3
6.1	Call for nominations from the committee for a student rep.	Brenda Massey	Complete. Kathryn George has been recruited as the new student rep.

The Science System Advisory Group (SSAG) is seeking submissions for Phase 2. Submissions will consider questions relating to the funding tools and mechanism and broader aspects of the science, technology, and innovation system (e.g., workforce and infrastructure).

Action: Committee members will be invited to attend a workshop to discuss and respond to the submission questions, in order that we can pass our feedback on to Prof Martin Carroll and Jamie Smiler. If anyone is unable to attend the workshop, but wishes to share some feedback, please email this to Brenda Massey and Hadley Brown, before COB Wednesday 19 March.

SECTION 3 – MEA HEI WHAKAAE | ITEMS TO APPROVE

Section 3.1 Honorary Research Fellowship Nomination – Artem Tolstykh, School of Computing, Electrical and Applied Technology

The nomination for the appointment of Artem Tolstykh as an Honorary Research Fellow was approved.

MOTION

That the committee approves the appointment of Artem Tolstykh as an Honorary Research Fellow within the School of Computing, Electrical and Applied Technology.

Moved: Leon Tan
Seconded: Kristie Cameron

MOTION CARRIED

Action: Brenda Massey to advise the nominator, Dr Masoud Shakiba, of this outcome.

SECTION 4 - WHAKAWHITI KŌRERO | ITEMS FOR DISCUSSION

Section 4.1 Unitec Research Groups

Marcus Williams was present at the meeting to speak to this item.

There is a requirement to identify Research Groups in School Research Plans. Research Leaders (RLs) were asked to lead a review of their school's research plans in partnership with their Head of School (HoS) at the end of last year. The reviewed plans have been received by the Research Advisor, who has since updated the visual schematic of all Research Groups at Unitec.

This review was an effort to enliven Research Groups. Section 454 (3) (a) of the Education and Training Act 2020 requires that degrees must be "taught mainly by people engaged in research". Our Research Productivity Traffic Light provides data that enables Tūāpapa Rangahau to support schools in a targeted way, ensuring that our degree programmes are in good health in terms of research productivity. The Act also says that the type of research people engage in should be relevant to the nature of the degree they teach on. The Research Group schematic gives visibility to the type of research that's occurring at Unitec.

Research Groups are a means to encourage collaboration, bringing critical mass to our activities. People work together and help each other, and it makes it easier to achieve our goals. More experienced researchers can support emerging and early career researchers. Research groups provide efficiencies in an environment where we have limited resource to undertake research.

In response to RLs' ideas, research retreat provision has been doubled. There's now the opportunity for Research Groups to apply for a space to retreat for a number of days so they can talk about group strategy, co-author papers, and work on grant applications together. Externals can also be invited and funded, e.g., industry partners, staff from other ITPs etc. In addition, some funding is now available for hospitality for groups who prefer to meet at Unitec.

There have also been changes to Individual Research Plans. Staff are now asked which group they're in and who their group leader is. Tūāpapa Rangahau has asked that schools identify group leaders, and professional development will be offered for them. Tūāpapa Rangahau has also added a criterion to schools' research dissemination funding prioritisation lists. The criteria up to this point has largely been around contributing to a nationally significant research portfolio that could be rated and around helping a programme to maintain its green-lit status. The new criteria is 'how does this research output contribute to your research group'?

It was queried whether it is possible to have day retreats for those not in a position to retreat overnight. Marcus responded that in such instances an interested party could communicate and negotiate with the retreat coordinator. Staff are encouraged to contact Research Professional Development Liaison Helen Gremillion in this regard.

It was queried whether there is any guideline around the makeup of Research Group membership. If one of the goals is for groups to allow for mentorship of emerging and early career researchers, it would be good to have guidance around this. I.e., it could be a requirement that research groups need a research leader and should include a mix of experienced and emerging researchers.

Marcus responded that Tūāpapa Rangahau is implementing this initiative at a time of continued disruption and when many of our schools are under enormous pressure. The aim is to move forward with changes in a mana enhancing and gentle way. Unitec has lost a lot of its top researchers in the midst of this disruption. In addition, research career paths often involve the achievement of higher degrees, culminating in a PhD, which requires a high level of specialisation. That high level of specialisation sometimes means some lateral thinking is required as to how such specialisation can function in a group of people with other interests. We need to allow space for a transition to group-based research to happen organically. Some groups will form easily, and indeed there are many groups operating effectively already, but other staff will have had very successful research careers,

may have been highly ranked in the PBRF, but might not see how they fit into this new environment. So, for those two reasons Tūāpapa Rangahau is treading carefully, and will look to integrating this feedback into the change agenda over time.

It was also suggested that, because there are only a small number of Pacific researchers at Unitec, there could be scope to create a specific Pacific Research Group that could incorporate those research groups in schools that have a Pacific focus. Hinewai Reihana-White informed the committee that A/P Dion Enari started at Unitec this week. His involvement in a Pacific Research Group would be invaluable.

Marcus responded that with the requirement that those engaged in teaching in degree programmes be actively researching in areas relevant to the nature of the degree that they teach on, all initiatives being implemented by Tūāpapa Rangahau are focussed on that. However, that doesn't mean we can't do things that we're not required to do, such as start a Pacific Research Group. Such a group could add real value to School Research Groups and might engage a lot of people that aren't degree teachers but are interested in research.

Hadley Brown recently brought an action to Tūāpapa Rangahau from this committee around encouraging schools to support and identify Māori and Pacific research interests in their School Research Plans and in the Research Groups. Arun Deo leads the annual review of the School Research Plans. Going forward they'll be a requirement that RLs and HOSs consider that directive and give some priority for Māori and Pacific research.

It was queried how the new criterion will be implemented. As this committee's jurisdiction is governance, questions around implementation should be directed to the Research Partners. However, Marcus responded that essentially, it's up to RLs how they prioritise groups. Generally, RLs should be applying the criterion to their priority lists before presenting them to the Research Director to approve.

Marcus advised that web profiles are being developed for the Research Groups. Links with contact details will be provided so groups can promote themselves and their mahi to the industries and communities they work with.

Marcus also pointed out that the SSAG and UAG are both being led by Sir Peter Gluckman ,and it is widely known what his position is on performance-based research funding to TEOs, which is that we should not be making individual submissions, we should be making group submissions. While it's unclear what's going to happen with the PBRF being on hold, the new system is likely to be influenced by Gluckman and it just might be that next time around we'll be submitting as groups. This means that the work we're putting into revivifying our research groups will be fruitful.

The committee were advised that if they have any other feedback, they should be in touch with the Research Partners.

Action: Brenda Massey to report the committee's feedback on Research Groups back to Tūāpapa Rangahau for consideration.

Section 4.2 Māori and Pacific Research in Schools

Some schools have not explicitly identified Pacific and Māori research in their School Research Plans or in their proposed Research Groups. Tūāpapa Rangahau will be working closely with schools to

ensure that Pacific and Māori research is more clearly emphasised in both School Research Plans and in Research Groups going forward.

It was noted that Unitec has had a Pacific Research Fono for many years, previously under the leadership of Dr Falaniko Tominiko, and now chaired by Daisy Bentley-Gray, and that it has been supported by various staff in Tūāpapa Rangahau.

Action: Marcus Williams asked Daisy Bentley-Gray to ensure she contacts Penny Thomson asking that the Fono be given a web presence alongside Unitec's other Research Groups and asking that the Fono is kept appraised of any opportunities available for Research Groups, such as the writing retreats.

Section 4.3 Supporting Research at Unitec – Jamie Smiler

Jamie Smiler was unable to attend the meeting, therefore this item will be deferred to a future meeting.

SECTION 5 - NGĀ TUKUNGA | ITEMS TO RECEIVE

Section 5.1 Prohibition of the use of AI to Assist with Research Interview Transcription

The committee noted that Unitec and MIT have prohibited the use of AI to assist with research interview transcription. The reason revolves primarily around the safe management of confidential data and information.

Martin Carroll's communication on the matter listed a number of other contexts in which the use of AI is also prohibited. With research interviews, we're not to use any AI software, except MS Teams, unless it has been explicitly approved by the Unitec Ethics Research Committee for a specific Principal Investigator (PI) on a specific project. This will give assurance that the piece of software that's being used can be controlled, the data is controlled, and that the PI knows how to control the data in that software

Martin has set up and is leading the Artificial Intelligence Committee, and staff have been sharing the software that is being used around Unitec. The committee will then have a better understanding of what people are using and can start to get a sense of what protections need to be in place going forward.

Section 5.2 GenAI Features Added to Scholarly Databases

Nora Md Amin presented a paper to provide information to the committee on GenAI features recently added to two scholarly databases (provided by Ebsco and Proquest). There is no risk in using these databases as the AI is contained within the database.

Section 5.3 Minimum Criteria for a Presentation (non-conference)

As a follow up from the last meeting, the committee received the approved definition of a Presentation (non-conference) Research Output for the purposes of verification in Unitec's Research Output Management System (ROMS).

Section 5.4 2024 Unitec Early Career Research Forum Annual Report

Kristie Cameron presented the highlights of the activities undertaken last year by the ECR Forum, including holding three coffee mornings and a well-attended annual 'Spiel' competition.

Hadley Brown noted that while the Mt Albert coffee catch ups are generally well attended, there is an ongoing issue with attracting ECRs to attend events held on the Waitakere campus.

One of the things that Helen Gremillion promotes at the beginner workshop that she runs on research is the fact that the ECR Forum is open to anyone who considers themselves a beginner researcher. Helen would be happy to follow up the concern around Waitakere staff not attending coffee mornings with staff in her area and suggested there could be some more active promotion of these events out in Waitakere.

Section 5.5 2024 Unitec Early Career Researcher Fellowship Final Report – A/P Kristie Cameron

Kristie Cameron received an ECR Fellowship last year and provided a comprehensive report for the committee on what the fellowship enabled her to achieve, including producing a number of publications, the submission of external grant applications, and mentoring new researchers.

Section 5.6 Reminder of Responsibilities of Academic Governance Committees (AGCs)

The committee received a reminder of the protocols and conventions by which Academic Governance Committees, including the Unitec Research Committee, operate and the scope and nature of their responsibilities as committee members.

Meetings are able to be attended by guests, such as representatives of the MIT Research Committee, who are invited at the discretion of the Chair, however only committee members can vote on motions and move and second motions.

SECTION 6 - KUPU WHAKAMUTUNGA | CLOSING

Section 6.1 Ētahi Kaupapa Anō | Any Other Business

Marcus Williams advised that a question came up at a recent school meeting about Individual Research Plans in which it says:

> *How will your research impact Māori research leadership, capability, excellence, partnership, processes and governance?*

The question was, can this question be broadened to include Pacific or Indigenous research?

Daisy Bentley-Gray and Hinewai Reihana-White expressed support to include Pacific research, however asked for more time to consider the wording of the exact question that should be asked in Individual Research Planners.

Action: Hadley Brown to form a small working group to consider and respond to this item, reporting back to the committee at next month's meeting.

Section 6.2 Komiti Self-Assessment

Marcus Williams commented that it is heartening to see the committee being so ably chaired. Today nearly every committee member is in attendance, and people are contributing and learning. There is good, critical conversation happening. To be departing after 12 years in the role, seeing the committee like this, there couldn't be anything more gratifying.

The committee is reminded that feedback on any aspect of the committee's operation can be emailed to the Chair or the Secretary at any time (in confidence if requested).

Section 6.3 Karakia Whakamutunga | Closing Karakia

MEETING CLOSED: 1430 h

SUMMARY OF ACTIONS

Agenda Item(s)	Action	Responsible	Outcome
2.3	Establish a working group to scope the mahi required to update the current Unitec Scholarly Communication Guidelines. Present the results of the scoping work to the committee mid-2025.	Nora Md Amin / Arun Deo / Hamid Sharifzadeh	
2.3	Invite committee members to attend a workshop to discuss and respond to the SSAG Phase 2 submission questions.	Brenda Massey / Hadley Brown	
3.1	Advise the nominator of the approval of Artem Tolstykh as an Honorary Research Fellow.	Brenda Massey	
4.1	Report the committee's feedback on Research Groups to Tūāpapa Rangahau for consideration.	Brenda Massey	
4.2	Contact Penny Thomson asking that the Pacific Research Fono be given a	Daisy Bentley-Gray	

	web presence alongside Unitec's other Research Groups and asking that the Fono is kept appraised of any opportunities available for Research Groups, such as the writing retreats.		
6.1	Form a small working group to consider and respond to a question about Individual Research Plans in which it says: *"How will your research impact Māori research leadership, capability, excellence, partnership, processes and governance? "* The question is, can this question be broadened to include Pacific or Indigenous research? The working group should report back to the committee next month.	Hadley Brown	

MATTERS ARISING

Agenda Item(s)	Action	Responsible	Outcome
2.3	Establish a working group to scope the mahi required to update the current Unitec Scholarly Communication Guidelines. Present the results of the scoping work to the committee mid-2025.	Nora Md Amin / Arun Deo / Hamid Sharifzadeh	In progress
2.3	Invite committee members to attend a workshop to discuss and respond to the SSAG Phase 2 submission questions.	Brenda Massey / Hadley Brown	Complete. Agenda item 5.1 refers.
3.1	Advise the nominator of the approval of Artem Tolstykh as an Honorary Research Fellow.	Brenda Massey	Complete
4.1	Report the committee's feedback on Research Groups to Tūāpapa Rangahau for consideration.	Brenda Massey	Complete
4.2	Contact Penny Thomson asking that the Pacific Research Fono be given a web presence alongside Unitec's other Research Groups and asking that the Fono is kept appraised of any opportunities available for Research Groups, such as the writing retreats.	Daisy Bentley-Gray	Complete
6.1	Form a small working group to consider and respond to a question about Individual Research Plans in which it says: *"How will your research impact Māori research leadership, capability, excellence, partnership, processes and governance? "* The question is, can this question be broadened to include Pacific or Indigenous research?	Hadley Brown	In progress. A working group of Hadley Brown, Hinewai Reihana-White and Daisy Bentley-Gray has been formed to progress this action.

	The working group should report back to the committee next month.		

Unitec New Zealand Limited

Meeting of Te Komiti Rangahau o Unitec | Unitec Research Committee

Date of Meeting: 10 April 2025

Title	Supporting Research at Unitec – Jamie Smiler, Pounuku Rangahau | Director Rangahau and Research, Te Pūkenga
Provided by:	Hadley Brown, Chair
Authored by:	Jamie Smiler, Pounuku Rangahau | Director Rangahau and Research, Te Pūkenga Brenda Massey, Secretary
For:	**DISCUSSION**

Recommendation

That the committee discusses with Jamie Smiler, Pounuku Rangahau | Director Rangahau and Research, Te Pūkenga, what support Unitec would benefit from in the research space and how Jamie could work directly or co-ordinate that to happen, as Unitec moves towards becoming a standalone entity.

Purpose

Te Pūkenga is moving towards disestablishment. The purpose of today's discussion is to understand what support Unitec might need in the research space in order to put its best foot forward as a standalone entity.

Key Points

Jamie recently met with some staff in Tūāpapa Rangahau. The purpose of the hui was to discuss three main things:

(1) What are Unitec's research goals for 2025?
(2) What is standing in the way of us achieving them?
(3) What are the areas that we require support to achieve them?

These questions were framed within the context of Jamie supporting business divisions to prepare for disestablishment and for them to put their best foot forward to be standalone entities.

Rather than Jamie saying what support he can provide, he is keen to hear from the committee about what support Unitec would benefit from and how he could work directly or coordinate that to happen, noting that any support requested should be of a strategic rather than operational nature.

Unitec New Zealand Limited

Meeting of Te Komiti Rangahau o Unitec | Unitec Research Committee

Date of Meeting: 10 April 2025

Title	Science System Advisory Group Phase 2 Consultation
Provided by:	Brenda Massey, Acting Secretary
For:	**INFORMATION**

Recommendation

That the committee be advised that the Senior Leadership Team (SLT) will make a submission on behalf of Unitec to the Science System Advisory Group (SSAG) Phase 2 Consultation which will incorporate the feedback that a working group of the Unitec Research Committee provided.

Purpose

The purpose of this paper is to report to the committee concerning the outcome of the Unitec Research Committee's working group's discussions on the SSAG Phase 2 consultation, and to confirm that the SLT will make a submission on behalf of Unitec that includes a summary of the working group's feedback.

Key Points

The SLT will make a submission to the SSAG on behalf of Unitec. It is unlikely to include all the issues in the notes from the committee's working group, but it will include:

(a) A view that Applied Research needs to be fully recognised in any new funding system

(b) A view that the VET sector can provide leadership in Applied Research – particularly where it involves engagement with small to medium sized enterprises locally, regionally and nationally.

(c) To that end, requiring stronger evidence of relevant industry and Māori partnering in research applications.

(d) Concern that actions have already been taken to reduce funding for humanities and social sciences.

(e) Stressing the importance of funding schemes that can support the development of research skills at all levels .

(f) Recognising that many employers are more interested in employing graduates with applied research capabilities than basic research capabilities.

(g) Supporting long term research roadmaps not bound by political agendas, perhaps through an independent commission type of model.

(h) Supporting streamlining application processes (with flexible feedback loops) whilst recommending retention of subject matter expertise in designing research funding policies and funding allocation decision-making.

(i) Supporting Māori-led decision making for funding Māori research.

(j) Supporting policies that use funding to support national infrastructure subject to broader and equitable infrastructure accessibility.

At its March meeting Te Komiti Mātauranga Chair initiated a vote of thanks to the committee for its minutes, acknowledging its work on the SSAG Consultation Phase Two and noting that Unitec is the only Business Division of Te Pūkenga to do so.

A/P Marcus Williams has asked that this feedback be passed onto the committee and encourages a continuation of this outstanding effort.

Information/Background

The SSAG is proceeding in several phases with submissions sought during each phase. Phase 1 submissions considered high-level sectoral questions that considered the role of science and innovation in New Zealand to inform the interim report.

Phase 2 submissions considered questions relating to the funding tools and mechanism and broader aspects of the science, technology, and innovation system (e.g., workforce, and infrastructure).

Committee members were invited to attend an online workshop on Thursday, 20 March to discuss and respond to the submission questions, in order to provide feedback to Prof Martin Carroll and the SLT on the consultation. Anyone unable to attend the workshop, but who wished to share some feedback, was asked to email this to Brenda Massey and Hadley Brown, before COB Wednesday 19 March.

Unitec New Zealand Limited

Meeting of Te Komiti Rangahau o Unitec | Unitec Research Committee

Date of Meeting: 10 April 2025

Title	2024 Early Career Researcher (ECR) Contestable Funding Final Reports
Provided by:	Brenda Massey, Senior Grants Advisor
For:	**REVIEW**

Recommendation

That the committee receives final reports from three of the four recipients of 2024 Early Career Researcher (ECR) Funding.

Purpose

The purpose of this paper is to report to the committee concerning the outcomes and expenditure of the 2024 ECR funded projects.

Information/Background

The ECR Fund provides annual, contestable funding to emerging and established early career researchers at Unitec in order to develop their capability, capacity and career progression as a Principal Investigator on a high quality, externally partnered, applied research project that meets the evaluation criteria. Provision of one progress report and one final report is required as part of the accountability requirements of the fund.

Attachments

- 2024 ECR Final Report – A/P Kristie Cameron
- 2024 ECR Final Report – Dr Mary Yan
- 2024 ECR Final Report – Hinewaimarama Reihana-White

2024 UNITEC EARLY CAREER RESEARCHER FUND Final Report

Email your completed report to bmassey@unitec.ac.nz before **5pm on Friday, 28 March 2025.** Instructions in red italics may be removed before submission.

Researcher:	A/P Kristie Cameron
Project Title:	Methodologies for measuring preference and demand in Guinea pigs
Amount of Grant:	$9,000

Executive Summary

This project is the first systematic analysis about how housing size and shape and level affects guinea pig behaviour. To conduct this research, four students, a research assistant and myself had to work collaboratively to reach a satisfactory outcome. The outcome was data that allowed us to measure how changes in the environment affect animals and how to take opportunities to maximise their welfare through husbandry practices. These included the physical size of an enclosure, the shape, and if multiple levels, that allow for larger cages, change how guinea pigs utilise their environment. The design was initially that two students worked on a different experiment, but it became apparent early on that the housing experiment was large enough to cater to the course requirements. We also did not want to compromise on the science and having the four students working collaboratively has provided thousands of hours' worth of videos and copious amounts of data. In order to cope with this level of data I approached Computer Science lecturers with an idea for a Master's project. I now have a Master's student working on AI software to identify Guinea pig behaviours. This has massive commercialization outcomes with the software if successful being modified to streamline identification of animal behaviour. The outcomes are also important to industry with the science officers from the SPCA interested in using this data in formulating a code of welfare for guinea pigs and using it as part of the education portfolio.

The demand study is currently planned for two NR students to be conducted in 2025 as funded by a small ECR grant.

Background

Currently there is no code of welfare for Guinea pigs in New Zealand.

Being able to inform the writing of a Code of Welfare for Cavies (as is being written for rabbits) would provide the pet and veterinary industry with scope to improve the husbandry and thus welfare of these animals by law. These types of studies are required to make policy changes which have bearing on the welfare of companion animals. The RSPCA and Companion Animals New Zealand have expressed interest in research that focuses on positive animal relationships. This research will provide empirical evidence of what provision to achieve that status would be.

The development of a Guinea pig lab at Unitec, will be unique in the New Zealand research space and inform future legislation with regards to the popular pet, as well as establish methods for studying the behavioural repertoire of rodents as it might apply to husbandry

of laboratory animals e.g., the extent to which a captive animal might cope in a rectangle versus a square.

Aims and Objectives

The aim of the experiment was to measure the behaviour of the guinea pigs across a variety of cage sizes and shapes to elucidate area usage and behaviour associated with shape and design. E.g., guinea pigs prefer more wall space available as they are a prey species. We will analyse their behaviour to indicate stressors and usage of commodities inform a 'true' minimum and optimum for animal caging

Methodology

Ten guinea pigs were housed in pairs. Using a randomised design each pair experienced three days in enclosures of different shapes and sizes ranging from a minimum of .76 m2 to 3.6m2, and of shapes including squares, rectangles and pentagons. There are reports that guinea pigs prefer long thin enclosures because it maximises wall space where they are safe and minimises open space where they are vulnerable to predators. We used motion detection video recorders that gave a bird's eye view of the enclosures to give us a picture of what the animals are doing relative to size. The students used a sampling methodology where the first two videos of each hour for each day (two days per condition) were analysed.

We can compare the proportion of time spent doing particular behaviours associated with those consistent with good and poor welfare such as popcorning (when they leap about), exploration of the enclosure, resting, conspecific behaviour and the lack of in-fighting, vocalising or lack of movement in the space. We will compare the proportions of behaviour across the different cage sizes and areas and see if there is a difference. We also conducted an extra condition where we added a level to the rectangle cages and repeated the experiment to see if level, which increases, area of the cage is a) used by guinea pigs, and b) increases the performance of behaviours associated with good welfare, or c) was a barrier to resources (as identified as a risk in Begum-Diamond, Neuhauser and Cameron, 2022).

Project Milestones

Achievement	**Agreed Date due**	**Status** (Completed, in progress or ceased)	**Revised Due Date**
Housing experiment 1 with NR student	Sem 1 2024	Completed	Data analysis in progress as the amount of data was huge. Writing and final data analysis (by me rather than students) is
Demand experiment 1 with NR student	Sem 1 2024	Postponed to 2025 Replaced by increased scope of Housing experiment	
Housing experiment 2 with NR student	Sem 2 2024	Completed	

Demand experiment 2 with NR student	Sem 2 2024	Postponed to 2025 Replaced by increased scope of Housing experiment	scheduled for an April start.
Completion	End 2024	Data collection complete. NR students finished	Hope for draft in May 2025.

Outcomes/findings

It was expected that housing size would influence behaviour, that is, where the animals spent their time relative to the enrichment and resources in the cage of the different sizes. At this point I have only evaluated size as a variable. I expect it that is the size of the cage increased they would be in increase in behaviour because there's more space for it to occur, but also at the largest sizes there would be an increase and usage of the tunnel and hide and a decrease in time spent in the open. Figure 1 shows a curve starting with a higher proportion of time spend undercover, which then decreases around the 1.84m2 mark, then increases again. The corresponding proportion of behaviour in the open is show in blue.

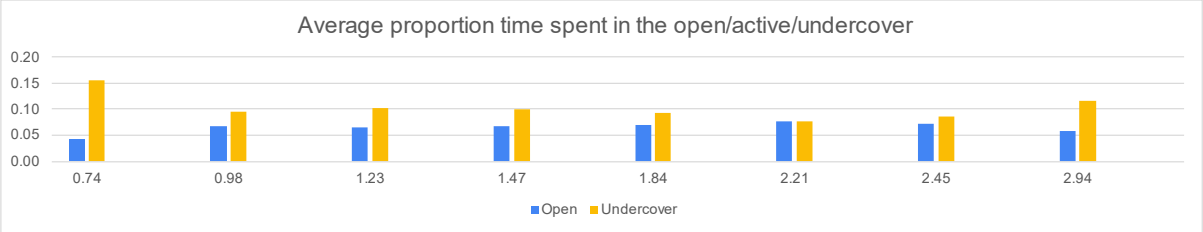

Figure 1.

Preliminary analysis of the average proportion of time spent in the open versus undercover for ONE pair of guinea pigs.

Figure 2 shows a proportion of time spent in the upper right off the enclosure we the hay box was located but not being in the hay box, being in the hay box, or being in the hide. Excited the enclosure increased the Guinea pigs paint least I'm out in the open but also this time in the hide. They did have other options including a tunnel, but this creates its own issues as cage size increases. The proportion of time spent in the hay box is interesting. We know that guinea pigs prefer coverage because they are a prey species that survive via vigilance and hiding. The increased proportion of times speak in the high box as their size increases indicates that the hey box is highly valued it also performs another function in there is it is perceived as being protection and offsets the increase in size and decrease in time spent out in the open. This has implications for both sides of the enclosure in consideration for what should be supplied to guinea pigs in order for their welfare to be optimal. As I progress through the data analysis and writing up the paper this will be my focus.

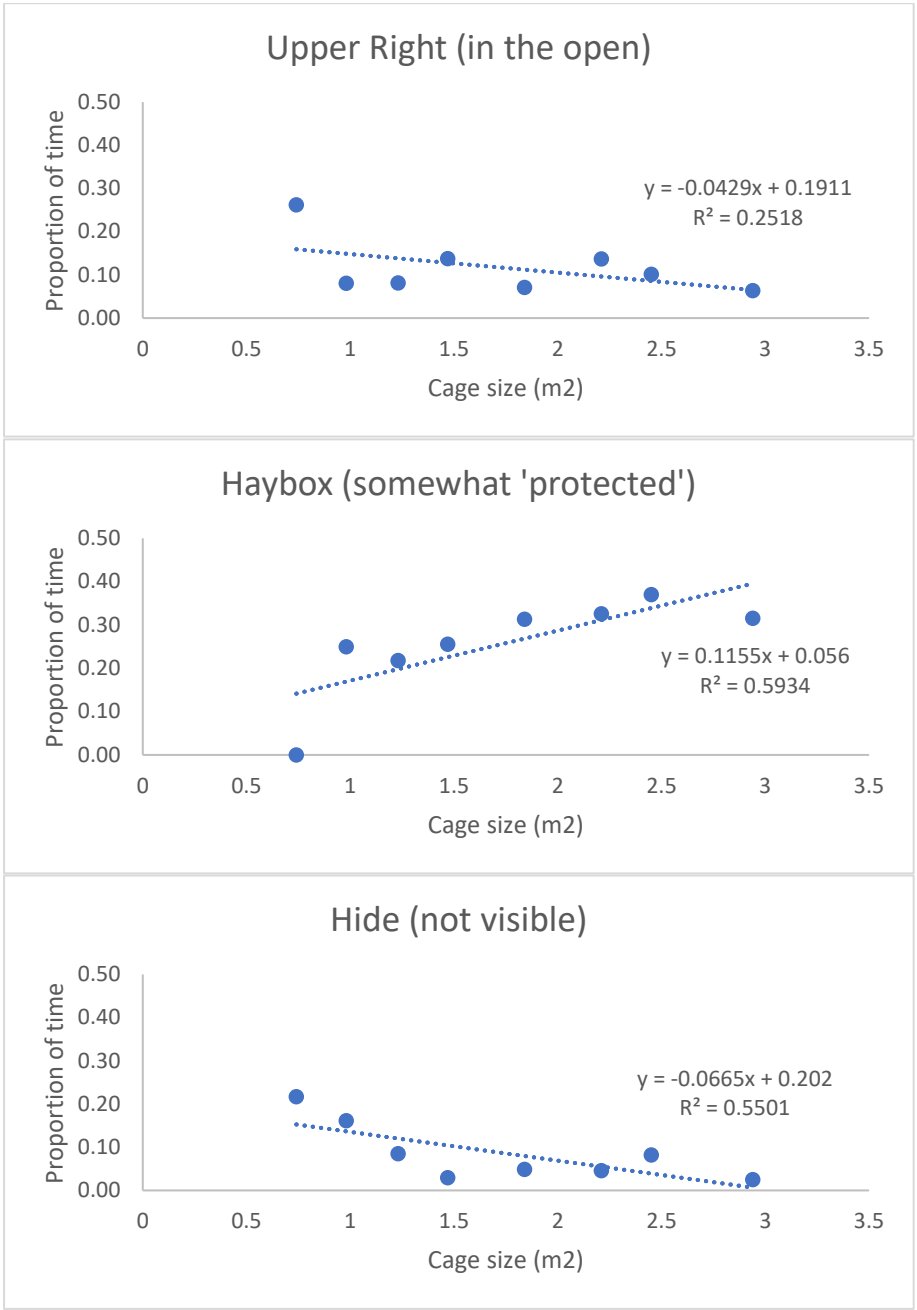

Figure 2.

Scatter plots (with linear regression) of the proportion of time spent in the upper right quadrant (but not in the haybox), in the haybox and in the hide not visible by ONE pair.

Impact

The students have benefitted by experiencing graduate style laboratory work while also having sufficient data in time for their deadline of the year-long project.

I have discussed this project with the SPCA, and they are very interested in the work we have done that can impact their efforts to increase awareness of animal welfare in the community – specifically targeting primary school kids. My last project with the SPCA was regarding public perception of greyhound racing in New Zealand – this has been influential

in the positive result for greyhound welfare in the cancelation of greyhound racing by 2026. Thus, my work is impactful for community and governmental policy change.

Conclusions

Nearly 100,000 households in New Zealand have a rodent and this is about 38,000 animals. Up to 200,000 Guinea pigs and used in laboratories. They make good 'guinea pigs' because they are docile and have similar and immune capabilities to humans. It is important that husbandry all of Guinea pigs as pets or is animals is conducted in a way that experimental results are not compromised by poor housing affecting welfare. Before optimal housing for animals in a stable state, free from environmental stress, is important. Further with no code of welfare in New Zealand, and not consistent recommendation for sizing throughout the world, this knowledge is valuable and important for maintaining husbandry of guinea pigs in species often kept in captivity.

Next steps and Ongoing Research Possibilities

Is the project turned out to be incredibly large in terms to ensure scientific rigour, the two demand projects we postponed to 2025. This project will build on the data set from the housing project looking at the demand for particular commodities and enrichment provided in the enclosure measured in a controlled experiment similar to Walker et al. (2024) and Cameron et al., (in press) with guinea pigs climbing ramps to indicate the work they will exert to obtain preferred commodities. I have won a small ECR grant to continue this work.

Future plans: collaborate with the SPCA to disseminate the research with educational scope and also as the only science that could inform housing for the code of welfare. Work with Computing student to create AI software to assess behaviour of guinea pigs from video (this could be commercialised and could be used for multiple similar animals).

Recommendations (optional)

Learn how to use the HR system to track RA hours.

The method of collaborative research for our students is exceptionally efficient. The four students alternated days of the week and weekends where they were required to perform experimental changes for each of the five Guinea pig pairs. However, they were only required to analyse the data from via pair of animals. This model insured a relatively large number of students obtained sufficient data for the year-long project and insured that ate massive project requiring many man hours was completed within six months. In terms of supervisor hours, this design allows 4 meetings with everyone instead of individual time. In addition, it provided students with an authentic experience of working in a postgraduate-type lab.

1.1 Publications and dissemination

Output type	**Agreed Date due**	**Status** (Completed, in progress or ceased)	**Revised Due Date** (if still in progress)

Existing preference paper pub	End 2023, early 2024	Completed 5th paper in GP series • Cameron, K. E., Hoult, C., & Walker, T. W. (2025). The role of line-of-sight in operant experiments using food reinforcers in guinea pigs. *Behavioural Processes, in press.*	
Existing preference paper pub	End 2023, early 2024	Completed 4th paper in GP series • Walker, T. W, Hoult, C., & **Cameron, K. E**. (2024). Food Preference and Demand in a Ramp Task in Guinea Pigs (*Cavia porcellus*). *International Journal of Comparative Psychology*, 37. http://dx.doi.org/10.46867/ijcp.19475 Retrieved from https://escholarship.org/uc/item/14g712hx *Research funded by 2023 ECR grant*	
Demand 1 paper	Aim to submit July 2024	Postponed to 2025.	End 2025
Presentation ~~NZABA~~ at Companion Animals NZ conference.	September 2024	Completed April 2024	
Housing 1 &2 paper	Aim to submit July 2024	Too optimistic and study had three experiments in one. This exceeded expectations but was required to ensure robust scientific design.	May-June 2025
Demand 2 paper	Aim to submit July 2024	Postponed to 2025	End 2025

Financial Reconciliation

Item	Amount Approved	Actual spend in PeopleSoft ($)
Personnel – Research Assistant (1 day per week for 8 months)	$6,000	7,118
Professional services (husbandry and animal care via existing techs (food supplies, vet care, loan of animals))	$1,000	948
Materials (loan of animals and care from Auckland Cavy Care)	$1,000	1,000
Equipment/caging (convert an existing space to be a Guinea pig lab)	$1,000	625.17
Total	**$9,000**	**$9,691**

The budget exceeded the budget by $691 due to a failure by the PI to track RA hours. This was covered generously by Tūūpapa Rangahau. I have now a system to track the hours and was informed by HR how to use the system so I do not make the same mistake again.

References (if applicable)

Cameron, K. E., Hoult, C., & Walker, T. W. (2025). The role of line-of-sight in operant experiments using food reinforcers in guinea pigs. Behavioural Processes, in press.

Walker, T. W, Hoult, C., & **Cameron, K. E.** (2024). Food Preference and Demand in a Ramp Task in Guinea Pigs (Cavia porcellus). International Journal of Comparative Psychology, 37. http://dx.doi.org/10.46867/ijcp.19475 Retrieved from https://escholarship.org/uc/item/14g712hx

Begum-Diamond, Z., Neuhauser J. & **Cameron, K.E.** (2022). Ramp use in Guinea pigs: A demand analysis. *Journal of Experimental Analysis of Behaviour, 118(2),* 292-301. https://doi.org/10.1002/jeab.783

Appendixes (optional)

Reminders:

- You must ensure publications and research outputs are entered into ROMS when they occur.
- Please keep in mind that in addition to Tūāpapa Rangahau and the Unitec Research Committee, your report may be viewed by members of the ELT, Heads of Schools and/or external stakeholders. Please also note your research may also be highlighted in the Annual Unitec Research Report and/or in Unitec's research blog.
- Any problems or issues that you would prefer not to highlight in this report can be discussed, in confidence if requested, with the Director Research and Enterprise and/or with Brenda Massey, Senior Grants Advisor.

2024 UNITEC EARLY CAREER RESEARCHER FUND Final Report

Email your completed report to bmassey@unitec.ac.nz before **5pm on Friday, 28 March 2025.** Instructions in red italics may be removed before submission.

Researcher:	Dr Mary Yan
Project Title:	Development of emergency food formulation with mainly New Zealand ingredients for disaster preparedness
Amount of Grant:	$3,250

Executive Summary

The project was co-funded by Unitec ECR Fund and GMP Ltd.

The major activities in the past year:

1. Initial research for market available emergency foods was conducted. None of them are based on milk powder. As GMP Ltd produces milk powder, milk powder will be one of the main ingredients for the proposed project. In addition, GMP Ltd has facilities to produce powder-form products. Therefore, the emergency foods to be developed are powder-form products.
2. A list of potential ingredients was checked by GMP Ltd to ensure the process within the scope of their Risk Management Program (RMP).
3. Potential formulas were developed based on the WHO guidelines in terms of energy, protein, fat, and vitamins. Energy intake should be 2100 Kcal per person/day, in which energy from protein should be 10-12%, energy from fat should be 17%.

Example	1	2	3
	RATIONS (quantify in g)		
Cereal	400	450	350
Pulse*	60	60	100
Oil (vit. A fortified)	25	25	25
Fish/meat	–	10	–
Fortified blended foods	50	40	50
Sugar	15	–	20
Iodized salt	5	5	5
Energy: Kcal	2113	2075	2113
Protein (in g and in % Kcal)	58g; 11%	71g; 13%	65g; 12%
Fat (in g and in % Kcal)	43g; 18%	43g; 18%	42g; 18%

*Not all types of pulses are acceptable to all populations; therefore, the most familiar type of pulse must be resourced for the population.

4. The potential ingredients, mainly New Zealand ingredients, were selected and purchased from Gilmours Auckland. The milk powder and vitamins were provided by GMP Ltd. The ingredients were computated in different combination and composition for formulas.
5. Nutritional analysis was conducted referring to the Concise New Zealand Food Composition Tables to ensure essential nutrient provision in the formulas.
6. Three powder-form prototypes were developed based on the WHO guidelines in terms of energy, protein, fat, and vitamins. Of each prototype (oatmeal-wheat, chickpea-wheat, chickpea-maize), energy intake was 2124 kcal, 2118 kcal, 2103 kcal per person/day; in which energy from protein (in g and in % kcal) was (61g, 11.5%), (63g, 12%), (62.9g, 12%); energy from fat (in g and in % kcal) was (41g, 17%), (40g, 17%), (39g, 17%); respectively. Vitamins were added to the formulas (V_A: V_{B1}: V_{B2}: V_{B3}: V_C: V_D ≈ 500µg: 0.9mg: 1.4mg: 12mg: 28mg: 3.8µg).
7. The bench trials were conducted to check the uniformity when adding water, and the taste acceptability. Initial bench trials were conducted at GMP Ltd to check the uniformity when adding water, and the taste. There was no issue with uniformity when adding either hot or cold water (in case there is no power supply during emergency). The prototypes were evaluated by researchers and the NPD team at GMP Ltd and tasted acceptable. It had nutritional health star rating 3.5 (on a scale of 0.5 to 5).

8. Further work was discussed on-site in November 2024 at GMP Ltd. After a visit to GMP dairy plant, the ingredients were narrowed down, and the formulas were refined to comply with RMP and GMP production facilities.

9. The preliminary results have been disseminated at the NSNZ Annual Conference and the School of Healthcare Research Forum, in 2024.
10. An extension to the project completion date is needed. Formulation trials on the industrial production line at GMP dairy plant take longer than proposed.

Background

New Zealand typically faces natural disaster risks such as earthquakes, floods, tsunamis, and even volcanoes to consider. In natural disasters, food shortages are uncommon. However, if the supply chain is destroyed or the food transportation is delayed, food shortage can quickly become an issue. In an emergency, timely distribution of an adequate basic ration for the needy population is crucial. Therefore, food supply is very important in an emergency. Food products that meet the nutritional requirements, have a long shelf-life and can be stored would meet the food and nutritional needs during emergencies.

According to the World Health Organisation (WHO) guidelines, food supply should be adequate to cover the overall nutritional needs of all population groups in terms of quantity, quality, and safety. In an emergency, an adequate food ration meets the population's minimum energy, protein and fat requirement for survival and light physical activity. An adequate food ration is also nutritionally balanced, diversified, culturally acceptable, fit for human consumption and suitable for all sub-groups of the population.

Though emergency food is called survival food, the taste and nutritional profile could be improved. In the proposed project, a prototype will be developed based on WHO guidelines for food and nutrition in emergencies. The features will be considered including energy intake (2,100 kcal/person/day), macronutrients (protein and fat) requirements, micronutrients (vitamin and mineral) requirements, nutrient profile, and the shelf-life (vacuum packed). Then the ration will be refined to meet specific considerations for vulnerable persons.

The expected outcome is that the developed prototype meets the criteria of the WHO guidelines for food and nutrition in emergencies, is taste acceptable, and has a five-year shelf life.

Aims and Objectives

The overall aim of the research is to develop emergency food. The specific objectives are to develop emergency food that is nutritionally balanced, culturally tailored, and cost-effective, and i) taste acceptable, ii) has a good nutrient profiling score, iii) has a long (10+ years) shelf-life.

The specific objectives are:

- Develop novel emergency food formulations using mainly New Zealand ingredients such as milk powder, and fruit and vegetable powders.
- Conduct comprehensive nutritional analysis to ensure essential nutrient provision.
- Assess the shelf stability of these formulations under disaster conditions.
- Evaluate the cost-effectiveness and feasibility of large-scale production for disaster preparedness.

Methodology

The aim of the research is to enhance the nutritional quality, shelf life, and cost-effectiveness of emergency food supplies using mainly New Zealand ingredients, including milk powder and fruit and vegetable powders and other nutritional ingredients. By developing innovative formulations, assessing nutritional content and stability, and evaluating production feasibility, this research seeks to contribute to disaster preparedness efforts.

I: The formulation of emergency food:

The potential ingredients for the formulation will be cornflour, soybean flour, milk powder and fruit and vegetable powders, butter substituted lipid source. The milk powder will be provided by GMP Ltd. Other ingredients will be sourced from local companies in Auckland, New Zealand. Formulation trails will be conducted to create improved formulations utilizing New Zealand ingredients in a food lab in School of Science at AUT and GMP Ltd. Essential nutrients will be analysed using FoodWorks™ software (Xyris Pty Ltd, Australia). The water activity will be monitored ($a_w < 0.7$) using a water activity meter. The features considered are taste, nutrition profiles, cost-effectiveness, and shelf stability.

II: Sensory evaluation:

Sensory evaluation will be conducted to evaluate the developed prototypes. Twelve panellists who have knowledge in food sensory will taste and describe the difference between the samples of developed prototype food in terms of colour, texture, flavour, and overall acceptance. The attributes will be scored by a 9-point hedonic scale from 1 (very slight perception) to 9 (very intense perception). The prototype samples of 20 g will be served in plastic cups labelled with three-digit random numbers and served at room temperature. Then the acceptable prototypes will be chosen for further refinement.

III: Shelf stability:

The shelf stability will be tested under conditions simulating disaster storage, e.g., an accelerated shelf-life test in a food laboratory at AUT. The samples will be stored at each temperature (30, 40, 50, 60 °C) for a 2-week period. The samples will be evaluated weekly for the quality of colour and appearance, three samples from each condition will be examined. Microbial analysis will be conducted in the micro laboratory at GMP Ltd.

IV: Economic analysis and feasibility studies to determine scalability:

The researchers and the industrial partner will work out the cost and feasibility for the scalability.

Statistical Analysis:

All results will be expressed as mean ± standard deviation (SD). Statistical analysis will be carried out by R statistical software. Analysis for sensory test will be performed with a one-way analysis of variance and means comparison (post hoc Tukey's test). For shelf-life test, the absorbances were plotted versus time at 30, 40, 50, 60 °C on the same plot to determine the reaction rate constants at each temperature, then to determine the activation energy for browning.

Project Milestones

Achievement	**Agreed Date due**	**Status** (Completed, in progress or ceased)	**Revised Due Date** (if still in progress)
Formulation trials	Apr-July 2024	Completed Working with GMP Ltd, i) product types were defined; ii) ingredients were selected, iii) formulas were tested by bench trials to check the uniformity when adding water, and the taste.	
Product sensory test	Aug 2024	Completed The prototypes were evaluated by researchers and the New Product Development (NPD) team at GMP Ltd and tasted acceptable.	
Product shelf stability test	Sep-Oct 2024	An extension is needed: Formulation trials on the production line at GMP dairy plant take longer than proposed. Once the trials are	Jun-Sep 2025
Cost-effectiveness analysis	Oct-Nov 2024		
Data compilation	Dec 2024		Nov 2025
Estimated completion date	Feb 2025		

		conducted, the formulas can be finalised, and the product shelf stability test and cost-effectiveness analysis can be completed.	

Outcomes/findings

The project is still in progress. The preliminary results are available.

Three powder-form prototypes were developed based on the WHO guidelines in terms of energy, protein, fat, and vitamins. The bench trials were conducted to check the uniformity when adding water, and the taste acceptability. Of each prototype (oatmeal-wheat, chickpea-wheat, chickpea-maize), energy intake was 2124 kcal, 2118 kcal, 2103 kcal per person/day; in which energy from protein (in g and in % kcal) was (61g, 11.5%), (63g, 12%), (62.9g, 12%); energy from fat (in g and in % kcal) was (41g, 17%), (40g, 17%), (39g, 17%); respectively. Vitamins were added to the formulas (VA: VB1: VB2: VB3: VC: VD ≈ 500µg: 0.9mg: 1.4mg: 12mg: 28mg: 3.8µg).

The prototypes were taste acceptable, had nutritional health star rating 3.5 (on a scale of 0.5 to 5).

The preliminary results have been disseminated at the NSNZ Annual Conference and the School of Healthcare Research Forum, in 2024.

Impact

The aim of the research is to develop food products for emergencies in partnership with GMP Ltd. The work is part of emergency preparedness. That will ensure timely distribution of an adequate basic ration for the needy population. The successful outcomes of the research will have considerable potential in production. It is beneficial for our Whanau, our community in emergency management.

Conclusions

To be completed.

Next steps and Ongoing Research Possibilities

GMP Ltd would like to learn about the green channel shipment of dairy based products into different markets for emergency categorised foods. I have been contacting MPI NZ for more information, still waiting for their reply.

Recommendations (optional)

Publications and dissemination

Output type	**Agreed Date due**	**Status** (Completed, in progress or ceased)	**Revised Due Date** (if still in progress)
Emergency food prototype	2024	Three prototypes developed.	
Conference presentations	2024-2025	The preliminary results have been disseminated at the NSNZ Annual Conference and the School of Healthcare Research Forum, in 2024.	
Peer reviewed journal articles, targeted in nutrition journals e.g., Education and Health Promotion, Food and Nutrition Science (FNS)	2025	In progress	2025

Financial Reconciliation

Item	**Amount Approved**	**Actual spend in PeopleSoft ($)**
Personnel	$250	0
Materials (raw ingredients, chemicals, consumables for emergency food formulation trial)	$3,000	$1030 (Formulation trials on the production line at GMP Ltd were postponed. As the trials need to be conducted at GMP dairy plant, allergens from raw materials need to be controlled. Because food ingredients have shelf-life, I was concerned to have ingredients ordered and leave them in the plant unused by

		the expiry date. Therefore, I did not order more raw ingredients.
Total	**$3,250**	**$1030**

References (if applicable)

1. Prasad, A.S. & Francescutti, L.H. (2017). Natural disasters. International Encyclopaedia of Public Health. doi:10/1016/8978-0-12-803678
2. Wikipedia. (2023). 2023 Auckland anniversary floods. Retrieved from https://en.wikipedia.org/wiki/2023_Auckland_Anniversary_Weekend_floods. Accessed 12 July 2023.
3. Lassa, J. A., Teng, P., Caballero-Anthony, M. & Shrestha, M. (2019). Revisiting Emergency Food Reserve Policy and Practice under Disaster and Extreme Climate Events. Int J Disaster Risk Sci. 10. doi: 10.1007/s13753-018-0200-y.
4. WHO. (2004). Food and nutrition need in emergencies. Gevena.
5. FAO/WHO. (1985). Energy and protein requirements. Joint expert consultation. Technical report series 724. Geneva.
6. Ainehvand, S., Raeissi, P., Ravaghi, H. & Maleki, M. (2019). The characteristic features of emergency food in national level natural disaster response programs: A qualitative study. J Educ Health Promot. 8. doi: 10.4103/jehp.jehp _266_18.
7. Hadi, S., et.al. (2022). Ready-to-use therapeutic food (RUTF) formulations with functional food and nutrient density for the treatment of malnutrition in crisis. Int J Prev Med. 13. doi: 10.4103/ijpvm.IJPVM_304_20.
8. WHO. (2000). The management of nutrition in major emergencies. Geneva.
9. Howson, C.P., et al. (1988). Prevention of micronutrient deficiencies: tools for policy makers and public health workers. National Academy Press. Washington, DC.
10. Food Standards Australia New Zealand: Nutrition, health and related claims: standard 1.2.7. In A guide to the development of a food standard for Australia and New Zealand: Food Standards Australia New Zealand; 2017.

Appendixes (optional)

Mary Y_Emergency food.pptx

2024 UNITEC EARLY CAREER RESEARCHER FUND Final Report

Email your completed report to bmassey@unitec.ac.nz before **5pm on Friday, 28 March 2025.** Instructions in red italics may be removed before submission.

Researcher:	Hinewaimarama Reihana-White
Project Title:	Toitū te Whenua: Sustaining the Wāhi Tapu of Te Noho Kotahitanga Marae
Amount of Grant:	$8,000

Website Repository

The full findings, background, methodology, and kōrero from this project are presented in a dedicated website:

👉 **https://www.kaitiakitanga.ac.nz/** Password = Wairaka

This site serves as a living repository that will continue to grow and develop. It holds the core content of the final report, including video interviews, imagery, emerging themes, and key messages. The site reflects the kaupapa of Tikanga Pā Harakeke by sharing the research in a way that is accessible, relational, and grounded in place.

Executive Summary

Project Overview

Toitū te Whenua: Sustaining the wāhi tapu of Te Noho Kotahitanga Marae is an Early Career Researcher (ECR) project supported by Tuapapa Rangahau; Partnering and Research, Unitec. Grounded in kaupapa Māori and the relational methodology of Tikanga Pā Harakeke, the project weaves together interviews with kaitiaki, *manaaki whenua* restoration events, and a *raranga wānanga* to explore how kaitiakitanga sustains the mauri of whenua and wai in the face of urban development. It positions the pā harakeke and puna as ecological sites and living systems of whakapapa, learning, and healing.

Introduction

This executive summary presents the key findings and themes that emerged from the research undertaken within the framework of *Tikanga Pā Harakeke*. Grounded in the whakatauākī Hūtia te Rito, the study reinforces that the health of the whenua and wai directly is inseparable from the wellbeing of people.

Key Findings

1. **Kaitiakitanga as Daily Action**
    - Kaitiakitanga is not a passive responsibility; it requires ongoing engagement, advocacy, and adaptability.
    - The puna, Te Waiunuroa o Wairaka, is central to the health of the pā harakeke and the wider ecosystem, demanding active protection.

- The wellbeing of the pā harakeke reflects the care given by its guardians, ensuring its role as a place of sustenance, learning, and healing.

2. **Whakapapa: Intergenerational and Collective Responsibility**
    - The marae and pā harakeke exist as living legacies shaped by the contributions of past and present generations.
    - Each generation is responsible for maintaining kaitiakitanga practices while adapting to contemporary challenges.
    - Guardianship of the puna is a shared responsibility, reinforcing that no single person or group owns it, but all have a role in ensuring its protection.
3. **Mauri and Wairua: The Life Force of the Puna and Whenua**
    - The puna holds deep spiritual and ecological significance, with its mauri reflecting the overall health of the environment and its people.
    - Honouring the wairua of the whenua is essential to kaitiakitanga, requiring ongoing respect and cultural practice.
    - When the mauri of Te Waiunuroa o Wairaka is strong, the ecosystem thrives; when diminished, the impacts are felt across generations.
4. **Challenges and Responsibilities for the Future**
    - Urban development presents risks to the pā harakeke and puna, necessitating strong advocacy and engagement in decision-making processes.
    - Indigenous knowledge systems must be embedded in planning and policy to ensure that the whakapapa of the whenua is not erased.
    - Strengthening community education and intergenerational knowledge-sharing is vital to sustaining these relationships into the future.

Implications for Kaitiakitanga

- Policy and Decision-Making: Embedding Indigenous frameworks of kaitiakitanga into planning processes will uphold the ecological and cultural integrity of the whenua.
- Education and Transmission of Knowledge: Sustained efforts to teach tikanga pā harakeke principles will ensure continued engagement with kaitiakitanga.
- Community-Led Restoration and Protection Initiatives: Strengthening local engagement and fostering collaborative approaches will support the ongoing protection of these spaces.

The pā harakeke and puna are part of a living system. An interconnected network of people, whenua, and waters that depend on ongoing care, and advocacy. In the face of accelerating urban development, the responsibility of kaitiaki becomes ever more vital to protect the integrity and mauri of these spaces for future generations.

This research does not mark an endpoint, but continues as part of a longer journey woven through the pā harakeke, the puna, and the relationships sustained by Te Noho Kotahitanga marae.

Background

Kei hea te kōmako e kō?

Where will the bellbird sing?

More than 200 years ago, kuia Mere Ngaroto of Te Aupouri gifted us a whakatauākī emphasising socio-environmental wellbeing. She posed the question: "Hutia te rito o te harakeke, kei hea te kōmako e kō?". If the central shoot of the harakeke is not cared for, where will the kōmako sing? Through this ecological metaphor, we are reminded that our present actions shape the lives of future generations, highlighting the interconnectedness of human and non-human wellbeing. This foundational concept continues to guide Māori perspectives on environmental care.

Māori perspectives view human wellbeing as inseparable from environmental health. Just as the kōmako and tūī rely on harakeke nectar, our identities and health depend on thriving ecosystems. This interconnectedness underscores the necessity of balanced relationships among people, land, water, and living systems. Such balance is embedded deeply in Māori ecological values.

Māori knowledge systems articulate ecological relationships through whakapapa, embedding interconnectedness within cultural practice (Marsden, 2003; Hikuroa, 2017; Morris, 2020; Harmsworth & Awatere, 2013). Central to these systems is kaitiakitanga, a philosophy of environmental guardianship rooted in reciprocity (Walker et al., 2019; Kawharu, 2000; Roberts et al., 1995). Kaitiakitanga integrates everyday actions with intergenerational knowledge, protecting environmental resources and cultural integrity (Pihama & Lee-Morgan, 2022; Pihama & Smith, 2023). This cultural philosophy provides vital guidance for contemporary ecological challenges.

Māori frameworks also recognise mauri, the life force inherent in all beings, as essential to environmental and human wellbeing (Marsden, 2003; Pohatu, 2011). Tikanga Pā Harakeke exemplifies this principle, representing care for future generations through nurturing the central shoot (rito) of the harakeke plant (Tan & White, 2023; White & Tan, 2022; White, 2022). This metaphor illustrates that protecting ecological balance ensures community resilience and cultural continuity (Pihama & Lee-Morgan, 2022). Such holistic approaches become especially important amidst rapid urbanisation.

Urban environments pose distinct challenges for practising kaitiakitanga but remain integral to maintaining Indigenous relationships to land and cultural practices (Walker et al., 2019; McAllister et al., 2023). Mātauranga Māori provides crucial insights for ecological restoration and the affirmation of Indigenous sovereignty (Wehi, 2009; Marsden, 2003). Applying ancestral wisdom helps urban communities actively manage the pressures of urban development. This practical application is exemplified by current projects such as Toitū te Whenua.

The project Toitū te Whenua: Sustaining the Wāhi Tapu of Te Noho Kotahitanga Marae, supported by Tuapapa Rangahau; Partnering and Research at Unitec, applies kaitiakitanga in practice. It examines reciprocal relationships between human actions and environmental wellbeing through lived expressions of kaitiakitanga. This approach demonstrates how our wellbeing depends directly on ecological health, encouraging reflection and deliberate actions toward sustainable long-term outcomes. Such kaupapa Māori frameworks challenge prevailing urban development paradigms.

The urban intensification around Te Noho Kotahitanga Marae poses ecological and cultural risks, particularly to Rangimārie Pā Harakeke and Te Waiunuroa o Wairaka. Recent developments have already led to the removal of mature trees and increased pollution threats to vital freshwater sources. These pressures highlight the urgent need for decision-making grounded in Māori ecological and cultural values rather than economic priorities alone. Addressing these challenges demands meaningful alternatives to current extractive urban planning approaches.

Extractive and anthropocentric urban development paradigms cause significant harm to ecological and human communities. As Salmond (2017, p. 414) notes, such approaches have created environmental degradation, socioeconomic inequality, and dysfunction,

contaminating lakes, rivers, and ecosystems—referred to metaphorically as "the tears of Rangi". Without a shift toward holistic, Māori-informed practices, these patterns of ecological and social damage will worsen. Therefore, projects like Toitū te Whenua offer valuable pathways for change.

Toitū te Whenua provides a marae-based, kaupapa Māori response, presenting an alternative to harmful urban development practices. By centering ecological and cultural wellbeing, it directly challenges current development approaches prioritizing short-term economic gains. This project exemplifies how Māori knowledge and practice can reshape relationships between communities and environments, promoting sustainability and cultural resilience. Such approaches offer essential models for building culturally grounded, ecologically sustainable urban futures.

Aims and Objectives

Aim

To protect and sustain the mauri of Rangimārie Pā Harakeke and Te Waiunuroa o Wairaka through tikanga-based kaitiakitanga, ensuring the wellbeing of the whenua, the marae, and future generations.

Objectives

1. **To explore how kaitiakitanga is practiced as a daily, relational responsibility** through kōrero with kaitiaki of wāhi tapu associated with Te Noho Kotahitanga Marae.
2. **To document the interconnected roles of the pā harakeke and the puna** as living systems that sustain ecological, cultural, and spiritual wellbeing.
3. **To identify key themes and kaitiaki actions** that support collective guardianship and resilience in the face of urban development.
4. **To contribute to long-term strategies for whenua protection** by embedding whakapapa, mauri, and kaitiakitanga into future planning and decision-making.

Methodology

Tikanga Pā Harakeke

Hūtia te rito o te pū harakeke
Kei hea te kōmako e kō?
Kī mai ki ahau
He aha te mea nui o te ao?
Māku e kī atu
He tāngata, he tāngata, he tāngata.

If you pluck out the heart, the new shoot of the harakeke
Where will the bellbird sing?
If you ask me,
What is of most importance in this world?
I will reply,
It is people, it is people, it is people.

Tikanga Pā Harakeke guides this research through a developing kaupapa Māori framework that centers on relationships, intergenerational responsibility, and the interconnected wellbeing of people and the environment. The pā harakeke is a model of healthy whānau and community relationships. The rito represents the child, the mokopuna, the heart of the pā harakeke. When the rito thrives, the pā harakeke flourishes. If we do not nurture the rito, the pā harakeke perishes, and the kōmako and tūī lose their source of sustenance, silencing their song.

In this way, Tikanga Pā Harakeke reminds us that the wellbeing of people is inseparable from the wellbeing of the environment and the interwoven relationships that sustain both. This research does not position itself as an external observation but is embedded within the pā harakeke, acknowledging the voices, relationships, and intergenerational responsibilities inherent in the research context.

Project Milestones

1. **Ethics Approval (July 2024)**
   Ethics approved for interviews with kaitiaki.
2. **Manaaki Whenua Wānanga – Matariki 2024**
   Collective kaitiakitanga in action, focus on rongoā.
3. **Interviews with Kaitiaki (Nov 2024 – Jan 2025)**
   Seven interviews conducted with kaitiaki of Te Noho Kotahitanga marae.
4. **Transcription and Thematic Analysis (Jan – Feb 2025)**
   Transcribe kōrero and identify emerging themes guided by Tikanga Pā Harakeke.
5. **Drafting Findings and Report (Feb – Mar 2025)**
   Summarise key messages and kaitiaki actions; prepare draft of website content.
6. **Manaaki Whenua Wānanga – March 2025**
   Collective kaitiakitanga in action.
7. **Website Development (Dec 2024 – Mar 2025)**
   Populate digital repository with video, images, and findings.
8. **Weaving Wānanga with Ngāti Whātua Ōrākei – April 2025**
   Collaborative wānanga focussed on kaitiakitanga and sharing taonga raranga practices.

Achievement	**Agreed Date due**	**Status** (Completed, in progress or ceased)	**Revised Due Date** (if still in progress)
Discuss research design with Ngā Kaitiaki	March 2024	complete	
Ethics application	April 2024	complete	
Interviews with knowledge keepers	Begin June 2024	complete	

Rongoā wānanga for Matariki Wānanga with weavers/Ngāti Whātua Ōrākei Wānanga with community (Manaaki Whenua)	June/July 2024 November 2024 November 2024	Complete In progress Complete	 April 4th/5th 2025
Write up findings from wānanga and interviews	Aug – December 2024	In progress (final wānanga April 4th and 5th)	May 31 2025
Discuss findings with Ngā Kaitiaki	Feb 2025	In progress	May 2025
Publish website	March 2025	Ready for publication	Launch website in Matariki 2025
Written journal article for disseminating to ePress, or MAI Journal.	March 2025	In progress	Publication target June/July 2025
Estimated completion date	March 2025		Matariki 2025

Outcomes/findings

1 **Summary of Findings**

This research explores the relational framework of Tikanga Pā Harakeke, revealing how people and whenua are interconnected through whakapapa, mauri, and wairua. The kōrero shared by kaitiaki reaffirm that **kaitiakitanga is a lived, daily responsibility**—not symbolic or passive.

Key messages include:

- **Kaitiakitanga requires daily commitment and advocacy.**
- **The puna and pā harakeke are living entities** grounded in whakapapa; their wellbeing reflects the health of the land and the people.
- **The marae is a collective legacy** that must be sustained as a place of cultural protection and learning.
- **Urban development challenges the integrity of the whenua**, demanding strong partnerships and long-term action.
- **Each generation has a role** in adapting to change while maintaining core values of kaitiakitanga and mauri.

Thematic analysis identified five core themes:

1. **Whakapapa** – The foundation of connection and shared responsibility
2. **Kaitiakitanga** – Active care, advocacy, and decision-making
3. **Mauri** – The life force of the puna and pā harakeke
4. **Wairua** – Honouring the spiritual presence of the land
5. **Challenges and Future Responsibilities** – Embedding Indigenous values in development and planning

From these, a set of **kaitiaki actions** emerged, including:

- Daily care for the puna and pā harakeke
- Educating communities about whakapapa and whenua
- Restorative planting to protect mauri
- Advocacy for culturally aligned development
- Passing on tikanga to future generations

These findings reinforce the understanding that **kaitiakitanga is woven into everyday practice** and is essential for sustaining the wellbeing of people, place, and future generations.

Impact

This research has benefitted, and will continue to benefit, the following groups and kaupapa:

- **Te Noho Kotahitanga Marae and local kaitiaki**
  Their kōrero, roles, and relationships have been acknowledged, uplifted, and recorded in ways that support ongoing protection of the pā harakeke and puna.
- **The wider teaching and research community at Unitec**
  The project provides a model for tikanga-based, place-connected research that strengthens relationships between people and whenua, encouraging more grounded and reciprocal practices.
- **Ngāti Whātua Ōrākei and iwi partners**
  Through collaborative wānanga and shared reflection, the research supports wider efforts to revitalise kaitiakitanga, raranga, and whenua care in urban spaces.
- **Environmental restoration and urban planning conversations**
  The findings contribute to emerging dialogue on embedding mātauranga Māori in land-based decision-making, especially in areas facing development pressures.
- **Future generations of learners and researchers**
  The website acts as a living repository, preserving Indigenous knowledge and supporting intergenerational learning through video kōrero, imagery, and practical examples of kaitiakitanga.

These benefits are important because they support cultural, ecological, and educational regeneration. They help protect sacred spaces while actively nurturing them as sites of knowledge, healing, and future-making.

Conclusions

This research confirms that kaitiakitanga is a lived and ongoing responsibility that connects people, whenua, and whakapapa. The puna and pā harakeke are not just ecological features, but active sites of mauri, wairua, and intergenerational knowledge.

Through the voices of kaitiaki and the framework of Tikanga Pā Harakeke, the research shows that caring for these places strengthens cultural identity, ecological resilience, and collective wellbeing. In a time of urban pressure and environmental change, this kaupapa reminds us that the future of the whenua depends on the daily, relational actions we take today.

Next steps and Ongoing Research Possibilities

- **Continue developing the website** as a living repository of kōrero, video snippets, and imagery that can grow over time with new contributions.
- **Launch the website during Matariki 2025**
- **Submit a journal article** based on project findings and the Tikanga Pā Harakeke framework (target: June–July 2025).
- **Plan for a Phase 2 project** focusing on the relationship between kaitiakitanga and urban development in the Wairaka Precinct.
- **Explore external funding opportunities** to support further wānanga, kaitiakitanga initiatives, and digital storytelling.
- **Strengthen partnerships** with Ngāti Whātua Ōrākei, Unitec, and Te Noho Kotahitanga Marae through co-developed responses to whenua and puna protection.
- **Share the research more widely** to support others working in kaitiakitanga, whenua-based planning, and mātauranga Māori-led restoration.

Recommendations

- **Protect our outdoor classroom**
  Rangimārie Pā Harakeke and Te Waiunuroa o Wairaka must be recognised and protected as living learning environments with cultural and ecological significance.
- **Embed tikanga-based approaches like Tikanga Pā Harakeke**
  Teaching and research must uphold mātauranga Māori through place-based, relational, and tikanga-led practice.
- **Prioritise marae-based and whenua-connected learning**
  Encourage hands-on, site-based education that strengthens ties between learners, communities, and the environment.
- **Make kaitiakitanga active, not symbolic**
  Learning and research activities are expected to involve tangible actions that support the wellbeing of communities and ecosystems.
- **Support Indigenous-led digital repositories**
  Resourcing and visibility must be given to platforms that enable Indigenous communities to share and manage their own knowledge.
- **Avoid extractive research**
  Teaching and research must be reciprocal, valuing Indigenous voices and returning benefit to communities.

1.1 Publications and dissemination

The research outputs are mostly on track, with some dates adjusted to better match the timing and needs of the community. Two Manaaki Whenua wānanga have been held (in July 2024 and February 2025), and a third wānanga is planned with Ngāti Whātua Ōrākei weavers on April 4–5, 2025. This upcoming wānanga is a way of giving back — by sharing what has been learned so far, strengthening relationships, and creating space to reflect together through raranga and kōrero.

The website is ready for publication. It will be launched during Matariki 2025, a time that holds cultural meaning and allows space for the kaupapa to be shared properly. A journal article is also underway and will be submitted around June–July 2025.

Output type	Agreed Date due	Status (Completed, in progress or ceased)	Revised Due Date (if still in progress)
Wānanga x 3	July and November (2) 2024	Wānanga x 2 (completed) 1 wānanga in progress.	April 4th-5th 2025
Publish website	February 2025	Publication-ready; will continue to grow as a living repository.	Launch at Matariki 2025
Journal article	March 2025	In progress	Target publication June/July 2025

Financial Reconciliation

The project was delivered within budget. The final expenditure totalled **$7,955.41**, slightly under the approved amount of **$8,000**.

- The **underspend** of $44.59 was the result of minor savings across several items, including wānanga costs and website platform fees, which came in slightly lower than estimated.

Item	Amount Approved	Actual spend in PeopleSoft ($)
Wānanga x 3 (July 2024, March 2025, April 2025 , includes cost of venue hireage, facilitation, guest speaker/s and sharing of kai.	$4,063.99	$3810.00
Website registration and platform	$500	$ 480.99
Equipment to create high quality interview and audiovisual content across several different shooting scenarios: • Canon EOS R10 Mirrorless Camera with 18-150mm lens $1,897.40 • DJI Ronin RS 2 Gimbal $828.63 • Rode Wireless Go II $506.03 • RODE Lavalier Go Wearable Microphone Best for Rode Wireless Go System $120.21 • SanDisk Extreme SDXC 256GB $83.74	$3,436.01	$3664.42
Total	**$8,000**	**$7955.41**

References (if applicable)

Harmsworth, G. R., & Awatere, S. (2013). Indigenous Māori knowledge and perspectives of ecosystems. Manaaki Whenua Press.

Hikuroa, D. (2017). Mātauranga Māori—the ūkaipō of knowledge in New Zealand. Journal of the Royal Society of New Zealand, 47(1), 5–10. https://doi.org/10.1080/03036758.2016.1252407

Kawharu, M. (2000). Kaitiakitanga: A Māori anthropological perspective of the Māori socio-environmental ethic of resource management. Journal of the Polynesian Society, 109(4), 349–370.

McAllister, T., Hikuroa, D., & Macinnis-Ng, C. (2023). Connecting Science to Indigenous Knowledge: kaitiakitanga, conservation, and resource management. New Zealand Journal of Ecology, 47(1), 1–13. https://doi.org/10.20417/nzjecol.47.3521

Marsden, M., & Royal, T. A. C. (2003). The woven universe : selected writings of Rev. Māori Marsden. Estate of Rev. Māori Marsden.

Morris, H. W. (2020). Te taiao, te tinana, e rua, e rua: the environment and the human body. Cadernos de Linguística, 1(3), 1–10. https://doi.org/10.25189/2675-4916.2020.v1.n3.id227

Pihama, L., & Lee-Morgan, J. (Eds.). (2022). Tiakina te pā harakeke : ancestral knowledge and tamariki wellbeing. Huia Publishers.

Pihama, L., & Smith, L. T. (Eds.). (2023). Ora : healing ourselves : indigenous knowledge, healing and wellbeing. Huia Publishers.

Pohatu, T. W. (2011). Mauri - rethinking human wellbeing. MAI Review, 3.

Roberts, M., Norman, W., Minhinnick, N., Wihongi, D., & Kirkwood, C. (1995). Kaitiakitanga: Maori perspectives on conservation. Pacific Conservation Biology, 2(1), 7–7. https://doi.org/10.1071/PC950007

Salmond, A. (2017). Tears of Rangi. Auckland University Press.

Smith, L. T. (2012). Decolonizing methodologies research and indigenous peoples (2nd ed.). Zed Books.

Tan, L., White, T., Alexander, A., & Sharma, M. (2023). Raranga and Tikanga Pā Harakeke-An Indigenous Model of Socially Engaged Art and Education. In The Routledge Companion to Decolonizing Art, Craft, and Visual Culture Education (1st ed., pp. 269–279). Routledge. https://doi.org/10.4324/9781003190530-35

Vazquez, R. (2017). Precedence, Earth and the Anthropocene: Decolonizing Design. Design Philosophy Papers, 15(1), 77-91. https://doi.org/10.1080/14487136.2017.1303130

Walker, E. T., Wehi, P. M., Nelson, N. J., Beggs, J. R., & Whaanga, H. (2019). Kaitiakitanga, place and the urban restoration agenda. New Zealand Journal of Ecology, 43(3), 1–8. https://doi.org/10.20417/nzjecol.43.34

Wehi, P. M. (2009). Indigenous ancestral sayings contribute to modern conservation partnerships: examples using Phormium tenax. Ecological Applications, 19(1), 267–275. https://doi.org/10.1890/07-1693.1

White, T. (2022). Wānangatia te wahakura: Weaving wellbeing for mokopuna and whānau.

White, T., & Tan, L. (2022). Te whānau Pā Harakeke: An indigenous artform of community intervention.

Te Komiti Rangahau o Unitec | Unitec Research Committee Self-Assessment

Purpose: NZQA requires the Committees of Unitec's Academic Board to provide evidence of self-assessment.

Te Komiti Rangahau o Unitec Self-Assessment Provocations

- Can we improve the way the committee is run?
- Is time well managed?
- Are issues under discussion well-handled and resolved?
- Are the agenda and minutes well handled?
- Are the perspectives of committee members respected and heard?
- Are actions completed and accounted for?
- Were there matters raised and dealt with in the meeting that were particularly helpful or unhelpful?
- Does the committee oversee and ensure compliance within its mandate?
- Does the committee show foresight and proactively engage in continuous improvement?
- Does the committee review and improve the relevant policies, guidelines and regulations?