agenda

Te Komiti Rangahau o Unitec | Unitec Research Committee

Date:	**2023-04-13**
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

1. Nomination for Appointment of an Honorary Research Fellow – Dr Cat Mitchell
2. Nomination for Appointment of an Honorary Research Fellow – A/P Dan Blanchon

SECTION 4 WHAKAWHITI KŌRERO | ITEMS FOR DISCUSSION

1. Review of the Unitec Research Strategy Action Plan
2. PBRF Sector Reference Group – Consultation Paper 10
3. 2023 Research Symposium

SECTION 5 NGĀ TUKUNGA | ITEMS TO RECEIVE

1. Future research management and administration in Te Pūkenga
2. 2022 ECR Contestable Funding Final Reports
   a. Dr Mary Yan

b. Nigel Pizzini
c. A/P Kristie Cameron
d. A/P Renata Jadresin Milic

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

Marcus Williams (Associate Professor)	Chair and Director Research and Enterprise
Daisy Bentley-Gray (New and Emerging)	Nominee of Director, Pacific Success
Dr Catherine Mitchell (Early Career)	Nominee of Director, Māori Success
Dr Helen Gremillion (Professor)	Healthcare and Social Practice
Dr Yusef Patel (Early Career)	Architecture
Duaa Alshadii (New and Emerging)	Building Construction
Dr Lian Wu (Associate Professor)	Healthcare and Social Practice
Dr Hamid Sharifzadeh (Professor)	Computing and Information Technology
Dr Leon Tan (Associate Professor)	Creative Industries
Dr Kristie Cameron (Associate Professor/ Early Career)	Environmental & Animal Sciences
Dr Mitra Etemaddar	Applied Business
Robyn Gandell (Early Career)	Bridgepoint
Dr Norasieh Md Amin (Subject Librarian)	Learning and Achievement
Vacant	One member nominated by the Student Council
Arun Deo (Research Advisor)	Tūāpapa Rangahau

In attendance: Brenda Massey (Acting Secretary) Tūāpapa Rangahau

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 2023-03-09.

Section 2.3 Mahia Atu | Matters Arising

refer to pg12

SECTION 3 MEI HEI WHAKAAE | ITEMS TO APPROVE

Section 3.1 Nomination of Appointment of an Honorary Research Fellow – Dr Cat Mitchell

refer to pg13

Section 3.1 Nomination of Appointment of an Honorary Research Fellow – A/P Dan Blanchon

refer to pg17

SECTION 4 WHAKAWHITI KŌRERO | ITEMS FOR DISCUSSION

Section 4.1 Review of the Unitec Research Strategy Action Plan

refer to pg23

Section 4.2 PBRF Sector Reference Group – Consultation Paper 10

refer to pg36

Section 4.3 2023 Research Symposium

refer to pg47

SECTION 5 NGĀ TUKUNGA | ITEMS TO RECEIVE

Section 5.1 Future research management and administration in Te Pūkenga

refer to pg48

Section 5.2 2022 ECR Contestable Funding Final Reports

refer to pg49

a. *Dr Mary Yan pg50*
b. *Nigel Pizzini pg57*
c. *A/P Kristie Cameron pg64*
d. *A/P Renata Jadresin Milic pg69*

SECTION 6 KUPU WHAKAMUTUNGA | CLOSING

Section 6.1 Ētahi Kaupapa Anō | Any Other Business

Verbal reminder that Tūāpapa Rangahau needs to request that Schools report against their Research Plans, as per the committee's 2023 Work Plan.

Section 6.2 Komiti Self-Assessment

refer to pg81

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:	2023-03-09
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.

SECTION 2 – STANDING ITEMS

Item 2.1 Ngā Whakapāha | Attendance, Apologies & Quorate Status

Members Present

1. Marcus Williams (Chair)
2. Daisy Bentley-Gray
3. Caralyn Kemp (proxy for Kristie Cameron)
4. Helen Gremillion
5. Arun Deo
6. Nora Md Amin
7. Hamid Sharifzadeh
8. Lian Wu
9. Yusef Patel
10. Leon Tan

Total members represented: 10 members

Apologies

1. Cat Mitchell
2. Kristie Cameron

Total apologies: 2 members

Absent

1. Mitra Etemaddar
2. Duaa Alshadii
3. Robyn Gandell

Total absent: 3 members

MOTION

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

Moved: Helen Gremillion
Seconded: Yusef Patel

MOTION CARRIED

Quorate Status

A minimum of 9 representatives is required; the meeting was quorate.

Hunga Mahi | Staff in Attendance

1. Brenda Massey, Acting Secretary

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

MOTION

That the committee approves the minutes of the 2023-02-09 meeting as a true and accurate record.

Moved: Daisy Bentley-Gray
Seconded: Hamid Sharifzadeh

MOTION CARRIED

Item 2.3 Mahia Atu | Matters Arising

Agenda Item(s)	Action	Responsible	Outcome
3.1	Develop a memo for TKM requesting a change to the RPTL Terms of Reference.	Marcus Williams	Complete
5.4	Reclassify the categorisation of the URC's 2022 agenda items as 'Strategic Orientated' or 'Review Orientated'. Present the classification data via memo to TKM.	Brenda Massey Marcus Williams	Complete Complete
6.1	Request that Research Centre Directors provide Annual Reports on their 2022 activities for the committee's review at the May meeting (NB: the agenda for the May meeting closes 28 April).	Brenda Massey/ Marcus Williams	Complete

SECTION 3 – MEA HEI WHAKAAE | ITEMS TO APPROVE

Section 3.1 Nomination for Appointment of an Honorary Research Fellow – Prof Christian Schröder

The nomination for the appointment of an Honorary Research Fellow within the School of Healthcare and Social Practice was approved. This is the first such appointment within this school.

MOTION

That the committee approves the appointment of Professor Christian Schröder as an Honorary Research Fellow within the School of Healthcare and Social Practice.

Moved: Helen Gremillion
Seconded: Lian Wu

MOTION CARRIED

Action: Marcus Williams to advise the nominator, Linda Aumua, of this outcome.

SECTION 4 - WHAKAWHITI KŌRERO | ITEMS FOR DISCUSSION

Section 4.1 Review of the Unitec Research Strategy Action Plan

The committee reviewed the Unitec Research Strategy Action Plan within the context of the current positioning of research at Te Pūkenga (TP) which was outlined by the Chair as follows:

- The second purpose in the act of parliament that created TP is that TP shall conduct applied and technological research.
- Rangahau/research will sit under the Academic Centre and Learning Systems of TP. Some functions will sit centrally (e.g., strategy, policies and procedures, monitoring, and reporting), other things will sit regionally or locally (as appropriate). This is all yet to be designed, but research systems will be organised by function so there will be overarching national functions, then regional responsiveness, and local delivery.
- Dr Megan Gibbons leads this portfolio https://www.xn--tepkenga-szb.ac.nz/our-work/about/leadership/. Megan was Chief Executive at Otago Polytechnic and is very experienced and respected in tertiary education.
- It is likely that work will begin on Tier 3 and 4 design for the research and rangahau management structure over the next few months, with consultation following design a bit later in the year (timeframes still to be decided).
- Te Ohu Whakahaere Rangahau Māori, Research and Postgraduate is the existing TP research committee, and it has been running for approximately 18 months.
- The Rangahau Research Forum (RRF) is a group of the research directors and managers from all the ITPs who have been regularly meeting and actively advocating for research since the inception of the RoVE.
- Te Ohu Whakahaere Rangahau Māori, Research and Postgraduate and Megan Gibbons have both asked the RRF to help with the development of a national research strategy. Consultation with kairangahau/researchers will be built into this process. This committee will be afforded the opportunity to provide feedback as well.
- National animal and human research ethics processes are being developed.
- When the Regional Co-leaders are announced, Marcus Williams will invite them to meet with Unitec's Research Leaders and this committee.

A summary of the committee's discussion is as follows:

- It was queried how Pacific research would be included and supported within the new TP research structure. The Chair responded that the commitment to Pacific research is in the broader policy and mission statements around TP. The context supplied above simply outlines the process for restructuring research management within TP. Improving Pacific success and retention is very much at the heart of the TP concept and mission, and one would expect that to be reflected in the new structure.
- The Action Summary under Priority One of the Action Plan states that "we will grow the numbers of Māori researchers" and we will "increase Māori postgraduate supervisors". Dr Hinekura Smith is a Māori postgraduate supervisor. With the departure of a number of staff within Ngā Wai a Te Tūī (NWaTT), and Dr Hinekura Smith's appointment as Acting Director of NWaTT, Hinekura has indicated that her capacity to undertake Māori postgraduate supervision has been affected. The Chair responded that any issues around supervision capacity should be articulated and communicated to him as Director Research and Enterprise.
- It was queried where student engaged research sits within the Action Plan. Student integrated research is one of the KPIs under Priority Two. Data is being collected to measure how many students are integrated into published, co-authored contexts as part of Unitec's Power BI dashboard.
- Progressive improvement has been made towards achieving most of the KPIs in the Action Plan. However, growing Māori capability is not an area of success. The data associated with this KPI has been presented to Te Komiti Mātauranga (TKM) and TKM requested its Chair to present it to TP. As it has done, the committee can only govern and guide and advise, it cannot affect staff recruitment or retention.
- Another of the Priority Two KPIs is QA outputs. The production of QA outputs has steadily decreased over the past five or six years. There are several reasons for this, it is not just that Unitec is producing less research:
    - Unitec has become significantly smaller. If there are less staff, it is not unreasonable to expect that there would be less QA outputs being produced.
    - Unitec had a much less targeted approach toward the dissemination of resources prior to the current director. Previously, some staff were producing 20 or 30 outputs per year, while many staff were producing zero or very few QA outputs and receiving little support. There has been a much greater democratisation of access to resources, with better resourcing of Māori and Pacific staff, better resourcing of emerging and early career staff with appropriate support for senior researchers and professorial staff.
    - Although the number of QA outputs has decreased, it has not affected the research productivity of degree programmes, which in that same time period have gone from 36% green-lit to 93% green-lit. The redistribution of resource has in fact enhanced the goals the Research Strategy is trying to achieve, as can be identified in the data.
- It is Tūāpapa Rangahau's responsibility, along with Research Leaders, Heads of Schools and Heads of Centres (Pacific and Maia) to together deliver the research strategy actions. We are mostly delivering on the actions, with data around the KPIs suggesting that we are achieving our goals to a high level generally, with some notable and very unfortunate exceptions.
- The Annual Research Report gives a comprehensive response to the results that come out of the investment that is made at Unitec into supporting research, the three priorities of this strategy, and the concomitant action plan.

There was much to digest from the discussion of this item, and it was decided that the review of the Action Plan would be re-tabled for consideration at next month's meeting.

Action: Brenda Massey to ensure this item is carried over onto the agenda of the next committee meeting.

SECTION 5 - NGĀ TUKUNGA | ITEMS TO RECEIVE

Section 5.1 Outcome of proposed amendment to the RPTL audit for new staff

The committee noted that Te Komiti Mātauranga (TKM) declined its request to approve a proposed amendment to the Terms of Reference (ToR) of the Research Productivity Traffic Light (RPTL) audit.

It was queried whether there is an alternative mechanism whereby very small programmes (into which, for example, staff that are hired may come from practice and could take a while to get up to speed with research) that go from being green-lit to either amber- or red-lit, could articulate the reason for any decrease in research productivity.

The Chair responded that Arun Deo prepares the RPTL report annually for TKM. If Research Leaders wish to communicate any detail around any issues that have resulted in a loss of research productivity, they should contact him, and at his discretion will include such details in his report.

Action: Marcus Williams to share the above query and response with A/P Samantha Heath, the author of the memo that originally proposed the amendment to the RPTL ToR.

SECTION 6 - KUPU WHAKAMUTUNGA | CLOSING

Section 6.1 Ētahi Kaupapa Anō | Any Other Business

Marcus Williams congratulated Brenda Massey and Gregor Steinhorn from the Research Office 'win team', and all the Principal Investigators (PIs) of the dozen or so applications for external research funding which have been submitted in the last two or three months to the Royal Society Te Apārangi and MBIE. Collectively ~$35m has been applied for.

This is the most outstanding 'funding season' Unitec has ever had. Preparation of these applications involved multiple external partners, transdisciplinary, cross-programme, cross-school collaborations, extensive engagement with Pacific and Māori and skilled leadership from Brenda and Gregor and the relevant PIs. Unitec can be very proud of its research culture.

Three of the projects are requesting ~$10m. Winning funding for even one of these projects would have a great impact on Unitec's revenue and culture. There are huge implications for the robustness of our research culture when these grants are won. They generate overheads for the institution which can be used in a discretionary way to support researchers and to help grow new and existing research centres. Overheads can be used to employ new researchers, to relieve existing staff from teaching, to facilitate the creation of QA outputs, and to grow the capacity and capability within research centres and within programmes and schools.

Section 6.2 Komiti Self-Assessment

The Chair thanked the committee for their contributions.

An opportunity was given for the committee to reflect on their self-assessment provocations. 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: 1345 h

SUMMARY OF ACTIONS

Agenda Item(s)	Action	Responsible	Outcome
3.1	Advise Linda Aumua of the approval of the appointment of Professor Christian Schröder as an Honorary Research Fellow within the School of Healthcare and Social Practice.	Marcus Williams	
4.1	Ensure the review of the Unitec Research Strategy Action Plan is carried over onto the agenda of the next committee meeting.	Brenda Massey	
5.1	Advise A/P Samantha Heath that if she wishes to communicate the details around any issues that she may be facing as Research Leader in Healthcare in relation to the RPTL, Arun Deo will incorporate these into the RTPL report that goes to TKM.	Marcus Williams / Brenda Massey	

MATTERS ARISING

Agenda Item(s)	Action	Responsible	Outcome
3.1	Advise Linda Aumua of the approval of the appointment of Professor Christian Schröder as an Honorary Research Fellow within the School of Healthcare and Social Practice.	Marcus Williams	Complete
4.1	Ensure the review of the Unitec Research Strategy Action Plan is carried over onto the agenda of the next committee meeting.	Brenda Massey	Complete
5.1	Advise A/P Samantha Heath that if she wishes to communicate the details around any issues that she may be facing as Research Leader in Healthcare in relation to the RPTL, Arun Deo will incorporate these into the RTPL report that goes to TKM.	Marcus Williams / Brenda Massey	Complete

memo

To Unitec Research Committee Date Monday 27th March

From Dr Hinekura Smith
Interim Director, Ngā Wai a Te Tūī

Subject Nomination for Appointment of an Honorary Research Fellow

I am requesting that the Unitec Research Committee approves the appointment of Dr Cat Mitchell as an Honorary Research Fellow within Ngā Wai a Te Tūī, Māori and Indigenous Research Centre.

Dr Cat Mitchell has taught at Unitec for more than 16 years. She has made a considerable contribution to the teaching and learning experiences of students particularly in the area of postgraduate research and writing. In recent years she has moved into kaupapa Māori research and has contributed to Ngā Wai a Te Tūī being awarded of a number of large research projects. She has also played a notable role in supporting emerging Māori students and scholars.

Although she is leaving her paid role at Unitec, we (both) would like to maintain our research relationship. I would greatly value her continued contribution to kaupapa Māori research at Ngā Wai a Te Tūī. In my view, she will be adding value to Unitec and Te Pūkenga in the area of kaupapa Māori research and help our Centre continue to re-establish itself after a period of recent change.

Ngā mihi,

Dr Hinekura Smith

Director (interim)

Ngā Wai a Te `Tūi Māori and Indigenous Research Centre

Dr Cat Mitchell

(Taranaki)

Current position	Senior Lecturer, Māori Research Ngā Wai a Te Tūī
Academic Qualifications	PhD (Education) University of Auckland (2019), PG Dip in Education, Adult Education *(Awarded with Distinction, 2011)* Master of Library and Information Studies *(Awarded with Merit, 2004)* CELTA Cert in Language Teaching (2001), Bachelor of Laws (LLB), University of Waikato (1995)
Professional Experience	2006 – present Lecturer at Unitec (Learning & Achievement and Ngā Wai a Te Tūī), Senior Researcher Pūrangakura (Nov 22, Part-time), Graduate Teaching Assistant University of Auckland, 2015.
Academic Service	UREC – Unitec Ethics Committee 2022 - *Current* Unitec Research Committee 2022 - *Current* Postgraduate Research & Scholarships Committee 2021-2022
Research awards	Unitec & MIT Symposium: Māori Research Excellence Winner 2022 Unitec & MIT Symposium: Māori Research Excellence Runner-up 2021
Research interests	Kaupapa Māori collaborative writing practices, Research academic writing; Māori postgraduate education. First-generation student experiences.

Publications and other outputs

Mitchell, C. (2022). *Rangatahi ki te Kainga: A research project that investigates housing for rangatahi Māori* [Blog post]. Unitec Research Blog. https://www.unitec.ac.nz/UnitecResearchBlog/rangatahi-ki-te-kainga-a-research-project-that-investigates-housing-for-rangatahi-maori/

Burford, J., & Mitchell, C. (2022). Doctoral carers: Tracing contradictory discourses and identifying possibilities for a more care-full doctoral education. In G. Hook, M.-P. Moreau, & R. Brooks (Eds.), *Student Carers in Higher Education Navigating, Resisting, and Re-inventing Academic Cultures* (pp. 121–137). Routledge. https://doi.org/DOI: 10.4324/9781003177104-9

Mitchell, C., & Vaughn, T. (2022). *Kia Mataara: Te Tiriti-based co-leadership in tertiary Education* [Presentation]. *Indigenous Futures and Sustaining Liveliness.* NAISA Conference, Brisbane, Australia. https://live-indigenous-engagement-uq.pantheonsite.io/sites/default/files/202211/NAISAConference%20Program_Branded_Final%202_41pmSansLinks_0.pdf

Mitchell, C., & Lee-Morgan, J.(2022). He Moana pukepuke e ekengia e te waka: Navigating the Challenging waters of Te Tiriti-based co-leadership in tertiary education [Presentation]. *Disruption: Research that addresses and celebrates change.* Te Manawa Reka: Curiosity Symposium, Te Oho Mai, Rotorua.

Mitchell, C. (2022). Mā te huruhuru, ka rere te manu: A call for collaboration and leadership within postgraduate supervision within vocational education [Presentation]. *Rangahau: Te Mana o te Mahi Kotahitanga; Research: The Power of Collaboration.* MIT - Unitec Research Symposium.

Mitchell, C., & Tamati, D. (2021). Mā te huruhuru, ka rere te manu: Gaining insights into the experiences of postgraduate tauira Māori within vocational education [Presentation]. *Rangahau Horonuku Hou – New Research Landscapes.* Unitec/MIT Research Symposium.

Mitchell, C. (2021). *Hihiko o Mangarautawhiri: Power sovereignty in Te Rohe Pōtae* [Blog post]. Unitec Research Blog. https://www.unitec.ac.nz/UnitecResearchBlog/hihiko-o-mangarautawhiri-power-sovereignty-in-te-rohe-potae/ Mitchell, Cat. (2021). Writerly aspirations and doctoral education: Beyond neoliberal orthodoxies. In C. Badenhorst, B. Amell, & J. Burford (Eds.), *Reimagining doctoral writing.* WAC Clearinghouse. https://wac.colostate.edu/books/international/doctoral/

Mitchell, C. (2019). *The dreams and promises of the university: Narratives of first-generation students in doctoral education.* PhD thesis, University of Auckland. Retrieved from http://hdl.handle.net/2292/47448

Jadresin Milic, R., & **Mitchell, C**. (2019). The death of aesthetics in achitectural education? Possibilities for contemporary pedagogy. *SAJ - Serbian Architectural Journal*, *11*(3), 553–570. Retrieved from doi:72.01 378.147::72.01

Burford, J., & **Mitchell, C**. (2019). Varied starting points and pathways: 'Diverse' doctoral students' uneven capacities to aspire to doctoral education. *Reconceptualising Educational Research Methodologies, 10* (1), 28-44. https://doi.org/10.7577/rerm.3242

Mitchell, C. (2019). 'Continuous improvement' in higher education (Response). *Australian Universities Review 61*(2), 57-58. Retrieved from https://www.nteu.org.au › library › download

Mitchell, C. (2017). Class and the college classroom: Essays on teaching. *Higher Education Research & Development*, *36*(1), 221–223. (Book review).https://doi.org/10.1080/07294360.2016.1245694

Grant, B. M., **Mitchell, C**., Okai, E., Xu, L., Ingram, T., & Cameron-Lewis, V. (2016). Doctoral supervisor and student identities: Fugitive moments from the field. In J. Smith, J. Rattray, T. Peseta & D. Loads (Eds.), *Identity work in contemporary higher education*. Sense Publishers.

Mitchell, C. (2016). The pursuit of the academic 'good life' within the neoliberal university: First-generation students within doctoral education and their aspirations for the academy [Presentation]. *Academic Identities Conference*. Sydney, Australia.

Mitchell, C. (2015). *Adult education through a class lens.* Guest lecture (EDUC 381). Faculty of Education: University of Auckland.

Mitchell, C. (2014). First-generation students' imaginings of the university: Narratives of distance and hope [Presentation]. *Doctoral Imaginaries Symposium*, RMIT Melbourne, Australia (By invitation).

Mitchell, C**.** (2013). First-generation students aspiring to live the academic dream: The role of supervisor support. In E. Bitzer, R. Albertyn, L. Frick, B. Grant & F. Kelly (Eds.), *Pushing boundaries in postgraduate supervision* (pp. 203-214). Stellenbosch, S.A: Sun Press.

Mitchell, C., & Malthus, C. (2010). Building strong writing foundations: An investigation into materials for teaching paraphrasing. van der Ham, V., Sevillano, L., and L George (Eds). pp 45-56. *Shifting Sands, Firm Foundations: Proceedings of the 2009 Annual International Conference of the Association of Tertiary Learning Advisors of Aotearoa/New Zealand* (ATLAANZ).

Unitec Institute of Technology
TE WHARE WĀNANGA O WAIRAKA

memo

To Unitec Research Committee Date 4 April 2023

From Prof Peter de Lange
School of Environmental and Animal Sciences

Subject Nomination for Appointment of an Honorary Research Fellow

I am requesting that the Unitec Research Committee approves the appointment of A/P Dan Blanchon an Honorary Research Fellow within the School of Environmental and Animal Sciences.

A/P Dan Blanchon joined Unitec as a Lecturer and Research Coordinator in the then School of Landscape and Plant Science in 1999, eventually becoming a Senior Lecturer (2004), Associate Head of Department (2009), Acting Head of Department (2015) and Head of Environmental and Animal Sciences (2016). Dan was promoted to Associate Professor in 2014 and in 2020 he founded and became the Director of Unitec's Applied Molecular Solutions Research Centre. He has been the Curator of Unitec's Herbarium since 2007.

Dan will be leaving Unitec in early May to join the Auckland War Memorial Museum. The Museum is very keen for him to continue working on his current research projects, and grow more research with Te Pūkenga. His appointment as an Honorary Research Fellow would enable him to come in regularly to Unitec to continue lab work. He currently leads two externally funded projects: (1) Data Deficient Lichens (funding from the Department of Conservation); (2) Climbing Asparagus biocontrol (funding from Auckland Council). The intention is that he will still lead both of those projects from the intellectual side of things. Both projects have staff members who will remain at Unitec.

Ngā mihi,

Prof Peter de Lange

School of Environmental and Animal Sciences

New Zealand RS&T Curriculum Vitae – Dan Blanchon

PART 1

1a. Personal details					
Full name	*Title* Dr	*First name* Dan	*Second name(s)*	*Family name* Blanchon	
Present position	Associate Professor/Head of Environmental and Animal Sciences				
Organisation/Employer	Unitec Institute of Technology, part of Te Pūkenga				
Contact Address	Private Bag 92025				
	Victoria Street West				
	Auckland		**Post code**	1142	
Work telephone	(09) 892 7355	**Mobile**	021 117 4428		
Email	dblanchon@unitec.ac.nz				

1b. Academic qualifications

2005 Certificate in Higher Education, Unitec Institute of Technology.
1999 PhD, Botany, University of Auckland.
1994 MSc (First Class Honours), Botany, University of Auckland.
1992 BSc, Botany/Geology, University of Auckland.

1c. Professional positions held

2020 - present	Director, Applied Molecular Solutions Research Centre, Unitec Institute of Technology.
2016 - present	Head of Environmental and Animal Sciences, Unitec Institute of Technology.
2014 - present	Associate Professor, Unitec Institute of Technology.
2007 - present	Herbarium Curator, Unitec Institute of Technology.
2015 - 2016	Acting HoD, Natural Sciences, Unitec Institute of Technology.
2009 - 2011	Associate HoD, Natural Sciences, Unitec Institute of Technology
2004 - 2011	Senior Lecturer, Natural Sciences, Unitec Institute of Technology
1999 - 2004	Lecturer & Research Coordinator, School of Landscape and Plant Science, Unitec Institute of Technology.

1d. Present research/professional speciality

Lichen systematics, ecology and conservation. Microbiology. Bioremediation. Asbestos. Molecular systematics and ecology. Invasive plant biology. Ecological restoration.

1e. Total years research experience	30 years

1f. Professional distinctions and memberships (including honours, prizes, scholarships, boards or governance roles, etc)

2018 Member, National Threat Classification Panel (Lichens).
2017 Chief Executive's Award for Research, Unitec Institute of Technology.
2013 Elected Fellow of the Linnean Society of London.
2013 Unitec Staff Award for Research.
2008 Member, National Threat Classification Panel (Lichens).

1g. Total number of *peer reviewed* publications and patents	Journal articles	Books, book chapters, books edited	Conference proceedings	Patents
	62	3	4	0

PART 2

2a. Research publications and dissemination

Peer-reviewed journal articles (most recent)

1. Doyle, E., **Blanchon, D**., Wells, S., De Lange, P., Lockhart, P., Waipara, N., Wallis, S. and Berry, T. Internal Transcribed Spacer and 16S Amplicon Sequencing Identifies Microbial Species Associated with Asbestos in New Zealand. Accepted to *Genes*, **2023**.
2. Bannister, JM; Knight, A; **Blanchon, D** (2023). Reinstatement of Usnea capillacea Motyka (lichenized Ascomycota, Parmeliaceae) to the New Zealand lichenized mycobiota. Australasian Lichenology 92: 8-13.
3. Berry, T-A, Wallis, S.L., Doyle, E., De Lange, P., Steinhorn, G., Vigliaturo, R., Belluso, E. and **Blanchon, D**. A preliminary investigation of degradation of asbestos fibres in rocks, soils and building materials associated with naturally-occurring biofilms. Submitted to the *International Journal of Environmental Research and Public Health***, 2023**.
4. Prasad, M., Schmid, L., Marshall, A. J., **Blanchon, D. J.,** Renner, M. A. M., Baba, Y., Padamsee, M., & de Lange, P. J. (2022). Ecological communities of Aotearoa / New Zealand species threatened by myrtle rust (Austropuccinia psidii (G. Winter) Beenken): The flora and mycobiota of the endemic genus Lophomyrtus Burret . *Perspectives in Biosecurity*, 7, 34-70.
5. Marshall, A. J., **Blanchon, D. J.,** Aptroot, A., Lücking, R., & de Lange, P. J. (2022). Five new additions to the lichenized mycobiota of the Aotearoa / New Zealand archipelago. *Ukrainian Botanical Journal*, 79(3), 130-141.
6. Lücking, R., Moncada, B., Widhelm, T. J., Lumbsch, H. T., **Blanchon, D. J.**, de Lange, P. J. (2021) The *Sticta filix - Sticta lacera* conundrum (lichenized Ascomycota: Peltigeraceae subfamily Lobarioideae): unresolved lineage sorting or developmental switch?, *Botanical Journal of the Linnean Society*, 2021, https://doi.org/10.1093/botlinnean/boab083
7. Benitez, G. N., Aguilar, G. D., & **Blanchon, D.** (2021). Spatial Distribution of Lichens *in Metrosideros excelsa* in Northern New Zealand Urban Forests. *Diversity,* 13, 170. https://doi.org/10.3390/d13040170.
8. **Blanchon, D. J.**, Ranatunga, D., Marshall, A. J., & de Lange, P. J. (2020). Ecological communities of tree species threatened by myrtle rust (*Austropuccinia psidii* (G. Winter) Beenken): The lichenised mycobiota of pōhutukawa (*Metrosideros excelsa* Sol. ex Gaertn., Myrtaceae). *Perspectives in Biosecurity*, 5, 23-44.
9. de Lange, P. J., & **Blanchon, D. J.** (2020). The flora and vegetation of Dayrell Island, Herald Islets, northern Kermadec Island group. *Records of the Auckland Museum*, 55, 37-52.
10. Wallis, S.L., Emmett, E.A., Hardy, R., Casper, B.B., **Blanchon, D.J.**, Testa, J.R., Mendes, C.W., Gonneau, C., Jerolmack, D.J., Seiphoori, A., Steinhorn, G**.**, & Berry, T-A. (2020). Challenging Global Waste Management – Bioremediation to Detoxify Asbestos. *Frontiers in Environmental Science*, 8, 20. doi:10.3389/fenvs.2020.00020
11. Holmes, W., Ooi, M. P., Kuang, Y. C., Simpkin, R., Lopez-Ubiria, I., Vidiella, A., **Blanchon, D.,** Gupta, G. S., & Demidenko, S. (2020). Classifying *Cannabis sativa* Flowers, Stems and Leaves using Statistical Machine Learning with Near Infrared Hyperspectral Reflectance Imaging. Conference: 2020 IEEE International Instrumentation and Measurement Technology Conference (I2MTC) (pp. online). doi:10.1109/I2MTC43012.2020.9129359
12. Bannister, J., Harrold, P., & **Blanchon, D**. (2020). Additional lichen records from New Zealand 51. *Usnea dasaea* Stirt. *Australasian Lichenology*, 86, 114-117.

13. Holmes, W. S., Ooi, M. P., Kuang, Y. C., Simpkin, R., **Blanchon, D**., Gupta, G. S., & Demidenko, S. (2020). Signal-to-Noise Ratio Contributors and Effects in Proximal Near-Infrared Spectral Reflectance Measurement on Plant Leaves. 2020 IEEE International Instrumentation and Measurement Technology Conference (I2MTC) (pp. online). doi:10.1109/I2MTC43012.2020.9129359
14. Hannah, L., Aguilar, G., & **Blanchon, D.** (2019). Spatial Distribution of the Mexican Daisy, *Erigeron karvinskianus*, in New Zealand under Climate Change. Climate, 7, online. doi:10.3390/cli7020024
15. Marshall, A. J., **Blanchon, D. J.**, Aptroot, A., & de Lange, P. J. (2019). Five new records of *Pyrenula* (Pyrenulaceae) for New Zealand. New Zealand Journal of Botany, 57, online. doi:10.1080/0028825X.2019.1662816
16. Dang, Z., McLenachan, P. A., Lockhart, P. J., Waipara, N., Er, O., Reynolds, C., & **Blanchon, D. J.** (2019). Metagenome Profiling Identifies Potential Biocontrol Agents for *Selaginella kraussiana* in New Zealand. Genes, 10, online. doi:10.3390/genes10020106
17. Leddy, N., **Blanchon, D. J.**, Wiapo, C., Eruera, T., Cameron, K. E., & Kahui-McConnell, R. (2018). Artificial dispersal of the lichen *Crocodia aurata* (Lobariaceae) using asexual propagules and gel-filled gauze packets. Ecological Management and Restoration, early view. doi: 10.1111/emr.12344
18. Elix, J. A., Knight, A., & **Blanchon, D. J.** (2017). New species and new records of buellioid lichens (Physciaceae, Ascomycota) from New Zealand and Tasmania. Australasian Lichenology, 80, 46-52.
19. Marshall, A. J., & **Blanchon, D. J.** (2017). Additional lichen records from New Zealand 50. Australasian Lichenology, 80, pp.58-61.
20. Reynolds, C. L., Er, O. A. H., Winder, L., & **Blanchon, D. J.** (2017). Distribution and community composition of lichens on mature mangroves (*Avicennia marina* subsp. *australasica* (Walp.) J.Everett) in New Zealand. *PLOS One,* 12(6), 1-15. doi:10.1371/journal.pone.0180525
21. Aguilar, G. D., **Blanchon, D. J.**, Foote, H., Pollonais, C. W., & Mosee, A. N. (2017). A performance based consensus approach for predicting spatial extent of the Chinese windmill palm (*Trachycarpus fortunei*) in New Zealand under climate change. Ecological Informatics, 130, 130-139. doi:10.1016/j.ecoinf.2017.04.004
22. Large, M. F., Nessia, H. R., Cameron, E. K., & **Blanchon, D. J.** (2017). Changes in stomatal density over time (1769–2015) in the New Zealand endemic tree *Corynocarpus laevigatus* J. R. Forst. & G. Forst. (Corynocarpaceae). *Pacific Science,* 71(3), 319-328. doi:10.2984/71.3.6
23. Printzen, C., **Blanchon, D. J.**, Fryday, A. M., de Lange, P. J., Houston, D. M., & Rolfe, J. R. (2017). *Lecanora kohu*, a new species of *Lecanora* (lichenised Ascomycota: Lecanoraceae) from the Chatham Islands, New Zealand. *New Zealand Journal of Botany*, 55, pp.1-13. doi:10.1080/0028825X.2017.1364274
24. Er, O. A. H., Reynolds, C. L., & **Blanchon, D. J.** (2015). Additional lichen records from New Zealand 49. *Pertusaria puffina* A.W.Archer & Elix. Australasian Lichenology, 77, 28-31.
25. **Blanchon, D. J.**, de Lange, P. J., & Galloway, D. J. (2015). New records of *Ramalina* (Ramalinaceae, Ascomycota) for mainland New Zealand. *New Zealand Journal of Botany,* 53, 192-201. doi:10.1080/0028825X.2015.1050040
26. Divakar, P.K., Crespo, A., Wedin, M., Leavitt, S.D., Hawksworth, D.L., Myllys, L., McCune, B., Randlane, T., Bjerke, J.W., Ohmura, Y., Schmitt, I., Boluda, C.G., Alors, D., Roca-Valiente, B., Del-Prado, R., Ruibal, C., Buaruang, K., Núñez-Zapata, J., Amo de Paz, G., Rico, V.J., Molina, M.C., Elix, J.A., Esslinger, T.L., Tronstad, I.K.K., Lindgren, H., Ertz, D., Gueidan, C., Saag, L., Mark, K., Singh, K., Dal Grande, F., Parnmen, S., Beck, A., Benatti, M.N., **Blanchon, D.J.**, et al.

(2015). Evolution of complex symbiotic relationships in a morphologically derived family of lichen-forming fungi. New Phytologist, 208, 1217-1226. doi:10.1111/nph.1355

Peer reviewed books, book chapters, books edited (selected)

1. **Blanchon, D.**, Kooperberg, W., and Lockett, C. (2007). Lichens. In Wilcox, M., Natural History of Rangitoto Island. (pp. 135-143). Auckland, New Zealand: Auckland Botanical Society Inc.

Other forms of dissemination (reports for clients, technical reports, popular press, etc)

1. **Blanchon, D. J.,** Doyle, E., Tang, T., Waipara, N., Wallis, S., & Berry, T. (2022, December). Siderophore production in fungi from asbestos biofilms: the first step towards bioremediation of a carcinogenic mineral. Poster presented at MIT - Unitec Research Symposium 2022 Rangahau: Te Mana o te Mahi Kotahitanga; Research: The Power of Collaboration, Auckland.
2. White, T., Tan, L., **Blanchon, D.,** Smith, H., Renata, H., Toki, L., Lamwilai, P., & Ripley, D. (2022, November). *Toitū te Whenua: Working together for the wellbeing of te taiao.* Poster presented at NZ Ecological Society Conference, Dunedin.
3. Holmes, W., Ooi, M., Kuang, Y. C., Simpkin, R., **Blanchon, D.**, Look, M., & Demidenko, S. (2019, May). Proximal Near-Infrared Spectral Reflectance Characterisation of Weeds Species in New Zealand Pasture. Paper presented at the IEEE International Instrumentation and Measurement Technology Conference (I2MTC), Auckland.

2b. Previous research work

Research title: Investigation into the naturally occurring fungal, bacterial and invertebrate associates of an invasive species: *Selaginella kraussiana* (African Club Moss). **Principal outcome:** Knowledge of the range of potentially pathogenic naturally-occurring microbes on *Selaginella kraussiana* in NZ. Testing the pathogenicity of some of these. Advice on whether it was necessary to look overseas for possible biological control agents. **Principal end-user:** Auckland Council.

Research title: Improving methods for devitalisation of imported cut flowers and foliages. **Principal outcome:** More knowledge of the use of a range of herbicides on cut flowers and foliages (particularly horsetails and roses). MPI subsequently banned the importation of horsetails into NZ after our results showed devitalisation was not being carried out. **Principal end-user:** Ministry for Primary Industries.

Research title: Determining methods for the translocation and artificial establishment of lichens. **Principal outcome:** Successful establishment of epiphytic, rock and soil crust lichens at three sites. **Principal end-user:** Auckland Council & Ngāti Whātua.

2c. Describe the commercial, social or environmental impact of your previous research work

My research programme has expanded understanding of lichen biology within Australasia and the Pacific, produced multiple publications, gained external funding, named six species, resulted in me being appointed to two Dept. of Conservation national threat classification panels and has been recognised by my election as a Fellow of the Linnean Society of London, and having a lichen species (*Cladia blanchonii*) named after me. I am the curator and co-founder of the Unitec herbarium (13,500 specimens, specialising in lichens 9,000 specimens); I am the Research Director for the Applied Molecular Solutions Research Centre and laboratory at Unitec, which I co-founded (www.unitec.ac.nz/ams). My research into asbestos and remediation allowed me to advise my organisation when an asbestos contamination issue occurred in 2021.

2d. Demonstration of relationships with end-users

My research in biosecurity has resulted in multiple publications, has changed industry practice and continues with a close relationship with Auckland Council.

Unitec New Zealand Limited

Meeting of Te Komiti Rangahau o Unitec | Unitec Research Committee

Date of Meeting: 13 April 2023

Title	Review of the Unitec Research Strategy Action Plan
Provided by:	A/P Marcus Williams, Director Research & Enterprise
For:	**DISCUSSION**

Recommendation

That the committee reviews the Unitec Research Strategy Action Plan.

Purpose

The Unitec Research Strategy Action Plan was developed and approved by the committee in 2021. The Action Plan is due to be reviewed to ensure it has been appropriately responding to the Unitec Research Strategy 2020 - 2024.

Information/Background

It was agreed in the consultation and development of the 2020 - 2024 Unitec Research Strategy that an Action Plan would be developed subsequently.

It is the responsibility of Tūāpapa Rangahau to implement the Action Plan. The implementation of actions and outcomes of these actions is reported in the Unitec Annual Research Report. The KPIs are reported in the Unitec BI Dashboard and indicate to the committee the effectiveness of the Action Plan.

The committee's Work Plan requires that the Action Plan be reviewed annually.

Attachments

Unitec Research Strategy - Action Plan

Unitec Research Strategy 2020-2024

Unitec Research Strategy – Action Plan

Priority One	Goal one	KPI	Action Summary	Actions
Research that is aligned with Te Tiriti o Waitangi Unitec will ensure that its support for research, governance and processes is aligned with Tiriti o Waitangi. In this way, Unitec will exemplify leadership in Māori research in the NZIST sector and in Aotearoa. The principle of rangatiratanga expressed through our partnership document, Te Noho Kotahitanga, will apply to research at Unitec: that Māori will have authority over and responsibility for all research related to Māori dimensions of knowledge. Vision Mātauranga will be integrated into all research processes and researchers will be supported to understand and fulfil these requirements. We will resource and grow the numbers and capability of Māori researchers, including Māori supervisors of our postgraduate programmes. We will actively seek and maintain partnerships with iwi, hapū, Māori businesses, institutions and peak Māori bodies. We will evolve our research office appropriately to	Unitec has strong Māori research leadership, capability, excellence, partnerships, processes and governance.	**Rangahau Māori productivity**; QA outputs that demonstrate excellence in Vision Mātauranga, QA outputs by Maori staff, funded projects with named Māori researchers and accredited Vision Mātauranga and Kaupapa Māori professional development	**Review research policy, guidelines and processes to ensure rangatiratanga**	- Consult with Māori researchers on how we do the management of contracts and the appropriate appointment of Māori researchers for these projects. - At the appropriate interval; review policy to ensure rangatiratanga - Review funding frameworks to update Vision Mātauranga sections
			Review all funding frameworks, guidelines and processes to incorporate Vision Mātauranga	- review guidelines and processes as above - ensure appropriate Māori representation on research funding application assessment panels
			We will grow the numbers of Māori researchers.	- Measure numbers of N&E, ECR and independent Māori researchers from 2020. - Identify comparative teaching-researcher and non-teaching-researcher data. - Develop comparative data with non-Māori researchers. - Present the data and analysis to the relevant executive leadership with recommendations. - Present the data to the Heads of School with recommendations.
			Increase Māori postgraduate supervisors and student scholarships	- appoint an expert Kaupapa Māori Supervisor/Advisor - work with the postgraduate committee to increase Māori scholarships - develop strong Mahi Kotahitanga between programme and Māori scholarship committees - facilitate writing retreats for Māori postgraduate students
			Provide professional development by Māori for Māori researchers and postgraduate supervisors	- support and provide administrative backup to the Kaupapa Māori Supervisor/Advisor to

ensure Māori research governance and rangatiratanga.				provide professional development for Māori researchers & supervisors - provide administrative support for the Māori and Pacific Postgraduate Support Roopu
			Support and resource Ngā Wai a te Tūī appropriately	- provide contract oversight, compliance support and administrative expertise
			Review capability and plan for institutional research co-governance and leadership	- consult with Ngā Wai a te Tūī on a research governance model in line with Te Tiriti - consider research office structure in line with above - consult with Unitec Research Committee on this - submit a relevant proposal to ELT
			Tell stories of Māori research projects, outcomes and success	- advocate to Unitec Corporate Comms for Māori research stories - Publish Māori research in ePress - include Māori research stories in the Unitec Research Blog

Priority Two	Goal Two	KPI	Action Summary	Actions
A flourishing, collaborative research culture Unitec will grow a productive, diverse, student integrated, engaged and sustainable research workforce with the necessary resourcing and infrastructure. There will be an inclusive pipeline of support for developing the capability of our people and empowering them toward transformative outcomes for our communities; from the beginnings of their research independence through to leadership at the highest level, as expressed in Unitec's Research Competencies. Grounded in Te Tiriti and Te Noho Kotahitanga partnership, this will be inclusive and provide opportunity for the diverse cultures and individuals who make up our institution and the varied nature of that activity we call research and its related enterprises. This pipeline will be aligned with and actively support the initiatives at the heart of Te Manaakitia te Rito, Unitec's Renewal Strategy.	The diverse people of Unitec have fit-for-purpose capability development and support toward sustainable, collaborative research productivity and excellence	QA Outputs, Student Integrated Research, Research Engaged Programmes	**Provide high quality, diverse, multi-level research professional development**	- provide a range of research blended workshops - provide research master classes - run writing retreats - offer developmental research for emerging researchers
			Implement formalised research planning at individual and School level	- provide continuously improved templates for Individual Plans - support and oversee compliance - implement a School Plan review and improvement process
			Support degree teachers to be research engaged	- monitor Research Traffic Light to identify staff most needing support - Prioritise Research Dissemination funding to improve Traffic Light - run writing retreats - offer developmental research funding for emerging researchers - run an externally engaged research symposium
			Increase research excellence and productivity	- monitor ROMS to identify staff most needing support - prioritise Research Dissemination funding to build strong portfolios - run an internal review and publicity campaign in preparation for PBRF - provide Research Partners - provide support for the professoriate
			Develop Research Groups in every School offering degree programmes	- provide Research Partner support to develop Research Groups in schools - structure the Unitec symposium around Groups
			Develop Research Centres, facilitate concomitant business planning and annual evaluations	- provide Research Partner support to Research Centres - provide expert administrative, contractual and IP support - implement annual reviews and tri-annual re-accreditation as per the procedure

				- publicise to groups the procedure to become a research centre
			Support Strategic Research Foci	- provide research assistants and associates - provide research materials and equipment - help resolve accommodation, facility and branding needs - provide support with publicity
			Support emerging and early career researchers; grow leaders	- provide expert administrative, contractual and IP support to ECRs - provide ECR research support funding (Parental Leave support etc) - provide ECR contestable research funding - provide ECR Research Fellowships - provide support to PIs of ECR funded projects toward external funding - support ECRs with external funding grant development and writing - support the ECR Forum - fund ECR Forum Chair to attend Royal Society meetings - provide Emerging Researcher Start-up Funding - provide comprehensive PD opportunities for emerging researchers
			Collate, authenticate, sustainably disseminate and publicise research	- publish double blind peer reviewed papers with ePress - publish three journals at ePress; Whanake, Perspectives in Biodiversity and Asylum - publish Unitec Research Symposium papers - provide advice to manage predatory and vanity publishing risks - oversee Research Output Management System and verify all research outputs - report research outputs in the Annual Research Report - monitor research at programme level for Research Traffic Light

				- liaise with Corporate Comms to publicise Unitec research
			Support and resource postgraduate student research	- lead and administer the Postgraduate Research and Scholarship Committee - administer all scholarships - review the effectiveness of scholarships - review the accessibility of scholarship processes for students - implement improvements which emerge from the reviews - promote all scholarships - offer specialist scholarships to Māori and Pacific students - offer Bold Innovator Scholarship and mentor the recipient - ensure high quality professional development for supervisors - facilitate writing retreats for Pacific postgraduate students - offer and maintain high quality, specialist postgraduate study space - provide specialist research software for postgraduate students and related PD
			Increase student involvement in research	- offer contestable Industry Scholarships with strong partnerships criteria - develop criteria for 5th research goal - Student Integrated Research - ratify a 5th research goal at Academic Committee for Student Integrated Research - modify ROMS to allow input of Student Integrated Research data - monitor and report productivity of this goal in Annual Research Report - offer expert administrative support for Research Studentships

				- ensure Student Integrated Research is a criteria for Research with Impact Award - ensure Student Integrated Research is a criteria for internal contestable funding
			Foster research into Wairaka, our place; the natural environment, history and wairua	- liaise with roopu Kaitiaki, Nga Wai a te Tui, Sustainability Manager & Pae Arihi - pilot a 2021 contestable fund; Wairaka - natural environment, history and culture - create an ongoing fund; Wairaka - natural environment, history and culture
			Embed sustainability into all funding guidelines	- review all internal funding documents to ensure sustainability questions are asked

Priority Three	Goal Three	KPI	Action Summary	Actions
Partnered research and innovation Research at Unitec will concentrate on opportunities and problems identified by Māori, industry and community partners. Strong, enduring partnerships will be facilitated and valued, with investment in capacity building, innovation and leadership in this space. The reciprocity created by these partnerships will enhance opportunity for student work-integrated learning.	Research that is industry/community partnered and promotes innovation	Industry/Community Funded Research, External Research Income	**Weave, ignite and nurture long-term partnerships across community, academia and industry**	- seed fund industry partnered conferences and seminars at Unitec - encourage strong industry partnerships in contestable funding frameworks - provide expert industry partnership support (Research Partner Enterprise) - provide expert legal, contractual and administrative support
			Facilitate subsidised research consultancy	- fund and administrate the research voucher scheme - assist in growing resulting partnerships
			Implement industry/community-partnered postgraduate research scholarships	- create guidelines for Industry Scholarships - fund and administrate Industry Scholarships - assist in growing resulting partnerships
			Provide industry partnering, IP, innovation and commercialisation advice and practical support	- provide expert commercialisation support (Research Partner Enterprise) - provide expert legal, contractual and administrative support - ensure contracts and agreements protect IP appropriately as per policy
			Develop reputation through the establishment of Research Centres with strong partnerships	- provide funding to Research Centres which are Strategic Foci - work with the Unitec Communications Team to publicise achievements - provide support to develop funding applications - provide support to maximise collaboration between Research Centres
			Identify areas of future importance and opportunity; Research Sandpits	- ensure school plans have Research Groups - keep schools aware of the Research Sandpits and other areas of priority in Auckland, New Zealand and the Pacific

UNITEC
Research Strategy 2020-2024

NB – in keeping with Unitec process on strategies, a separate action plan will outline how we implement the actions, how we show the progress of that implementation and what indicators we use to measure success. This will follow approval of this draft research strategy.

Vision

To undertake research of excellence that aligns to Te Tiriti o Waitangi and has transformative outcomes for the communities we serve.

Mission

We undertake impactful research in order to provide significant economic, social, cultural and environmental benefits to Māori, New Zealand communities, industries and the environment. We do this by igniting the power of our founding document, Te Tiriti o Waitangi, partnering with tangata whenua, our communities and industry. This partnering is at the heart of our value proposition and is fundamental to research from the beginning of the research process, through to the dissemination of the outcomes. Unitec's strengths lie in its kaupapa Māori capability, its applied and practical focus, its mixture of programmes involving research and enterprise at postgraduate and undergraduate levels, and its strong relationships with community and industry. We will develop these strengths through focused, sustainable research and enterprise activity that is Treaty aligned, integrated with teaching and learning and undertaken within networks of stakeholders and partners, enabling effective knowledge transfer. In these networks we aim to contribute to better knowledge bases for decision making, improved wellbeing, socioeconomic resilience, cultural diversity, flourishing communities and improved productivity, policy, technologies, products or processes.

Background

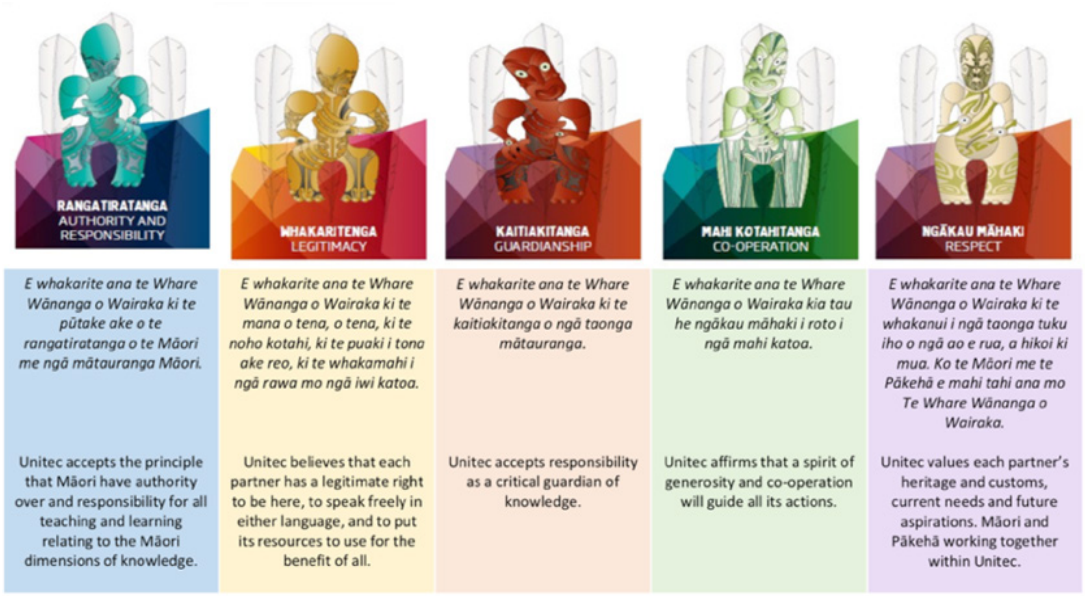
During the 2015 – 2019 Research Strategy period, three Strategic Research Foci were developed: the Cybersecurity Focus, the Applied Molecular Solutions Focus and the Kaupapa Māori Focus. Through mechanisms such as the Research Voucher Scheme, the strategy successfully drove institutional change toward higher levels of industry-partnered research resulting in many funded projects. Coupled with an emphasis on building staff capability and research leadership, Unitec has experienced growth in its research, with externally funded research increasing by 450%, increased external partnering with 184% more industry-funded projects, improvement in excellence with a 97% success rate through the PBRF Quality Evaluation and increased NZQA compliance with 91% of degree programmes research compliant. The Kaupapa Māori Focus led to the appointment of two highly respected Māori professors, and the establishment of Ngā Wai a te Tūī Māori and Indigenous Research Centre, which is now leading numerous externally funded projects, including an Endeavour Fund Research Programme and a National Science Challenge project.

This next strategic period will see Unitec continue investing in our Strategic Research Foci with an emphasis on rangatiratanga, embedding a flourishing, diverse and sustainable research culture and weaving strong, enduring industry/community partnerships.

Te Tiriti o Waitangi and Te Noho Kotahitanga

Unitec will uphold Te Tiriti o Waitangi, the founding document of our nation and its principles, through our research. Our commitment to Te Noho Kotahitanga, which express Unitec's Treaty partnership and its principles, underpins the values and kaupapa of our organisation, including our approach to research.

Rangatiratanga	**Authority and Responsibility**
Whakaritenga	**Legitimacy**
Kaitiakitanga	**Guardianship**
Mahi Kotahitanga	**Co-operation**
Ngākau Māhaki	**Respect**



Vision Mātauranga

Unitec acknowledges and actively supports staff in engaging with the Vision Mātauranga policy as outlined by the Ministry of Business, Innovation and Employment. The policy aims to unlock the innovation potential of Māori knowledge, resources and people to assist New Zealanders to create a better future.

Code of Practice and Research Ethics

Research at Unitec will function within Ngā Tikanga Whakahaere (Unitec's Code of Conduct) and the research-specific Code of Professional Standards and Ethics developed by the Royal Society Te Apārangi. All human research is conducted with guidance from the Unitec Research Ethics Committee, an accredited research ethics committee, and animal research is overseen by an approved committee.

Priorities

The Unitec Research Strategy 2020 – 2024 has three key priorities which underpin our goals, our actions and the way we measure success:

Priority One **Research that is aligned with Te Tiriti o Waitangi**
Priority Two **A flourishing, collaborative research culture**
Priority Three **Partnered research and innovation**

Priority One – Research that is aligned with Te Tiriti o Waitangi
Unitec will ensure that its support for research, governance and processes is aligned with Tiriti o Waitangi. In this way, Unitec will exemplify leadership in Māori research in the NZIST sector and in Aotearoa. The principle of rangatiratanga expressed through our partnership document, Te Noho Kotahitanga, will apply to research at Unitec: that Māori will have authority over and responsibility for all research related to Māori dimensions of knowledge. Vision Mātauranga will be integrated into all research processes and researchers will be supported to understand and fulfil these requirements. We will resource and grow the numbers and capability of Māori researchers, including Māori supervisors of our postgraduate programmes. We will actively seek and maintain partnerships with iwi, hapū, Māori businesses, institutions and peak Māori bodies. We will evolve our research office appropriately to ensure Māori research governance and rangatiratanga.

GOAL ONE:
Unitec has strong Māori research leadership, capability, excellence, partnerships, processes and governance.

Actions:
- Review research policy, guidelines and processes to ensure rangatiratanga
- Review all funding frameworks, guidelines and processes to incorporate Vision Mātauranga
- Increase Māori postgraduate supervisors and student scholarships
- Provide professional development by Māori for Māori researchers and postgraduate supervisors
- Support and resource Ngā Wai a te Tūī appropriately
- Review capability and plan for institutional research co-governance and leadership
- Tell stories of Māori research projects, outcomes and success

Priority Two - A flourishing, collaborative research culture
Unitec will grow a productive, diverse, student integrated, engaged and sustainable research workforce with the necessary resourcing and infrastructure. There will be an inclusive pipeline of support for developing the capability of our people and empowering them toward transformative outcomes for our communities; from the beginnings of their research independence through to leadership at the highest level, as expressed in Unitec's Research Competencies. Grounded in Te Tiriti and Te Noho Kotahitanga partnership, this will be inclusive and provide opportunity for the diverse cultures and individuals who make up our institution and the varied nature of that activity we call research and its related enterprises. This pipeline will be aligned with and actively support the initiatives at the heart of Te Manaakitia te Rito, Unitec's Renewal Strategy.

GOAL TWO:

The diverse people of Unitec have fit-for-purpose capability development and support toward sustainable, collaborative research productivity and excellence.

Actions:

- Provide high quality, diverse, multi-level research professional development
- Implement formalised research planning at individual and School level
- Support degree teachers to be research engaged
- Increase research excellence and productivity
- Develop Research Groups in every School offering degree programmes
- Develop Research Centres, facilitate concomitant business planning and annual evaluations
- Support Strategic Research Foci
- Support emerging and early career researchers; grow leaders
- Collate, authenticate, sustainably disseminate and publicise research
- Support and resource postgraduate student research
- Increase student involvement in research
- Foster research into Wairaka, our place; the natural environment, history and wairua
- Embed sustainability into all funding guidelines

Priority Three - Partnered research and innovation

Research at Unitec will concentrate on opportunities and problems identified by Māori, industry and community partners. Strong, enduring partnerships will be facilitated and valued, with investment in capacity building, innovation and leadership in this space. The reciprocity created by these partnerships will enhance opportunity for student work-integrated learning.

GOAL THREE:

Research that is industry/community partnered and promotes innovation.

Actions:

- Weave, ignite and nurture long-term partnerships across community, academia and industry
- Facilitate subsidised research consultancy
- Implement industry/community-partnered postgraduate research scholarships
- Provide industry partnering, IP, innovation and commercialisation advice and practical support
- Develop reputation through the establishment of Research Centres with strong partnerships
- Identify areas of future importance and opportunity; Research Sandpits

RESEARCH SANDPITS HAVE:

- the values of Te Noho Kotahitanga
- high societal need
- student-involved research and learning potential
- existing external partnerships
- cross-school transdisciplinary opportunity

POTENTIAL FUTURE DIRECTIONS (MANAAKITIA TE RITO)

- Business, finance and professional services
- Maori and indigenous research
- Construction and infrastructure
- Health and wellbeing
- Transport and logistics
- Education and training
- Environmental services
- Creative industries and arts
- Computing and services

Glossary

Ngā Tikanga Whakahaere – Unitec's Code of Conduct
NZIST – the New Zealand Institute of Skills and Technology incorporating 16 Institutes of Technologies and Polytechnics
Research Centres – Formally structured research institutes governed by the Unitec Research Committee
Research Competencies – Detailed description of what it means to be research competent at Unitec
Research Groups – Informal groups of researchers around a theme, identified in School Research Plan
Research Sandpits - areas of future research importance and opportunity
Strategic Research Foci – Research Centres which receive seed funding from Unitec
Te Manaakitia te Rito – Unitec's Renewal Strategy 2019 – 2022
Te Noho Kotahitanga – Unitec's Partnership agreement under Te Tiriti and our values
Te Tiriti o Waitangi – the founding document of Aotearoa, New Zealand

Unitec New Zealand Limited

Meeting of Te Komiti Rangahau o Unitec | Unitec Research Committee

Date of Meeting: 13 April 2023

Title	PBRF Sector Reference Group – Consultation Paper 10
Provided by:	A/P Marcus Williams, Director Research and Enterprise
For:	**Feedback/Discussion**

Recommendation

That the committee reviews, considers and provides feedback on the PBRF Sector Reference Group's 10th consultation paper: Recognising the impact of the Covid-19 pandemic.

Key Points

The consultation paper sets out options developed by the PBRF Sector Reference Group (SRG) for how Quality Evaluation 2026 should recognise the impacts of the Covid-19 pandemic on researchers and TEOs.

These options have been developed following initial consultation with the sector as part of Consultation 5 – Individual Circumstances.

Following that consultation, in July 2022 the Minister of Education agreed to a one-year delay to the Quality Evaluation. The main rationale for this decision was recognition of the ongoing impacts of Covid-19 on all participating researchers and TEOs.

The SRG now seeks feedback on a revised set of options to determine whether additional Covid-19 mitigations are required in addition to the sector-wide recognition afforded through the one-year delay.

Information/Background

Ahead of the next Quality Evaluation, the TEC has appointed a SRG comprising members from across tertiary and research sectors. The SRG is to advise the TEC on the operation and design of the PBRF, contributing critical sector expertise and knowledge towards the implementation of Cabinet's decisions on the PBRF. SRG recommendations are developed as part of a public consultation process. The SRG has just released Consultation Paper 10: Recognising the impact of the Covid-19 pandemic.

Next Steps

The feedback period runs from **24 March to 5 May 2023**. The committee's feedback will be conveyed to the Rangahau Research Forum (RRF) for review/discussion, along with any other feedback received from within Te Pūkenga. The RRF will collate a response for input/submission to TEC by Te Pūkenga. Individual submissions can also be made here: https://www.surveymonkey.com/r/ZY9H3VT.

The TEC will make in principle decisions based on the SRG's recommendations and officials' advice. These will be communicated to the sector when the full draft Guidelines are released for final sector consultation in June 2023.

Attachments

- PBRF Sector Reference Group – Consultation Paper 10: Recognising the impact of the Covid-19 pandemic.

Tertiary Education Commission
Te Amorangi Mātauranga Matua

PBRF Sector Reference Group – Consultation paper 10

Recognising the impact of the COVID-19 pandemic

Name	Status	Distribution
PBRF Sector Reference Group – Consultation Paper Recognising the impact of the COVID-19 pandemic	CONSULTATION PAPER	Public Direct feedback to: https://www.surveymonkey.com/r/ZY9H3VT Feedback due 5pm, 5 May 2023

PBRF Sector Reference Group – Consultation Paper 10: Recognising the impact of the COVID-19 pandemic

Purpose

1 This paper sets out options developed by the PBRF Sector Reference Group (SRG) for how Quality Evaluation 2026 should recognise the impacts of the COVID-19 pandemic on researchers and TEOs.

2 These options have been developed following initial consultation with the sector as part of Consultation 5 – Individual Circumstances.

3 Following that consultation, in July 2022 the Minister of Education agreed to a one-year delay to the Quality Evaluation. The main rationale for this decision was recognition of the ongoing impacts of COVID-19 on all participating researchers and TEOs.

4 The SRG now seeks feedback on a revised set of options to determine whether additional COVID-19 mitigations are required in addition to the sector-wide recognition afforded through the one-year delay.

Background

Cabinet decisions on recognising the impacts of COVID-19

5 In July 2021, Cabinet released its decisions on changes to the PBRF, including an instruction to the TEC, in consultation with the SRG, to revise the extraordinary circumstances (now Researcher Circumstances) qualifying criteria to:

- Introduce a merit relative to opportunity element to allow assessment of research quantity in ways that promote equity and inclusion,
- Ensure the process collects and evaluates information in a sensitive way, and limits the number of people with access to this information,
- Review and potentially remove the minimum threshold of three years,
- Allow for part-time employment to be considered more deliberately throughout assessment, including potentially in this category, and
- Take account of the negative impacts of COVID-19.

6 The TEC has now made in-principle decisions, on the basis of the SRG's recommendations, which address the first four instructions. These decisions are set out in the TEC In-Principle Decisions and Summary of Sector Feedback, available on the TEC website.

7 The SRG considers that any recommendations to the TEC in relation to addressing the negative impacts of COVID-19 must be consistent with Cabinet's wider instructions and the in-principle decisions to date in relation to Researcher Circumstances, particularly in

terms of promoting equity and inclusion and ensuring processes are sensitive and uphold individual privacy and mana.

Initial sector consultation and feedback on approaches to COVID-19 mitigations

8 In Consultation Paper 5, the SRG sought the sector's views on how the Quality Evaluation should recognise the impacts of the COVID-19 pandemic on individual researchers. The approach was one of information-gathering, rather than proposing a set of options, and questions included:

- Whether an Extraordinary Circumstances model (now Researcher Circumstances) was the only or best approach, or whether other ways of recognising impacts existed,
- If following a Researcher Circumstances model, whether COVID-19 impact provisions were best presented as a standalone section, similar to how the Canterbury Earthquakes provisions were treated, or as a sub-type,
- What types of impact should be eligible for recognition, and
- How COVID-19 impacts should be declared, bearing in mind the widespread extent of impacts across the research community and the need to keep TEO compliance costs and administrative workload manageable.

9 Full details of the questions asked can be found in Consultation Paper 5, available on the TEC website.

10 While all consultation respondents agreed that the impacts of the pandemic should be recognised in some way, there were a range of views as to how to achieve this. Two key concerns emerged, which were related:

- Given the widespread impact, a Researcher Circumstances approach would likely lead to a majority of, if not all, submitting staff applying. The administrative workload associated with such an approach would be very significant. The University of Auckland and AUT noted that they would expect all their submitting staff to claim COVID-19 impacts given the much longer Auckland lockdown in the second half of 2021.
- Although most staff will have been impacted to some extent, impacts will have been experienced unevenly depending on geographic area, career stage, personal circumstances, research discipline etc, and for some staff the pandemic may have in fact created opportunities. Recognising the uneven depth of impact and ensuring that any provision did not exacerbate existing inequities for early career researchers, parents and those with caring responsibilities, and staff with existing health issues or disabilities, is both critical and a significant challenge.

Twelve-month extension to Quality Evaluation assessment period

11 During the consultation period for Consultation Paper 5, in May 2022, Universities New Zealand wrote to the TEC seeking a delay to the Quality Evaluation in recognition of the ongoing impact of COVID-19 on TEOs and individual researchers.

12 Following consultation with all TEOs that participate in the PBRF, the Minister of Education agreed a twelve-month extension to the assessment period and submission date for the Quality Evaluation, with the result that the submission and assessment process will now occur in 2026. This decision was communicated to the sector in July 2022.

13 In October 2022, the SRG considered feedback on Consultation Paper 5, including on approaches to recognising the impacts of COVID-19. The SRG agreed that in light of the twelve-month extension and the initial feedback, further sector consultation on a more specific range of options was appropriate.

Sector Reference Group process

14 Following consultation on the options set out in this paper, the SRG will consider sector feedback and will make recommendations to the TEC. The TEC will make in-principle decisions on the basis of the SRG's recommendations alongside officials' advice.

15 Any changes agreed by the TEC will be reflected in the Quality Evaluation 2026 Guidelines, as well as informing guidance and training for Panel Chairs and panellists. The draft Guidelines reflecting all in-principle changes will be released for sector consultation ahead of the final publication in September 2023.

16 In developing the options in this paper, the SRG has considered whether they:

- Deliver Cabinet's instructions,
- Address the concerns and aspirations identified in the Report of the PBRF Review Panel and the *Report of the Moderation Panel and Peer Review Panels*,
- Deliver fair and equitable outcomes for all participating TEOs and their staff,
- Uphold the unique nature of research produced in Aotearoa New Zealand and reflect what is distinctive about our national research environment,
- Are consistent with the PBRF Guiding Principles, including the three new Principles of partnership, equity, and inclusivity, and
- Are able to be implemented and audited (legally and practically).

Recognising the impact of COVID-19

Contexts informing the SRG's approach to developing options

17 In developing options, the SRG has had particular regard for the need to ensure any solutions are equitable. It is important not to further embed existing inequities, which the pandemic has highlighted and, in some instances, exacerbated.

18 The SRG is recognises that the negative impacts of COVID-19 have, at a national level, disproportionately fallen on Māori and Pacific people and communities, women, people with caring responsibilities, people who are disabled or living with illness, people and communities living in areas of socio-economic deprivation, and those living in the Auckland metropolitan area.

19 There is significant overlap between some of these groups, which will have compounded the negative impacts experienced by some people and their communities. These inequities will to a large extent be replicated within the population of academic staff who are eligible to participate in the PBRF.

20 The twelve-month extension to Quality Evaluation 2026 recognises the general impacts on individual staff members' research activity and outputs, widespread across the sector. These are impacts not related to the specific inequities noted above which will have resulted in more severe impacts for some groups and individuals. The SRG considers that these general research impacts include:

- Closure of research facilities such as offices, laboratories and archives,
- Inability to carry out fieldwork due to restrictions on movement,
- Inability to attend conferences and other events, take up fellowships, or carry out other research-related activities,
- Increased teaching or administrative workloads,
- Loss of PhD students or postdoctoral fellows,
- Loss of external research partners, funding, or investment, and
- Loss of other research-related opportunities as a consequence of national or international COVID-19 restrictions.

21 The SRG acknowledges that these impacts will not have all been experienced by all eligible research staff to the same degree, but considers that the majority of staff will have experienced at least one of these.

22 In developing the options set out below, the SRG has also had regard for the in-principle decisions to date on individual circumstances, including the new Achievement Relative to Opportunity framework. The changes agreed mean that for Quality Evaluation 2026 the following groups will have reduced EP submission requirements:

- New and Emerging Researchers,
- Part-time staff, and
- Staff who have declared valid Researcher Circumstances, which includes two new types of circumstance: *Career breaks* and *Force Majeure*

These changes are aimed at ensuring Quality Evaluation outcomes are more equitable.

Options for recognising the impact of COVID-19

23 The options set out below aim to recognise COVID-19 impacts that have affected (and may continue to affect) specific groups, or that have been more significant than the general research activity impacts discussed above.

24 This includes impacts on researchers with additional family or other caring responsibilities as a consequence of lockdowns; researchers with health or disability issues either caused by or exacerbated by the pandemic, or who were required to shield; and researchers who experienced psychological impacts as a result of bereavement, trauma, stress, or fatigue. In addition, these options include recognition of researchers who experienced research activity impacts that are demonstrably significantly more severe, including potentially a specific 'Auckland-based researcher' impact type.

25 In line with in principle decisions on the Researcher Circumstances declaration and validation process, the SRG does not consider that panels should play a role in 'assessing' the nature and extent of COVID-19 impacts or that COVID-19 impacts should be a factor in the assessment of EP quality. As such, both options propose voluntary COVID-19 impact declarations and that EPs submitted by researchers with validated impact declarations would contain fewer than three EREs.

Option 1: A standalone COVID-19 impact provision which operates under the Achievement Relative to Opportunity framework, with a specific set of eligible COVID-19 impacts restricted to those which are above and beyond the general research activity impacts, and which have had a minimum impact of six months. These are:

- Additional family, community, or caring responsibilities including childcare and home-schooling,
- Health or disability issues requiring shielding or that were exacerbated by the pandemic or government policy,
- Illness as a consequence of catching COVID-19 including Long COVID,
- Psychological impacts as a consequence of bereavement, trauma, stress or fatigue

- Living in the Auckland metropolitan area for the duration of the 2021 lockdown, and

- Research impacts which go significantly beyond those described above as being mitigated against by the twelve-month extension. These would likely need to cover situations where a researcher had been unable to carry out any of their planned programme of research due to, for example, cancellation of core funding or in-kind support; inability to carry out any required fieldwork or laboratory work for six months or more; or being required to take on a significant institutional COVID recovery role which necessitated giving up all research time.

The declaration and validation process is the same as for Researcher Circumstances.

EPs claiming COVID-19 impacts are subject to the same reduced submission requirements: a validated period of impact of six months – four years would result in a requirement to submit two EREs; while a validated period of impact of more than four years would result in a requirement to submit one ERE.

Option 2: COVID-19 impacts are included within the Researcher Circumstances provision under the new *Force Majeure* type, and the same declaration processes and subsequent EP submission requirements apply.

The current *Force Majeure* type definition is revised as follows (proposed addition in italics):

A significant unforeseen natural or human-made event that has affected the quantity of research outputs produced and/or activities undertaken during the assessment period. These may include, but are not limited to, events such as earthquakes, including the ongoing impacts of the Canterbury earthquakes, floods, hurricanes, fire or other severe weather events, volcanic activity, pandemics, *including the ongoing impacts of the COVID-19 pandemic*, armed conflict, or terrorist attacks. The impacts on research must have occurred within the assessment period and meet the six-month summative threshold. The events can have occurred during or prior to the assessment period in New Zealand or anywhere in the world.

Next steps and consultation feedback

26 The SRG seeks the sector's feedback as follows:

- Do you support **Option 1**: A standalone COVID-19 impact provision which operates under the Achievement Relative to Opportunity framework, with a specific set of eligible COVID-19 impacts.

- Do you support **Option 2**: COVID-19 impacts are included within the Researcher Circumstances provision under the new Force Majeure type.

- Do you have any other comments on the consultation paper 'Recognising the impact of the COVID-19 pandemic'?

27 Feedback can be provided through the online survey available here: https://www.surveymonkey.com/r/ZY9H3VT

28 The feedback period will run from 24 March to 5 May 2023. The SRG will consider sector feedback and make recommendations to the TEC at the end of May 2023.

29 The TEC will make in principle decisions based on the SRG's recommendations and officials' advice. These will be communicated to the sector when the full draft Guidelines are released for final sector consultation in June 2023.

Unitec New Zealand Limited

Meeting of Te Komiti Rangahau o Unitec | Unitec Research Committee

Date of Meeting: 13 April 2023

Title	2023 Research Symposium
Provided by:	A/P Marcus Williams, Director Research and Enterprise
For:	**Discussion**

Recommendation

That the committee discusses the planning, dates and structure of the 2023 Research Symposium, including the possibility of it becoming a Northern Sector Research Symposium that would involve NorthTec, Unitec and MIT.

Key Points

- In 2022 a Symposium Steering Committee was convened.
- The 2022 symposium ran jointly with MIT.
- The 2022 symposium ran on Thursday 8 and Friday 9 December.
- The 2022 symposium was run entirely online.
- In 2022 there were guest speakers, panel discussions, awards, and a Māori and a Pacific Stream.
- The 3 Minute Thesis Competition was scheduled separately on Wednesday 31 August.

Background

The annual Research Symposium showcases the best research at Unitec, with presentations by staff and students as well as the popular Undergraduate Research Competition. In 2022, participation reached right across Unitec and MIT. Presentations are grouped with others in a similar vein; for example, sustainability or hi-tech, etc. Most of these are delivered in parallel streams allowing attendees to select the presentation which interests them most.

In 2020 the Research Symposium was transformed into a two-day event due to high levels of interest. In 2020, 2021 and 2022 Unitec's ePress offered the opportunity to submit full papers, subject to double-blind peer review, for a publication coming out of the symposium. Offering the opportunity to publish papers was a response to the challenges of the Covid-19 lockdowns and provided an opportunity for staff to disseminate their research while travel was highly restricted. In accordance with the PBRF Evidence Guidelines, presentations at the symposium formed a non-quality assured research output described as "(non-quality-assured) conference presentation".

Unitec New Zealand Limited

Meeting of Te Komiti Rangahau o Unitec | Unitec Research Committee

Date of Meeting: 13 April 2023

Title	Future research management and administration in Te Pūkenga
Provided by:	A/P Marcus Williams, Director Research and Enterprise
For:	**INFORMATION**

Recommendation

That the committee receives an update on the future of research and administration in Te Pūkenga.

Key Points

- The management of research in Te Pūkenga will soon be restructured. The following two points are directly from Dr Megan Gibbons who leads the Academic Centre and Learning Systems portfolio https://www.xn--tepkenga-szb.ac.nz/our-work/about/leadership/.
- Rangahau and Research will sit under the Academic Centre and Learning Systems. Some functions will sit centrally (e.g., strategy, policies, and procedures, monitoring and reporting), other things will sit regionally or locally (as appropriate). Of course, all of this is yet to be designed, but research systems will be organised by function so there are overarching national functions, then regional responsiveness, and local delivery.
- It is likely that work will begin on Tier 3 and 4 design for the research and rangahau management structure over the next few months, with consultation following design a bit later in the year (timeframes still to be decided).
- Megan, who leads the Academic Centre and Learning Systems portfolio within which research sits, was Chief Executive at Otago Polytechnic. She is very experienced and respected in tertiary education.
- Te Ohu Whakahaere Rangahau Māori, Research and Postgraduate is the Te Pūkenga research committee.
- The Rangahau Research Forum is a group of the research directors and managers from all the ITPs who have been regularly meeting and actively advocating for research since the inception of the RoVE.
- Te Ohu Whakahaere Rangahau Māori, Research and Postgraduate and Megan Gibbons have both asked the Rangahau Research Forum to help with the development of a national research strategy. Consultation with kairangahau/researchers will be built into this process.
- National animal and human research ethics processes are being developed.

Unitec New Zealand Limited

Meeting of Te Komiti Rangahau o Unitec | Unitec Research Committee

Date of Meeting: 13 April 2023

Title	2022 Early Career Researcher (ECR) Funding Final Reports
Provided by:	Brenda Massey, Senior Grants Advisor
For:	**REVIEW**

Recommendation

That the committee receives final reports from the four recipients of 2022 Early Career Researcher (ECR) Funding.

Purpose

The purpose of this paper is to report to the committee concerning the progress towards outcomes and expenditure of the 2022 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

- 2022 ECR Final Report – Dr Mary Yan
- 2022 ECR Final Report – Nigel Pizzini
- 2022 ECR Final Report – Dr Kristie Cameron
- 2022 ECR Final Report – A/P Renata Jadresin Milic

2022 UNITEC EARLY CAREER RESEARCHER FUND Final Report

Email your completed report to bmassey@unitec.ac.nz before **5pm on Friday, 31 March 2023.** Instructions in red italics may be removed before submission.

Researcher:	Dr Mary Yan
Project Title:	Yacon prebiotic functional drinks
Amount of Grant:	$3,500

Executive Summary

The project was co-funded by Unitec ECR Fund, AUT, and Yacon New Zealand Ltd.

There were seven major activities in the past year:

1. Three types of products were designated after marketing research and an initial assessment of the alternative product formats for yacon.
2. The potential ingredients were selected and trialed in different combination and composition to produce a mixture that are sensory and cost acceptable.

   Nine formulas were trailed to evaluate four quality attributes include visual appearance, sweetness, flavor, and overall liking by two researchers and three industrial partners.
3. Ethics application and additional documents for consumer study (e.g. participant information sheet, participant consent form, questionnaires) have been submitted to UREC. It has been reviewed and approved in July 2022.
4. Product sensory test (consumer studies) has been completed in September 2022. Fifty participants (n=50) tested two types of drinks: yacon-collagen, yacon-blackcurrant. The results reveled that sensory was acceptable with ratings above the centre point of the scores (all ratings>5).
5. Product shelf stability test has been completed in October 2022. Shelf-life of yacon-collagen and yacon-blackcurrant drinks > 1 year at room temperature, while yacon-vitamin(c) needs refrigeration.
6. Product antioxidant capacity has been tested. The antioxidant capacity of yacon-blackcurrant and yacon-vitamin(c) were much higher than that of yacon-collagen because of blackcurrant and vitamin c addition that enhanced the antioxidant capacity.
7. The outcomes of the project have been disseminated in December 2022 at the Nutrition Society of New Zealand Annual Conference, and Unitec/MIT Research Symposium.

In addition:

A draft manuscript aimed for nutrition journals is in progress.

In conclusion:

The development of yacon functional drinks, as new dietotherapy applications of yacon concentrate (NZFOS+), could provide more healthier food products for our consumers to exercise healthier food choices.

Background

The increasing awareness on overall health of consumers, in particular young people, has driven a shift from fruit juices and carbonated drinks to functional beverages. Functional drinks utilising new ingredients (e.g. prebiotics and probiotics) have now created a niche in the food industry. Yacon (*Smallanthus sonchifolius*), a perennial plant of the family Asteraceae native to the Andean regions of South America, is an abundant source of prebiotic fructo-oligosaccharides (FOS). Yacon was introduced into New Zealand in the 1980's. Yacon fruits are harvested and made into juice concentrate with high pressure low temperature processes to reserve the bioactive components. Recently, yacon concentrate (NZFOS+) was awarded Nutra Ingredients Asia Awards. This research aimed to incorporate yacon concentrate to the formulation of functional drinks to improve the health-related properties.

Aims and Objectives

The overall aim of the research project is to incorporate yacon juice concentrate (NZFOS+) to the formulation of functional drinks in place of commercialised fructo-oligosaccharides (FOS), and to test the sensory attributes (e.g. appearance, sweetness, flavor, and overall liking), antioxidant activity, and the shelf stability of the developed drinks.

Methodology

Sensory evaluation for yacon-collagen and yacon-blackcurrant drinks was conducted by a 9-point hedonic scale from 1 (very slight perception) to 9 (very intense perception).

Antioxidant activities of three yacon drinks were evaluated using the cupric ion reducing antioxidant capacity (CUPRAC), ferric ion reducing antioxidant power (FRAP) assay, and 2,2-diphenyl-1-picrylhydrazyl (DPPH) assays.

The shelf stability of the developed drinks was evaluated by accelerated shelf-life test, water baths set at 30, 40, 50, 60 °C, tested daily for two weeks by using spectrometric method.

Project Milestones

Achievement	**Agreed Date due**	**Status** (Completed, in progress or ceased)	**Revised Due Date** (if still in progress)
Formulation trials	Apr-Aug 2022	Completed Working with Yacon New Zealand, product types were defined, ingredients were selected, formulas were tested. Three-type prototypes were produced: • Yacon NZFOS+ with collagen • Yacon NZFOS+ with blackcurrant • Kids range NZFOS+ with vitamin C	
Ethics application for sensory test	Jul 2022	Completed Reviewed and approved	
Product sensory test	Aug 2022	Completed by 2nd September	
Product shelf stability test	Jul-Sep 2022	Completed	
Data compilation	Jul-Oct 2022	Completed	
Estimated completion date	Dec 2022	Completed	

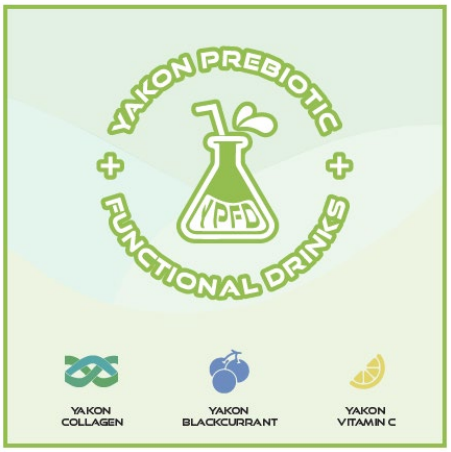
Outcomes/findings

There were three types of yacon prebiotic functional drinks developed. Our findings showed that the developed yacon drinks were:

Sensory acceptable with appearance, sweetness, flavor, and overall liking

Higher antioxidant capacity compared with yacon concentrate

Provide more healthier food products for consumers to exercise healthier food choices



Impact

The New Zealand Health Survey 2019/20 found that around 1 in 3 adults (aged 15 years and over) were obese (30.9 %), around 1 in 10 children (aged 2-14 years) were obese (9.4 %) [8]. From 2002 to 2016, consumption of sugary drinks increased in New Zealand, compared to the United Kingdom and the United States, where the total sugary drink intake was steadily falling. Sales figures indicate New Zealanders are drinking less soft drinks but more juice, sports and energy drinks [9]. The exploration of incorporating yacon juice concentrate to functional drinks could open up windows to beverage manufacturers supplying New Zealand market with high value drinks.

If successful, the results of this project could be commercialised by the industry partner. Furthermore, the research outcomes of this project would be communicated in at least one international conference and published in reputable journals.

Conclusions

In partnership with industrial, the development of yacon functional drinks, as new dietotherapy applications of yacon concentrate (NZFOS+), could provide more healthier food products for our consumers to exercise healthier food choices.

Next steps and Ongoing Research Possibilities

Further work - working together with industrial partner, Yacon New Zealand Ltd., to make the yacon functional drinks commercially available.

Recommendations (optional)

Working together with industrial partner to develop healthier food products is a proof-of-concept to change the food supply, and to improve the quality of life.

Publications and dissemination

Output type	**Agreed Date due**	**Status** (Completed, in progress or ceased)	**Revised Due Date** (if still in progress)
Prebiotic functional drinks	2022	Three-type prototypes were produced: • Yacon NZFOS+ with collagen • Yacon NZFOS+ with blackcurrant • Kids range NZFOS+ with vitamin C	

Conference presentations	2022-23	The outcomes of the project have been disseminated in December 2022 at • Nutrition Society of New Zealand Annual Conference, and • Unitec/MIT Research Symposium	
Peer-reviewed journal articles, targeted in nutrition journals e.g., Nutrients, Foods, Food and Nutrition Science (FNS)	2023	A draft manuscript is in progress	

Financial Reconciliation

Item	Amount Approved	Actual spend in PeopleSoft ($)
Personnel	$300	$300
Professional services	$1,200	$0 (not used due to regulations changing)
Materials	$2,000	$1,640 (packaging boxes haven't been ordered, $280) I019470.pdf
Total	**$3,500**	**$1,940**

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Appendixes (optional)

Mary Yan oral presentation 202211

2022 UNITEC EARLY CAREER RESEARCHER FUND Final Report

Email your completed report to bmassey@unitec.ac.nz before **5pm on Friday, 31 March 2023.** Instructions in red italics may be removed before submission.

Researcher:	Nigel Pizzini
Project Title:	Investigating the supports and constraints encountered by male high school students needing to engage with the school counsellor.
Amount of Grant:	$7,900

Executive Summary

The process of data analysis and coding has been paused due to teaching commitments but will be the focus of my attention for the next two months.

Through transcribing the focus groups, I was delighted at how serious, insightful, and generous the students were with their stories, ideas and feedback. 700 high school students were involved, and I am inspired on their behalf to advocate for change in the promotion, recruitment, training, and practice of counselling in Aotearoa New Zealand High Schools.

Some key findings of immense implication include:

- It can take a lot of **courage** to ask to see the counsellor. Time delays between that request and an appointment is upsetting or a put off. Appointment notifications need to be carefully considered from the student's experience – not embarrass or "out them" in front of peers or teachers. Use of Release Slips that are identifiable as 'counselling' are a deterrent. Texts, emails, generic slips at Tutor / Aku or Form Time are preferred options.
- **Confidentiality** is an over-riding concern. Students realise there is a threshold (harm to self of others) but they are scathing of reports of counsellors notifying home, teachers, Deans or others about consultations without taking the time to discuss the need and highlight the benefit to the student (gain their understanding and consent). Such stories destroy counsellor credibility and ripple out widely. This leads students to be very weary of what to share with counsellors, how much to say, or how honest or forthcoming to be. They are unclear what will trigger action beyond the room.
- There also seemed to be a **lack of understanding** about what school counsellors do; what their experience and qualifications are and whether in fact they are "real" counsellors (like those in community agencies).
- **Relatability** is a key word that came up frequently. Male students want to be faced with someone they have reasonable hope would "get them", would know something about what it means and is like to grow up as a boy in the 21st century. Male students seek a male counsellor aged 25-35. This has significant implications for the profession, where the majority of the current workforce is female, and the average age is 50+. We need to address the perception of counselling and promote it as a viable career option for young men.

Below are some indicative Focus Group quotes from various schools:

I think we're very lucky that we have good school counsellors. I feel like, in general, they get a bad rep for being kind of bad but we have good ones. In school the teachers know that if we need the help then they will actually give us the help we need. So I think that's quite reassuring, knowing that our teachers support it and our teachers don't think it's just a "I-don't-want-to-deal-with-this-kid-just-send-them-there" sort of thing. They're sending us there for the right reasons. (Female, Yr 12)

My dad's against counselling. He feels like males should just be able to toughen up and forget about it. It's like even when I broke my arm when I was younger, he refused to take me to the hospital until my mum took me and it was fractured. Even recently I had to go (to the school counsellor) but because I'm still 16 they said I need a parent to come down to say they consent and so when he came down, he got really mad at me for going (Male, Yr 12)

Sometimes you just get sick of talking to someone about your problems, because the amount of times that, as a person, you can get 'sent': "Oh, go to this counsellor" or "Go to that counsellor", you just get like "How many people do I have to tell what's happening in my life for someone to finally help me." (Male, Yr 12)

At one point I got a bit nervous when I got called up to go to counselling because I got a feeling that others were thinking that I'm fucked in the head or something (others have said "broken"). (Male Yr 10)

Sometimes it's kind of weary. You don't want to say too much, …some information might be too "thing"… (will result in the counsellor including others/break confidentiality). (Male, Yr 12)

In year 9 I wanted to go to the counsellor, but I was scared to because I thought that if I said anything wrong or concerning it would affect how they treat me in school, like education wise. Like schoolwork would be easier or something like that because I was struggling with my mental health or something like that. That was one of my biggest concerns, so kind of kept me back from going for a while. (Female, Yr 10)

One thing that scares a lot of people is "I don't want my parents to find out, I don't trust them not to tell my parents". (Female, Yr 12)

I've never thought about going because I don't know a lot about how it works, and I wouldn't know what to talk about, what I can say and what I can't. I guess, I really don't know how it works and like how they can help with anything. (Female, Yr 10)

It's in that first line that you say to us. If it's always "Oh, so how do you feel"? or "What are your problems?" that is automatically ganna make us not want to come back. But if you just have a conversation started that's real comforting, then eventually we will get to the problems. (Female, Yr 12)

Sometimes counselling is a bit too, like scary, or too personal, or too confronting, or they go too fast into the stuff that's hard to talk about. (Female, Yr 12)

(Youth worker) he doesn't seem like a teacher… he just seems like a person. I've seen him randomly at cafes around where I live and I'll just talk to him randomly… and he's

just one of those guys you can feel more open towards. If (the Youth Worker) was a counsellor I feel like that would make a lot more boys (willing)because he's connected with a bunch of the boys around the school. If he was counsellor that would make them feel more open. (Male, Yr 12)

I remember in Year 9 someone said "you should go to the counsellor for the issue you're having" but in my head I was like it's just a small issue, why would I go to a counsellor for that? Because to me you went to a counsellor for a big issue and it wasn't until our friend group had a really big issue that someone had to go to a counsellor because we had someone in the group who was suicidal, that kind of forced us to go to the counsellor and then we realised we don't have to just talk about them, we can talk about other things. Then you kind of realise you don't have to have a big issue to go to the counsellor. You don't have to have something wrong with you, you can just go if you want a bit of guidance. (Female, Yr 12)

For my mates it's more like I know females go to counselling or some of them do but yeah the male ones they tend to not trust the ability of what counsellors are able to do and more they will either talk to us or they most of the time tend to keep to themselves because they don't want it hindering others like it hinders them. So I feel like that's the biggest part of why most people keep it to themselves. (Male, Yr 12)

I reckon a lot of (boys) don't want to be emotional. It's mostly boys who would rather not get in touch with it so you don't have to deal with it. (Male, Yr 10)

I think what (guys) do a lot is, they try to solve things themselves instead of, like, they'd rather just…I don't know if its ego or just like not feeling safe to talk to someone else. Me personally, I normally try to do stuff just on my own. (Male, Yr 10)

Generally (guys)… hide their emotions. That's why most of them don't come to counselling because they can hide it and sometimes they can get used to it. But most of the time you won't even know if a guy needs counselling or not. Sometimes you can tell, sometimes you can't. (Male, Yr 10)

If there was more age (and gender) diversity, where like people could choose who you go and see for what problem, and the counsellors don't feel that if you choose to talk to someone else that they're not a good counsellor. So, for different problems you could speak to different people. (Female, Yr 12)

Background

It is well proven that males are less likely to engage in help-seeking behaviour. In New Zealand secondary schools most of the students accessing counselling support identify as female. However male teens are at higher risk of completing suicide or engaging in risk behaviour, indicative of mental or emotional wellbeing needs that go unattended. This project sought to identify the constraints and barriers to male student engagement with school counsellors, with the intended outcome to facilitate change that increases male student engagement rates.

Aims and Objectives

The aim was to engage in in depth consultation with high school students from across the motu to discuss student perceptions and experience of barriers and facilitative factors to their engagement with school counsellors.

The plan was to engage with ten schools. In the end seven sites were secured. 280 students (140 male and 140 female) participated in the focus groups resulting in 26 hours of video and hundreds of pages of transcripts. 400 students completed the written survey.

Methodology

A qualitative research approach was taken, involving Focus Groups with male and female students across a range of co-educational state secondary schools representing a cross section of urban/rural and socio-economic communities in Aotearoa, New Zealand. Focus groups were considered more engaging for this age group than individual interviews, as it afforded support and familiarity for participants meeting with "stranger", while themes and points could be built on and expanded by the general conversation in the group.

In addition, 400 surveys were administered at these same schools to a Year 10 and a Year 12 co-ed class, amassing quantitative data about students' perceptions and experience of barriers and facilitative factors. Key questions in the survey were modeled on a similar survey in Scotland, thus offering a point of comparison while also canvassing a wider catchment of students.

Qualitative data analysis was undertaken utilising a thematic analysis framework to explore the data and identify themes and patterns. A process of open coding and categorizing the points made by participants in the focus groups lead to the identification of key themes which were expanded and then consolidated through the analysis phase.

Analysis of themes will include consultation with Māori and Pacifika partners to aid in the construction of meaning and representation of the findings.

Project Milestones

Achievement	**Agreed Date due**	**Status** (Completed, in progress or ceased)	**Revised Due Date** (if still in progress)
Phase One			
Complete UREC approval	June, 2021	Completed	
Invite participation from applicable schools	July, 2021	Completed	
Receipt of data sets	Sept, 2021	Completed	
Interpretation and analysis of data sets	October, 2021	Completed	
Write up preliminary findings – accepted for the National School Guidance Counsellor Conference, Mauri Ora, Wellington*	Nov, 2021	Completed	
Phase Two			
UREC approval for Phase Two	March, 2022	Completed	
Secure informed consent agreements from 10 schools	April, 2022	Completed	

Commence site visits (administer surveys and focus groups)	Aug, 2022	Completed	
Analysis of data	Sept, 2022	In process	April, 2023
Write up findings	Oct, 2022	In process	May, 2023
Estimated completion date	Dec, 2022	In process	July, 2023

Outcomes/findings

While the number of participating schools was slightly reduced (7 rather than 10) there was substantial data from which to formulate key themes and establish patters of statistical significance. Several significant findings are emerging that have major implications for the recruitment of people into counsellor education programmes, the curriculum of counsellor education programmes, and the practice of counselling in schools. Central is confidentiality and increased understanding among the student body what counselling is and offers, and for male students in particular, increasing the number of men (25-35 age bracket) in training programmes and therefore qualified to take up school counsellor positions.

Impact

The key findings being identified will be reported to an international conference in USA in May (the International Congress of Qualitative Inquiry scheduled for Thursday, May 18, 2023, at the University of Illinois Urbana Champaign). I also plan to submit an abstract to present the findings at the annual NZAC Conference to be scheduled later this year in Wellington. Finally I will write up a full account of the research and findings for publication in the British Journal of Counselling.

Conclusions

A significant conclusion from the findings already is that male students are in great need of male counsellors in New Zealand secondary schools. Having a young male (25-35 yrs) offers hope that the counsellor will understand them, be relatable and therefore meaningful to engage with.

In addition to this point there are many points the participants make about what puts students off or are experienced as barriers. Some are easy for schools to address (e.g. methods used to inform students of a counselling appointment) while others will take more time to implement (e.g. the location of the counsellors rooms).

Next steps and Ongoing Research Possibilities

I feel compelled to seek to shape the future of counsellor education, recruitment, and practice in secondary schools. To that end, the findings of this research will be shared with the Ministry of Education (e.g. around the design and location of counsellor spaces, ratio of counsellors to students and impact on wait-list/accessibility), tertiary training providers / counsellor educators (issues students want counsellors to be more cognizant about) and NZAC (the promotion and profile of counselling as a credible career choice for young men).

Future work needs to look at the current school counsellor workforce (ages, ethnicities, qualifications, gender) to establish a base-line. Work then needs to go into how to position school counselling as a credible career choice for young men – reviewing training pathways

and accessibility of training, qualification requirements (often appointees are required to be Registered Teachers in addition to members of NZAC, a pathways that could involve 6 years of tertiary study – B.Ed +M.Couns), and pay rates (school counsellors pay parity with secondary teachers, in addition to gender pay disparity as school counsellors are disproportionally women and subsequently could be impacted by gender pay differentials. There is also the public perception of "counsellors" and relative status contrasted with Psychologists.

Recommendations (optional)

N/A

Publications and dissemination

Output type	**Agreed Date due**	**Status** (Completed, in progress or ceased)	**Revised Due Date** (if still in progress)
Unitec Research Symposium	December 2021	Completed	
Journal Article: Outnumbered: Male student engagement with school counsellors compared to female engagement rates. *ePress, Unitec.* Peer reviewed/refereed	2022	Published	
Journal Article: Supports and constraints encountered by male high school students needing to engage with the school counsellor in Aotearoa, NZ. *British Journal of Guidance and Counselling* Peer reviewed/refereed international journal.	2023	To be undertaken	Aug, 2023
Conference Presentation: Barriers and Facilitative Factors for Male students engaging with school counsellors. NZAC National Conference, peer reviewed application process.	2023	In process	July 2023
Workshop: Barriers and Facilitative Factors for Male students engaging with school counsellors – what can be done about it? By invitation: local, regional, or national audiences.	2023	To be undertaken	2024
NEW: Conference Presentation: Male Teen Engagement with School-Based Counsellors. Nigel Pizzini, Social Practice, Unitec/Te Pūkenga, Auckland New Zealand International Congress of Qualitative	May 18, 2023		

Inquiry. University of Illinois Urbana Champaign.			

Financial Reconciliation

Item	Amount Approved	Actual spend in PeopleSoft ($)
Personnel: 20 hours of research assistance at $25 per hour - assist with transcribing focus group interviews and compiling survey data.	$500	$500
Teaching buy-out: 0.1FTE release from teaching (Semester 2, 2022)	$3,300	$3300
Professional services: statistical analysis	$500	$1500
Travel & Accommodation: Domestic flights (Christchurch, Invercargill, Queenstown, Nelson, Wellington, New Plymouth, Napier). Rental car hire for local travel from airport. Car travel to sites within 4 hrs of Auckland (Whangarei, Tauranga and Auckland). Accommodation (6 nights @ $150 approx.)	$1,200 $800 $300 $900	$1200
Materials: Koha for participating school's counsellors in recognition of their time and support of the project ($40 x 10) (arranging survey and focus group participation, etc.). In addition to in-kind above.	$400	$400
Total	**$7,900**	**$8,900**

NZAC provided a research grant of $1000 that covered the overspend.

(additional $1000 was for professional transcription services)

I am uncertain about the actual spend for travel and accommodation, as these bookings and payments were made by the Research Office directly. I was unable to track these against the budget lines as a result.

References (if applicable)

N/A

Appendixes (optional)

N/A

2022 UNITEC EARLY CAREER RESEARCHER FUND Final Report

Email your completed report to bmassey@unitec.ac.nz before **5pm on Friday, 31 March 2023.** Instructions in red italics may be removed before submission.

Researcher:	A/P Kristie Cameron
Project Title:	Relative Numerousness and Absolute Number Discrimination in Dogs Part 2.
Amount of Grant:	$6,000

Executive Summary

Dogs show numerousness which is the ability to identify the larger of two reinforcers. However, dogs seem to use other mechanisms than counting to make this discrimination. There is little evidence that dogs show numerosity which is the ability to identify relative value based on the counting of stimuli. In this experiment, cues including olfaction and surface area of the stimuli were controlled to investigate if dogs could be trained to discriminate similar values by having to count the number of dots on a sealed petri dish by always selecting the dish with five dots. Our results show support for previous assertions that dogs show numerousness by the dogs discriminating between dishes with 1 versus 5 dots with consistent selection of more than 80% correct. Preliminary results for the more difficult discrimination of 4 versus 5 dots indicates accuracy for selecting the correct dish is above 50%. Knowledge of numerical competency can offer strategies to facilitate cognitive enrichment and learning in our animals or offer enhancement of the capabilities of working dogs where the concept of number might be advantageous in providing additional skills for working dogs.

Background

The ability to count, in the most general sense, is considered a singular human ability (Macpherson & Roberts, 2013). Simply put, we can identify and verbalise the number of objects in a continuous linear sequence as different from the prior, and then map the top value onto the total number of objects which represents the magnitude of the grouping; this is the cognitive ability known as 'numerosity' (Stevens, 1951). 'Number' is the 'discrete identifier' for each of these values. Some numerical competence has been shown in animals with research indicating an ability to show numerousness; that is, they can identify a larger array over that of a smaller one (Stancher, 2014; Ward & Smuts, 2006). The ability to judge quantities is evolutionarily advantageous as it allows individuals to ascertain which environment has more food available, predators present, or conspecifics (Ward & Smuts, 2006). Furthermore, the ability of animals to present higher-level cognitive abilities, such as numerical competence, presents a comprehensive link between humans and animals that cannot be explained by simple learning (Shettleworth, 2010).

Aims and Objectives

The aim of experiment 3 was to train dogs to discriminate value where presentation of stimuli was controlled for olfaction and continuous quantities of pattern and surface area. It was expected that the dogs will display numerousness, in that they will be able to

reliably discriminate very different values of 1 versus 5 items, by selecting the 5-item option to earn a reinforcer – they can.
Similarly, the dogs will discriminate a larger difference of 9 vs 5, after practising the inhibitory response where selecting the 5-item will result in reinforcement – most can!

It is expected that the more complex discrimination of 4 versus 5-items will result in poor performance accuracy due to the low discriminative value of the two stimuli – in that they are very difficult to tell about without counting – of which the dogs did not do.

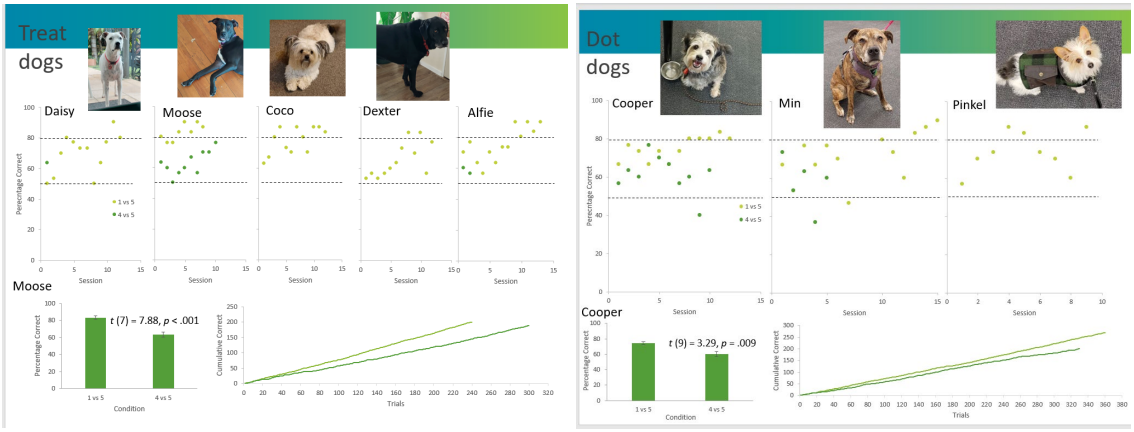
Methodology

The same task methodology used in Cameron et al., (2019) and Cameron et al., (2021) was used as it shows dogs can move down a runaway and make a choice between commodities for a food reinforcer. The choices to be made in the current experiment were between a dish with either treats or dots on a page in a Petrie dish (sealed to prevent the use of olfactory senses). The surface area of the page was controlled (all the randomly sized dots added up to the same number) so choice could not be made based on *amount* – the only way to correctly identify the correct choice (the dish with '5') compared with the alternative. There were five treat dogs and four dot dogs that were allocated to each group as they were recruited.

Project Milestones

Achievement	**Agreed Date due**	**Status** (Completed, in progress or ceased)	**Revised Due Date** (if still in progress)
Project started as Negotiated Research – 1st exp	May 2021	Completed	
Continuance and start of 2nd exp to start (delayed due to covid)	February 2022	Completed	
Research assistant to complete research weekly	Feb-May/mid 2022	Completed	
Estimated completion date for Exp 2 & 3	End 2022	Completed	

Outcomes/findings



The results here are for the 1 vs 5 trial for the treat dogs. all dogs except Dexter moved to the next condition. They started off quite slow with 50% correct but then quickly increased to 80% correct over about ten to 15 trials where three days over 80% correct allowed them to move to the next condition. The bottom graphs are for Moose, where he is heading towards 80% correct and is consistently performing at better than chance in the 4 vs 5 condition. The dot dogs showed less convincing performance than the treat dogs. Cooper is showing similar cumulative correct for both 1 vs 5 and 4 vs 5 but did not hit the criterion.

The dogs show numerousness – all (bar Dexter) have shown 80% correct selecting the dish with more dots or treats than in than about 12 sessions. In controlling for surface area we manipulated surface area by equating the total surface area and size of individual dots so 4 dots had the same coverage as 5 dots – in this we may have changed the nature of the discrimination from just 'number' to a *size and number* discrimination and although we created the dot patterns randomly we may not have made the cue the dogs are attending, which is larger things, rather than more things, less clear than we thought. But there is some evidence that the dogs responding to 5 vs 4 are trending towards 80%

There are possible changes we could make for the future such as the amount of space between individual items. A linear presentation would be clearer, however, it would offer a 'length' cue, so the circular presentation mitigates that. But maybe we could double the size of our stimuli.

Impact

The collaboration between the University of Waikato and Unitec has been productive and collaborative. The four BASCI students have benefitted in achieving in their course work and RA Kayla Briden has gained invaluable experience in conducting research and assisting in the write up of papers. Kayla has also been involved in the paper about Greyhound racing for the SPCA and has had her first paper accept to the International Journal of Comparative Psychology.

The study may not have provided data that confirms that dogs can count, but it as contributed to knowledge regarding the cognitive abilities of dogs which might be useful in industries where training dogs to recognize count might be an advantage – particularly when the task is to select the smaller number that goes against the instinct of numerousness (picking larger over smaller).

Conclusions

This experiment confirmed that dogs are adept at discriminating large and small counts, that generally align with more or less amounts. They can not be taught to identify the larger of two similar counts. Dogs, as domesticated animals, do not need the same level of ability to 'count' in the same way as wolves in the wild – who require some numerical competency to assess completeness of the pack (Rivas-Blanco et al., 2020). It seems that the cognitive ability of number recognition has limits for dogs using the visual modality only. Using a method, such as the Mechner procedure with possums, requiring the animal to perform a behaviour to assist in 'counting' could further our understanding of the limits of canine cognition.

Next steps and Ongoing Research Possibilities

There are no plans to further this research but there could be potential for dissemination to industries such as those that train dogs to perform complex behaviour.

Recommendations (optional)

Practical used as application example in the 7106 coursework.

1.1 Publications and dissemination

Output type	**Agreed Date due**	**Status** (Completed, in progress or ceased)	**Revised Due Date** (if still in progress)
2009 data to be written up and submitted to journal (all submitted to journals such as Behavioural Processes)	Mid 2022	In progress In Draft	Mid 2023 Combined paper
First experiment written up and submitted to journal	End 2022	In progress In Draft	Mid 2023
Second experiment written up and submitted to journal	2023	In progress In Draft	Mid 2023
Disseminated at NZABA – oral presentation *ECR spiel* *And Unitec Research Symposium*	Aug 2023 May 2023 Dec 2023	Completed	

Financial Reconciliation

Item	**Amount Approved**	**Actual spend in PeopleSoft ($)**
Personnel	$5,000	$5645.75

Travel	$500	$500
Materials/equipment	$500	$451.79
Total	**$6,000**	**$6597.54**

References (if applicable)

Agrillo, C. & Bisazza, A. (2014). Spontaneous versus trained numerical abilities. A comparison between the two main tools to study numerical competence in non-human animals. Journal of Neuroscience methods, 234, 82-91.

Bräuer J, Hanus D, Pika S, Gray R, Uomini N. Old and New Approaches to Animal Cognition: There Is Not "One Cognition". Journal of Intelligence. 2020; 8(3):28. https://doi.org/10.3390/jintelligence8030028

Hauser, M. D., Carey, S. & Hauser, L. B. (2000). Spontaneous number representation in semi-free-ranging rhesus monkeys, proc. R. Soc. Lond. B. 267, 829-833. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1690599/pdf/10819154.pdf

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Levenson RM, Krupinski EA, Navarro VM, Wasserman EA (2015) Pigeons (Columba livia) as Trainable Observers of Pathology and Radiology Breast Cancer Images. PLOS ONE 10(11): e0141357. https://doi.org/10.1371/journal.pone.0141357

Shettleworth, S. J. (2010). Clever animals and killjoy explanations in comparative psychology. Trends in Cognitive Sciences, 14(11), 477-481.

Appendixes (optional)

Reminders:

- You must notify Tūāpapa Rangahau of any outstanding publications and research outputs when they occur (via email to research@unitec.ac.nz) and ensure they are entered in ROMS.
- 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 or with Brenda Massey, Senior Grants Advisor.

2022 UNITEC EARLY CAREER RESEARCHER FUND Final Report

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Researcher:	A/P Renata Jadresin Milic
Project Title:	Digitalisation of Heritage in NZ Phase Three
Amount of Grant:	$24,500

Executive Summary

The Project Phase Three, 2022: This continued to be an applied research project, externally partnered, that includes students' engagement directly, has an impact on teaching, and creates ongoing industry connections and connections with the community. We continued using modern digital technologies and showing the relevance of the results to the public (community), professionals, and the industry.

Highlights: In 2022,

1) We formalised (applied and got ethics approval) and extended engagement and conversations with architects, engineers, surveyors from the sector, councils, government organisations. The Survey investigated what is being practised by heritage professionals and the architectural/building industry. The research included conversations and interviews with architects and engineers from the sector, district councils, and government organisations, with the primary aim to learn how New Zealand could and may benefit from some modifications in policies it has at the moment; to gain an understanding of what would be valuable for all stakeholders to help heritage buildings be retained and adaptively reused, and not demolished. We analysed the results and started preparation for focus groups.
2) We expanded our working network, which has been built between Jadresin-Milic and Potangaroa, to include Heritage NZ and Auckland City Council – Heritage Unit, which have resulted in two recent events in 2023. First, capturing detailed images and data of the historic Colonial Ammunition Company Shot Tower in Mount Eden, Auckland before it had to be demolished, therefore not only preserving an important piece of Auckland's history but also demonstrating the value of using cutting-edge technology to document and understand our past. Second, a decision to establish a *Digital Heritage Taskforce* that will be highly based on Jadresin-Milic's existing network with industry professionals and community groups for better advocating for heritage preservation. Having a working network like this significantly increases the success of our project since it links and connects professionals hailing from every angle of the heritage sector.
3) We established the Digital Heritage Research Centre.
4) We started work for the MBIE Endeavour Funding application + Marsden (and we submitted applications in February/March 2023).
5) We continued tireless work as ICOMOS NZ Board member and "Legislation and Policy" committee member. (I took an active part in writing: - ICOMOS NZ Submission to the Environment Committee Resource Management (Enabling Housing Supply and Other Matters) Amendment Bill; Preparation of Submissions

and Letters to: Minister of Conservation; Minister for Arts, Culture and Heritage; Draft approach to Kathryn Ryan in regards to the respect for heritage areas, including what goes up next to them without holding back on development; etc. As a member of the ICOMOS NZ Specialist Committee "Advocacy & Communications", I was selected to be the centrepoint for implementing ICOMOS Mentorship Pilot Programme. I also contributed to the ICOMOS New Zealand Charter Practice Notes and Best Practice Guidelines Scoping Report).

6) The part of the project involving Building One (Old Carrington Hospital) has culminated in a visual output through the interactive online model-sharing platform 'sketch fab'. The sketch fab model allows for an interactive 3D movement of the external site with high (great) visual detail in the textures and geometries that form the building. Linked within this model are a series of clickable annotation nodes; these can be clicked from within the sketch fab interface to which will take the viewer to visual outputs such as sections, plans and elevations which are relevant to the area where the node has been placed. This will also be used in part to summarise and portray text information of the site in order to educate the public on the significance of portions of Building one.
7) Wilson's Cement Works heritage site (Warkworth) point cloud possibilities – some explorations for future presentation.
8) The reintegration of never built past – first explorations though the elective course and paper "Digital Modelling of Heritage Buildings: The Process of using Point Clouds versus Historic Drawings" ("The Civic Centre", *Auckland Star*, Volume LV, Issue 242, published October 11, 1924).
9) The Virtual Reality project between our Research Office/School of Architecture and Wesley Primary School.
10) With Maia Ratana initially in 2021 and 2022, and with Regan Potangaroa gradually in 2022, we continued to explore/discuss/draft papers about possibilities: Mātauranga Māori and digital storytelling and Analyse the ways in which digital technologies can be used in the representation and preservation of Māori heritage sites and buildings.

Background

The report by the Parliamentary Commissioner for the Environment concluded that New Zealand's heritage is in danger of being lost and degraded at an alarming rate: 140 listed heritage buildings being lost in the aftermath of the Christchurch, Seddon and Kaikōura *earthquakes* during a short period of the years 2011–2016; 60 listed heritage buildings lost during this period due to *redevelopment*; according to HNZPT data, in 1,393 instances authorities were granted permission to *demolish* pre-1900 buildings between May 2014 and September 2018; there are approximately four to five fires on marae each year, with on average one marae building lost annually to *fire*; there are many thousands of buildings that are important to communities across New Zealand that have *never been formally recognised* for their heritage values; and it's yet to be counted how many heritage buildings have been damaged by floods, landslides and other consequence of cyclones just in the current year alone. Our project addresses widespread public anxiety about the loss of many historic and cultural sites by utilising modern digital technologies to improve domestic conservation practices and ensure preventative protection of architectural heritage. The project hopes to help and to serve as a national benchmark for the global paradigm shifts in heritage conservation, offering a concept and practice for long-term multi-hazard heritage management in Aotearoa New Zealand.

From the initial intentions of the Project – to raise awareness of the importance of heritage; address existing gaps in current legislation; advocate for greater use of modern digital technologies in domestic conservation practice – until today, we have developed a strong team, strong external connections, and established the Digital Heritage Research Centre.

Aims and Objectives

The Project of heritage digitalisation in New Zealand overall aimed to present unknown, vulnerable (in the process of degradation or transformation), and/or abandoned historical heritage through a multimedia presentation on the one hand, and to set up an information tool for restoration, maintenance and valorisation, on the other. It has an emphasis on using digital technology in work with heritage sites and buildings, which is very much a novelty. The specific objectives in the Project overall are: 1) to raise awareness of the importance of heritage; 2) to do the action with: a. recording heritage buildings; and b. influencing a change in existing legislation and regulations; and gaps in current legislation that allow loss of our heritage (often 'demolition by neglect'). New Zealand would benefit from some modifications in the policies it has at the moment.

The original overall research questions in the project have been:

- What is the current state of knowledge in the practice of New Zealand regarding the digitalisation and archiving of heritage buildings?
- What buildings in New Zealand should be recorded and digitalised (vulnerable, in the process of transformation and degradation, abandoned)?

These questions are further refined in 2022 to better articulate the potential and value of this phase of the project – Digitalisation of Heritage in NZ, Phase Three. The focus of 'phase 3' of the research project overall and the current funding application is to establish:

- What levels of understanding of Digital Heritage (tools, equipment, software) there is in our professionals/ architects/ heritage architects?
- What buildings (heritage buildings) would they prioritise to be digitally recorded? And Why (what would be their criteria for the selection)?

Methodology

Our research overall uses an integrated methodology that combines methods from experts in different fields: from the most advanced **digital heritage methodologies**, such as laser scanning, digital photogrammetry, 3D modelling and computer graphics, to a robust methodology related to participatory focus groups through close engagement with communities, different professionals from the sector, district councils, and government organizations. By using rapidly developing, transformative digital technologies and combining existing practices and knowledge systems, we intend to transform the disparate nationwide and industrywide knowledge sets, standards, and legislations.

In Phase Three in 2022, this research also included qualitative and quantitative approaches. Mixed research methods in Phase Three included **Survey** (electronic questionnaire; both qualitative and quantitative); a short Survey, 10-15 min; at the end, the last question: "We are going to extend to 45-60 min (focus-group) interview; would you be interested in taking part?"; Qualtrics was used; SKIP logic was used in the electronic questionnaire; and **Focus Groups** (semi-structured, with a list of topics to be discussed to enable conversational tone). This allows for follow-up questions to clarify what was said and expansion of the understanding. It ensures there is comparable information between different focus groups.
The ethics approval application was submitted in March 2022, and the approval obtained 04 July 2022.

Project Milestones

Achievement	**Agreed Date due**	**Status** (Completed, in progress or ceased)	**Revised Due Date** (if still in progress)
Finish quantitative aspects of the research (conversations and interviews with architects and engineers from the sector, district councils, and government organisations such as Heritage NZ)	March 2022	In Progress. Ethics approved, Survey completed and results analysed. Focus groups preparation is in the final stage.	End of May 2023
Develop and systematise data that directly answer the research questions	July 2022	In Progress. Same as above.	End of May 2023
Disseminate quantitative aspects of the research – refereed journal article + and dissemination in community, between heritage professionals, academics and industry.	Throughout 2022	Completed; but we keep disseminating all the time.	Done in 2022. But, we keep doing this in 2023
Digital library and Project webpage developed further, to include new 3D modelling of heritage buildings (sites).	Throughout 2022	We keep developing visual material; a lot was done in 2022 (especially interactive sketch fab as explained above in 6)); this is work that never stops. However, we need help and support to have visually rely strong webpage (we need web designer to present all visual material we have developed properly).	Done in 2022. But, we keep doing this in 2023
Confirming funding from other sources, hopefully. Establishing a new Unitec Research Center that deals with heritage in Aotearoa New Zealand, and offers a possibility to protect and keep numerous heritage buildings and sites.	By the end of 2022	Completed – Research Center established.	Done in 2022. Fund applications submitted in February and March 2023.

Estimated completion date	December 2022	n/a	Digital Heritage Research Center is taking over what was started within this Project.

Outcomes/findings

The results in 2022 detected and pointed with more detail at the main problems that heritage in NZ faces; and what may be a direction for the future.

The results demonstrate that there is an urgent need among many different stakeholders for new and improved tools for heritage conservation that will not only facilitate and improve conservation practices and processes but will allow heritage buildings with and without formal heritage recognition to be examined, any state of decay to be recorded, and data made available to the iwi/hapū and communities via a newly developed, shared digital platform and database; something that heritage researchers have not been able to achieve before.

Figure 1: Digital Tools in Heritage Conservation in NZ: Survey Results

The results from 2022 helped us develop the vision with a science stretch to significantly benefit New Zealand, and turn what we do from (what may be seen as) a 'preservation activity' into a science research project.

Finally, Renata Jadresin Milic activities and external engagements continued to grow and have a bigger impact:

- ICOMOS NZ Board Member;
- ICOMOS NZ "Legislation and Policy" Committee Member, significant work towards: "Submission to the Environment Committee Natural and Built Environments Bill"; "Submission to the Environment Committee Spatial Planning Bill"; "Submission to the Review Panel Draft report: Te Arotake i te Anamata mō Ngā Kaunihera Review into the Future of Local Government";
- ICOMOS NZ Mentorship Pilot Programme;
- ICOMOS NZ Charter Practice Note Project.

Impact (and Benefits

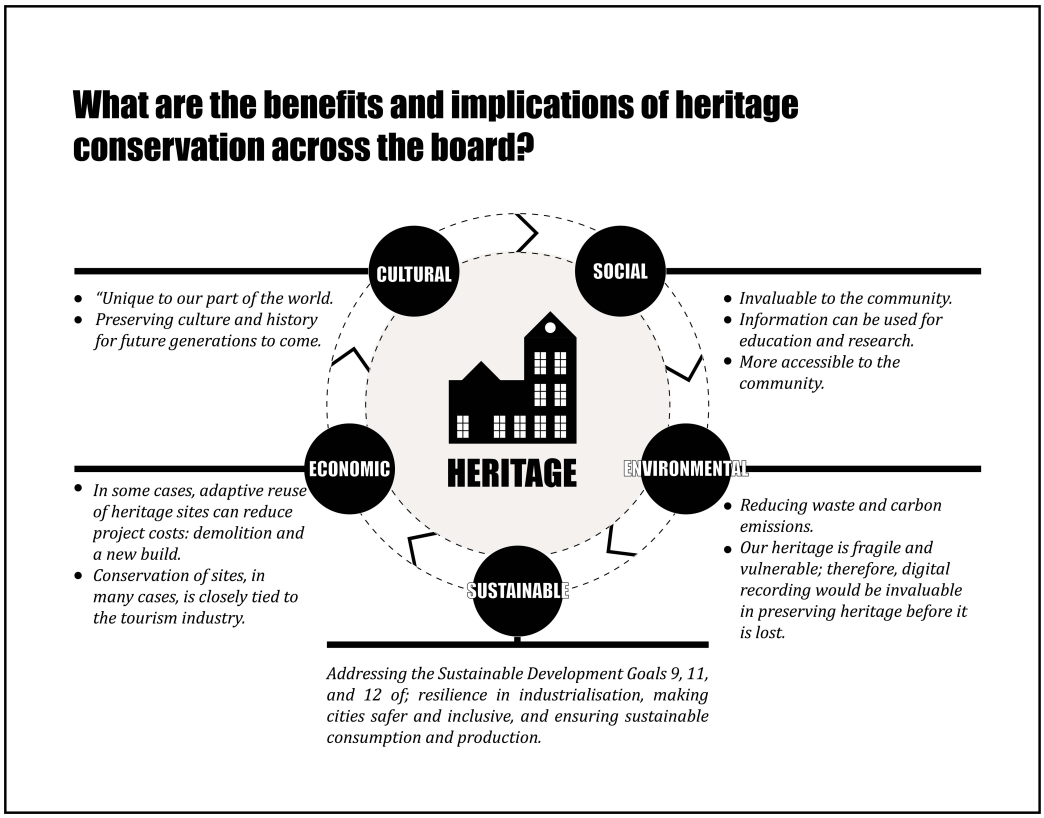

Figure 2: Impact and Benefits

Economic

- On average, a sizeable commercial rehabilitation costs approximately 4% lower than comparable new construction on a clear site. The savings are more significant if the new build requires demolishing an existing structure (Rypkema 2003).
- Even where rehabilitation costs more than new construction, it can still produce a higher rate of return. (Besen et al., 2020) Central locations, exciting architecture and high-quality materials will often lead to higher rents and occupancy rates for heritage buildings. (English Heritage 2002; Shipley et al. 2006).
- Heritage conservation supports the development of a skilled, well-paid workforce in the building trades and traditional crafts. It also creates demand for professional services in areas such as architecture and engineering. Because it is more labour-intensive, rehabilitation creates more jobs per dollar invested than new construction. (Othman & Elsaay, 2018)
- Bringing vacant and underused buildings back to productive life creates business opportunities.

- Heritage tourism is "booming in Aotearoa" (Chumko, 2022). In 2019 94% of respondents surveyed via Auckland Council's 'People's Panel' said they had participated in a 'heritage-related activity' in the last 12 months, up from 78% in 2011 (Auckland Council, 2019).
- Unlike newly built tourist attractions, historical places are unique tourism assets that already exist in most communities (Yüksek & Sökmen, 2021).

Social

- Heritage assets can contribute to an area's liveability and identity.
- Heritage buildings and historic streetscapes convey an appealing sense of place and help shape a community's unique identity(Yüksek & Sökmen, 2021).
- Digital models and virtual tours of historic sites will enable global remote access, or "armchair travel", for example, to inaccessible, restricted, or dangerous areas or during periods when physical travel is impossible, e.g., during pandemics or wars. (Paladini et al., 2019)
- Providing a digital heritage platform of enduring value, recorded for and accessible to future generations, is a benefit that has not been offered or available to the public before. (Laing, 2020)

Environmental

- A digital library of information is created, which could be used to remediate buildings in the case of natural or other disasters (Marcoux & Leifeste, 2022).
- The availability of precision surveys will assist future seismic strengthening activity and/or the design of new fit-outs.(Milic et al., 2022)
- Carbon footprint reduction, e.g., specialist contractors will not need to fly over sites (Rodrigues & Freire, 2017).
- The need for site visits can be minimised or even eliminated, saving time and money and reducing the impact of 'in-person visits on fragile, sensitive and/or sacred sites. (Besen et al., 2020)
- Using new technologies and rethinking how we preserve our current built environment, we can realise more value from existing assets, keep resources and building materials in the economy, stop them from becoming waste, and assist in reducing CO2 emissions by doing so. (Rodrigues & Freire, 2017).

Benefits of the Project seen by local government bodies: Implementing the results of our research will give a new avenue for different ways of handling the housing and environmental crisis that the whole society is facing. The Stakeholder Advisory Group and the Digital Heritage Taskforce will be the primary communication channels with local and central governments in the building and construction industry. They will facilitate the flow of information between universities, Auckland City Council, community groups, industry, consultants, and Heritage NZ. All parties will highly benefit from the flow of information we will share throughout the project lifecycle as it progresses from planning, execution, and closure. As members of the task force, our team will be able to provide essential information and help to mitigate a proper response to the impacts of the recent flooding on the city's heritage stock.

> *"Auckland Council's Heritage Unit can see the benefits of the proposed geospatial data program as we aim to use new and emerging technologies to more effectively record and curate the large number of heritage assets we administer across Tāmaki Makaurau. A data platform, as proposed, would enable heritage agencies to share important data with key stakeholders and increase awareness and engagement of heritage places outside of their immediate context. The digital heritage research project is a brilliant initiative that, when fully realised, will have huge benefit for Auckland's heritage and the wider New Zealand heritage sector for many years to*

come. It is thoroughly worthy of any and all support." (Auckland Council Heritage Unit)

Furthermore, Jadresin-Milic has already engaged in conversations with the government on the proposed reform on both the Natural and Built Environment Act and the Resource Management Amendment Bill. Jadresin Milic contributed to the Auckland Council Government's new housing rules.

Benefits seen by stakeholders: Based on our background study (see the Figure 1 above) that investigates the use of digital tools among practitioners and academics (stakeholders), a substantial number of participants see the benefits of using digital tools and technologies and vouch for it to be 'normalised' across the industry – the most prominent reasons being its benefits, including a faster workflow, increased efficiency, and accuracy. Many participants stated that digital recording is necessary for heritage sites and buildings that are culturally significant and at risk of natural disaster, neglect, and demolition.

"TEKTON sees real value in your proposal since, concentrating as our work largely on the seismic strengthening of buildings, many of them heritage buildings, we would appreciate access to a library of geospatial data to which we could then apply our own specialized software as we go about the complex task of strengthening important buildings without drastic or intrusive intervention. As co-designers with you of the proposal we have no difficulty in seeing how it could be applied to our work and appreciate the time-saving and efficiency benefits that would result from having easy access to it."

Conclusions

This is an important project for Aotearoa New Zealand, one that can have a significant impact on the heritage space. The methodology could potentially be applied more widely. Through feedback about the work so far we got from Max Kennedy, this is a timely and important project that fits well with Endeavour in an area MBIE does not have much funded. He also acknowledged this is a pressing problem to solve.

Multiple opportunities have been recognised for national and international collaborations. New and strong connections have been developed with:

- Human Interface Technology (HIT) Lab NZ at the University of Canterbury has all the necessary specialist research resources to explore how people use these technologies to understand cognition, perception, and human behaviour.
- Orbica has all the necessary specialist resources for Digital Twins, Smart City, 3D mapping, analysis and artificial intelligence, and they pioneer novel methodologies in their regular business.

Our Massey University and Victoria University colleagues confirmed existing relationships, and we committed to extending the work together.

We have already established relationships with other industry partners who will provide specialist resources, technology and expertise for our research. They include asBuilt Digital; Arclab, Auckland; Geometria Ltd (TBC); Sam Smith, Wood and Partners Consultants, and others. Our existing industry partners have already provided specialist resources for drone scanning and 3D laser scanning in the past.

Next steps and Ongoing Research Possibilities

With the help of Tūāpapa Rangahau, we applied for external funding:

- 2023 MBIE Endeavour Fund Research Programme;
- Marsden Fund Preliminary Research Proposal.

Our vision is to move beyond the current practice of different organisations building separate datasets and connecting business processes, and link data through the property lifecycle. The research focuses on presenting vulnerable (in the process of degradation or transformation), and/or abandoned historical heritage buildings through a modern geospatial data platform built with our industry partners, to enable cross-functional teams to access and co-collaborate around key datasets. Creating a modern geospatial data platform is crucial to enable cross-functional teams to access and co-collaborate around key datasets. Open standard support and being supportive of modern and varied approaches to data and knowledge access are important for our multidisciplinary team. This aspect also focuses on Scan-to-BIM conversion and building an intelligent model: our goal is to increase the efficiency of the tool and thereby widen its usage within the industry.

1.1 Publications and dissemination

Output type	**Agreed Date due**	**Status** (Completed, in progress or ceased)	**Revised Due Date** (if still in progress)
Dissemination: Public presentations and engagement with the community, professionals in the field, government representatives, industry, students, research team.	2022	Completed	-
Publications quality assured: Refereed paper for ANZAScA 2022	2022	Completed	-
Publications quality assured: Refereed paper for SAHANZ 2022 (Adjusted: Paper presented at the 2022 Joint Conference of Historic Places Aotearoa and ICOMOS NZ: "Harsh Reality: Current Challenges For Historic Heritage in NZ")	2022	Adjusted and completed	-
Publications quality assured: Refereed journal article – targeted publications relevant for this field: "DISEGNARECON" - *Journal of Architecture and Cultural Heritage* (ISSN 1828-5961) http://disegnarecon.univaq.it/ojs/index.php/disegnarecon/index); *Journal of Cultural Heritage* (ISSN: 1296-2074) https://www.journals.elsevier.com/journal-of-cultural-heritage; *Heritage* (ISSN 2571-9408) https://www.mdpi.com/journal/heritage; *Buildings*	2022/2023	Completed in 2022 (*Sustainability* journal, MDPI) Second journal paper planned for 2023 in progress	-

(ISSN 2075-5309) https://www.mdpi.com/journal/buildings.			
Exhibition of work done for the digital library	2022	In progress	2023
Not listed in 2021 ECR application			
Heritage bites: Dissemination: Invited presentation for "Heritage Bites" - Digital lunchtime talks on historic heritage matters, Historic Places Aotearoa and ICOMOS New Zealand	01 April 2022	Completed	-
Media attention (audio and video recording): "3D technology being used to save heritage buildings", RNZ	25 May 2022	Completed	-
Media attention: "3D-tech helps preserve New Zealand's most important buildings", ArchitectureNow	5 Jul 2022	Completed	-
ICOMOS NZ Legislation Policy submissions in 2022 ("Submission to the Environment Committee Natural and Built Environments Bill"; "Submission to the Environment Committee Spatial Planning Bill"; "Submission to the Review Panel Draft report: Te Arotake i te Anamata mō Ngā Kaunihera Review into the Future of Local Government")		Completed	-
Fund Application: Marsden Fund Preliminary Research Proposal "New Zealand's Cultural Heritage at Risk: A Trans-disciplinary Approach for enhancing Multi-Hazard Resiliency"		Completed	2023
Fund Application: 2023 MBIE Endeavour Fund Research Programme Application: "Transforming Heritage Conservation in NZ: A Transdisciplinary Approach for/towards a More Resilient Environment"		Completed	2023

Financial Reconciliation

Item	Amount Approved	Actual spend in PeopleSoft ($)
Personnel – Principal Investigator	$16,000	$16,000
Personnel - Research Assistants (3 x RAs; 100 hours each; $25 p/hr)	$7,500	$6,642
Printing, materials, other expenses	$1,000	-
Total	**$24,500**	**$22,642**

The final status of the Project's budget shows that the expenditure almost matches the final income and expenditure statement produced by PeopleSoft.

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- ICOMOS NZ Legislation Policy submissions: "Submission to the Environment Committee Natural and Built Environments Bill"; "Submission to the Environment Committee Spatial Planning Bill"; "Submission to the Review Panel Draft report: Te Arotake i te Anamata mō Ngā Kaunihera Review into the Future of Local Government".

Reminders:

- You must notify Tūāpapa Rangahau of any outstanding publications and research outputs when they occur (via email to research@unitec.ac.nz) and ensure they are entered in ROMS.
- 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 or with Brenda Massey, Senior Grants Advisor.

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?