agenda

Te Komiti Rangahau o Unitec | Unitec Research Committee

Date:	**2024-08-08**
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. 2023 Unitec Research Report

SECTION 4 — WHAKAWHITI KŌRERO | ITEMS FOR DISCUSSION

1. University Advisory Group: Submissions Sought for Phase 2

SECTION 5 — NGĀ TUKUNGA | ITEMS TO RECEIVE

2. 2024 ITP Research Symposium

SECTION 6 — KUPU WHAKAMUTUNGA | CLOSING

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

SECTION 1   NGĀ KUPU ARATAKI | PRELIMINARIES

Item 1.1   Karakia Tīmatanga | Opening Prayer

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

Item 1.2   Mihi Whakatau | Welcome from the Chair

Item 1.3   Te Komiti Rangahau o Unitec Membership

Hadley Brown (Chair)	Nominee of Director Research & Enterprise
Daisy Bentley-Gray (Emerging)	Nominee of Director, Pacific Success
Tanya White (Early Career)	Nominee of Director, Māori Success
Dr Helen Gremillion (Professor)	Healthcare and Social Practice
Dr Yusef Patel (Early Career)	Architecture
Kambiz Borna	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
Khaled Ibrahim	Applied Business
Vacant	Bridgepoint
Dr Norasieh Md Amin (Subject Librarian)	Library
Vacant (Student Rep)	Nominee of 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 2024-07-11.

Section 2.3   Mahia Atu | Matters Arising
refer to pg11

SECTION 3   MEI HEI WHAKAAE | ITEMS TO APPROVE

Section 3.1   2023 Unitec Research Report
refer to pg12

SECTION 4   WHAKAWHITI KŌRERO | ITEMS FOR DISCUSSION

Section 4.1   University Advisory Group: Submissions Sought for Phase 2
refer to pg93

SECTION 5   NGĀ TUKUNGA | ITEMS TO RECEIVE

Section 5.1   2024 ITP Research Symposium

SECTION 6   KUPU WHAKAMUTUNGA | CLOSING

Section 6.1   Ētahi Kaupapa Anō | Any Other Business

Section 6.2   Komiti Self-Assessment

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!*

Te Komiti Rangahau o Unitec | Unitec Research Committee

Date:	2024-07-11
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. Hadley Brown (Chair)
2. Tanya White
3. Daisy Bentley-Gray
4. Arun Deo
5. Helen Gremillion
6. Nora Md Amin
7. Kambiz Borna
8. Xinxin Wang
9. Kristie Cameron
10. Leon Tan
11. Hamid Sharifzadeh

Total members represented: 11 members

Apologies

1. Lian Wu

Total apologies: 1 member

Absent

1. Khaled Ibrahim

Total absent: 1 member

MOTION

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

Moved: Nora Md Amin
Seconded: Tanya White

MOTION CARRIED

Quorate Status

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

Hunga Mahi | Staff in Attendance

1. Brenda Massey, Acting Secretary

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

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MOTION

That the committee approves the minutes of the 2024-06-13 meeting as a true and accurate record.

Moved: Tanya White
Seconded: Xinxin Wang

MOTION CARRIED

Item 2.3   Mahia Atu | Matters Arising

Agenda Item(s)	Action	Responsible	Outcome
2.3	Provide an update to the committee on a draft submission to IT and Academic Committee on the difficulties Unitec's IT policies and procedures are posing to teaching and research endeavours.	Leon Tan	Complete. Leon updated the committee as below
4.1	Check with Marcus Williams whether Unitec will be having a research symposium this year and report back to the committee.	Hadley Brown	Complete. Hadley updated the committee as below.
	Convene a small group to give further feedback on Priority One of the Unitec Research Strategy Action Plan.	Hadley Brown / Tanya White / Daisy Bentley-Gray	In progress – see update below
4.2	Summarise the committee's feedback on the proposed sector-wide research awards for Jamie Smiler.	Hadley Brown / Brenda Massey	Complete
5.2	Draft letters to Research Centre Directors thanking them for their 2023 Research Centre Reports ready for Marcus Williams, Director Research and Enterprise to issue.	Brenda Massey	Complete

2.3: Leon Tan tabled his draft submission to IT and Academic Committee on the difficulties Unitec's IT policies and procedures are posing to teaching and research endeavours. The submission names the Schools that are being particularly affected by current IT policies and provides examples of the non-standard software that staff are having difficulty accessing and keeping updated.

4.1: Jamie Smiler, National Research Director, Te Pūkenga, and Tūāpapa Rangahau have held some preliminary discussions about a possible sector-wide research symposium, perhaps to be hosted by Unitec later in the year. Marcus Williams will update the committee, via memo, in due course as these discussions progress.

4.1: Tanya White and Hadley Brown recently convened to consider Priority One (Research that is aligned with Te Tiriti o Waitangi) of the Unitec Research Strategy Action Plan and to discuss potential amendments to the Actions associated with this Priority. The group still needs to consult with Daisy Bentley-Gray, Hinekura Smith and Marcus Williams and will report back to the committee once those conversations have been had. The group is hoping to rework some of the Actions to make them more contemporary. Given that we don't yet know the status of Unitec's Research Strategy beyond 2024 we really don't, at this point in time, have a mandate to implement any changes. The aim at this juncture is to simply put the proposed revised Actions out for consultation, and to raise with key stakeholders that these revisions should be considered if another five-year research strategy is going to be developed.

Other Matters Arising

The University Advisory Group (UAG) is currently seeking submissions for Phase 2. The submission provocations will be brought to the committee's August meeting for discussion so that feedback can be collated in time for the 30 August deadline for responses. Martin Carroll has also requested Marcus Williams to organise a workshop around the consultation for all Unitec staff. Details of the workshop will be circulated in due course.

Hadley provided an update on the new Emerging Researcher Start Up Fund. The committee had suggested that:

- the maximum grant available from the fund be increased from $500 to $750. Marcus Williams has agreed to this.
- examples be provided of the types of things that will be considered for funding. This is going to be actioned by Tūāpapa Rangahau.
- the definition of an Emerging Researcher be included in the guidelines of the fund. This is going to be actioned by Tūāpapa Rangahau.

The 2024 3-Minute Spiel Competition for both ECR and Emerging Researcher (ER) categories ran successfully. The Spiel was held for the first time in the afternoon in the hopes that more staff would attend, and the turnout was good. The quality of the speakers varied across the diverse group of participants. The organisers had concerns about including ERs for the first time, but these proved to be unfounded. Four ERs participated with two winners announced, as the judges couldn't decide between them. There was one winning ECR, with an overall winner as well across both categories. Martin Carroll attended, and his support of the event was welcome. There will be a post about the Spiel on Te Aka | The Nest with photos soon.

SECTION 3 – MEA HEI WHAKAAE | ITEMS TO APPROVE

There were no items to approve.

SECTION 4 - WHAKAWHITI KŌRERO | ITEMS FOR DISCUSSION

Section 4.1   Review of the Exclusion Criteria for Research Productivity Traffic Light (RPTL)

This item was discussed after item 5.1.

The committee discussed potential new exclusion criteria for the RPTL: that staff returning from extended medical leave be excluded from the RPTL for a period of one year following the sickness. The committee also discussed which time period 'extended' should refer to: three, four or six months?

The committee considered the new exclusion criteria to be fair and reasonable. They then discussed whether 'extended' should refer to three, four, or six months' medical leave. Four months represents a little under half the academic year excluding the summer break. However, in cases of staff being unable to work and being on ACC, ACC will only sign employees off for up to three months at a time. This was seen as a good rationale to decide on three months as a period that will should be considered 'extended'.

In reference to the discussion had in 5.1, it was proposed that in cases of either maternity or extended medical leave, perhaps the exclusion criteria could be worded 'programmes have the option to exclude' staff from the RPTL, rather than 'staff are excluded' by default.

Action: Arun Deo to propose these recommendations to Te Komiti Mātauranga (TKM).

For context, it was explained that the RPTL exercise is conducted retrospectively. If a staff member is teaching in a given year, during that given year, the outputs that are considered for inclusion in the RPTL are those that were produced during the previous two years. If someone is on maternity leave or extended sick leave, in the year following the leave, they have the option to be excluded from the RPTL exercise. However, during the year of their return, they need to start producing outputs again. I.e., for full-time degree teaching staff, they need to produce two outputs during the year that they return from leave in order to achieve a 'green-lit tick' in the RPTL the following year. This should be achievable for most staff, as the outputs don't have to be Quality Assured for RPTL purposes.

If TKM approves these changes, the revised criteria will be applied to RPTL from 2025 onwards.

SECTION 5 - NGĀ TUKUNGA | ITEMS TO RECEIVE

Section 5.1   2024 Research Productivity Traffic Light (RPTL) Report

This item was discussed before item 4.1.

The committee received the 2024 RPTL Report, observing that:

- Of the 32 programmes, 28 (88%) are green-lit, four are amber-lit and none are red-lit.
- The School of Creative Industries has all its programmes and staff green lit.

- Some programmes' green lit percentages were affected by new staff, many of whom were either new to academia or research inactive in previous roles.
- Some programmes transitioned from green-lit to amber-lit due to their small teaching cohorts, where slight numerical shifts cause notable RPTL percentage changes.

The committee noted the current RPTL inclusion and exclusion criteria. Permanent or part-time staff with an FTE of at least 0.2 or staff on contracts of 12 months or more and FTE of at least 0.2, who significantly teach and/or supervise degree-level courses in Semester One 2024 are included. Currently only staff returning from maternity leave are excluded from the RPTL (for one year). An additional possible exclusion criteria was discussed in 4.1 above.

It was queried whether if a staff member goes on maternity leave, they are automatically excluded from the RPTL even if they publish while they are on leave. Arun Deo responded that if they do publish while they are on leave, they could be included, but if they are not research active while they are on leave then they could be excluded.

SECTION 6 - KUPU WHAKAMUTUNGA | CLOSING

Section 6.1   Ētahi Kaupapa Anō | Any Other Business

N/A

Section 6.2   Komiti Self-Assessment

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:	1330 h

SUMMARY OF ACTIONS

Agenda Item(s)	Action	Responsible	Outcome
2.3	Seek a memo from Marcus Williams updating the committee on whether there will be a 2024 ITP Research Symposium.	Hadley Brown / Brenda Massey	
2.3	Consult Hinekura Smith, Daisy Bentley-Gray and Marcus Williams on proposed revisions to the Actions under Priority One of the Unitec Research Strategy Action Plan and then report back to the committee.	Hadley Brown/ Tanya White	
4.1	Propose a new exclusion criteria for the RPTL to Te Komiti Mātauranga: that staff returning from extended medical leave be excluded from the RPTL for a period of one year following the sickness; extended leave being defined as a period of medical leave lasting three months or more.	Arun Deo	

| | Ensure the RPTL guidelines are explicit that programmes have the <u>option</u> to exclude staff returning from maternity or extended medical leave, as some staff may still produce outputs during these types of leave, and it would therefore be beneficial to include them in the RPTL. | Arun Deo | |

MATTERS ARISING

Agenda Item(s)	Action	Responsible	Outcome
2.3	Seek a memo from Marcus Williams updating the committee on whether there will be a 2024 ITP Research Symposium.	Hadley Brown / Brenda Massey	Complete – on agenda
2.3	Consult Hinekura Smith, Daisy Bentley-Gray and Marcus Williams on proposed revisions to the Actions under Priority One of the Unitec Research Strategy Action Plan and then report back to the committee.	Hadley Brown/ Tanya White	In progress
4.1	Propose a new exclusion criteria for the RPTL to Te Komiti Mātauranga: that staff returning from extended medical leave be excluded from the RPTL for a period of one year following the sickness; extended leave being defined as a period of medical leave lasting three months or more.	Arun Deo	Complete
	Ensure the RPTL guidelines are explicit that programmes have the option to exclude staff returning from maternity or extended medical leave, as some staff may still produce outputs during these types of leave, and it would therefore be beneficial to include them in the RPTL.	Arun Deo	Complete

Unitec New Zealand Limited

Meeting of URC – Te Komiti Rangahau o Unitec | Unitec Research Committee

Date of Meeting: 2024-08-08

Title	Unitec 2023 Research Annual Report
Provided by:	Marcus Williams, Director, Tūāpapa Rangahau
Authored by:	Arun Deo & Marcus Williams, Tūāpapa Rangahau
For:	APPROVAL

Recommendation/s

That the URC endorses the Unitec 2023 Research Annual Report.

Purpose

Accompanying this memo is the Unitec 2023 Research Annual Report, produced by Tūāpapa Rangahau; partnering research and enterprise. It provides a comprehensive summary of Unitec's Research and Enterprise activity for the 2023 year.

Background

The URC now Te Komiti Rangahau o Unitec, commissioned this annual report on research, around the time degrees began to first emerge at Unitec in the 1990's.

Next Steps

After the approval, this report will be made available to the internal stakeholders of Tūāpapa Rangahau.

Contributors

» Arun Deo – Research Advisor, Tūāpapa Rangahau.
» Marcus Williams – Director, Tūāpapa Rangahau

Attachments

Please refer to the attachment: Research Annual Report 2023.pdf

1

UNITEC RESEARCH ANNUAL REPORT 2023

Prepared by Tuapapa Rangahau, Partnering Research and Enterprise

Photo Description: *Sirenophila macquariensis*
Photo Credit: Professor Peter de Lange

Unitec

Table of Contents

List of Figures

List of Tables

1   Introduction

Whāia te iti kahurangi, ki te tuohu koe me he maunga teitei.

Seek the treasure you value most dearly: if you bow your head, let it be to a lofty mountain.

Despite the disruption created by Te Pūkenga, its creation and now imminent dismantlement, the continued leadership, dedication and sheer drive of the committed research staff and supportive managers at Unitec largely prevailed where research is concerned, to produce the outcomes summarised in this report. Senior Leadership, Directors of Research Centres, Research Leaders in Schools, Principal Investigators of funded projects, committee members, teaching researchers and Tūāpapa Rangahau (the research office) colleagues rose, as they always do, to face every challenge of a sector undergoing profound reform and the relentless disruption which that brings. These pages contain the data and the narratives of a research success story in the context of the Aotearoa New Zealand vocational education sector, which continues to be something we should all be proud of. This document reports on the fourth year of the Unitec Research Strategy 2020–2024.

Associate Professor Marcus Williams

Director Research and Enterprise

Tūāpapa Rangahau; Partnering Research and Enterprise

2   Executive Summary

This research report is structured around the Unitec Research Strategy 2020–2024 (Section 8.1). The strategy responds strongly to Te Tiriti, Unitec's values, the purpose statements coming out of the Reform of Vocational Education (RoVE) and Te Pūkenga. The strategy has three Priorities and three related Goals, with Key Performance Indicators (KPIs) designed to measure progress toward these goals. They are:

» **Priority One –** Research that is aligned with Te Tiriti o Waitangi.
Goal One: Unitec has strong Māori research leadership, capability, excellence, partnerships, processes and governance.

Report highlights:

- ⤷ Ngā Wai a Te Tūī (NWaTT), Māori and Indigenous Research Centre generated $499,122 external research income (ERI), contributing 34% of the total ERI at Unitec in 2023.
- ⤷ Māori academics produced a total of 20 research outputs in 2023 and Pacific academics produced 18 research outputs.
- ⤷ A/P Hinekura Smith received multiple prestigious awards, including the Fulbright NZ Ngā Pae o Te Māramatanga Scholars award for a five-month residency in the United States, became a national finalist for the Ako Aotearoa Tertiary Teaching Excellence Awards, received the Te Kōpūnui Māori Research award and the Skinner Fund award from the Royal Society Te Apārangi for Māori research support, and was awarded the Michael King Writers Residency for publication.
- ⤷ Seven postgraduate scholarships were awarded to Māori students.

» **Priority Two –** A flourishing, collaborative research culture.
Goal Two: The diverse people of Unitec have fit-for-purpose capability development and support toward sustainable, collaborative research productivity and excellence.

Note: The highlights, in bold font, represent the KPIs of research at Unitec.

Report highlights:

- ⤷ Building staff research capabilities involved organizing eight workshops and retreats in 2023, with a total participation of 232 staff members.
- ⤷ Early Career Researcher (ECR) Fund – five recipients supported.
- ⤷ ECR Fellowships – two recipients supported.
- ⤷ **Research outputs – a total of 441 research outputs (335 quality assured and 106 non-quality assured, an average of 2.09 quality-assured outputs to FTE of degree teaching staff).**
- ⤷ **85 student-integrated research outputs** (research outputs where the co-authors with staff, were current or recent Unitec students).
- ⤷ A wide range of staff support products were available to staff in addition to the above 2023. These included, Research Dissemination Funding the Collaborative Research Dissemination Fund, the Wairaka: Natural Environment, History and Culture Fund, the Student-Integrated Research Output Fund, and the Conference Seed Fund.
- ⤷ **Research Productivity Traffic Light (RPTL) – 88% of degree programmes green-lit.**
- ⤷ Ethics – 48 applications approved.
- ⤷ Postgraduate scholarships – 46 scholarships awarded.

» **Priority Three –** Partnered research and innovation.
Goal Three: *Research that is industry/community partnered and promotes innovation.*

<u>Report highlights:</u>

- ⇗ **39 industry-funded projects.**
- ⇗ 30 proposals for external funding submitted: 17 successful.
- ⇗ A total of $598,499 of grants won.
- ⇗ **$1,460,679 as total external research income (ERI).**
- ⇗ The Cybersecurity Research Centre contributed $153,933 as ERI.
- ⇗ The Applied Molecular Solutions Research Centre contributed $100,210 as ERI.
- ⇗ The Environmental Solutions Research Centre contributed $436,991 as ERI.
- ⇗ Four Research Centres contributed 82% of Unitec's total ERI for 2023, while the Schools contributed 18%.
- ⇗ Five industry scholarships awarded in which students are partnered with community or companies.
- ⇗ 10 students participated in the 3-minute thesis competition.
- ⇗ In 2023, Unitec and Manukau Institute of Technology hosted an inaugural Pacific Research Symposium, themed "Pacific Success in Vocational Education: Past and Future."
- ⇗ Unitec ePress published quality-assured research outputs for 50 Unitec staff members and 106 staff members from other institutions in Te Pūkenga.

The Research Strategy Action Plan (Section 8.2) provides a detailed breakdown of how we will achieve the three goals and how the six <u>KPIs</u>[1] measure our progress toward these goals.

The six KPIs for research are:

1. **Rangahau Māori Productivity** – productivity in this context is aggregated as quality-assured (QA) outputs by Māori staff, funded projects with named Māori staff, Māori supervisors, Level 9 and 10 Māori postgraduate scholarships, QA outputs that demonstrate excellence in Vision Mātauranga, accredited Vision Mātauranga and Kaupapa Māori rangahau professional development achievements, and rangahau Māori research stories in the media.

2. **Quality Assured (QA) Research Outputs** – recognised research outputs that have been through a peer-review process or have been specifically commissioned. This is presented as a ratio of counts of the number of QA outputs to FTE of degree teaching staff.

3. **Research Productivity** – measure of staff teaching on degree programmes who meet the agreed levels of research in the Research Productivity Traffic Light. This is measured as the ratio of research-active staff to the total number of staff on a degree programme.

4. **External Research Income (ERI)** – income received from external sources for research purposes calculated on the project milestones achieved and spending to date in a particular year. This is measured in dollars.

5. **Industry-Funded Projects** – research and enterprise projects Unitec is receiving funding for, where the services Unitec is providing are applied contract research or consultancy from all funders, excluding any governmental contestable funding sources. This is measured as a count of the number of projects.

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[1] This hyperlink takes you to Unitec's Power BI Portal. You will need to log into this portal using your own credentials, and once you are into Power BI refer to the **Research Dashboard**.

6. **Student-Integrated Research** – a measure of student input into staff-engaged research including authorship, contributions to wānanga, creative outputs, studentships, research-assistant positions, awards or other contributions (as defined by the PBRF). This is measured as a count of the number of research outputs.

The first section of the report relates to Priority and Goal One, the second to Priority and Goal Two and the third to Priority and Goal Three.

3   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 Te Tiriti o Waitangi. In this way, Unitec will exemplify leadership in Māori research in the ITP 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.

This section of the report highlights:

>> The activities of Ngā Wai a Te Tūī, Māori and Indigenous Research Centre
>> Postgraduate examinations (including completions by Māori and Pacific students)
>> Māori postgraduate scholarship
>> Research outputs by Māori academics and research outputs by Pacific academics.

It must be acknowledged that the loss of research-active Māori staff, along with the associated Kaupapa Māori expertise, has been a regrettable aspect of the years 2022 and 2023, reflecting a concerning trend regarding the strategic aspirations mentioned earlier. While impending changes to the Performance-Based Research Fund (PBRF[2]) are anticipated to benefit Māori research, in 2023 they have spurred universities to actively recruit such staff, adversely affecting Te Pūkenga amid a recruitment freeze and other disruptions.

In 2023:

>> Seven Māori staff, comprising a total of 174 staff, were involved in teaching degree programmes.
>> Three Māori staff, out of 89 staff, were listed on the supervisor's register.
>> Māori staff contributed to 5% of the total research outputs.

3.1   Ngā Wai a Te Tūī (NWaTT), Māori and Indigenous Research Centre

The year 2023 presented significant challenges to the Centre as part of the wider ecosystem of research across Te Pūkenga. Decisions around how research would be positioned across the network were delayed, which made it difficult to plan and apply for funding amidst the ongoing uncertainty. As a result, opportunities were missed for funding and securing experienced Māori staff to build our capacity. Despite a greatly decreased academic capacity within the Centre, NWaTT continued to attract research grants and has managed to grow its funding base, which has enabled an increase in academic and professional full-time equivalent (FTE) staff.

NWaTT enthusiastically appointed Tanya White, a dedicated Unitec staff member, PhD candidate and kaitiaki taiao (environmental caretaker), to the position of Māori Postgraduate Advisor and Lecturer (Research). Tanya brings extensive networks and a steadfast dedication to advancing Kaupapa Māori research. Her role entails fostering postgraduate co-supervision partnerships, contributing to the Unitec Research Ethics Committee (UREC) and the Postgraduate Research and Scholarships Committee (PGRSC), as well as aiding in research development and funding proposals.

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[2] In early 2024, TEC decided to cancel the 2026 PBRF, leaving the future of the next PBRF uncertain.

The current staffing is outlined here:

» Assoc. Prof. Hinekura Smith (Te Rarawa, Ngā Puhi), 1FTE, Senior Lecturer, Senior Researcher, Centre Director
» Tanya White (Ngāti Hine), 1FTE, Lecturer, Māori postgraduate advisor.
» Irene Kereama-Royal, 0.6FTE Research Partner
» Dr Nalani Wilson-Hokowhitu (Marsden Fast Start) – novated to Victoria University, Wellington March 2024.
» Kim Penetito (Ngāti Hauā), 0.2FTE, Contractor to Teaching and Learning Research Initiative (TLRI) project 2023-25.
» Assoc. Prof. Jani Wilson, 0.1FTE, Project Contract.
» Assoc. Prof. Donna Campbell, 0.1FTE, Project Contract.
» Assoc. Prof. Byron Rangiwai (Tūhoe), 0.2FTE, Research Contract.

The Centre is funded by external research projects, and it is through the critical collaboration with external partnerships that NWaTT aims to continue its self-sustainable viability. Recognition is extended to these partnerships and organisations who funded research projects in 2023–24:

» Teaching and Learning Research Initiative (TLRI)
» Ngā Pae o te Māramatanga
» Ako Aotearoa.

3.1.1 2023 Highlights
 Some highlights from 2023 were the recognition of several awards to NWaTT kaimahi and tauira.

» With the support of NWaTT colleagues and Tūāpapa Rangahau, Assoc. Prof. Hinekura Smith:
  • Received the 2023 Fulbright NZ Ngā Pae o Te Māramatanga Scholars award to facilitate a five-month research and teaching residency in the United States. This included two months at the University of Washington, Seattle, and three months at the University of Hawai'i, Oahu.
  • Became a national finalist for the Ako Aotearoa Tertiary Teaching Excellence Awards.
  • Received Te Kōpūnui Māori Research Award from the Royal Society Te Apārangi for early career excellence in Māori research.
  • Received an award from the Royal Society Te Apārangi's Skinner Fund to support Māori research.
  • Became the recipient of a Michael King Writers Residency award for publication.

» Two MAI ki Wairaka master's students received Hine Kahukura New Horizons for Women Research Awards.
  • Irene Farnham from Social Practice was granted a $10,000 research award to aid her master's project focusing on Māori women in leadership.
  • Tonina Ngatai from Creative Practice received an education award to support her creative-practice postgraduate work.

Figure 1: A/P Hinekura Smith with MAI ki Wairaka students Irene Farnham and Tonina Ngatai.

3.1.2   The 2023 active research projects include:

» **MAI ki Wairaka**: The Māori and Indigenous (MAI) postgraduate student programme is a nationally organised network comprising key sites throughout Aotearoa New Zealand that supports student success. MAI ki Wairaka was established in 2020 – Unitec was the first ITP-situated MAI site in Te Kupenga o MAI national network – and is funded by Ngā Pae o te Māramatanga, Aotearoa New Zealand's Māori Centre of Research Excellence. MAI ki Wairaka works closely with Unitec's MAIA whānau to support MAI postgraduate students through Tuhi MAI (Friday academic writing sessions), guest speakers, workshops and writing retreats, and attendance at the annual MAI conference. The programme promotes capability-building outcomes and focuses on the specific student-support requirements and models to accelerate and foster the success of MAI postgraduate students.

> Academic lead: Tanya White
> 2023 funding: $5,000 (reduced from $12,000 due to the uncertainty at Te Pūkenga)
> Funding Agency: Ngā Pae o te Māramatanga

» **Toiora Hauora: Developing Māori arts-based pedagogy for whānau wellbeing:** An inter-institutional scoping research collaboration funded by Nga Pae o te Māramatanga. Toiora Hauora is a Kaupapa Māori arts-based collaboration to theorise the pedagogy of Māori creative practices that support flourishing Māori whānau wellbeing. This innovative research centres Māori arts-based practice 'as teacher', bringing together three established Māori arts scholar-practitioners (A/P Hinekura Smith, A/P Donna Campbell and A/P Jani Wilson) to expand the currently under-researched field of Māori pedagogies, and to highlight the critical role of Māori arts practice and pedagogy to grow well and flourishing Māori futures.

> Principle investigator: A/P Hinekura Smith
> 2023 funding: $60,000
> Funding agency: Nga Pae o Te Māramatanga
> Completion: June 2024

» **Toi ora, Reo ora, Whatuora:** a two-year Teaching and Learning Research Initiative (TLRI) funded educational research project across three Māori-immersion kura settings in central and west Auckland to address the following research question: *How does Whatuora, a Kaupapa Māori arts-based pedagogy, support and story the intergenerational revitalisation of Māori language, culture, stories and whānau aspirations, across three Māori-medium settings?* This project is a unique intergenerational wānanga arts-based project.

> Principle investigator: A/P Hinekura Smith
> 2023 funding: $224,650 (2023–25)

Funding agency: Teaching and Learning Research Initiative (TLRI)

» **Storylines of Pacific Women:** A two-year Marsden Fast Start project to explore the complex roles that women have played in voyaging, migration, movement, identity, places and displacements, diasporas and connections. The research hopes to restore the legacies of legendary Pacific Island women voyagers and navigators by retracing the voyaging storylines of Pacific women with a commitment to researching the connections between Hina/Hine/Ine/Sima/Sina and Nim'anoa throughout Oceania.

   This project was novated to Victoria University Wellington following Dr Nalani Wilson-Hokowhitu's appointment as Assoc. Prof.

» **Apple in Kura Evaluation (AKE):** A six-month qualitative evaluation is underway for a co-funded Apple in Kura technology project aimed at enhancing the skills of Māori kaiako in kura kaupapa. The project is slated for completion by July 2024.

   Principle investigator: A/P Byron Rangiwai (Contractor), Tanya White
   2023 funding: $11,686.
   Funding agency: Ako Aotearoa

» **International Teaching Artist Collaborative (ITAC):** This funding supported four Indigenous women's arts exchanges between Aboriginal knowledge holders of possum-skin cloaking and Māori cloak weavers. All four individuals are either artists, teachers and/or researchers, who serve as leaders within arts communities of practice. Hosting events both in Tāmaki Makaurau Auckland and rural Victoria, Australia, provided a platform to showcase the outcomes of the collaborative exchange, which delved into the practice, pedagogy and activism involved in revitalising once-endangered identity symbols. This served as a potent locus for social-justice advocacy and community transformation. This project is expected to be completed in September 2024.

   Principle investigator: Assoc. Prof. Hinekura Smith and Dr Kim Penetito
   2023 Funding: $15,000
   Funding agency: International Teaching Artist Collaborative (ITAC)

3.1.3 Vision Mātauranga

Vision Mātauranga, one of the key drivers of NWaTT, is strongly embedded in all of the Centre's work. An example is the project Ka Tū Te Rā (a Toi Māori and Science innovation to return woven sails to voyaging waka in Aotearoa), with Co-Principal Investigators Assoc. Prof. Hinekura Smith, Assoc. Prof. Donna Campbell (Waikato University), Catherine Smith (Otago University) and Ranui Ngarimu. This project has secured 12-month funding of $150,000, with contracting due in August 2024 and project completion in September 2025. The funding agency for this initiative is the Ministry of Business, Innovation and Employment (MBIE).

3.1.4 Summary of partnerships and student activity in 2023

The active research projects and student activities stated above demonstrate the breadth of partnerships with various stakeholders in 2023.

The restabilising of the Centre has meant investing time into re-establishing relationships. Although Prof. Terri-Ann Berry (former Director of the Environmental Solutions Research Centre) has left Unitec, NWaTT has three research-proposal opportunities to maintain relationships with Prof. Berry and into

the research sector. This includes a proposal to develop a Smart Ideas project for MBIE funding around using harakeke fibres as geotextiles.

MAI ki Wairaka, the Māori and Indigenous postgraduate student programme, is a good example of student engagement at NWaTT.

3.1.5 External research income

In total, Ngā Wai a Te Tūī generated $499,122 in external research income (ERI) in 2023, from seven active contracts (with a contract value of $1,144,521), contributing 34% of the total ERI at Unitec.

3.2 Postgraduate examinations and completions

Tūāpapa Rangahau manages and administers the examination of all 90-credit and higher theses for Unitec's master's and doctoral programmes. Figure 2 shows the number of theses (90 or more credits) submitted for examination since 2011. The submissions in 2023 are notably lower compared to previous years. This decline is attributed to the closure of some postgraduate programmes in 2019 and 2020, with the Master of Osteopathy closing in 2021. Additionally, disruptions caused by the Covid-19 pandemic led some students to pause their studies.

The following programmes with 90-credit and higher theses are currently active:

» Master of Applied Practice (Social Practice)
» Master of Architecture (Professional)
» Master of Computing
» Master of Creative Practice
» Master of Landscape Architecture.
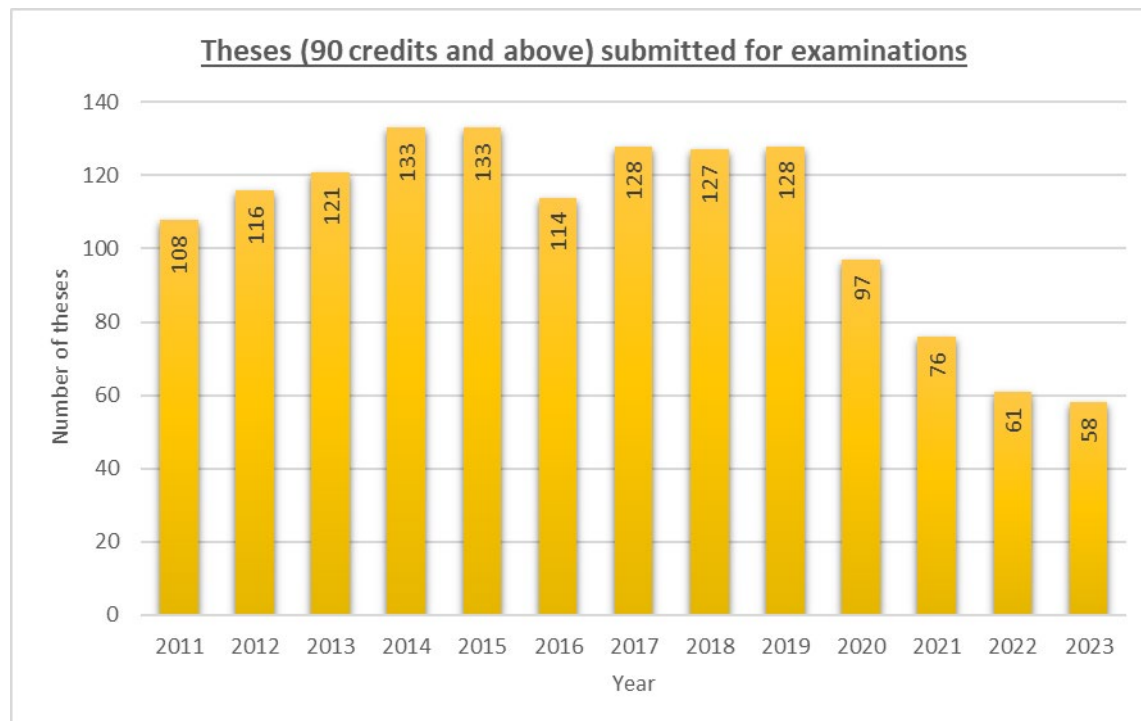
Figure 2: Theses (90+ credits) submitted for examination.

3.2.1 Completions by Māori and Pacific students

In 2023 there were 61 successful completions of master's thesis examinations (90 or more credits). Of these, four completions were by students who identified as Māori, and 12 by students who identified as Pacific.

The thesis submission and completion figures differ because not all submissions from a particular year are completed within that year; some completions pertain to submissions from previous years.

3.2.2 Dean's Award for A+ postgraduate students

In 2023, there were two master's completions with an A+ grade, both from the Master of Creative Practice programme. Notably, one of these graduates was of Pacific origin. The award ceremony was attended by whānau, supervisors and programme leaders.

3.3 Māori Postgraduate Scholarship

In 2023, six Māori Postgraduate Scholarships valued at $7,000 each were awarded to the following recipients:

  » Deb Cole – Master of Applied Practice (Social Practice)
  » Atarangi Anderson – Master of Creative Practice
  » Tonina Ngatai – Master of Creative Practice
  » Katyana Sitters-Neale – Master of Architecture (Professional)
  » Victoria Carran – Master of Architecture (Professional)
  » Pipiwharauroa Campbell – Master of Business.

Apart from the six scholarships above, Denise Messiter, a Māori student from the Master of Applied Practice (Social Practice) programme, received a postgraduate scholarship. Her thesis topic is "Poipoia te Mauri Kia Puāwai te Mauri o te Whānau – the Poutama, is it Working in Hauraki?"

The Poutama is a wānanga deeply rooted in mātauranga Māori. Denise developed the Poutama with the guidance of her kuia and koroua from Hauraki and has been facilitating workshops in the region for over 20 years. The purpose of the wānanga is to support whānau in healing and recovering from mahi tūkino, specifically their experiences of family and sexual violence.

Figure 3: Denise Messiter, a postgraduate scholarship recipient.

In June, Denise was appointed as an Officer of the New Zealand Order of Merit during the 2022 Queen's Platinum Birthday Honours, recognising her services to Māori and health. Additionally, she was recently selected to serve on the Māori Advisory Group alongside the Hon. Marama Davidson, the Minister for the Elimination of Family and Sexual Violence, as announced by Cabinet's Appointments and Honours Committee.

3.4 Research outputs by Māori and research outputs by Pacific academics

This section highlights the research productivity of Unitec's Māori and Pacific academics, showcasing their research contributions within the institution. More thorough analysis of research productivity is presented in Section 4.3.

Figure 4 provides a visual representation of the research outputs by Māori academics. It's disheartening to witness the year-on-year decline in research outputs by Māori academics, primarily because our Māori researchers are being recruited by other institutions. The loss of talented researchers not only affects the academic community at Unitec but also potentially diminishes the diverse perspectives and contributions they bring to the broader academic landscape. Addressing this issue will require a multifaceted approach, including strategies to retain Māori researchers by providing a supportive and conducive work environment and competitive remuneration packages.

Investing more resources and offering professional-development opportunities to Māori academics in research could lead to significant growth in the future.
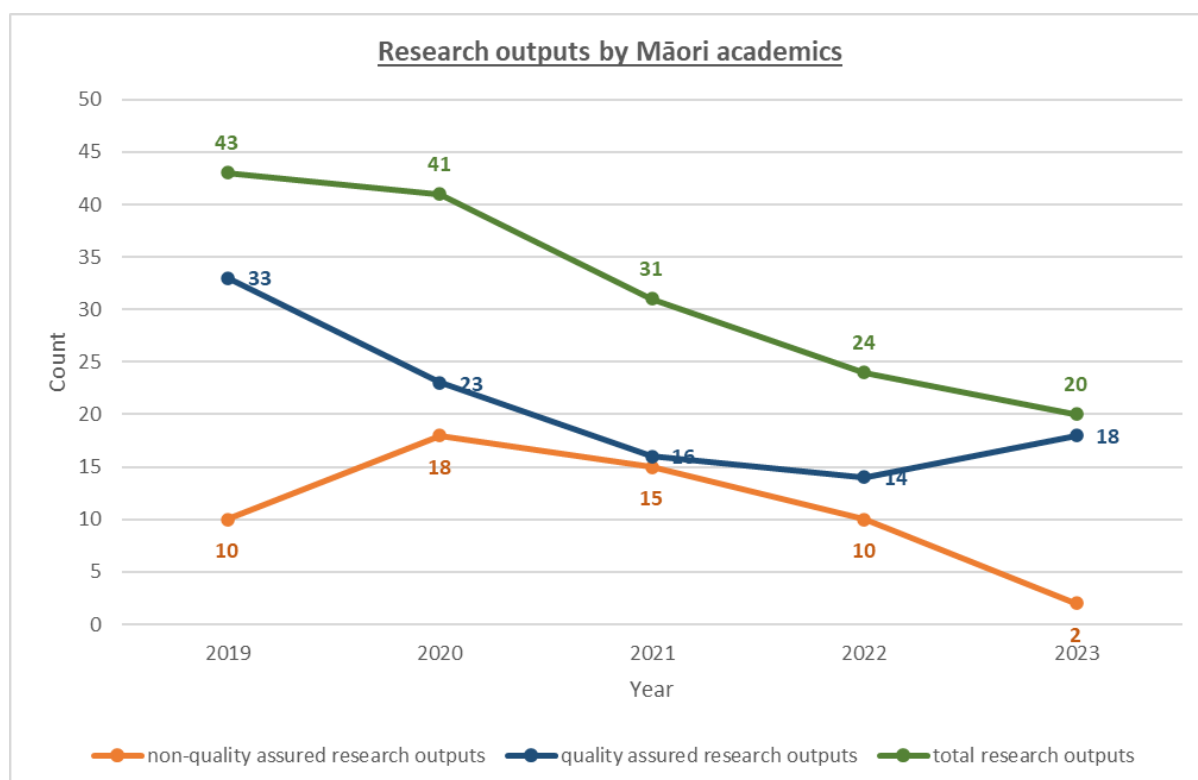

Figure 4: Research outputs by Māori academics.

Figure 5 depicts the research outputs by Pacific academics. There was a decline in outputs in 2022 followed by a gradual increase in 2023. However, this increase is not substantial. Investing more resources and offering professional-development opportunities to Pacific academics in research could lead to significant growth in the future.
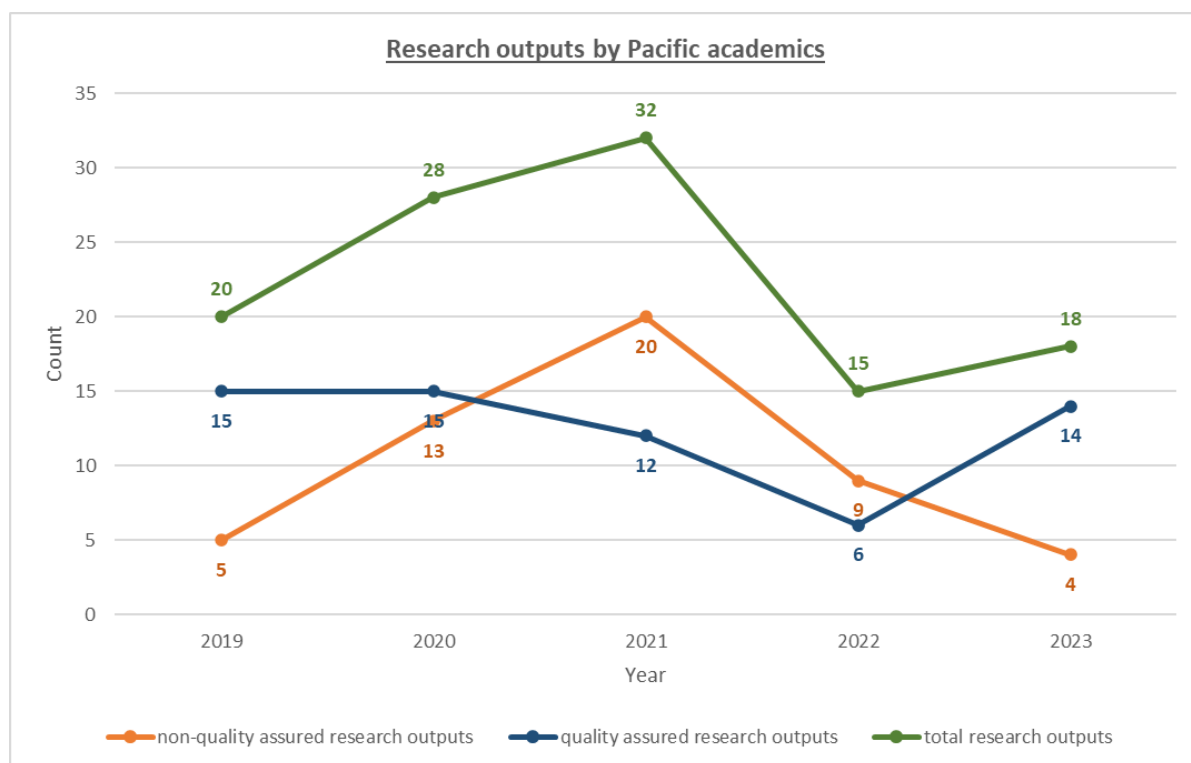

Figure 5: Research outputs by Pacific academics.

Additionally in 2023, six Pacific staff members were involved in teaching degree programmes out of a total of 174 staff, while three Pacific staff were on the supervisors' register out of 89 staff, and Pacific staff contributed to 4% of the total research outputs.

4 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.

This section of the report highlights:

» Building staff capability in research
» Supporting our researchers – internally funded research projects
» Focusing on research productivity – research outputs
» Research dissemination support to Schools
» Professoriate
» Research Productivity Traffic Light (RPTL)
» Research partnering
» School research plans
» Performance-Based Research Fund (PBRF)
» Ethics
» Postgraduate studies and student-engaged research

4.1 Building staff capability in research

Unitec supports "engaged and inspired staff" who have the capability and expertise to address and respond to a wide range of social, industrial and environmental challenges, including through research activity. Capable staff foster the development of "highly employable lifelong learners" who will contribute to a "highly skilled, innovative and enterprising New Zealand workforce".

In 2023, Tūāpapa Rangahau continued to prioritise raising the capability of Unitec staff, particularly those teaching on degree-level programmes, to undertake research, disseminate their research findings, and attract external research and development funding to progress their initiatives.

Unitec researchers are at various stages in their research careers, therefore capability-development initiatives are tailored to Unitec staff according to whether they are new and emerging (beginner), early career (well published, intermediate) or advanced (senior leader, professoriate) researchers. The capability-development initiatives are also targeted to respond to the requirement to lift, and to maintain at a high level, Unitec's research productivity (as measured by the Research Productivity Traffic Light [RPTL] in Section 4.6).

4.1.1 Developing our staff – Research Professional Development series

Tūāpapa Rangahau's Research Professional Development series is designed to improve the level of staff research capability, to encourage and assist staff to disseminate the results of their research and to link staff to industry-partnered opportunities. In a significant development in 2023, in light of increased efforts to support institutional collaboration opportunities with Manukau Institute of Technology (MIT), some of these opportunities were offered to MIT staff as well. A part-time staff member at Tūāpapa Rangahau, in the role of Research Professional Development Liaison, organises the series each year and facilitates several of its components.

Figure 6 shows the numbers of staff who enrolled in research workshops and writing retreats that were offered in 2023. As in the past, uptake in 2023 indicates high levels of staff engagement.
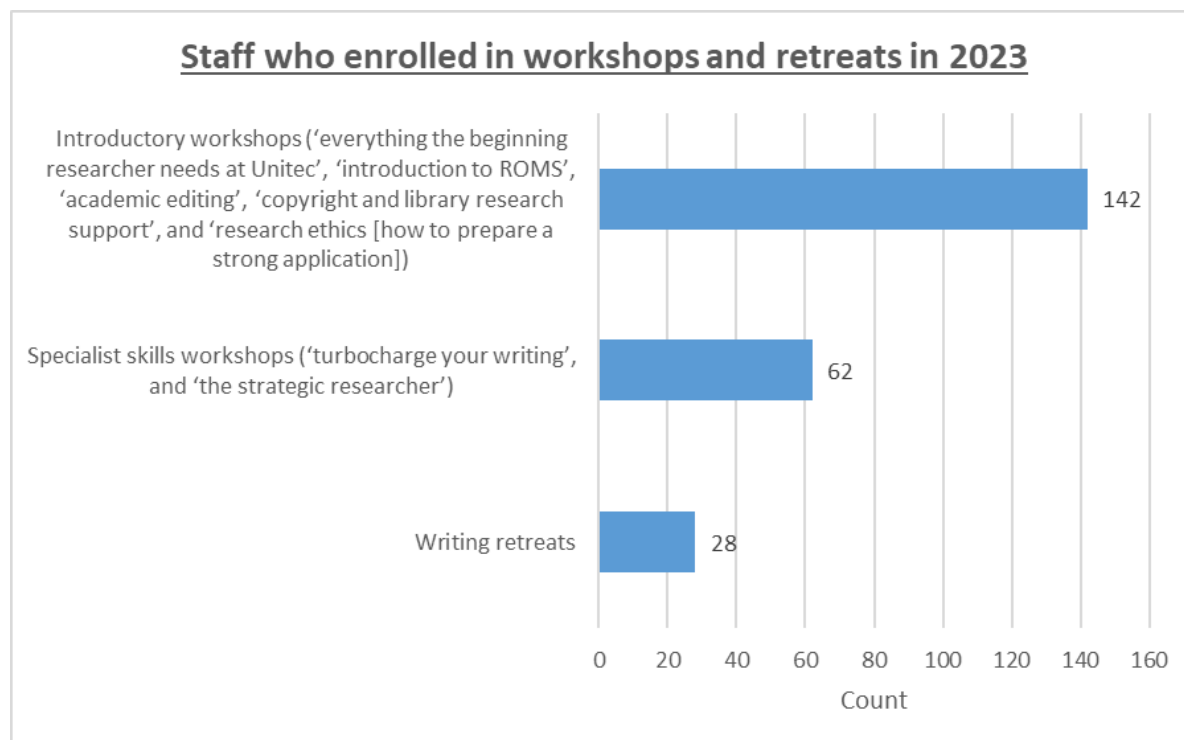
Figure 6: Staff who enrolled in workshops and retreats in 2023.

Writing retreats require an application and selection process, and allow staff members to devote dedicated time and energy to producing research outputs in a supportive and collegial, yet intensive, environment. Early indications are that specialist skills workshops, alongside the writing retreats, led to increased levels of research activity and output dissemination. These events also serve to lift staff morale and inspire greater confidence that research is supported and valued at Unitec, and at MIT.

The introductory workshops were especially plentiful, and popular, in 2023 and serve an important induction function. Figure 7 shows the numbers of staff who enrolled in introductory workshops:

Staff who enrolled in the introductory workshops offered in 2023

Copyright and library research support, 14, 10%

Academic editing, 24, 17%

Introduction to ROMS, 25, 18%

Research ethics (how to prepare a strong application), 49, 34%

Everything the beginning researcher needs at Unitec, 30, 21%
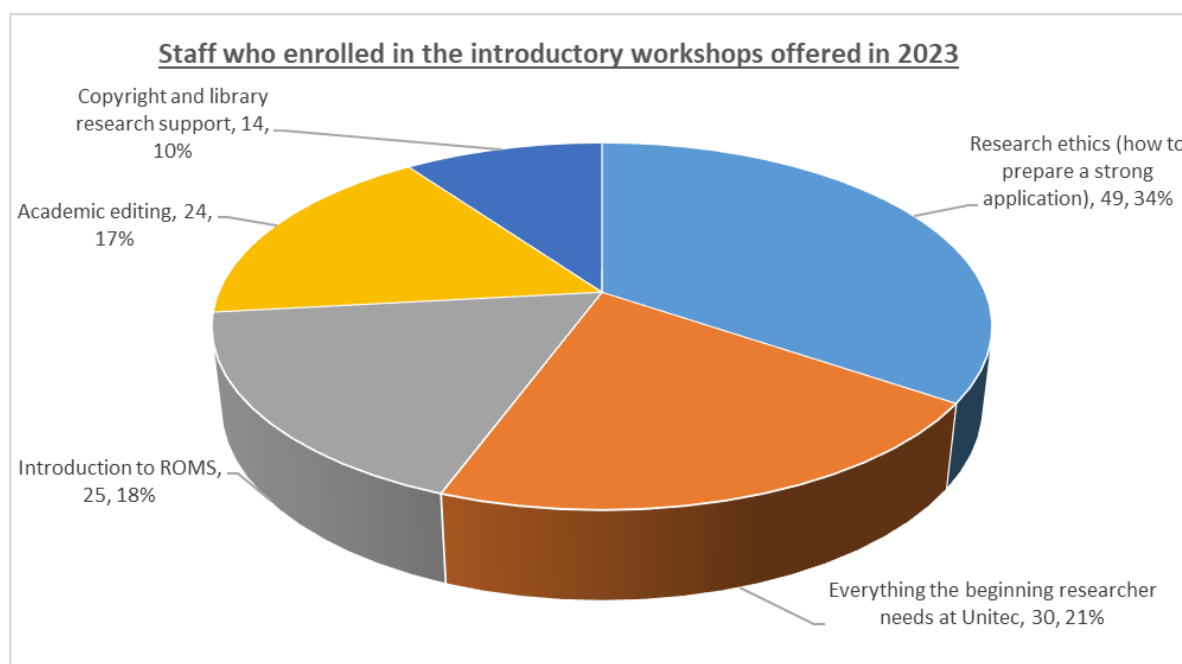
Figure 7: Staff who enrolled in introductory workshops offered in 2023.

Seven staff members completed the Successful Postgraduate Supervision course in 2023. This blended and 'flipped' course is very highly regarded and serves as a permanent resource for postgraduate supervision practice. Two additional courses that were on offer (online) in 2023 included Writing a Successful Grant Application and Managing a Research Contract. Course participation is largely self-managed; any Unitec staff member can self-enrol to access course resources and learning activities.

Evaluation data from the 2023 Research Professional Development series indicates a highly positive reception and perceived benefits. For example, participants in the writing retreats provided feedback such as the following: *"Great group of fellow researchers. Wonderful venue and quiet space to focus and get absorbed in the data. These events are so helpful and important to completing quality research projects"*, and *"This was an important way to be taken out of daily life and placed in a great routine of writing without having to think about cooking and other chores. It was also wonderful to meet with staff in different disciplines that I would normally meet in shorter sessions or not at all. Taking time over the meal breaks to discuss writing and meaningful thinking was a pleasure. This opportunity is a must for research output for Unitec."*

4.1.2 Writing support

Tūāpapa Rangahau continued to offer writing support to staff members in 2023, through the services of a contractor, to assist with preparing research texts for publication. Staff members receiving writing support are also guided through the process of submission to journals where necessary and are given help with responding to reviewer feedback when requested. This service is particularly valuable for new and emerging researchers, and researchers from programmes not always related closely to academia such as the Bachelor of Applied Technology (BAT). This offering represents a worthwhile investment in Unitec's staff in supporting them towards achieving quality-assured research outputs. In 2023, assistance was given for one journal article, one research report, and a book of interviews with visual artists.

4.2 Supporting our researchers – internally funded research projects

In 2023 Unitec supported its researchers with three types of internal funding for research projects. These were the Early Career Researcher Fund, Early Career Researcher Fellowships and Early Career Researcher Support – Return from Parental Leave Fund.

4.2.1 Early Career Researcher (ECR) Fund

The ECR contestable fund supports both emerging and established early career researchers at Unitec to develop their capability, capacity and career progression.

In 2023 Unitec held one annual contestable funding round for staff-initiated research projects: The Early Career Researcher (ECR) Fund. Applications for ECR funding were appraised by a Grants Advisory Committee, a sub-committee of the Unitec Research Committee.

In 2023 five ECR projects were awarded contestable funding totalling $46,150. The 2023 awardees are listed in Table 1 below, along with selected highlights from some of the funded projects.

Lead Researcher	School	Project name
Dr Irene Ayallo	School of Healthcare and Social Practice	A participatory action study investigating the views of 'Youth of African Background' on cultural-identity construction and the significance of creating cultural spaces.
Dr Mary Yan	School of Healthcare and Social Practice	Probiotic effects of yacon extract residual saccharides on gut *microbiota*: a preliminary study.
Dr Caralyn Kemp	School of Environmental and Animal Sciences	Social benefits of dog parks for dogs.
Dr Sarah Wells	School of Environmental and Animal Sciences	A genomic investigation of hybridisation in *Naultinus* geckos.
Madhusudan Vyas	School of Healthcare and Social Practice	Artificial intelligence-based software solution to predict individual outcomes of targeted radiotherapy.

Table 1: 2023 Early Career Researcher Fund projects supported.

While several of these ECR projects are still underway, a few 2023 highlights to date are:

» Dr Irene Ayallo – *A participatory action study investigating the views of 'Youth of African Background' on cultural-identity construction and the significance of creating cultural spaces.*
The research project aims to explore cultural-identity construction among African migrant and refugee youth in Aotearoa New Zealand. It seeks to identify the challenges these young people face as they navigate the culture of their birth country and their parents' countries of origin. The study will highlight both positive and negative factors influencing cultural-identity construction and examine ways to enhance positive influences and address adverse impacts. Specifically, it hypothesises that creating a cultural space may help these youth safely negotiate their multiple identities. The study will explore the nature of such a space with youth participation.

» Dr Mary Yan – *Probiotic effects of yacon extract residual saccharides on gut microbiota: a preliminary study.*
The primary aim of this research project is to investigate the probiotic effects of yacon extract residual saccharides on gut microbiota through in vitro fermentation with cow faecal

microbiota. Specifically, the study will examine changes in the populations of selected bacteria, including bifidobacteria, lactobacilli and clostridia, following 8-hour and 24-hour anaerobic fermentation periods. The probiotic potential of yacon extract residual saccharides will be evaluated and compared to control samples.

» **Dr Caralyn Kemp** – *Social benefits of dog parks for dogs.*
The research project aims to:

- Investigate the prevalence of positive and negative interactive behaviours between dogs, their owners and human strangers across four different dog parks.
- Compare observational data with owners' perceptions of the benefits of the dog park for both their dogs and them.
- Compare social behaviours in different dog parks to determine whether the park's design influences the behavior of owners and the socialisation of dogs within these spaces.

» **Dr Sarah Wells** – *A genomic investigation of hybridisation in* Naultinus *geckos.*
The primary objective of this study is to determine species' boundaries and identify a potential hybrid zone in *Naultinus* around the Bay of Islands area. This research is motivated by the needs of community conservation groups seeking to source *Naultinus grayii* for reintroduction on islands in the Bay of Islands. Given the urgency of this conservation effort, providing precise information on the locations of potential hybrid zones is crucial to ensure they are avoided.

» **Madhusudan Vyas** – *Artificial intelligence-based software solution to predict individual outcomes of targeted radiotherapy.*
The goal of this project is to develop a novel semi-automatic software solution for assessing whole-body tumour burden in prostate cancer patients and accurately predicting the outcomes of targeted radiotherapy. This advanced machine learning-based software aims to assist in planning suggested treatment outcomes. In advanced stages, prostate cancer frequently spreads to the bone, lymph nodes and soft tissues, complicating treatment planning. A specific receptor expressed by metastatic prostate cells can be utilised for both diagnosis and planning radionuclide-based treatments. The software will employ receptor-based imaging and integrate statistical modelling to predict treatment outcomes.

4.2.2   Early Career Researcher (ECR) Fellowships

Each year Tūāpapa Rangahau offers Early Career Researcher (ECR) Fellowships to Unitec researchers. These fellowships aim to support and strengthen the establishment and development of ECR careers and foster new research leadership. ECRs play a crucial role in renewing the research culture at Unitec and are poised to become future leaders in research and enterprise in the institution.

Two types of fellowships are available: one to support the implementation of research projects and another to support professional research and research leadership development.

In 2023 two ECR fellowships worth $15,000 each were awarded to the following two academics:

» **Min Hall**, from the School of Architecture, leads Project Pātūtū, a research initiative launched in 2019. Its aim is to tackle the unsustainable carbon emissions of the construction industry by exploring the potential of prefabricated timber and straw wall-panels for mainstream construction. Both postgraduate and undergraduate students from the School of Architecture have been involved in the research since its inception. As part of the Resource Matters elective, students contributed to designing and building prototype models of wall panels and a one-third-scale structure, which were showcased at a trade show exhibit. Additionally, Master of Architecture (Professional) students have designed a hypothetical fabrication facility, provided

digital drawings of the panels, and, currently, Master of Architecture (Professional) student Jayna Patel is conducting a desktop hygrothermal analysis of the wall assembly.

» **Associate Professor Renata Jadresin-Milic** from the School of Architecture utilised a fellowship to advance the newly established Digital Heritage Research Centre. This initiative aligned with the Unitec Research Strategy and aimed to enhance the organisation's reputation as a high-quality applied research institute. The fellowship supported Renata in various activities, including writing grant applications, developing partnerships for larger projects, and disseminating research findings. Students actively participated in the projects, which focused on environmental sustainability and issues related to the energy performance of heritage and historic buildings.

4.2.3   Early Career Researcher Support – Return from Parental Leave Fund

The Early Career Researcher Support – Return from Parental Leave Fund was available throughout 2023. However, despite its availability, no applications were submitted for this fund during the year.

4.3   Focusing on research productivity – research outputs

Research outputs have been a key measure of Unitec's research performance for some time, which enables longitudinal data to be reported. Research outputs are a key way in which researchers contribute to the store and accumulation of human knowledge. They include articles, books, conference papers and less-traditional forms of research dissemination such as patents, websites, films, exhibitions and reports for industry, government, etc.

4.3.1   Total Unitec research outputs

In 2023 a total of 441 research outputs was recorded. Among these, 335 (76%) were quality assured (QA), while the remaining 106 (24%) were non-quality assured (non-QA). The overall count depicted in Figure 8 indicates a slight decrease compared to the figures observed in 2022.

Recording research outputs is a retrospective process because staff continue to add research outputs to Unitec's research output management system (ROMS) each year. As new staff publish, they also add their research activity for previous years. These retrospective additions mean that the research outputs for each year continue to rise.
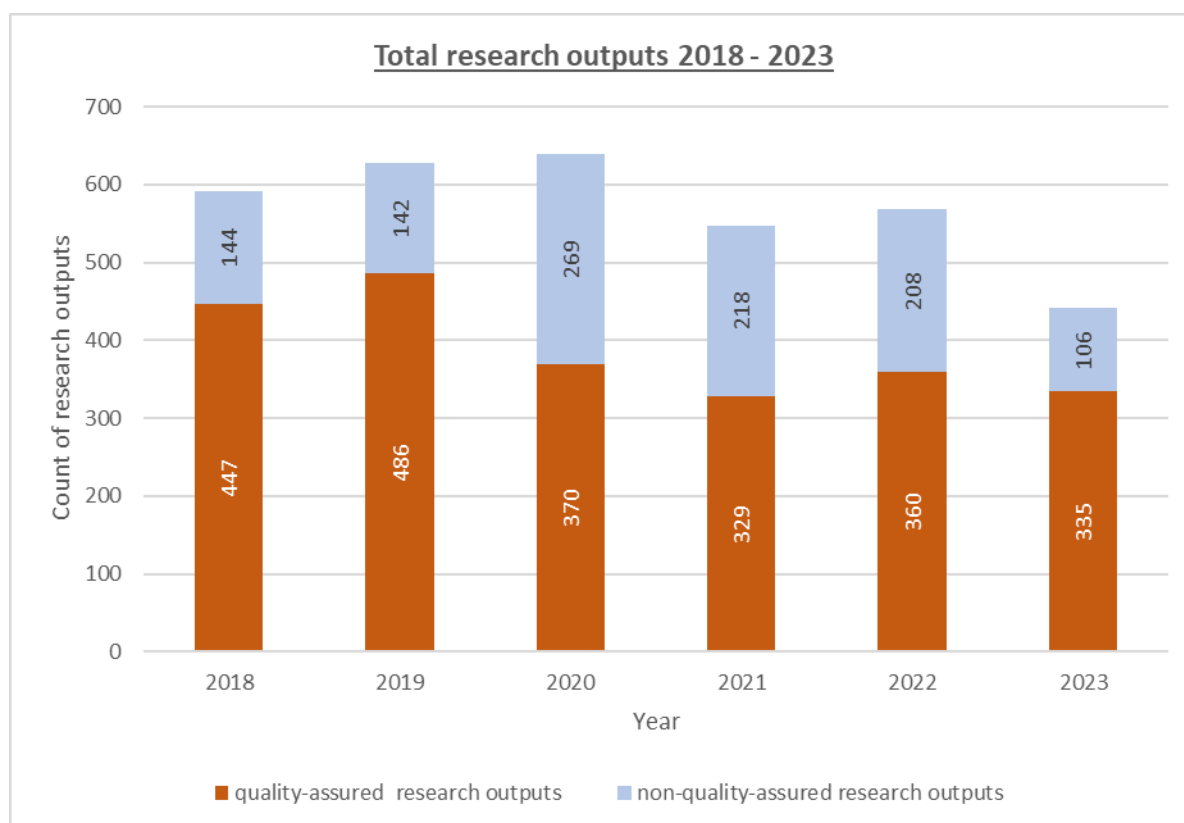
Figure 8: Quality-assured and non-quality-assured research outputs.

The proportion of QA research outputs relative to the total outputs generated annually exhibited minimal growth from 2020 to 2022, but a notable increase of 13% from 2022 to 2023. However, these percentages have declined since 2018, as illustrated in Figure 9. This trend may be attributed, in part, to heightened research activity typically observed towards the conclusion of a Performance-Based Research Fund (PBRF) cycle, with 2017 marking the final year for research publication within the most recent PBRF round.

In 2023, there was a notable increase in the proportion of QA research outputs compared to the preceding year. This increase could be attributed to two main factors:

» Increased engagement of staff in disseminating their research outputs virtually to conferences, all of which were classified as QA. Conferences, encompassing abstracts, oral presentations and published proceedings, collectively contributed to 50% of QA research outputs in 2023.

» The absence of the Unitec/MIT Research Symposium, an event where staff previously presented research activities that were categorised as non-QA. Consequently, staff members who would have traditionally presented at this symposium sought alternative platforms for presentation, leading to their outputs being reclassified as QA.

The top six types of disseminations contributing to QA outputs in 2023 were journal publications (27%), oral presentations at conferences (24%), papers in published conference proceedings (15%), abstracts presented at conferences (7%), book chapters (5%), and poster presentations at conferences (5%).
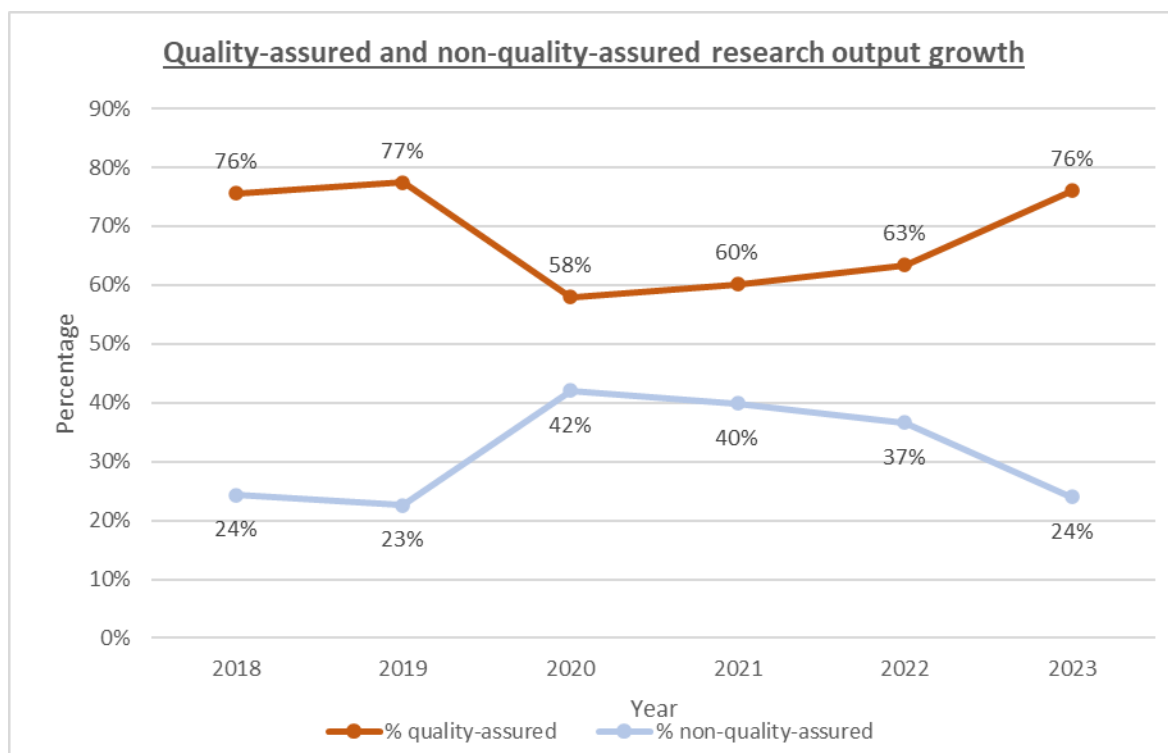
Figure 9: Quality-assured and non-quality-assured research output growth.

4.3.2   Research outputs by School

Figure 10 provides a visual representation of the aggregate quality-assured and non-quality-assured research outputs generated by each School in the year 2023. The "Others" category encompasses research outputs from Academic Development, Tūāpapa Rangahau and Ngā Wai a Te Tūī.

Note – School of Bridgepoint and School of Trades and Services do not offer degree programmes, therefore research is not a compliance priority.
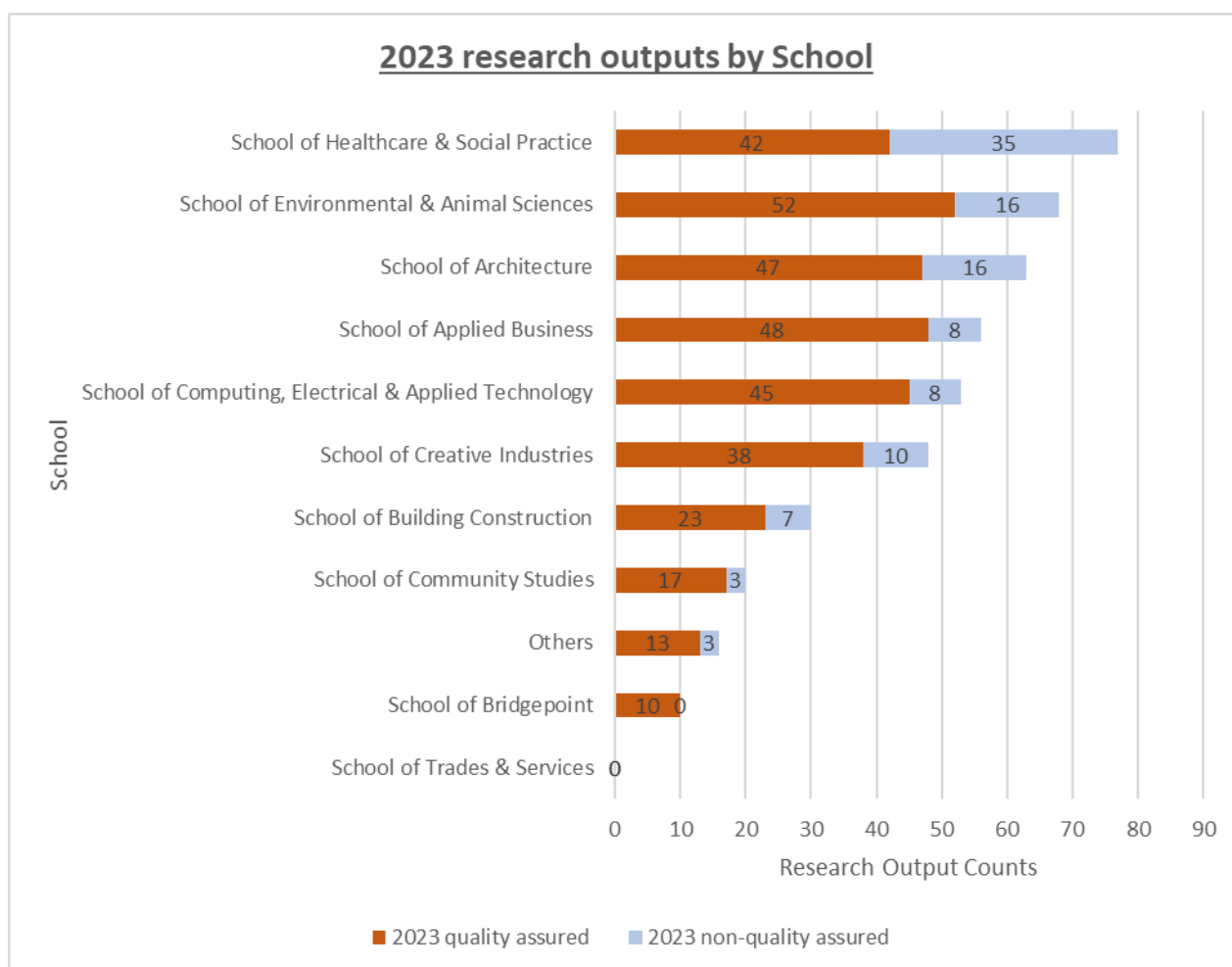
Figure 10: 2023 QA and non-QA research outputs by School.

Acknowledging that not all research outputs from 2023 were yet included in ROMS at the time of this report, the current findings demonstrate notable variability in research output productivity across the Schools. However, these overall counts must be considered in relation to the total research-active Full-Time Equivalents (FTEs) within each School. Table 2 precisely outlines the number of quality-assured (QA) research outputs achieved per research-active FTE within each School.

School	QA outputs per research-eligible FTE
School of Applied Business	3.16
School of Environmental & Animal Sciences	2.64
School of Architecture	2.30
School of Community Studies	1.98
School of Creative Industries	1.97
School of Computing, Electrical & Applied Technology	1.83
School of Healthcare & Social Practice	1.33
School of Building Construction	1.11

Table 2: QA research outputs per research-active FTE in 2023.

In 2023 Unitec achieved an institutional average of 2.09 QA research outputs per research-active FTE. The designated target for 2023 was 1.5 QA research outputs per FTE of degree teaching staff. The

School of Applied Business emerged as the clear leader, with the School of Environmental and Animal Sciences and the School of Architecture following closely behind.

A final note on this matter is the significantly improved performance in the School of Healthcare and Social Practice. The Bachelor of Nursing programme failed to meet the standard in the Research Productivity Traffic Light (RPTL) until 2020, this school is consistently green lit, with robust numbers of overall, verified research outputs. The appointment of Associate Professor Samantha Heath cannot be understated as a primary factor. However, team effort is the winner on the day with this, an excellent example of the closely partnered style of leadership at Unitec. Heads of Schools, Academic Programme Leaders, Research Leaders, the Research Partners and with strong guidance of the Research Leader in the RPTL process, have transformed the NZQA compliance in this school and at Unitec.

4.4 Research dissemination

Disseminating research through attendance and presentations at academic conferences and publishing in books and journals is an important and necessary part of academic careers. This provides opportunities to generate peer-reviewed research outputs (one measure of an academic's productivity), to provide staff professional development and networking opportunities, and to gain the latest knowledge and advances regarding a specific discipline. Unitec provides the Research Dissemination Fund, managed by Tūāpapa Rangahau, to support academic staff in the dissemination of new knowledge at approved fora, toward the benefit of the stakeholders that we serve.

4.4.1 Research dissemination funding

A total of $90,000 was allocated across Unitec's Schools to support research dissemination, with a portion remaining unspent. The majority of conference attendances and presentations were held virtually. A subtotal of $56,909 was utilised to assist 61 individuals in disseminating their research, averaging $933 per person.

The fund supported 51 international and domestic conference presentations. The remaining funds were allocated to aid in writing, publishing and exhibiting research work. A sustainable resourcing model for research dissemination, essential for the future PBRF submission, underlies the resource-distribution strategy.

The allocation of resources for research dissemination at Unitec involves collaboration between the Schools and Tūāpapa Rangahau. The prioritisation process ensures that resources are directed to areas where they can have the greatest impact on our priorities. Additionally, three staff members received partial funding from external organisations to disseminate their research outputs, reflecting the high quality and relevance of their work.

4.4.2 Collaborative Research Dissemination Fund

In 2020, amidst the challenges posed by the post-Covid era, the Collaborative Research Dissemination Fund was established as a strategic response. This fund serves as a structured framework aimed at fostering collaborative research endeavours and facilitating the subsequent dissemination of findings through a competitive funding mechanism. The overarching goal was to develop and delineate a collaborative approach to research dissemination that yields tangible research outputs benefiting multiple staff members.

In 2023 Tūāpapa Rangahau allocated a total of $17,310 to fund the following two collaborative projects:

1. **Resilient and Responsible Architecture and Urbanism (RRAU) Conference – School of Architecture:**
   - **Project Team:** Associate Professor Christoph Schnoor, Associate Professor Matthew Bradbury, Dr Sameh Shamout, Dr Peter McPherson, Dr Yusef Patel, in partnership with International Experts for Research Enrichment and Knowledge Exchange (IEREK).

- **Description:** This project, led by a multidisciplinary team from the School of Architecture, focused on participating in the RRAU Conference. The team aimed to present their research findings and engage in scholarly discourse with peers in the field.

2. Oro Pou – School of Creative Industries:
   - **Project Team:** Associate Professor Leon Tan, Hohepa Renata, Tanya White, Peeti Lamwilai.
   - **Description:** The Oro Pou project, spearheaded by a team from the School of Creative Industries, entailed collaborative research efforts aimed at exploring and potentially showcasing Indigenous creative practices. The project sought to delve into the intersection of traditional Māori art forms and contemporary creative expressions.

These funded projects exemplify Unitec's commitment to fostering collaborative research initiatives and facilitating the dissemination of research outcomes across diverse disciplines. Through strategic funding allocations and interdisciplinary collaborations, Unitec aims to advance knowledge creation and contribute to societal wellbeing.

4.4.3 Wairaka: Natural Environment, History and Culture Fund

The fund originates from Priority Three in the 2020–2024 Unitec Research Strategy Action Plan, which focuses on fostering research into Wairaka, our place: the natural environment, history, and wairua.

Early Career Researcher Tanya White from the School of Creative Industries was the recipient of this fund in 2023, receiving $7,000. The project, titled Toitū te Whenua, aimed to provide an Indigenous mapping of the whenua (land) and an overview of the unique biodiversity and taonga (treasures) within the Wairaka campus at Unitec. The objective was to offer strategic direction for the Unitec (Te Pūkenga ki Wairaka) community in fulfilling its responsibilities of kaitiakitanga, involving the protection, restoration, and sustainable use of the whenua.

4.4.4 Student-Integrated Research Output Funding

Student-integrated research is part of Priority Two in the Research Strategy, aiming to encourage mutual benefits for both staff and students through collaborative efforts. This Key Performance Indicator (KPI) doesn't cover all related activities but significantly measures student contributions to staff-engaged research. These contributions include authorship, participation in wānanga (educational workshops), creative outputs, studentships, research assistant positions, awards, or other contributions as defined by the Performance-Based Research Fund (PBRF). The KPI is quantified by counting the number of research outputs. It was approved by the Unitec Research Committee in 2019, with 2020 being the first reporting year.

Six Unitec researchers received funding under this initiative, totaling $3,719.42.

Table 3 illustrates the research output counts where the co-authors were current or recent Unitec students.

Year	Count research outputs, where the co-authors were current or recent Unitec student(s)
2020	70
2021	77
2022	92
2023	85

Table 3: Count research outputs, where the co-authors were current or recent Unitec students.

4.4.5   Conference Seed Fund

Unitec's Conference Seed Fund was established to provide initial support for undertaking conference bid responses, developing conference plans, and securing the necessary sponsorship to fund conferences and symposia hosted by Unitec.

In 2023 Tūāpapa Rangahau approved $10,000 to the School of Computing, Electrical and Applied Technology to support the hosting of the 14th annual Computing and Information Technology Research and Education New Zealand (CITRENZ) conference. The event took place in September 2023 at Unitec's Mt. Albert campus, under the theme "Collective Intelligence: Exploring Mahi Kotahitanga in Computing." The project team included Professor Hamid Sharifzadeh, Susan Bennett, Dr Bashar Barmada, Dr Masoud Shakiba, Dr Guillermo Ramirez-Prado, Dr Emre Erturk (EIT), Associate Professor Alison Clear (EIT) and Hamish Smith (OP).

CITRENZ was founded in 2010, evolving from the National Advisory Committee on Computing Qualifications (NACCQ), which began in 1988. It has provided support to academic staff through workshops, panels, research seminars, prior learning assessments, moderation, publishing a dedicated academic journal, and hosting an annual conference. CITRENZ's philosophy is to foster and support researchers at all stages of their careers, while promoting excellence and academic dialogue.

Figure 11: Susan Bennett (Conference Chair) at the 2023 CITRENZ conference.

4.5   Professoriate

Ko te amorangi ki mua, ko te hāpai ō ki muri.

The leader is in front and the food bearers behind.

The professoriate comprises researchers who have gained national and international recognition and have reputations as leaders in their disciplines. The goal for the Unitec professoriate is to share their knowledge, skills, time, passion, listening ears and selves with colleagues, students and industry

stakeholders for the betterment of society. This is done in a wide range of ways, depending on the strengths and opportunities available to each individual member. The professoriate advocates for its disciplines, teaching and research by collaborating, presenting, engaging in public and building teams across the organisation to catalyse research potential at Unitec. Supervising new and emerging researchers is a key part of the professoriate's mission.

The professoriate runs the Unitec Professorial Research Mentoring Framework, which involves every member mentoring an emerging researcher through to co-authorship in a recognised publication or supporting researchers to be the lead on their own paper. This framework continues to contribute to NZQA research compliance and toward developing high-quality PBRF portfolios. In addition to matters research, members of the professoriate show leadership across many aspects of the institute; here is a small selection with examples:

Professoriate name	Leadership examples
Associate Professor Hinekura Smith	Te Rarawa/Ngāpuhi/Te Ātiawa. Director of Ngā Wai a Te Tūī. Emerging Researchers Leader Ngā Pae o te Māramatanga. Awarded **Te Kōpūnui Māori Research Award** for her PhD research titled "Whatuora: Whatu kākahu and living as Māori women". Initiator and Principal Investigator on multiple externally funded research projects; experienced Kaupapa Māori researcher, supervisor, educator and creative. Fulbright Fellow in 2023–2024.
Adjunct Associate Professor Dan Blanchon	Curator of Botany, Auckland War Memorial Museum Tāmaki Paenga Hira, Adjunct to the Applied Molecular Solutions Research Centre.
Professor Hamid Sharifzadeh	Achieved full professor in 2022. Principal Investigator on externally funded research projects; Academic Programme Manager, Bachelor of Computing Systems, Graduate Diploma in Computing, Postgraduate Diploma in Computing, Master of Computing, Doctor of Computing; Co-Research Leader for School of Computing, Electrical and Applied Technology.
Professor Peter de Lange	Achieved full professor in 2022. Principal Investigator on externally funded research projects. Extensively published botanist, science communicator, ethnobotanist, early career research mentor and founding editor of new journal *Perspectives in Biodiversity* published through Unitec's ePress.

Professor Martin Carroll	Deputy Chief Executive – Academic, Unitec and MIT. Martin has research, teaching and learning, and academic quality in his executive portfolio, and leads the Senior Academic Advancement and Promotions process at Unitec. Pro Vice-Chancellor Academic at Charles Darwin University from 2010 to 2017, Martin is a board member of the Universities Quality Assurance International Board and participates in the Rangahau Research Forum Professorial Working Group within the context of Te Pūkenga's development.
Associate Professor Diane Fraser	Transdisciplinary researcher and teacher across environmental and animal sciences. Champion of student-integrated research projects and work-based learning innovator, procuring externally funded studentships and stipends toward research projects and bearing credits toward their degree.
Associate Professor Linda Kestle	Principal Investigator on externally funded research projects; team leader of externally funded, industry-partnered, multi-Unitec-team-member award-winning projects; Co-Research Leader for School of Building Construction.

Table 4: Leadership examples from the Unitec Professoriate.

4.6 Research Productivity Traffic Light (RPTL)

To comply with a NZQA requirement and monitor the integration of research activity into degree programme teaching and supervision, Te Komiti Mātauranga – Academic Committee approved the use of the Research Productivity Traffic Light (RPTL). Introduced in 2012, the RPTL Report has been presented annually since, enabling the reporting of trends, and forecasting in Unitec's degree programmes' research activity due to its longitudinal nature.

The Unitec Research Strategy 2020–2024 aims for all degree-level programmes to achieve and maintain a "green-lit" rating from 2021.

This document provides a summary of RPTL results for Unitec's degree programmes up to 2024 within the dynamic landscape of the tertiary education sector, marked by consistent disruption over the past 13 years of RPTL reporting.[3]

4.6.1 Research Productivity Traffic Light terms of reference and methodology

Key terms and methodology approved by Te Komiti Mātauranga – Academic Committee include:

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[3] 2024 RPTL results are based on the research outputs data from 2022 and 2023, and hence they are reported in this 2023 Research Annual Report.

» **Inclusion criteria:** Permanent or part-time staff with an FTE of at least 0.2 or staff on contracts of 12 months or more and FTE of at least 0.2, who significantly teach and/or supervise degree-level courses in Semester One 2024.

» **Exclusion:** Staff returning from maternity leave are excluded from RPTL for one year.

» **Definition of "research active":** Staff must produce at least two eligible research outputs verified in ROMS (Unitec's research output management system) within the past two years. For part-time staff, at least one output is required for the previous two audited years.

» **Reporting period:** The 2024 report is based on staff research activity recorded in ROMS for 2022 and 2023.

4.6.2 The 2024 Research Productivity Traffic Light results

The RPTL analysis uses a traffic-light colour system to represent levels of research activity in each degree programme:

» Green indicates meeting the required standard, with at least 75% of staff producing the necessary number of outputs over the two-year review period.

» Amber signifies marginal performance, with 50–74% of staff meeting the output requirements.

» Red denotes performance below the standard, with less than 50% of staff achieving the necessary outputs.

In 2024, Unitec sustained its progress since the introduction of the RPTL report in 2012 (see Table 5 and Figure 12 below), despite challenges. The percentage of green-lit programmes in 2024 is slightly up from 87% in 2023 to 88%. The number of active degree programmes increased from 30 to 32, with the addition of two new programmes, the Postgraduate Certificate in Applied Practice (Social Practice) and the Master of Applied Science. The latter programme is being taught across Te Pūkenga, and the data only includes staff from Unitec teaching in the programme.

Programme Status	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Count of green-lit programmes	9	10	14	19	21	28	27	33	28	31	27	26	28
Count of amber-lit programmes	7	8	9	12	16	8	5	7	3	0	2	4	4
Count of red-lit programmes	11	9	7	4	3	5	8	2	3	0	0	0	0
Total	27	27	30	35	40	41	40	42	34	31	29	30	32
Programme Status	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Percentage of green-lit programmes	33%	37%	47%	54%	53%	68%	68%	79%	82%	100%	93%	87%	88%
Percentage of amber-lit programmes	26%	30%	30%	34%	40%	20%	13%	17%	9%	0%	7%	13%	12%
Percentage of red-lit programmes	41%	33%	23%	11%	8%	12%	20%	5%	9%	0%	0%	0%	0%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 5: Total number and percentage of green-, amber- and red-lit degree programmes 2012–2024.
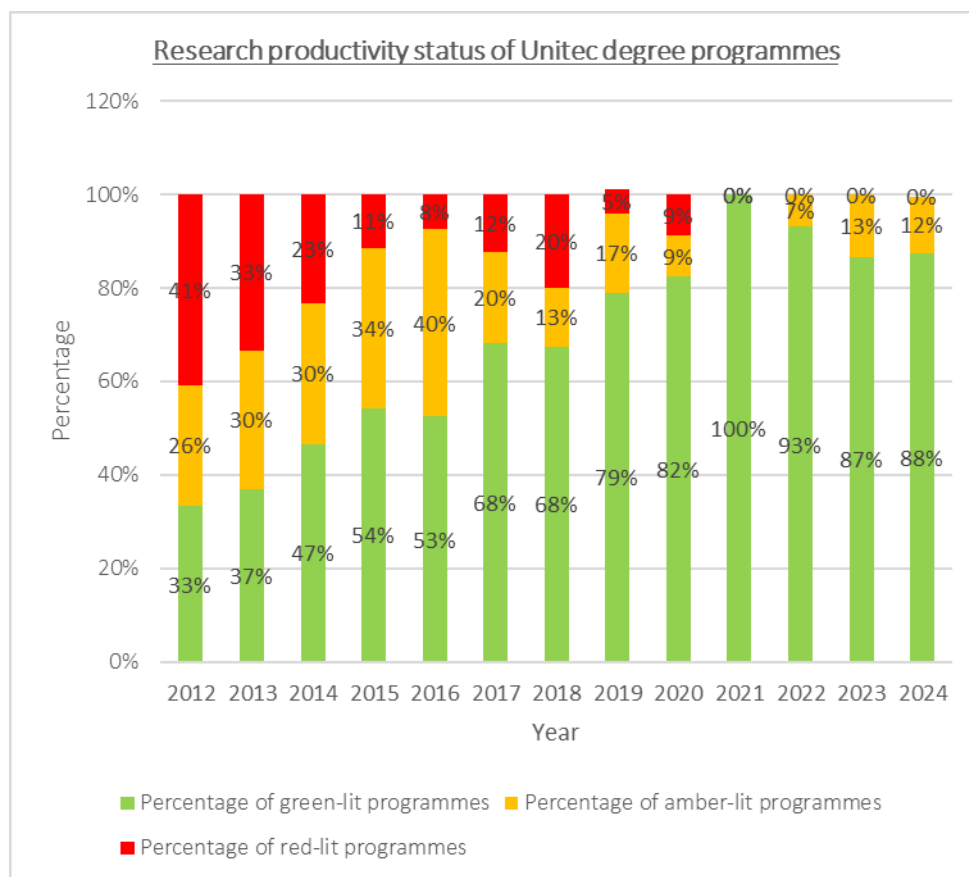
Figure 12: Percentage of green-, amber- and red-lit degree programmes 2012–2024.

Figure 12 also illustrates the research productivity results and trends for the institute over the last 12 years.

4.6.3 Observations

» Eighty-eight percent of programmes are green-lit, the rest are amber-lit; none are red-lit.
» Twenty-seven programmes have 80% or more of their staff green-lit, with 16 having 100% green-lit staff, remembering the target is only 75%.
» The School of Creative Industries has all its programmes and staff green-lit.
» Some programmes' green-lit percentages were affected by new staff, many of whom were either new to academia or research inactive in previous roles.
» Certain programmes, such as the Bachelor of Applied Technology and Bachelor of Social Practice, transitioned from green-lit to amber-lit due to their small teaching cohorts, where slight numerical shifts cause notable RPTL percentage changes.

Despite challenges such as Te Pūkenga's restructure, post-Covid influences and the departure of a number of experienced research staff, Unitec has maintained its significant progress in enhancing research activity at the degree level since 2012, including in 2024. To sustain this success, it is crucial that individual and school research planning remains dynamic and integrated into academic management. Collaborative efforts between Tūāpapa Rangahau's Research Partners, Research Leaders and Heads of Schools are essential for implementing necessary actions to maintain strong results in the future.

4.7   Research partnering

The Research Development Programme (RDP) initiative was implemented nine years ago to support programmes to improve their research productivity, so staff engage in research activities and contribute to a strong research culture. To measure research productivity, Tūāpapa Rangahau has tracked individual progress with the Research Productivity Traffic Light (RPTL) system to optimise resources toward the goal of 100% green-lit programmes. The following measures were first used in 2019 but were adapted to the Covid environment for 2021, where necessary, and moved online during Covid lockdown periods. More recently, we have transitioned to hybrid in-person/online meetings to address a remaining level of discomfort for some staff with larger gatherings. These functions are now moving toward more in-person delivery.

- » Attendance, where appropriate and accessible, at School staff meetings to promote our funding mechanisms and services.
- » Clear, concise and regular communication with Research Leaders to ensure they are well informed.
- » Quarterly Research Leaders' Hui set up as a forum for Research Leaders to share their experiences and plan for the upcoming months.
- » Continued implementation of the new co-designed, performance-based systems for research time allocation.
- » Actively encouraging research clusters, mentoring and collaboration, especially in those programmes that have needed extra support.
- » Reviewing and improving early career researcher (ECR) initiatives to grow and nurture research capability and leadership, including establishing new annual events such as the Unitec ECR Forum Research Spiel.
- » Continued support for PBRF candidates to implement their research plans (developed as part of an interim quality evaluation in 2022), so they remain on track for their future PBRF portfolio (on hold now that PBRF has been suspended).
- » Supporting non-degree researchers through the non-degree teaching research track where their research activity warrants support.

These measures allowed us, despite the pandemic-related disruptions and the uncertain future in the sector, to have 88% of our degree programmes green-lit. It is worth noting here that there are zero red-lit programmes. Also, that the research compliance standard is high for the Vocational Education and Training (VET) sector and by the standard used in many Te Pūkenga business divisions, Unitec is 100% compliant. Tūāpapa Rangahau plans to support Research Leaders in 2024 by helping to mitigate as much as possible the impact of restructures in the organisation on staff research activity. Tūāpapa Rangahau recognises the extra pressure on workloads due to the current situation, and that this could adversely affect these outcomes and require additional support.

4.8   School research plans

All Schools that have degree programmes at Unitec are required to develop research plans. The purpose of the plans is to help Schools undertake research that is:

- » integrated into programme curricula, teaching and learning;
- » Te Tiriti aligned and growing Māori and Pacific capability;
- » working toward the six Unitec Research Strategy KPIs (Section 2);
- » clustered, collaborative and maximising resources, with research groups identified;
- » co-ordinated into a cohesive and shared vision.

These are reviewed annually by the Unitec Research Committee and serve as an important artefact for programme reviews and degree monitor visits. They also encourage collaborative research through the required formation of Research Groups. Two of these groups became Research Centres in 2022.

In 2023 Tūāpapa Rangahau worked closely with Research Leaders and Heads of Schools and implemented a review of the School research plans created in 2022. All Schools successfully reviewed and updated their School research plans in 2023.

The School of Bridgepoint and School of Trades and Services were excluded because they offer sub-degree programmes and do not have the NZQA research-compliance requirements.

These plans require schools to organize staff into Research Groups, in order to encourage collaborative projects and research activity. The plans also note research performance data in the schools and are the first "go to" for Programme Monitor's and reviewers.

4.9   Performance-Based Research Fund (PBRF)

In response to challenges posed by external circumstances, the 2024 Performance-Based Research Fund (PBRF) assessment was postponed by two years, with the next assessment cycle rescheduled to 2026. However, at the time of this report, it has been confirmed that the anticipated 2026 PBRF round has been cancelled due to ongoing reviews and revisions being conducted within the PBRF framework. This decision reflects a broader effort to ensure the effectiveness and relevance of the PBRF system in light of evolving academic and institutional landscapes, with the aim of optimising its outcomes and impact within the tertiary education sector.

4.9.1   Sector Reference Group consultations

In 2023 Unitec extensively engaged in the Sector Reference Group consultations led by the Tertiary Education Commission, particularly delving into the intricacies of the Performance-Based Research Fund (PBRF) in alignment with the 2019 review. The Unitec Research Committee provided feedback on specific consultation papers. Unitec's Director of Research and Research Advisor actively engaged in monthly discussion forums led by PBRF managers from universities and Institutes of Technology and Polytechnics (ITPs) across Aotearoa New Zealand.

4.9.2   Workshops on the PBRF Evidence Portfolio (EP) structure

After the Tertiary Education Commission (TEC) released the final evidence portfolio structure, Unitec promptly organised workshops with its various schools to provide in-depth exploration of the evidence portfolio contents. These workshops aimed to ensure that staff fully understood the nuances and requirements outlined in the evidence portfolio structure. During the workshops, participants had the opportunity to engage in discussions, ask questions, and receive clarification on any aspects of their portfolios. The sessions were carefully designed to cater to the specific needs and concerns of each school within Unitec.

Feedback from staff following the workshops was overwhelmingly positive, indicating that the sessions were beneficial and well received. Participants appreciated the opportunity to gain a comprehensive understanding of the evidence portfolio and felt more confident in their ability to effectively navigate and contribute to it. The interactive nature of the workshops fostered a collaborative environment where attendees could share insights, exchange ideas, and enhance their understanding of the portfolio's intricacies. Overall, the workshops served as valuable platforms for knowledge dissemination, skill development, and fostering a sense of collective ownership and engagement among staff members at Unitec.

4.10 Ethics

The Unitec Research Ethics Committee (UREC) assesses ethics applications for research projects involving human participants. Animal ethics proposals are contracted out to AgResearch.

In 2023, 53 ethics applications were received from Unitec and MIT staff and students. Of these, 48 were approved during the year, including five in the first half of 2023. This total includes 11 applications from MIT. About half of the applications were submitted by master's degree students, predominantly from the School of Architecture, with the remainder submitted by academic staff members.

The quality of applications from both Unitec and MIT staff and students is improving, with significantly less revision being needed before approval, especially in the case of MIT. UREC secretary Dr Evangelia Papoutsaki delivered two online ethics workshops and one seminar to Master of Architecture students (by invitation). The student representative was also involved in several student research ethics submissions, resulting in both capacity building for the student representative but also valuable contribution from a student perspective on received applications.

UREC withdrew its membership from the Health Research Council (HRC) at the end of 2023 and has since formed an independent committee consisting of members both internal and external to Unitec and MIT. UREC is now chaired by Unitec Associate Professor Nigel Adams after the departure of its long-standing chair, Professor Maria Humphries-Kil, in December 2023. The drop in ethics applications in 2017 is a direct product of the sunsetting of a significant number of postgraduate programmes in 2016.
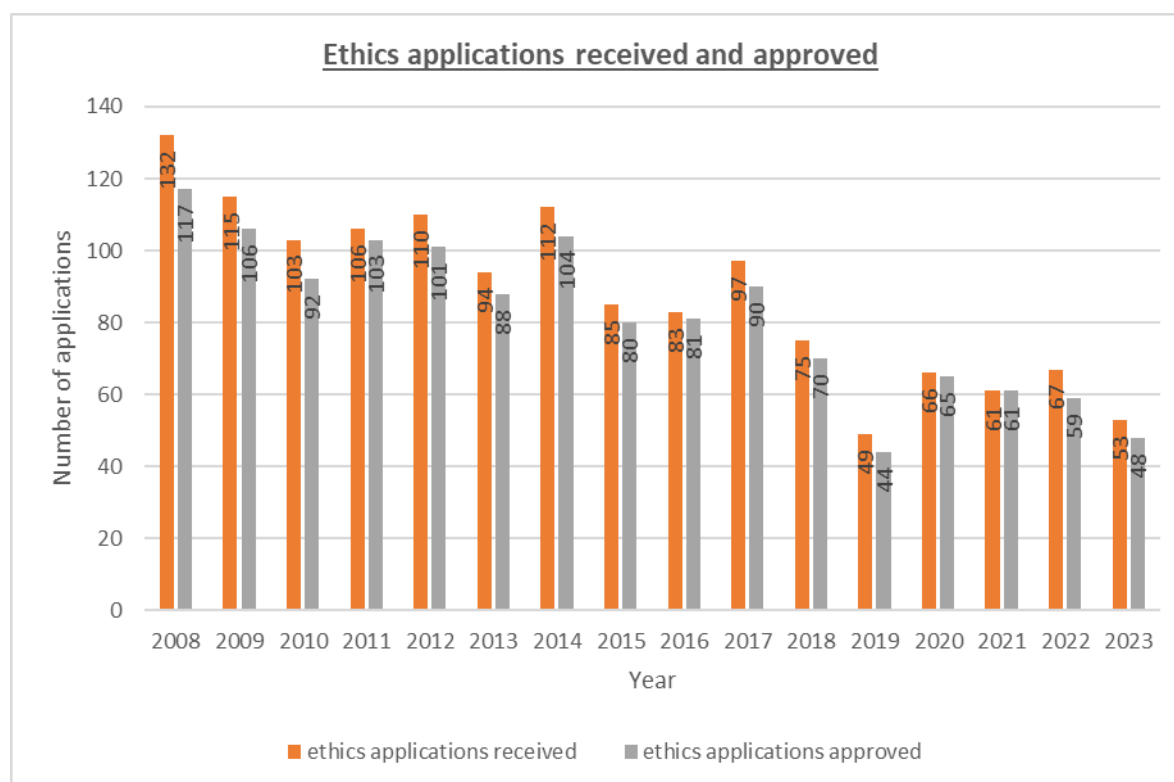
Figure 13: Staff and student ethics applications received and approved.

4.11 Postgraduate studies and student-engaged research

Engaging students in research is a crucial way to broaden their educational experience and make the taught subjects more accessible to them. This involvement allows students to apply theoretical knowledge to practical problems, deepening their understanding and fostering a more engaging learning environment.

4.11.1 Postgraduate scholarships

Each year, Tūāpapa Rangahau offers postgraduate scholarships to students enrolled in Unitec's postgraduate programmes, aiming to support their academic success. These scholarships are advertised, awarded and managed by Tūāpapa Rangahau in collaboration with the relevant Academic Programme Managers.

In 2023 a total of $250,000 in scholarship funding was allocated, benefiting 46 students across seven postgraduate programmes. Additionally, this funding supported two priority groups through Māori-specific scholarships and Pacific-specific scholarships. Furthermore, one Bold Innovator Scholarship and five Industry Scholarships were awarded as part of the scholarship programme.

4.11.2 Scholarship success stories

Below are some of the 2023 postgraduate scholarship success stories:

Rimo Ribechini – *Master of Architecture (Professional) Scholarship*

> *"I was immensely grateful to have received the scholarship in 2023. As a full-time student, the scholarship has gone a long way to easing the financial burden associated with the studies. The resources required when undertaking an architectural study programme can be numerous and somewhat costly, from materials, printing, computer hardware, software subscriptions to the essential flat whites. All these add up, but with the help of the scholarship funding these costs have definitely been easier and allowed me to focus more on the studies, providing a supportive platform to excel. Personally, I think receiving a scholarship has motivated me to work harder to try produce exceptional work as a way of showing my gratitude."*

Abigail Temby Spence – *Master of Architecture (Professional) Scholarship*

> *"With the scholarship, I could afford to keep working just a day during the holidays, where previously I had gone full-time, and towards the end of the year take two months off from work entirely. Without the scholarship there is a very real chance I would have needed to postpone my exam, especially with surgery earlier in the year. Instead, I could focus on my project, prioritise my health to help with my recovery, and on my family – and examine within the year! I'm grateful for the scholarship, and glad you can offer it to committed students. It makes such a huge difference."*

5 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.

This section of the report highlights:

- » Increasing external engagement
- » Joint research with universities, other ITPs and CRIs
- » Seeking external funding
- » Delivery of externally funded projects
- » Unitec Research Centres
- » Industry Scholarships
- » Unitec Bold Innovators Scholarship
- » Telling our research stories
- » Unitec ePress
- » Unitec Research Blog

5.1 Increasing external engagement

Building industry partnerships and enhancing student success are key to Unitec's vision and Research Strategy. By fostering collaborations, Unitec bridges academia and industry, ensuring the relevance of its education and research. These partnerships drive innovation and address industry needs, aligning with Unitec's overarching goals.

5.1.1 Building external relationships through research

Unitec fulfills a unique and vital role in Aotearoa's research and innovation sector, providing applied, cost-effective research solutions to community and industry groups that may otherwise not access such services. Dr Yusef Patel continues to be proactive in this segment, engaging with local community groups and businesses to design and install structures such as entrance ways for arts festivals, bike pods and school library furniture. Applied research elements include the aesthetic design, construction process and how building materials are utilised. An essential element of these research projects is involving both undergraduate and postgraduate architecture students in design, installation and delivery of the structures, which is often tied to a scholarship.

Similarly, Assoc. Prof. Diane Fraser utilises animal and environmental science students on local council-commissioned projects to research aspects of biocontrol and biosecurity within the Tāmaki Makaurau Auckland region, such as surveying the spread of pest plants and developing management plans. Again, scholarships tie the students' learning on research projects back to specific course content.

Ngā Wai a Te Tūī's Tanya White has been engaged through The Wintec Foundation to evaluate the efficacy of Apple technology in kura 'train the kaiako' (teacher) programmes. The purpose of the project is to improve science, technology, engineering and mathematics (STEM) education opportunities and outcomes for Māori and Pasifika students in ten kura kaupapa schools in Tāmaki Makaurau Auckland.

While Unitec suffered the resignation of Environmental Solutions Research Centre Director Professor Terri-Ann Berry and the loss of the GeneCrypt project (due to GeneCrypt failing to raise further funds) by the Cybersecurity Research Centre, new research centres such as Associate Professor Renata Jadresin-Milic's Digital Heritage Research Centre were able to build their external relationships in preparation for major grant applications in 2024.

5.1.2 Institutes of Technology and Polytechnics (ITP) Research and Enterprise Voucher scheme

The ITP Research and Enterprise Voucher scheme aims to seed new relationships with communities, iwi and businesses by subsidising the cost of our research services to kick-start research collaborations and develop staff capability. While delivering on a contract, we are facilitating professional development for staff in the commercial arena (outside of traditional academia) and engaging directly with end users. Where practical, we are involving students in the projects to give them valuable exposure to the industry and community research environment. This creates real-world opportunities for staff and students through increased industry engagement, as well as the opportunity to foster joint projects around commercialisation and the creation of intellectual property.

In 2023 two research project were supported:

- » Project **CocoFlourish**, led by Associate Professor Kristie Cameron of the School of Environmental and Animal Sciences. The project tested compostable cat litter made from sustainably sourced coconut coir. This material could replace large amounts of mineral-based cat litter that are disposed to landfills today.
- » **Huntsman Intelligence**, Denis Lavrov from the Cybersecurity Research Centre. The project developed a novel cybersecurity tool for an Aotearoa New Zealand start-up company. Three students from across Te Pūkenga were involved as research assistants.

These examples demonstrate how the ITP Research and Enterprise Voucher scheme can kick-start research of important sustainability questions to help our academics to create significant impact.

5.1.3 Industry-funded projects

Industry-funded projects are defined as research and enterprise projects Unitec is receiving funding for, where the services Unitec is providing are applied contract research or consultancy, from all funders, excluding any governmental contestable funding sources. This is measured as a count of the number of projects. Figure 14 provides a visual representation of the counts of industry-funded projects for Unitec spanning from 2018 to 2023. This data offers insight into Unitec's engagement with industry partners and its contributions to applied research and consultancy activities during this timeframe.
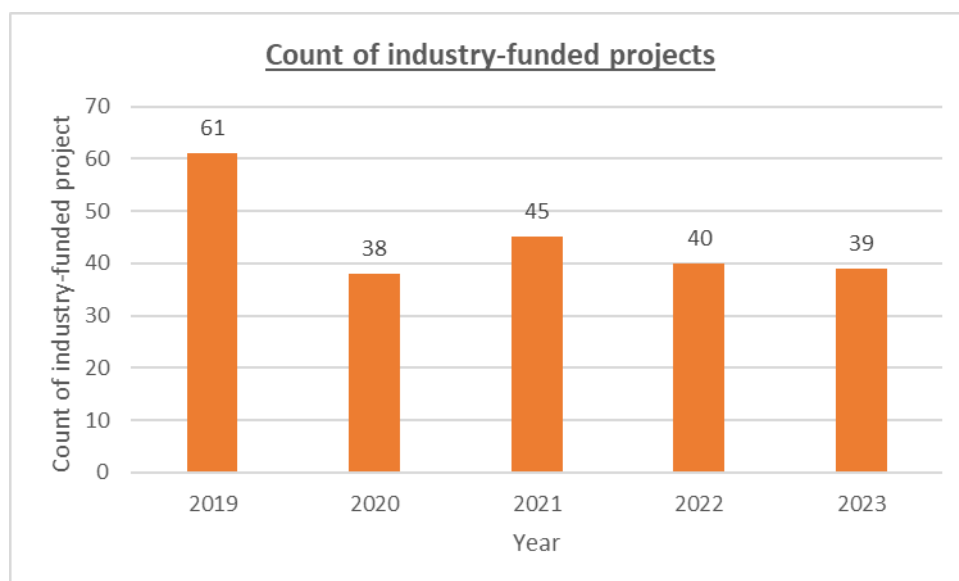
Figure 14: Unitec industry-funded project counts between 2019 and 2023.

Figure 15 provides a detailed breakdown of the contributions made by individual Schools within Unitec to industry-funded projects throughout the year 2023.
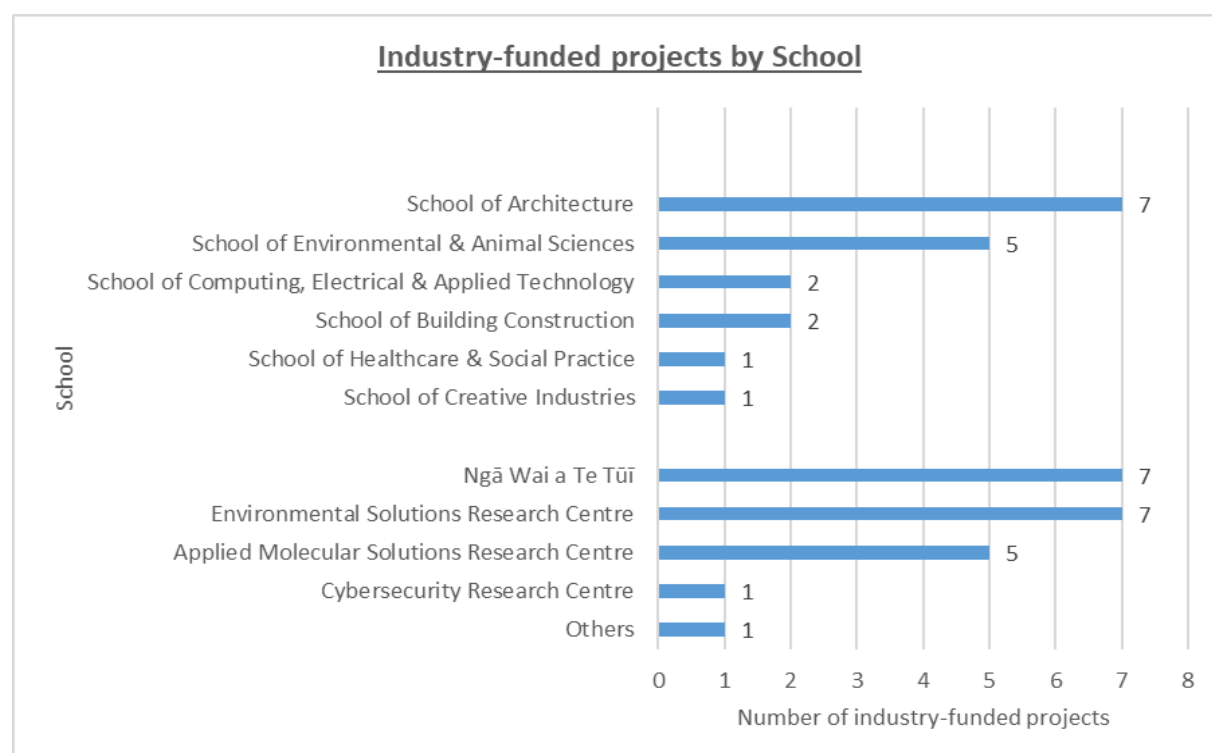
Figure 15: Schools' contribution to industry-funded projects count.

5.1.4 Commercialisation

After significant successes in the first half of the year, Unitec's Cybersecurity Research Centre had to discontinue its collaboration with Tāmaki Makaurau Auckland genetic information security start-up GeneCrypt due to GeneCrypt failing to raise funds and subsequently stopping to pay for the research services provided. Despite this sad outcome, it is a common risk in deep-tech start-up ventures and any academic institution active in this kind of research and development must accept these kinds of risks.

Initial research by the Cybersecurity Research Centre had in 2021 led to an agreement to commercialise technology developed by the Unitec team as part of the MBIE-funded STRATUS project. A $120,000 research contract was secured and successfully executed in 2022, providing a very significant opportunity for Unitec to partner with GeneCrypt during their growth journey. A further $150,000 research contract with GeneCrypt was secured for 2023, but ultimately not paid by GeneCrypt. This is very unfortunate as, due to the rapidly increasing threat level in cybersecurity, there is a great market demand for novel cybersecurity solutions and interest in research teams being able to deliver them.

In 2021, major Aotearoa New Zealand ventilation-system company HRV entered into a research collaboration with Unitec's Environmental Solutions Research Centre (ESRC) to test the quality of their products in real-world applications, using indoor air-quality sensors developed in a collaboration between ESRC and Unitec's School of Computing, Electrical and Applied Technology. The industry partner expressed great interest in developing these sensors further and licensing the underlying design to include them in future generations of their product family. This work has led to a $206,000 research contract for work in 2022 and 2023, with considerable future commercialisation potential. Due to pandemic impacts the project had to be delayed, but the flexible approach of ESRC allowed it to retain the contract and successfully set up everything for a measurement campaign in winter 2023. After the resignation of Prof. Terri-Ann Berry (who was partially retained as a Unitec Adjunct Professor), her new

research endeavour Environmental Innovation Centre was subcontracted to continue the successful delivery of the HRV project.

5.2 Joint research with universities, other Institutes of Technology and Polytechnics (ITPs) and Crown Research Institutes (CRIs)

Unitec continues to successfully partner with universities on a range of new projects. Dr Sarah Wells, from our Applied Molecular Solutions Research Centre, has entered a collaboration with Otago University and Te Roroa Commercial Development Limited under the umbrella of Genomics Aotearoa to undertake MBIE-funded research into ngā roimata ō Tōhe, an endemic, low sprawling shrub that is critically endangered. The project aims to provide a genetic analysis to understand the genetic diversity within remaining individuals of the species and determine whether there are any potential hybrids from these populations. This understanding will support an informed breeding plan to expand the genetic base of the species.

Our external research programme has benefited from the movement of academic staff across the tertiary education sector. Dr William Liu joined the School of Computing, Electrical and Applied Technology, bringing MBIE Catalyst Seeding funding to support a joint research project with Japan's University of Electro-Communications, The University of Auckland and Victoria University of Wellington to develop a trustworthy and privacy-preserving vehicular internet of things (V-IoT) control system to provide drivers with advanced warning of hazards and improve driver safety. Unitec hosts the fund coordinating travel and contract administration on behalf of the collaboration.

Associate Professor Hinekura Smith, Director of Ngā Wai a Te Tūī, has been appointed by Te Whare Wānanga o Awanuiārangi as a Key Researcher on the MBIE Endeavour-funded project Generation Kāinga. The project seeks to unlock the capacity of rangatahi Māori to become key agents in promoting and developing whānau housing and kāinga solutions. In this capacity, Associate Professor Smith will support the rangatahi and whānau wellbeing (rangatahi ora) theme over the duration of the project.

5.3 Seeking external funding

Knowledge creation and innovation occur within a complex system of interactions between scientists, scholars, whānau/hapū/iwi, technologists, educators, public institutions, businesses, entrepreneurs and funders. Collaboration is not only a key factor in developing projects that will have meaningful impact, but also in the funding application process. Meaningful engagement with stakeholders and end users of research is time consuming and can be challenging for those that are not so outgoing and social, whose institutions may not be in a position to support the costs of travel for networking and hui, and when collaborators may have little experience with research methodologies and funding processes.

Funding for research is usually allocated via contestable mechanisms. While having a well-drafted funding proposal and committed collaborators lined up increases the chances of success dramatically, incredible projects are still declined funding every day. The rationale funders usually provide for declining an application is that more funds were requested than were available. Often more meaningful explanations are not given, leaving applicants unsure how they could improve their proposals and whether it is worth resubmitting them to future funding rounds.

It takes time to prepare a competitive application for funding, often many months, and then there are often even longer time-frames involved in receiving the results, sometimes up to a year. Many things can change in a year. Team members may move organisations, be made redundant, or leave the country; businesses might restructure or tighten their belts and no longer be in a position to participate in projects; community and iwi groups may find they are suddenly busily involved with other initiatives.

Despite the challenges involved in seeking and applying for funding, in 2023 Unitec submitted over $34 million worth of funding applications. Every proposal submitted, whether funded or not, is testament

to the dedication, passion and commitment of numerous staff across the institution, and the communities and industries they work with, to making a positive difference to Aotearoa New Zealand.

5.3.1 2023 success stories

The stories below highlight just a couple of Unitec's external funding success stories in 2023.

5.3.1.1 2023 Ako Aotearoa Research and Innovation Agenda (AARIA) funding

Ako Aotearoa is a government-funded organisation committed to supporting the country's tertiary sector teachers, trainers and educators to be the best they can be for learners' success. Their vision is the best possible educational outcomes for all learners.

The AARIA programme involves Ako Aotearoa collaboratively working with tertiary education organisations, researchers and educators to develop new knowledge to inform improved ways of teaching and learning in Aotearoa New Zealand.

In 2023 a Unitec research team including Daisy Bentley-Gray (Project Leader – General) and Dr Marion Muliaumaseali'i (Project Leader – Technology) received AARIA funding of $48,861 for a project called "Addressing Racial Equity and Justice in the Tech Sector for Pasifika Learners in Aotearoa New Zealand". The project asks: How effective are IT programmes delivered by Pasifika for Pasifika at: bridging the gap of equality, fairness and inclusion for the marginalised in the tech sector; and addressing systemic racism to identify the potential for inclusive policies for STEM educators? How are industry-sponsored partnerships that uplift educators' capability via micro-credentials influencing educators to research pathways to postgraduate studies?

The project is scheduled to be completed late 2024.

5.3.1.2 Catalyst Seeding: New Zealand–Japan Joint Research Project Programme

In 2023 Dr William Liu joined Unitec's School of Computing, Electrical and Applied Technology, bringing with him a grant for a project called "Trustworthy and Privacy-preserving Collaborative Control Technologies for Vehicular IoT". The New Zealand–Japan Joint Research Project Programme supports researchers wishing to establish cooperative research networks and collaborative relationships between Aotearoa New Zealand and Japan. It facilitates bilateral research by funding Aotearoa New Zealand researchers to travel to Japan to work on joint research projects and supports the costs of expenses for research activities. The costs for Japanese collaborators travelling to Aotearoa New Zealand to work on supported projects is covered by the reciprocal JSPS funding programme.

Dr Liu's research aims to reduce road deaths by improving driver safety through trustworthy and privacy-preserving collaborative control technologies for vehicular IoT (Internet of Things). The project aims to respond to the government's national road safety strategy, Road to Zero, which has a target of reducing road deaths and serious injuries by 40% by 2030, compared with 2018.

Vehicular IoT (V-IoT) is a vehicular network where IoT devices and infrastructure are deployed to monitor vehicular environments with life-critical applications, e.g., road context-sensing and monitoring of inter- and intra-vehicular behaviours. While V-IoT is promising as a future solution improving road safety, the communication, computation and control architectures used in V-IoT can cause bottlenecks because monitoring and control capabilities are dependent on the trustworthiness (i.e., accuracy, completeness and timeliness) of data collected from diverse sensors that cannot always be guaranteed. Moreover, data sharing among vehicles and infrastructure is causing user privacy concerns. Dr Liu's project aims to develop a trustworthy and privacy-preserving V-IoT control system to overcome these problems. By embedding the system in a vehicle (as a software toolkit) it will provide drivers with advanced warning of hazards and improve driver safety.

The project commenced in April 2023 and will run for two years.

5.3.2 Funding-proposal submissions and success rates

In 2023, Unitec Principal Investigators (PIs) submitted six MBIE Endeavour Fund bids totalling approximately $33 million. The Endeavour Fund encourages researchers to consider a diverse range of ideas and conduct excellent research, with transformational potential across a range of economic, environmental and societal objectives. The Endeavour Fund is administered by the Ministry of Business, Innovation and Employment (MBIE). In 2023 MBIE received 422 applications for research grants with 68 approved for funding. This equates to a 16% success rate. Unfortunately, none of Unitec's bids were successful. While the scheme is notoriously competitive, some of our PIs questioned whether this outcome could have been a result of the impact of disruption on Unitec's (and Te Pūkenga's) reputation with major government funders. The novation of several large contracts that PIs took with them when they left Unitec may also have impacted on funders' confidence in Unitec's ability to host and deliver on long-term, high-stakes projects.

Figure 16 illustrates the number of proposals submitted by Unitec researchers for external funding, the number of successful proposals and the proposal success rates since 2011.
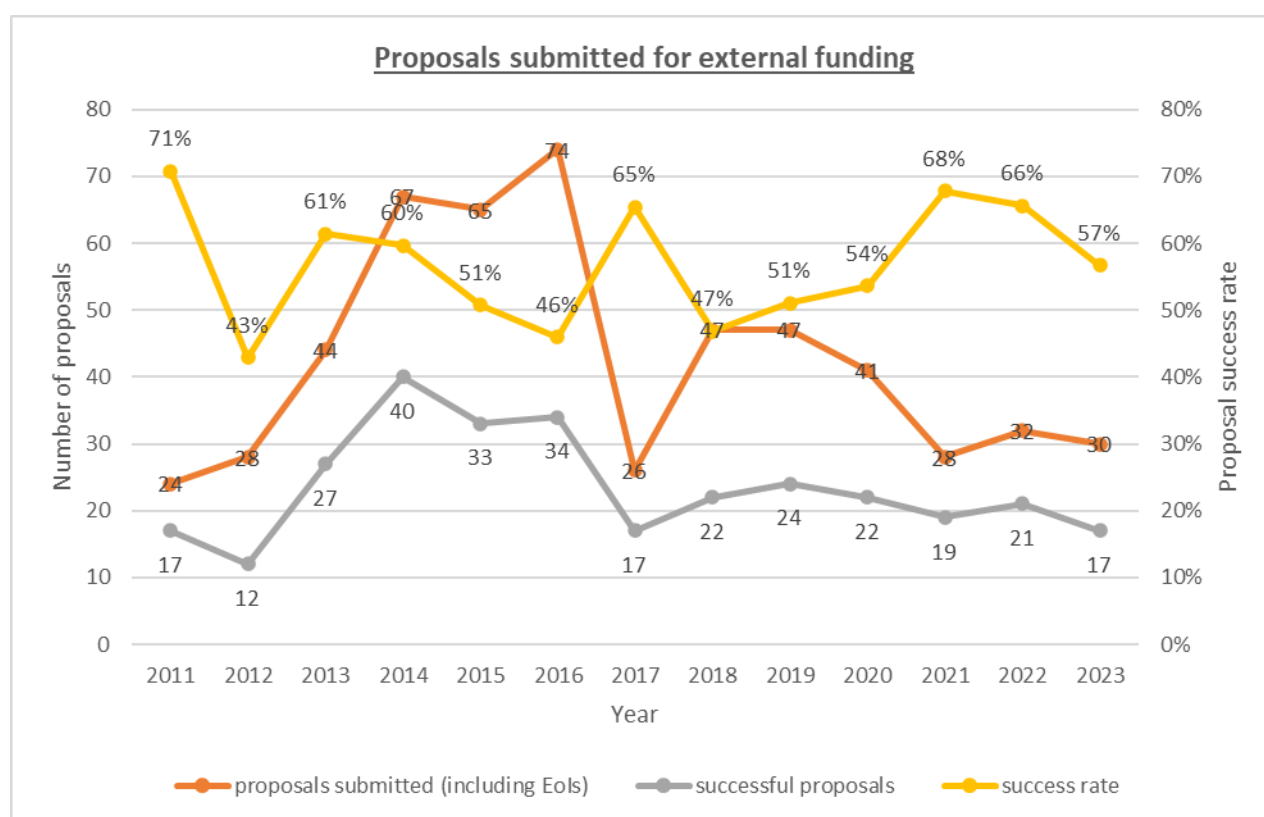
Figure 16: Proposals submitted for external funding 2011–2023.

Figure 17 illustrates the total grants Unitec has won since 2011.
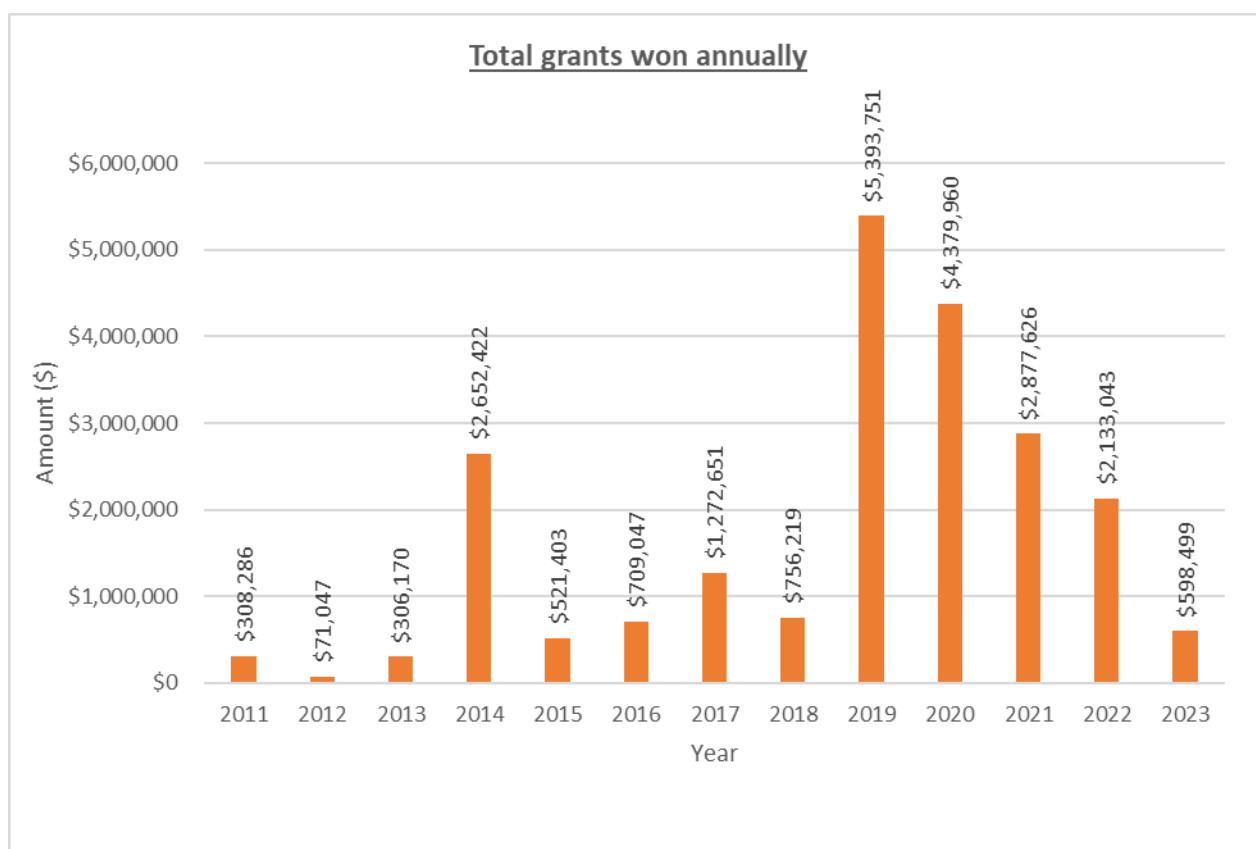
Figure 17: Total grants awarded annually 2011–2023.

NB: At the end of 2023 one grant application was still awaiting an outcome.

5.3.3 Organisations funding our research

Unitec grant funding comes from either government or non-government sources. Government funding is funding received from entities defined as Aotearoa New Zealand State Sector Organisations, local authorities (i.e., local government) and council-controlled organisations. Non-government funding includes funding received from public and private companies, not-for-profit entities, iwi and their subsidiaries, industry-based bodies, private individuals and trusts, and cooperatively owned companies.

Most of the funds won by Unitec staff in 2023 came from government sources (80%). However, because government grants are usually larger than grants provided by non-government organisations, this does not mean that most of the grants won were from government sources. In fact, the number of grants received from government and non-government sources were nearly on par (see Table 6 below).

With government budgets getting tighter and the future of its funding mechanisms uncertain, engagement with non-government funding schemes will become increasingly important.

Funding source	Total funding received	No. of Grants
Non-government	$120,774	8
Government	$477,725	9
Total	$598,499	17

Table 6: Sources of new grants awarded in 2023.

In 2023, $34,633,195 of funding was sought. A breakdown of the outcomes of these applications is depicted in Table 7.

Application status	Total funding sought
Awarded	$598,499
Declined	$34,034,696
Awaiting outcomes	$0

Table 7: Outcome of submitted applications 2023.

The funders and amounts of Unitec's five biggest grants in 2023 are depicted in Table 8.

Funder	Classification (Govt/ Non-Govt)	Amount	Principal Investigator
Te Whare Wānanga o Awanuiārangi	Government	$259,864	A/P Hinekura Smith
Otago University	Government	$73,000	Dr Sarah Wells
Royal Society Te Apārangi	Government	$60,000	Dr William Liu
Ako Aotearoa	Government	$48,861	Daisy Bentley-Gray
Bupa	Non-Government	$35,870	Prof. Terri-Ann Berry

Table 8: Funders and amounts of Unitec's five biggest grants in 2023.

5.4 Delivery of externally funded projects

The successful delivery of an externally funded research project hinges on the Principal Investigator's ability to lead, coordinate and perform the research. Operational and administrative assistance and advice from institutional support teams including Tūāpapa Rangahau, Finance, HR and IMS is vital to ensuring the smooth and timely delivery of contracted research.

In 2023 Tūāpapa Rangahau provided research management and research administration support to Unitec Principal Investigators in the delivery of 39 active externally funded projects worth over $4.8 million in contract value.

5.4.1 Total Unitec external research income (ERI)

The total external research income (ERI) for any given year is a strong indicator of the external value and magnitude of research efforts for that year. For these reasons, it is one of Unitec's KPIs within the Research Strategy, where Unitec seeks to increase the total value of ERI by 10% per annum.

Total ERI is an annual measure of the amount of income Unitec earned delivering research services to external parties. ERI is the income we have earned during a financial year, not what we have been awarded. Unitec measures the ERI earned each year by determining the percentage of progress made that year for each active research project. Each project's percentage is then multiplied by its respective awarded amount to provide the project ERI for that year. Total 2023 ERI is the sum of ERI calculations from all 39 active externally funded research projects.

Longitudinal data from 2010 onwards shows that Unitec significantly increased its external research efforts in the years 2015–17, dropped in 2018, and significantly increased in 2019. The major drop in 2018 was due to the change in the accounting principle that is used to calculate ERI. Due to this new process, the ERI will be low at project start-up but will gradually increase as the percentage of the project completed increases and is recognised. The investment-plan calculation did not incorporate the complexity discussed above and requires adjustment for future years.
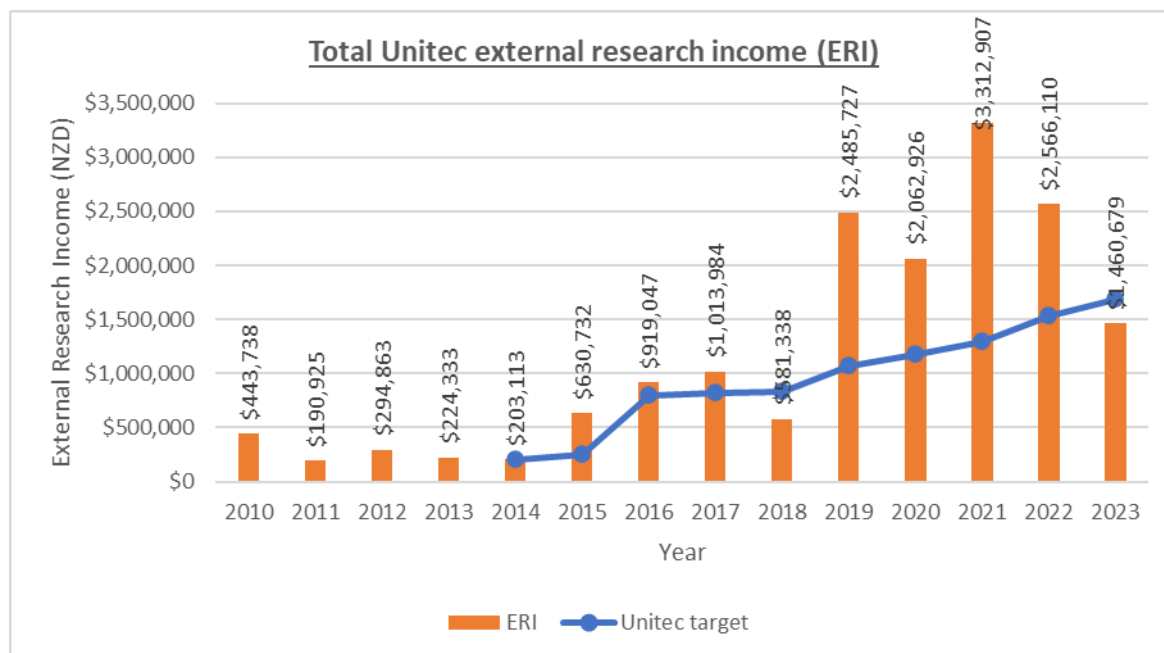
Figure 18: Unitec ERI between 2010 and 2023.

The decrease in External Research Income (ERI) figures in 2023 can be attributed to the novation of high-value contracts following the departure of Principal Investigator Prof. Jenny Lee-Morgan from Ngā Wai a Te Tūī, who oversaw several externally funded projects. Additionally, Prof. Terri-Ann Berry from the Environmental Solutions Research Centre and Assoc. Prof. Samantha Heath from the School of

Healthcare and Social Practice departed towards the end of 2023. Their departures are expected to significantly impact ERI figures in 2024, highlighting the importance of managing transitions effectively to maintain research continuity and funding stability within Unitec.

5.4.2   External research income by School and Research Centre

Unitec promotes active involvement in externally funded research at the School level through a reporting system tracking External Research Income (ERI) at both School and Research Centre levels. This fosters a culture of research excellence and collaboration, providing transparency and accountability while enabling tailored analysis for strategic decision-making.
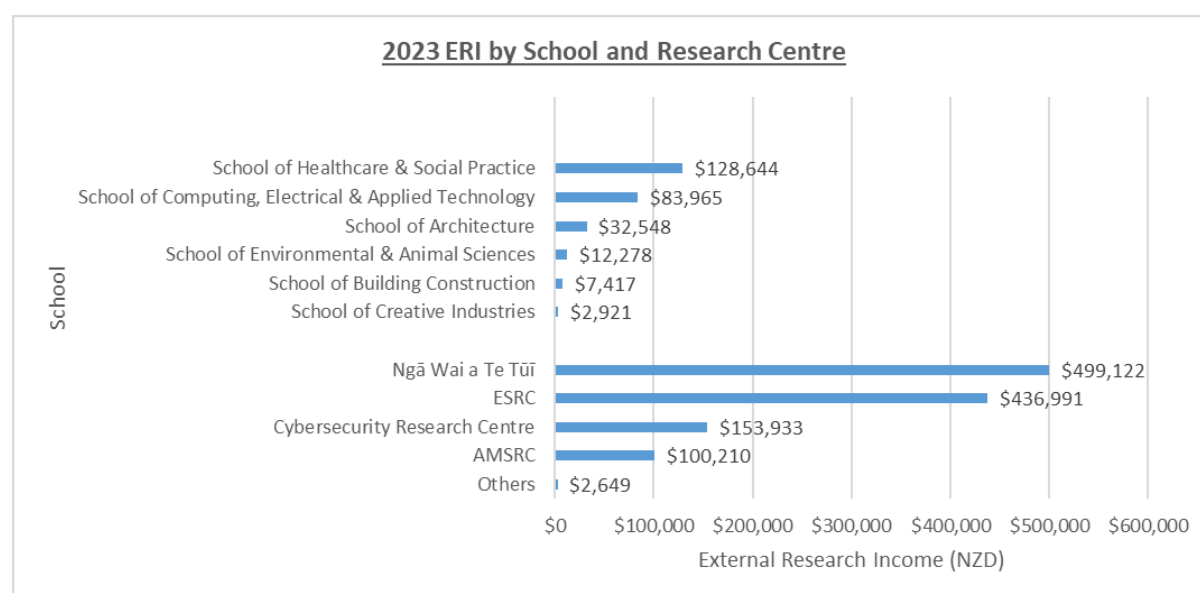
Figure 19: 2023 ERI by School and Research Centre.

In 2023 six out of eight Schools offering degree programmes at Unitec generated some level of External Research Income (ERI). However, there was notable variability in ERI performance among the Schools, with figures ranging from $2,921 to $128,644 per School (average of $33,472 per School, excluding specific research centres).

Four Research Centres accounted for 82% of Unitec's total ERI, while Schools contributed 18%. Notably, Ngā Wai a Te Tūī (Section 3.1) and the Environmental Solutions Research Centre were the top contributors, with 34% and 30% respectively, followed by the Cybersecurity Research Centre and the Applied Molecular Solutions Research Centre. This distribution underscores the effectiveness of Unitec's research strategy from 2015 to 2019, which focused on establishing Strategic Research Foci and facilitated the growth of new Research Centres.

5.4.3   Performance-Based Research Fund (PBRF) ERI

External Research Income (ERI) is one of the three assessment elements of the PBRF's mixed performance-assessment regime. The ERI metric serves as a robust proxy indicator of the quality and relevance of research conducted by tertiary education organisations (TEOs). In 2016 changes were made to the Performance-Based Research Fund (PBRF) metric to enhance incentives for TEOs to secure ERI, especially from non-governmental sources. These changes included reducing the weight of the Quality Evaluation portion from 60% to 55% and increasing the weight of the ERI portion from 15% to 20%. Additionally, starting in 2015, the government mandated reporting ERI in four distinct categories based on funding sources. From 2017 onwards, the PBRF funding formula utilised category weightings (Table 9) to calculate PBRF ERI funding allocations.

Funding source category	ERI Weighting	ERI Amount	ERI Percentage
NZ government contestable funds	1	$1,045,416	71.57%
NZ public-sector contract research	1	$53,251	3.65%
Overseas research income	3.5	$3,344	0.23%
NZ non-government income	4	$358,668	24.55%

Table 9: 2023 ERI by PBRF ERI weightings and by funding source.

The amendments to the PBRF by central government highlight the increasing emphasis on externally funded research, particularly in industries and communities. This shift also reflects a governmental push for TEOs to decrease reliance on public funding for research endeavours. These changes are in line with Unitec's Research Strategy for 2020–2024, which prioritises enhanced external engagement, a focus on applied research, and continuous growth in ERI.

Additionally, Table 9 provides a breakdown of Unitec's 2023 ERI by funding source, revealing that approximately 72% of ERI originated from New Zealand Government contestable funds, 25% from non-governmental sources within Aotearoa New Zealand, and the remaining 3% from either public-sector contract research within Aotearoa New Zealand or overseas research income.

5.5   Unitec Research Centres

The key priority in the 2015–2019 Research Strategy to *focus* research at Unitec has continued in the current environment. In 2023 there were six research centres at Unitec.

» The Digital Heritage Research Centre – Associate Professor Renata Jadresin-Milic (Director)
» The Centre of Research in Education for Healthcare Professionals – Associate Professor Samantha Heath (Director)
» The Cybersecurity Research Centre – Denis Lavrov (Director)
» The Applied Molecular Solutions Research Centre – Professor Peter de Lange and Dr Sarah Wells (Co-Directors)
» The Environmental Solutions Research Centre – Professor Terri-Ann Berry (Director)
» Ngā Wai a Te Tūī, Māori and Indigenous Research Centre – Associate Professor Hinekura Smith (Interim Director)

5.5.1   The Digital Heritage Research Centre

The Digital Heritage Research Centre aims to investigate ideas and concepts under three main themes:

1. **Digitalisation of heritage buildings.** This is the main theme of the Digital Heritage Research Centre. Current activity within this field includes existing work in the project "Digitalisation of Heritage in New Zealand", with overall aims to, on the one hand, present unknown, vulnerable (in the process of degradation or transformation) and/or abandoned historical heritage through a multimedia presentation; and, on the other, to set up an information tool for restoration, maintenance and valorisation. It has an emphasis on using digital technology in work with heritage sites and buildings. The specific objectives in the project "Digitalisation of Heritage in New Zealand" overall are:
    a) to raise awareness of the importance of heritage,
    b) to record heritage buildings,
    c) to influence a change in existing legislation and regulations in Aotearoa New Zealand.

2. **Retention of cultural heritage for meeting climate-change and environmental-emissions targets**. This is the theme that the Digital Heritage Research Centre aims to develop in cooperation with the Environment and Sustainability Research Group within the School of Architecture.

3. **Engagement with urban housing issues.** This is the theme that the Digital Heritage Research Centre aims to develop in cooperation with the Housing Research Group, and Te Hononga and Māori Housing, within the School of Architecture, and with Ngā Wai a Te Tūī, Māori and Indigenous Research Centre.

5.5.1.1   Mātauranga Māori

The Digital Heritage Research Centre's research project proposals have showcased a diverse team, notably co-led by Māori scientist Prof. Regan Potangaroa (Massey University), who actively contributes his Te Ao Māori knowledge, expertise and advocacy for the preservation of Māori architectural heritage.

The Centre's funding applications are guided by a Kāhui Māori to ensure alignment with Vision Mātauranga. Effective management of mātauranga is central to the Centre's work, with agreements sought from project beginnings to ensure recognition and protection of the intellectual property and cultural safety of Māori knowledge holders. Project teams adhere to the Nagoya Protocol (2011), acknowledging the importance of addressing the rights of Indigenous peoples when sharing biological, ecological and environmental data to support innovation and economic opportunities.

Assoc. Prof. Renata Jadresin-Milic and Prof. Regan Potangaroa, who is of Ngāti Kahungunu ki Wairarapa descent, collaborate closely on project proposal development, operating as equal partners based on pre-agreed values such as time, space, humour, persistence, generosity and forgiveness. The entire Research Centre team is dedicated to honouring and respecting Māori perspectives and knowledge systems, with a deep reverence for Te Ao Māori, especially concerning heritage and the environment.

From 2021 to 2023 the Centre's collaboration with Maia Ratana and Prof. Potangaroa has involved ongoing exploration, discussion, and drafting of papers and proposals. They have focused on providing opportunities for Māori postgraduate students to engage with topics including Mātauranga Māori and digital storytelling, as well as analysing how digital technologies can contribute to the representation and preservation of Māori heritage sites and buildings.

5.5.1.2   2023 Highlights

Students play an integral role in the Digital Heritage Research Centre's endeavours, engaging in various aspects such as digital recording, processing and modelling of heritage sites, as well as participating in public presentations, community engagement, and collaboration with professionals and the research team throughout the project lifecycle.

» In 2023 Master of Architecture (Professional) students Hannah Adolf and Rohan Sadhu, part of the Conservation and Heritage Research Cluster in the School of Architecture, achieved notable milestones: Hannah received a Unitec Industry Scholarship for her involvement in the Digital Heritage Research Centre's project at St David's Memorial Church, where she engaged with industry and community while developing digital recording and modelling skills.

» Meanwhile, Rohan was awarded the ICOMOS NZ General Assembly Conference Sydney Scholarship, became an ICOMOS ANZ Emerging Professional member, and later joined the ICOMOS ANZ Legislation and Policy Committee. Rohan co-authored a paper with Renata on cultural heritage preservation at the Ramappa Temple, presented in 2023 and published in

2024 in AMPS Proceedings Series "Heritages: Past and Present – Built and Social", AMPS and the Czech Technical University, Prague, Czech Republic.

» Student Xingru Song contributed to a joint presentation on the preservation of heritage at St David's Church in Tāmaki Makaurau Auckland for the Resilient and Responsible Architecture and Urbanism (RRAU) conference in 2023, alongside staff members Dr Sameh Shamout and Assoc. Prof. Renata Jadresin-Milic. Following this, the presentation was expanded into a full academic paper, currently being prepared for submission to an international journal.

5.5.1.3   Partnerships

In 2023, the Digital Heritage Research Centre's network expanded to include Heritage NZ and Auckland Council's Heritage Unit, leading to two significant events.

The Centre further developed partnerships with Wood and Partners Consultants, disseminating results internationally through the *Disegnarecon* journal. Collaborative efforts with Sam Smith and Maksym Khovalko from Wood's Survey and Data Products team included recording St David's Memorial Church.

Strong connections were formed with Human Interface Technology (HIT) Lab NZ at the University of Canterbury and Orbica Ltd.

External partnerships grew, supported by Renata's active involvement in ICOMOS ANZ and the further development of a research project with focus-group engagements involving industry, government, community and academia. Prior to the focus groups, survey data was evaluated qualitatively and quantitatively, showcasing their collaborative efforts. The first results are featured in the academic paper in preparation for publication in *Architectural Science Review*.

5.5.1.4   Disseminations

The earlier mentioned partnerships and collaborations are already evidenced by the early dissemination of the Centre's collaborative efforts.

In 2023 the Centre's research outputs encompassed the publication of four book chapters, three journal papers, delivery of a keynote lecture, and dissemination across five industry, professional and community media platforms.

5.5.1.5   External funding applications

In 2023 two external funding applications were submitted: to the Royal Society Te Apārangi's Marsden Fund and to MBIE's Endeavour Fund Research Programme scheme. Unfortunately, both applications were unsuccessful.

5.5.1.6   External research income

In 2023 the Digital Heritage Research Centre did not have any active externally funded projects, resulting in no external research income.

5.5.2   The Centre of Research in Education for Healthcare Professionals

The healthcare workforce has a direct impact on the health and wellbeing of every New Zealander at all ages and stages of their life. As such, the knowledge, skills and attitudes developed by the early-career practitioner need to be shaped in such a way as to meet the contemporary health needs of society. Discovering successful and distinctive approaches to teaching and learning that increase such ability will increase understanding about how education contributes to a workforce ready to tackle Aotearoa New Zealand's health concerns. The vision, then, is of a collaborative Research Centre in which projects undertaken will provide healthcare-professional educators with a range of evidence-based tools to support an education response to mitigating inequalities in health now and in the future. The Centre of Research in Education for Healthcare Professionals partners with public and private healthcare providers, charities, non-government organisations, experts from across a range of healthcare disciplines, and in other fields such as engineering, business and computing to develop

research initiatives that are pragmatic and address the real-world problems of healthcare education, and its relevance to improving health inequalities and outcomes.

The Centre's Director, Associate Professor Samantha Heath, won a Te Whitinga Fellowship from the Royal Society Te Apārangi, which allowed her two years funded at 0.8FTE to work on her research into the future nursing workforce, including 2023. Among many other things, Samantha has brought together all the nursing programmes in Te Pūkenga for this project and leads the Centre as an intrinsic part of this project. She is also active in assembling teams and putting together industry-partnered research funding applications, see below. Samantha says:

> *"The Whitinga Fellowship has provided opportunity for engagement across a range of providers of healthcare for older adults. We have formed relationships across communities, charities and experts in their fields. They have been supportive of the work and keen to be involved. The HRC [Health Research Council] grant application has been undertaken with a private medical-imaging service provider and, if successful, this collaboration will be developed into the full study. We have developed a collaboration with Monash, Malaysia, for the purposes of a future study about reducing ageism in the curriculum. We have a collaborative partnership with Haley Lowe within Vision Mātauranga."*

5.5.2.1 Vision Mātauranga

The evidence for disparity and inequality in health is overwhelming in every metric. Addressing these inequalities is a concern for all contributors to healthcare, including education. The Centre has worked proactively towards developing relationships with Māori educators and researchers to ensure that the significance of the research is understood and that there is opportunity to generate a Kaupapa Māori perspective in the work undertaken, or to support research that is Kaupapa Māori in origin. The Centre has developed a partnership with Mrs Haley Lowe (Tūhoe, Ngāti Raukawa and Director at Otemotu Creations) at the grant-application stage of a Marsden Fund application. The intention is to strengthen the health education and research workforce and leadership through these relationships and to work together on solutions for education that will support Māori health through professional education, and that respects the distinct contributions that might arise from the innovative potential of Māori knowledge, resources and people.

5.5.2.2 Partnerships

The Centre of Research in Education for Healthcare Professionals has established several partnerships with various organisations and experts to advance its research initiatives. These partnerships include public and private healthcare providers, charities, non-government organisations (NGOs), experts from healthcare disciplines, and experts from other fields such as engineering, business and computing. Additionally, the Centre collaborates with nursing programmes in Te Pūkenga, a private medical-imaging service provider for a potential HRC grant application, Monash, Malaysia for a study on reducing ageism in the curriculum, and Haley Lowe (Vision Mātauranga, Director at Otemotu Creations) for a Marsden Fund application. These collaborations aim to develop pragmatic research initiatives that address real-world problems in healthcare education, with a focus on improving health inequalities and outcomes.

5.5.2.3 Disseminations

In 2023 the Centre's research outputs encompassed the publication of one report, oral presentations at three conferences and poster presentations at two conferences.

5.5.2.4 External funding applications

In 2023 the Centre of Research in Education for Healthcare Professionals submitted five external research funding applications totalling $3.48 million to the Health Research Council (HRC), Unitec's Early Career Researcher Fund, MBIE's Endeavour Fund (Smart Ideas) and the Royal Society Te Apārangi's, Marsden Fund – Fast Start, and Marsden Fund – Standard. Regrettably, all applications were unsuccessful.

Sadly, Associate Professor Samantha Heath left Unitec at the end of 2023, creating challenges for the future of the Centre.

5.5.2.5   External research income

In 2023 the Centre of Research in Education for Healthcare Professionals did not have any active externally funded projects, resulting in no external research income.

5.5.3   The Cybersecurity Research Centre

Unitec's longest-established Research Centre was approved in 2012 to encourage digital innovation in Schools, including outside of computing and across disciplines. Former Centre Director, Professor Christian Probst, is now an Adjunct Professor and Denis Lavrov was appointed Director of the Centre in 2022, with significant experience in this space, starting with the STRATUS project in 2012 (MBIE Endeavour Fund Research Programme, $12.5m over six years); he led the STRATUS technical team to successful completion of the project, achieving all milestones. The Centre has produced over 15 novel technologies in the field of cybersecurity. Some have contributed back to academia (rRVM, COR-Honeypot), others have been co-developed together with industry partners (CRaaSH, LogSpider). The Cybersecurity Research Centre has significantly contributed to the culture of innovation at Unitec and has a national reputation.

Denis ran CybeR&DaaS at Unitec in 2023, a cybersecurity consultancy that in 2022 won $120,000 Phase Two funding from a start-up called GeneCrypt and in 2023, $150,000 for Phase Three. Bio-data analyst James Love worked with Denis on this project.

5.5.3.1   Vision Mātauranga

In 2023 the Cybersecurity Research Centre partnered with Andrew Sporle (Rangitāne, Ngāti Apa, Te Rarawa), Research Director, iNIZight Analytics, and Honorary Professor, University of Auckland, and Adjunct Professor Christian Probst (former Director of the Cybersecurity Research Centre) on an application for MBIE Endeavour Fund Research Programme funding on a project looking at data security and sovereignty. The project was a co-led Tiriti-based partnership specifically intended to give effect to MBIE's Vision Mātauranga policy to achieve an outcome that would not only work for Māori data holders but would extend data-analytics capability in other national and international contexts. The work would involve Māori data scientists (Sporle and Dr Tom Elliott) and the application of Indigenous innovation in collaboration with the Tūhono Trust to develop Mātauranga Māori-informed approaches to safely work collaboratively with whakapapa information and other Māori data. Unfortunately, the application was unsuccessful.

5.5.3.2   Summary of partnerships and student activity in 2023

The Cybersecurity Research Centre provided real-world experience in secure software development for cybersecurity solutions to interns from the Unitec Diploma in Cybersecurity and Bachelor of Computing Systems in 2023, hosting two from the Diploma in Cybersecurity and two from the Bachelor of Computing Systems.

5.5.3.3   External funding applications

In 2023 the Cybersecurity Research Centre secured two externally funded grants: $150,000 from GeneCrypt and $5,000 from Huntsman.

Sadly, GeneCrypt defaulted on the Phase Three payments, placing the Centre in a challenging situation going forward.

5.5.3.4   External research income

In total the Cybersecurity Research Centre generated $153,933 in external research income (ERI) in 2023 from one active contract (with contract value of $998,504), contributing 11% of the total ERI at Unitec.

5.5.4   The Applied Molecular Solutions Research Centre (AMSRC)

AMSRC partners closely with the Environmental Solutions Research Centre and the School of Environmental and Animal Sciences (EAS).

The Unitec Herbarium and its associated facilities have now been integrated into the AMSRC. This decision was based on the fact that the research conducted by the Unitec Herbarium, which was not previously formalised under any research centre, forms a natural extension of AMSRC's aims, priorities and research focus. Much of the work conducted within the Herbarium is already conducted in association with AMSRC due to the inclusion of molecular phylogenetics. Furthermore, the researchers from the Herbarium and AMSRC work closely with each other in a natural capacity and share research associates funded by Tūāpapa Rangahau.

5.5.4.1   Vision Mātauranga

AMSRC, in collaboration with its partner School Environmental and Animal Science (EAS), has a robust track record of engaging with Māori communities. EAS has a tradition of appointing Unitec Honorary Research Fellows, including Dr Nick Waipara, the late Kamera Raharaha, and Hema Wihongi, to enhance understanding of Māori perspectives and foster effective partnerships. Dr Waipara actively collaborates on projects involving climbing asparagus and asbestos.

In 2023 new and strengthened collaborations with iwi were established. Dr Sarah Wells, along with Prof. Peter de Lange, partnered with Te Roroa iwi to investigate the population genomics of a significant plant species unique to their region, ngā roimata o Tohe (*Pimelea eremitica*). This externally funded project facilitated Te Roroa representatives' visit to AMSRC, where they learned about molecular techniques and lab procedures. The collaboration included a mihi whakatau at Te Noho Kotahitanga marae and a presentation by Taoho Patuawa about Te Roroa's conservation efforts, fostering knowledge exchange. Additionally, AMSRC investigators visited Waipoua Forest for further engagement with Te Roroa. This collaborative exchange remains ongoing.

Dr Sarah Wells initiated a new research project investigating morphological variation and population genomics in *Naultinus* and *Dactylocnemis* geckos in Northland, collaborating closely with hapū in the Bay of Islands. She formed strong partnerships with various hapū in the region, including Ngāti Kawa, who invited her to Waitangi Marae. During the 2022–2023 summer, Dr Wells conducted fieldwork alongside Rana, an ecologist expert for Ngāti Kuta, and other local hapū members. These collaborations involved visits to hapū properties, where they learned about the natural environment. In 2024 Dr Wells will conduct further fieldwork in Te Roroa's rohe alongside members of the Environs team of Te Roroa.

AMSRC initiated collaboration with mana whenua in the Nelson region for the asbestos project, particularly focusing on the Cobb Valley area. Discussions were held with Wakatū Incorporation, comprising four hāpu from the top of the South Island, to explore collaborative opportunities. Additionally, contact was made with Mana Whenua ki Mōhua, consisting of Ngāti Rārua, Ngāti Tama and Te Ātiawa, whose rohe includes an asbestos mine. Following discussions with their respective rūnanga, full support was obtained for AMSRC's research permit application from the Department of Conservation. AMSRC has also requested a representative for a Kāhui Māori for the asbestos research to facilitate their kaitiaki role and promote knowledge sharing, which has been incorporated into an MBIE Endeavour Fund application submitted in March 2023 that was unfortunately unsuccessful.

In the asbestos Endeavour Fund application, AMSRC proposed employing Kaupapa Māori research methodology to investigate how rāhui can facilitate the healing and remediation of asbestos-contaminated sites. Rāhui, traditionally used to allow the environment to recuperate and regenerate without human intervention, serves both physical and spiritual protective purposes. The Vision Mātauranga-centred research aimed to establish a kāhui of knowledge holders and practitioners who implement rāhui, exploring suitable monitoring methods such as 'cultural health indicators' or 'mauri' for informing environmental reporting. Dr Nick Waipara and Tanya White, in collaboration with Assoc.

Prof. Dan Blanchon, would lead this aspect of the project, with funding allocated for a Māori master's student included in the Endeavour application.

5.5.4.2   Summary of partnerships and student activity in 2023

Dr Sarah Wells supervised:

» A third-year Bachelor of Science (BASci) student's Negotiated Research project, which was partially funded by AMSRC seed funding and Sarah's Unitec ECR grant. The project focused on investigating morphological and genetic variation in *Hemidactylus frenatus* geckos in collaboration with two external stakeholders: Ministry for Primary industries, who provided the specimens, and Dylan van Winkel from Bioresearches consultants. The student conducted all molecular lab work successfully in the AMSRC lab, and the project is currently being written up for publication.

» A second BASci student's investigation into morphological variation in tūī, *Prosthemadera novaeseelandiae*. The student conducted lab work in the AMSRC lab to molecularly sex all tūī samples. This project incurred minimal cost, as DNA extractions were readily available, with PCR costs funded by AMSRC seed funding. The findings of this project are currently being prepared for publication submission.

Prof. Peter de Lange supervised and managed research as follows:

» A BASci student from NorthTec who is revising the listing of the vascular flora of the Chatham Islands group (due for completion end of June 2024). This research project will provide critical information for the islanders, but especially for imi / iwi and the agencies involved in that island's conservation, biosecurity and environmental management.

» de Lange has a further BASci student who has conducted sampling of lichens on the Chatham Islands limestones with the intention to investigate their diversity and see whether this correlates to seabird nutrient overload. The study, of major interest to the Chatham Islands Landscape and Restoration Trust, will hopefully determine whether saxicolous limestone lichens can be used as an environment indicator of the success of predator-free restoration initiatives.

» de Lange has also helped co-supervise a Master of Science study on the genetics of *Leptecophylla oxycedrus* managed out of the University of Melbourne (due for completion June 2024). Papers on a new species of *Muehlenbeckia* and the flora of limestone islands in Te Whanga, Rēkohu, that involve students are in advanced preparation for journal submission.

» Additional projects involving student mentorship and research with EAS Research Associates have resulted in two new species of lichen being recognised, *Lithothelium kiritea* and *Megalaria crispisulcans*. A further project resolving a potentially new species of *Enterographa* is underway. de Lange and Dr Marleen Baling are also the senior editors of *Perspectives in Biodiversity*, a new ePress journal that links to AMSRC and Unitec. That publication, launched in May 2023, has published nine papers to date, many involving students and EAS staff but also international researchers.

Dr Marleen Baling supervised and managed as follows:

» A BASci student who undertook a study that quantified endoparasite load in captive inland bearded dragons (*Pogona vitticeps*), the findings of which were documented in a publication in *Perspectives in Animal Health and Welfare* (an ePress journal).

» Another paper looking at the arboreal behavior of Kapitia skink (*Oligosoma salmo*), completed by a student that she supervised in 2021, was published in *Perspectives in Biodiversity.*

» Marleen is also working with EAS lecturer Kate Harder on the endoparasites of exotic reptiles intercepted at the border. Publications from these studies are either pending or projected.

> » Marleen now runs the Galbraith Zoological Collection and with de Lange is Senior Editor of *Perspectives in Biodiversity*. In that capacity she has also overseen the publication of a major paper on the birds of Rēkohu / Chatham Island in that journa,l based on bird observations made on the island in February 2023. At the time of writing, Marleen is engaged in finalising research for HRV and has a student using eDNA to determine nesting materials used by small passerines on Rēkohu / Chatham Island. Marleen has a Bachelor of Veterinary Nursing student who is continuing a study on inland bearded dragons.

The Centre has many internal and external partnerships, including strong relationships with Auckland Zoo, Auckland War Memorial Museum, Auckland Council, Massey University, HRV, Wakatū Incorporation and Mana Whenua ki Mōhua. In 2023 new collaborations were established with staff at Landcare Research and Auckland Zoo, while initiatives involving Project Island Song, Babbage Consultants, MPI and the Department of Conservation have been launched. Additionally, collaborations related to the asbestos bioremediation project have been strengthened, including partnerships with Professor Michael Manefield at the University of New South Wales and institutions such as the University of Turin (Italy) and Fox Chase Cancer Centre (USA).

5.5.4.3   External funding applications
In 2023 the Applied Molecular Solutions Research Centre obtained an external grant totalling $70,000 from Genomics Aotearoa. AMSRC affiliated with Genomics Aotearoa, a government-funded organisation supporting genomics research in New Zealand. Dr Sarah Wells represented AMSRC at the Genomics Aotearoa AGM in November 2023, fully funded by the organisation. Genomics Aotearoa also serves as the external funder for Sarah Wells' collaborative project with Te Roroa.

5.5.4.4   External research income
In total, the Applied Molecular Solutions Research Centre generated $100,210 in external research income (ERI) in 2023, from five active contracts (with contract value of $496,000), contributing 7% of the total ERI at Unitec.

5.5.5   Ngā Wai a Te Tūī, Māori and Indigenous Research Centre
Refer to Section 3.1 of this report for details.

5.5.6   The Environmental Solutions Research Centre (ESRC)
Led by Professor Terri-Ann Berry, the Environmental Solutions Research Centre (ESRC) is highly collaborative. It fosters transdisciplinary research initiatives that push the boundaries of current disciplinary silos, with 24 Unitec researchers on the team, from six different schools and two other Unitec Research Centres.

Established in 2019, the ESRC involves chemists, biologists, engineers, epidemiologists, geographers, and building and construction experts. These members collaborate with industry leaders from various fields, such as waste management and minimisation, air quality, wastewater treatment and civil engineering, who work on complex and multigenerational challenges such as asbestos-contaminated soil, indoor air quality and plastic reduction in construction.

In August 2023 Prof. Terri-Ann Berry resigned effective mid-January 2024. Continuity for existing externally funded research projects was ensured by appointing Terri-Ann as an Adjunct Professor and subcontracting her newly formed Environmental Innovation Centre to deliver on the four externally funded projects with project end dates out to mid-2027.

5.5.6.1   Vision Mātauranga
ESRC has established connections and received strong support from Māori researchers, students, communities and other groups. For instance, its recent Endeavour Fund application (unfortunately declined) featured expertise from Professor Jenny Lee-Morgan (Pūrangakura), Associate Professor Hinekura Smith (Ngā Wai a Te Tūī), Dr Nick Waipara (Plant and Food), Veraneeca Taiepa (Unitec) and

Rebecca Gilbert (Cancer Society). This core team aimed to collaborate with ESRC to facilitate engagement with iwi and hapū, guiding the format, context and content of the Centre's communication with Māori. Prior to programme commencement, cultural safety agreements and IP protection measures would be established to recognise and safeguard the intellectual property of iwi collaborators, Māori knowledge holders and other Indigenous peoples.

5.5.6.2 External funding applications

In 2023 ESRC secured five externally funded projects totalling $888,000. These projects were awarded by funders such as BRANZ (plastics), Marley (Plastics Innovation Fund), HRV, the Waste Minimisation Innovation Fund (Auckland Council) and Bupa Aged Care.

5.5.6.3 External research income

In total, the Environmental Solutions Research Centre generated $436,991 in external research income (ERI) in 2023, from seven active contracts (with contract value of $1,493,787), contributing 30% of the total ERI at Unitec.

5.6 Industry Scholarships

Industry Scholarships are dedicated to the purpose of encouraging and supporting industry-partnered postgraduate research, are contestable, and are implemented by the Postgraduate Research and Scholarships Committee (PGRSC). Students must demonstrate that, in partnership with their supervisor, they have secured an industry or community partner who is actively supportive, preferably contributing resources.

A sub-committee of the PGRSC selected the candidates who demonstrated the highest-level qualities in adherence to Te Tiriti, applied/industry research and transdisciplinary research. Five scholarships were offered to Master of Architecture (Professional) students.

These were:

> » **Harold Gavin Drinn – Master of Architecture (Professional)**
> **Supervisors:** Dr Hugh Byrd and Kerry Francis
> **Project Title:** Cycle to Cradle – An Urban Mined, Material-Recovery Exhibit, as a Form of Circular Economy
> **Industry/Community Partners:** Auckland Council, and indirectly with companies that recycle building materials

> » **Joseph Bjelic-Webster – Master of Architecture (Professional)**
> **Supervisor:** Min Hall
> **Project Title:** How Can Rethinking Urban Architectural Materiality Inform Climate-Responsive Architecture?
> **Industry/Community Partners:** Fineline Architecture (https://www.finelinearchitecture.co.nz/)

> » **Hannah Adolph – Master of Architecture (Professional)**
> **Supervisor:** A/P Renata Jadresin-Milic
> **Project Title:** How Can the Neglected Carlile House Heritage Be Adaptively Repurposed to Serve a Better Community Purpose While Safeguarding its Historical Significance?
> **Industry/Community Partners:** Sam Smith and Maksym Khovalko

> » **Rahul Garad – Master of Architecture (Professional)**
> **Supervisors:** Peter McPherson and Dr Yusef Patel
> **Project Title:** How Can an Elderly Retirement Community Be Successfully Blended into Multi-Generational Households in Auckland?

Industry/Community Partners: Carter Holt Harvey, Laminex New Zealand and Abodo Wood

» **Atarangi Anderson – Master of Creative Practice**
Supervisors: A/P Leon Tan and Nikau Hindin
Project title: He Wāhine, He Aute
Industry/Community Partners: Whau the People Charitable Trust, Design and Contemporary Arts Research Group, Creativity and Cultural Praxis Group

5.7   Unitec Bold Innovators Scholarship

The Bold Innovators Scholarship is worth $15,000 and is awarded yearly, based on the potential of the concept for social, environmental and/or economic impact, the academic and general performance of the applicant, and the ability of Unitec to support the concept. This is determined through a selection process implemented by Tūāpapa Rangahau, involving a panel with relevant expertise.

The 2023 recipient of the Bold Innovators Scholarship was Afro-Kiwi writer, director and producer **Alex De Vries**, Master of Creative Practice graduate from Unitec's School of Creative Industries.

On receiving the scholarship, De Vries said, "As a member of an underrepresented community, this award means a lot. These opportunities often don't come to us. It's encouraging that Unitec believes in me and the scope of our work."

Gregor Steinhorn, Research Partner – Enterprise, says the award underlined Unitec's support for the creative industries. "While the creative industries have built such economically successful sectors in New Zealand as the movie and game-development industries, support is still limited. As the creative sector can create high-productivity employment and weightless exports, Unitec is excited to support this industry with our creative enterprise-focused courses. Alex brings innovative approaches to the music and video production industry. The Bold Innovators Scholarship will help him and his team to make their mark in this exciting sector."

Figure 20: Bold Innovators Scholarship recipient Alex De Vries.

Trust Issues is an ambitious audio-visual album, including eight distinct music videos, all conceptualised and directed by Alex and his team. This innovative project aims to elevate diverse perspectives and voices while prioritising artist care, relationship building and having fun. Moreover, it seeks to provide valuable experience to screen and music practitioners from diverse backgrounds to help advance their careers. It was premiered at the Bridgeway Cinema, Northcote, Tāmaki Makaurau Auckland, in February 2024.

The short film features a number of Creative Industries alumni and was produced by Procrastination Productions, a company Alex formed with Screen Arts graduates Kelsey Chapman, Saree Biddick, Lukas Faulkner and Hunter Challis.

Page 72

"Trust Issues was only possible due to the Bold Innovators Scholarship I received from Unitec, so it would be cool to enfold the community into the screening," says the Afro-Kiwi writer, director and producer.

Figure 21: Bold Innovators Scholarship recipient Alex de Vries (front right) with cast members of Trust Issues

5.8   Telling our research stories

Tūāpapa Rangahau promotes Unitec research stories via the research awards at the annual Unitec Excellence Awards, 3-minute thesis competition, Unitec/MIT Pacific Research Symposium, the ITP Research Symposium, Unitec ePress and the Unitec Research Blog.

5.8.1   2023 Unitec Staff Excellence Awards

Through our annual Unitec Excellence Awards, we recognise and celebrate the outstanding contributions of our people to Unitec. Out of the ten award categories, two are related to research.

5.8.1.1   Excellence in Early Career Research Award

The finalists for the Excellence in Early Career Research Award were:

»   **Environmental and Animal Sciences Early Career Researchers (EAS ECRs): Dr Marleen Baling, Dr Caralyn Kemp, Dr Sarah Wells, Assoc. Prof. Kristie Cameron, Kate Harder, Assoc. Prof. Laura Harvey**
EAS has a thriving and well-rooted research culture that plays a pivotal role in nurturing and bolstering the growth of its early career researchers. Their efforts have been recognised through their participation and success in Unitec ECR competitions, showcasing their talent and also the dedication of the EAS School in nurturing their professional development and research endeavours. Two of the school's ECR team are founding editors of ePress journals – helping provide a platform for established researchers to publish in open-access journals.

»   **Associate Professor Kristie Cameron – School of Environmental and Animal Sciences**
Award-winning teacher Kristie represents Te Pūkenga on the Royal Society Te Apārangi's Early Career Research (ECR) Committee and has led Unitec's ECR Forum for the past six years. She has implemented a number of initiatives which have significantly helped develop these important kaimahi, including the Early Career Research Speil, which provides opportunity for ECRs to practice their presentation skills and compete for research support prizes; the Early

Career Research Seminar with EIT Te Pūkenga which offers expert panel discussions, networking sessions and keynote speakers; and the Early Career Research Coffee Catch-ups which provide informal, cross-disciplinary connections with other ECRs and research partners.

The winner was Associate Professor Kristie Cameron from the School of Environmental and Animal Sciences.

Figure 22: Kristie Cameron (right), winner of the Excellence in Early Career Research Award, with Marcus Williams (left), Director Research and Enterprise, Tūāpapa Rangahau.

5.8.1.2 Excellence in Research Award

The finalists for the Excellence in Research Award were:

» **Assoc. Prof. Mel Galbraith, Senior Lecturer, School of Environmental and Animal Sciences (posthumous nomination)**
During his 22-year academic career Mel published 17 papers. At his passing, he was close to completing his PhD, already having two papers published from it and another in preparation. In 2015 Mel established *Perspectives in Biosecurity*, the first of the journals to be created in the Unitec ePress *Perspectives* series, which is now into eight issues and 24 papers. The journal provides a means for kaimahi and ākonga to publish biosecurity papers to support the EAS applied science degree. Mel was a founding member of many conservation trusts and had long involvement with several volunteer-based restoration projects, including Tiritiri Matangi. He was selfless in his endeavour to leave a tangible legacy for Aotearoa New Zealand in ecology and conservation.

» **Te Pātaka Art Trail: Assoc. Prof. Leon Tan, Dr Bobby Hung, Hohepa Renata, Tanya White, Peeti Lamwilai, Dr Becca Wood, Paul Woodruffe, Gina Ferguson**
A creative placemaking project involving a collaboration between Ngā Kaitiaki, the School of Creative Industries, Wairaka descendants, Dr Pouroto Ngaropo and Ngāti Awa ki Te Awa o Te Atua, Te Pātaka, a community art trail at Unitec, was a significant, research-led initiative celebrating the heritage of Wairaka. It engaged mana whenua with Unitec, including Ngāti Whātua Ōrākei and Ngāti Awa iwi, the latter having an 800-year-old ancestral connection with

the puna. The trail was intended to encourage public engagement with significant heritage, cultural and environmental qualities of the site, such as Te Wai Unuroa o Wairaka, Te Auaunga and Rangimarie Pā Harakeke, at a time of unprecedented housing intensification and urban change.

The winner for this category was Te Pātaka Art Trail team: Assoc. Prof. Leon Tan, Dr Bobby Hung, Hohepa Renata, Tanya White, Peeti Lamwilai, Dr Becca Wood, Paul Woodruffe and Gina Ferguson.

Figure 23: Te Pātaka Art Trail team at the project launch ceremony.

5.8.1.3   In Memoriam: Mel Galbraith – Associate Professor, School of Environmental and Animal Sciences

Mel Galbraith, a distinguished academic at Unitec, dedicated over 20 years of his life to education and research. It was not unusual to see Mel changing out of his gumboots in the carpark just in time to get to his 9.00am class, having been "down the back" helping a student with an applied science project before work started. Mel was an utterly committed educator and a highly active researcher, and he served as the Research Leader for the School of Environmental and Animal Sciences. His contributions to the field were immense, and his passion for knowledge and discovery was an inspiration to all who knew him. Mel significantly contributed to major conservation projects such as Tiritiri Matangi and Motu Kaikōura, in addition to substantial and enduring contributions to the New Zealand Ecological Society and the New Zealand Ornithological Society. Mel's legacy will live on through his extensive body of work and the countless students and colleagues he mentored and inspired. He was also one of most decent, values-based people you could hope to meet, and he will be deeply missed by the Unitec community and all who had the privilege of working with him.

Figure 24: The late Mel Galbraith, esteemed academic and passionate researcher, in his element, observing nature.

5.8.2   The 3-Minute Thesis Competition

The 3-Minute Thesis Competition was, as always, a highlight of 2023. There were ten presentations submitted. Students from the following programmes participated in the competition:

>> Master of Architecture (Professional) – 5
>> Master of Applied Science – 1
>> Master of Computing – 1
>> Master of Applied Technology - 1
>> Master of Applied Business – 2

The judges for this event were:

>> Dr Evangelia Papoutsaki – (Head Judge) Research Ethics Administrator, Tūāpapa Rangahau
>> Ioane Aleke Fa'avae – Academic Development Lecturer, Pacific Centre
>> Allana Goldsmith – Research Administrator, Ngā Wai a Te Tūī

The winning presentations were:

- » **Winner:** Jochelee Punzalan (Master of Applied Business). <u>Title:</u> Brewing Satisfaction in Auckland CBD Coffee Shops. <u>Supervisor:</u> Dr Susan Shu.
- » **Runners up:**
    - o Sembian Renga Rajan Veerasamy (Master of Applied Business]). <u>Title:</u> A Content Analysis of Political Campaigns on Facebook During the 2023 New Zealand Election. <u>Supervisor:</u> Denisa Hebblethwaite.
    - o Jayna Patel (Master of Architecture [Professional]). <u>Title:</u> Bandhan: To Bind, to Tie. <u>Supervisors:</u> Min Hall and Dr Yusef Patel.

5.8.3   Unitec/MIT Pacific Research Symposium

Unitec and Manukau Institute of Technology hosted their very first Pacific Research Symposium, themed **Pacific Success in Vocational Education: Past and Future**, in 2023. Co-convened by Aiono Manu Fa'aea (MIT) and Daisy Bentley-Gray (Unitec), the event was held at MIT's Ōtara campus on 11 December 2023.

The Symposium featured 95 registrations, including a keynote speaker, 14 full presentations, four shorter talanoa[4] presentations, and presentations of research excellence awards. Represented institutions included Ara, Whitireia/Weltec, Auckland Institute of Studies, MIT and Unitec. Additionally, the Ministry of Business, Innovation and Employment (MBIE) provided attendees with a comprehensive presentation detailing various funding opportunities.

After a warm Pacific welcome by Dr Jamie Smiler, Research Director Te Pūkenga, the opening lotu (prayer) by Rev. Dr Peniamina Leota and fa'afeiloaiga by Faleao Tupuola George Gray set the tone for the day, with prayers, song and a spiritual context for Pacific research. Introduced by Peseta Lotu-Iiga, the keynote speaker Dr Megan Gibbons (Deputy Chief Executive – Research Te Pūkenga) brought a strong socio-political lens for the importance of Pacific success in vocational education in Aotearoa New Zealand, with some compelling statistics, advocacy for the power of education to activate intergenerational change and the urgent need for our tertiary education institutions to serve Pacific peoples more effectively.

The Symposium featured three diverse panels or streams, namely Pacific Knowledges, Pacific Vocational Education and Policy/Pacific Region, along with the talanoa session, each encompassing a wide array of research foci reflective of the rich diversity inherent in the peoples of the Pacific.

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[4] Talanoa, originating from the Pacific Islands, particularly Fiji, Sāmoa and Tonga, embodies a traditional form of relaxed and inclusive dialogue where stories, experiences and perspectives are shared respectfully, fostering active listening, empathy and consensus building for problem solving, decision making and community cohesion.

Figure 25: Unitec/MIT Pacific Research Symposium (front left to right) Joanna Bourke, Linda Aumua, Bhagee Ramanathan

An example of a shorter talanoa presentation featured a transdisciplinary team with Peter Rees from Creative Industries, an MBA student and his supervisor, Dr Mitra Etemaddar from Applied Business. Mitra presented this in the absence of Peter.

Presentations from the panels showcased a breadth of topics:

> » Dr Tania Mullane from Whitireia/Weltec discussed the concept of vanua to foster a tuakana–teina relationship between Pacific peoples and tangata whenua, specifically focusing on the Whitireia experience, within the Pacific Vocational Education panel.
> » Joanna Bourke of the Pacific Corporation Foundation presented "Insights and perspectives: Inaugural report on New Zealanders' perceptions of the Pacific" in the Policy/Pacific Region panel.
> » Dr Semisi Taumoepeau of the Auckland Institute of Studies presented a case study titled "Empowering communities: A case study of the role of handicrafts in sustainable tourism development in Tonga" as part of the Pacific Knowledges panel.

The presentation of the Small Islands Cultures Research Initiative (SICRI) research awards was made by Dr Evangelia Papoutsaki, of the Unitec Research Office and SICRI convenor.

> » Linda Aumua of Unitec was awarded the best Early Career Research presentation for "The Tertiary Education Strategies 2002–2020: Pacific a voice to be heard".
> » Saunima'a Josephine Sasa of MIT received the Best Student Presentation award for "Sāmoan tatau: A holistic process of traditional cultural tattooing".

Co-convenor Daisy Bentley-Gray said of the Symposium, "The Pacific Symposium provided an opportunity for Pacific researchers in vocational education to showcase some of the work that people are doing in an environment that will hopefully grow an awareness of the research capability of Pacific staff in the sector and the potential for growth".

5.8.4   Institutes of Technology and Polytechnics Research and Innovation Symposium

The 11th ITP Research and Innovation Symposium, OPSITARA, convened by SIT from 30 November to 2 December 2023, featured excellent participation. Despite the distant location of this in-person event, Unitec contributed several presentations.

At the Symposium, Unitec staff presented on the following topics:

» **Skill requirements for low-prefabricated timber building technologies**
 <u>Presenters:</u> Yan Xu, Sadegh Aliakbarlou, Luban Chan, Anna Kimaro (all from Unitec), and Rehan Masood (Otago Polytechnic).

» **Improving prefabrication supply chain to alleviate the housing shortage**
 <u>Presenters:</u> Rajiv Mukunthan, Sadegh Aliakbarlou, Riffat Shaheed, Ronnie Matafeo (all from Unitec), and Rehan Masood (Otago Polytechnic).

» **Evolving family preferences: A study of Airbnb evaluations in New Zealand (2018–2023)**
 <u>Presenters:</u> Carl Gianelly Manalili, Dr Mitra Etemaddar, Shu Su (all from Unitec).

» **Exploring factors influencing the success and failure of rural micro-enterprises in Choiseul Province, Solomon Islands**
 <u>Presenters:</u> Daniel Willie, Dr Mitra Etemaddar, Glenn Simmons (all from Unitec).

5.9   Unitec ePress

Unitec's ePress is an online publisher of peer-reviewed, quality-assured academic work by Unitec staff, students and associates, as well as authors in the wider Te Pūkenga group. It publishes academic work in a range of formats on the ePress website (https://www.unitec.ac.nz/epress/), and provides a supportive publishing environment for current and emerging researchers.

The ePress publishing schedule for 2023 was as follows:

» One issue of the journal *Perspectives in Biosecurity* published
» One issue of the journal *Perspectives in Animal Health and Welfare* published
» One issue of the new journal *Perspectives in Biodiversity* published
» Two issues of the architectural journal *Asylum* published, one guest edited, one student focused
» *MIT/Unitec Research Symposium 2022 Proceedings* published
» *ITP Research Symposium 2022 Proceedings* published
» One book published, *Takina Te Hau e Te Reo Karanga*
» One issue of *Whanake: The Pacific Journal of Community Development* published
» One Monograph published
» Two Research Reports published
» Four Occasional and Discussion Papers published

The completed publications above represent quality-assured research outputs for 50 Unitec staff members and 106 staff members from other institutions in Te Pūkenga, an increase from 2022.

A high point in 2023 was the inauguration of another journal in the *Perspectives* series, *Perspectives in Biodiversity*. The journal has two Senior Editors from Unitec. The published papers are being well received in the discipline, with an average of 303 reads and 5.7 recommendations per paper.

In 2023 ePress published the MIT/Unitec Research Symposium 2022 proceedings, as well as the proceedings of the 2022 ITP Research Symposium, hosted by the Open Polytechnic and Southern Institute of Technology. The two proceedings combined represent 54 papers published by researchers from Unitec and the wider Te Pūkenga group. The ePress editor has been able to tap into this widening pool of published authors as reviewers for new papers submitted to ePress, which further builds staff capability in the publishing arena, and represents their valuable contributions to the research environment.

The ePress Editor and Executive Editor, Marie Shannon and Dr Evangelia Papoutsaki, are part of Te Pūkenga Publications and Dissemination Work Stream, who are forming a proposal for the future of research publishing in in the ITP sector. The group members offer each other mutual collegial support, and sharing of resources and information as they ensure best practice is followed in all published outputs across the sector.

ePress is committed to giving new and emerging researchers access to an open-source publishing platform, while maintaining high standards of academic integrity through the double-blind peer-review process. The ePress editor is able to support new and emerging researchers by reviewing papers prior to submission and giving authors guidance on writing structure and clarity.

5.10 Unitec Research Blog

The Blog proudly presents our research stories, news and other information about research at Unitec (https://www.unitec.ac.nz/UnitecResearchBlog/), and feeds into Tūāpapa Rangahau's social media platforms via Facebook (https://www.facebook.com/epressnz) and Twitter (https://twitter.com/UnitecResearch).

The Blog is an important means of telling our research stories, particularly now that *Advance* is no longer being published.

The decision in 2021 that the Blog writing would be shared among a group of staff members, co-ordinated and edited by ePress, resulted in regular and engaging posts about a range of applied research projects. However, staff changes and increased workloads have meant that we have not been able to maintain these regular posts in 2023.

Posts published in 2023 were:

» 29/3/2023 "Unitec Healthcare Lecturer Studies the Needs of New Fathers"
» 16/10/2023 "*Perspectives in Biodiversity*, a New Unitec ePress Journal to Showcase Aotearoa New Zealand Natural History"

6 Priorities for 2024

We will continue to support staff and student research as we await the Government's decisions about what will replace Te Pūkenga, now that it is being devolved. We will attempt to retain the three Research Centres that remain and look forward to potentially being able to work closely with MIT and other ITPs across the mōtu, depending on what model the Government rolls out.

7   Conclusion

Change continues to accelerate, and it is about to take a new twist as Te Pūkenga is devolved. The year 2023 was the third year of the integrated executive leadership model with MIT, and hopefully we can work more closely in collaboration with academics there in 2024. The potential for collaborative, applied, impactful research in this sector that is meaningfully partnered into community and industry remains our focus and our primary value proposition. This type of research is not well served in Aotearoa and the country needs it.

8   Appendices

8.1   Appendix 1: Unitec Research Strategy 2020–2024

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.

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, Aotearoa 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 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 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 expresses 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

RANGATIRATANGA AUTHORITY AND RESPONSIBILITY	WHAKARITENGA LEGITIMACY	KAITIAKITANGA GUARDIANSHIP	MAHI KOTAHITANGA CO-OPERATION	NGĀKAU MĀHAKI RESPECT
E whakarite ana te Whare Wānanga o Wairaka ki te pūtake ake o te rangatiratanga o te Māori me ngā mātauranga Māori.	E whakarite ana te Whare Wānanga o Wairaka ki te mana o tena, o tena, ki te noho kotahi, ki te puaki i tona ake reo, ki te whakamahi i ngā rawa mo ngā iwi katoa.	E whakarite ana te Whare Wānanga o Wairaka ki te kaitiakitanga o ngā taonga mātauranga.	E whakarite ana te Whare Wānanga o Wairaka kia tau he ngākau māhaki i roto i ngā mahi katoa.	E whakarite ana te Whare Wānanga o Wairaka ki te whakanui i ngā taonga tuku iho o ngā ao e rua, a hikoi ki mua. Ko te Māori me te Pākehā e mahi tahi ana mo Te Whare Wānanga o Wairaka.
Unitec accepts the principle that Māori have authority over and responsibility for all teaching and learning relating to the Māori dimensions of knowledge.	Unitec believes that each partner has a legitimate right to be here, to speak freely in either language, and to put its resources to use for the benefit of all.	Unitec accepts responsibility as a critical guardian of knowledge.	Unitec affirms that a spirit of generosity and co-operation will guide all its actions.	Unitec values each partner's heritage and customs, current needs and future aspirations. Māori and Pākehā working together within Unitec.

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 that 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 Te 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 on 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 levels
- 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, its 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:** 67
>
> 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

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 that 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 o Waitangi, the founding document of Aotearoa New Zealand

8.2 Appendix 2: Unitec Research Strategy Action Plan

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 Te 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	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 Māori staff; funded projects with named Māori researchers; 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.
			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 provide professional development for Māori researchers and supervisors. Provide administrative support for the Māori and Pacific Postgraduate Support Rōpū.
			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.

research governance and rangatiratanga.				

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 Research 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 five journals at ePress: *Whanake*, *Perspectives in Biodiversity*, *Perspectives in Biosecurity*, *Perspectives in Animal Health and Welfare*, *Asylum*. Publish Unitec Research Symposium proceedings. 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 fifth research goal – Student-Integrated Research. Ratify a fifth 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 criterion for Research with Impact Award. Ensure Student-Integrated Research is a criterion for internal contestable funding.

| | | | Foster research into Wairaka, our place; the natural environment, history and wairua. | Liaise with Rōpū Kaitiaki, Ngā Wai a Te Tūī, Sustainability Manager and 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 New Zealand Limited

Meeting of Te Komiti Rangahau o Unitec | Unitec Research Committee
Date of Meeting: 8 August 2024

Title	University Advisory Group: Submissions Sought for Phase 2
Provided by:	Hadley Brown, Chair URC
For:	**DISCUSSION**

Recommendation

That the committee provides feedback on Phase 2 to the University Advisory Group (UAG) for submission to Te Pūkenga, who will coordinate a response from the ITP sector.

Purpose

The purpose of this paper is to present the questions for submission for Phase 2 for the UAG. The committee's feedback will be used to inform Te Pūkenga's collective response to Phase 2.

Information/Background

The University Advisory Group (UAG) will have several consultation phases. Phase 1 consultation considered the role of universities in New Zealand and the shape of the sector. The submissions, while diverse, showed strong support for considering the eight universities as a more integrated system. There is support for more cooperation and, especially at the graduate level, specialisation. It is recognised that technology is impacting on future provision at all levels.

Phase 2 is concerned with the operations of core activities of teaching, research and knowledge transfer in New Zealand's universities, and their governance and management. The UAG will consider if changes are needed to New Zealand's legislative and regulatory frameworks.

The UAG is now seeking public submissions for Phase 2. **Submissions for phase 2 will close at 5pm, Friday 30 August 2024.** A collective response from Te Pūkenga will be organised. Te Pūkenga strongly encourages dialogue amongst the Unitec research community.

Key Points

Submission questions: Phase 2

Quality Assurance

1. How well does the current quality assurance system ensure that universities and university programmes meet the needs of students, employers, iwi and other members of universities' communities?

2. Could the current arrangements for quality assurance be improved? What is the appropriate division of responsibility for quality assurance between each university and the system as a whole?

3. What should the roles of the Academic Board/Senate, Vice-Chancellor and Senior Leadership Team, and University Council be in quality assurance?

4. Beyond quality assurance, what incentives or policies are needed or desirable to promote excellence in teaching, research and knowledge transfer?

Qualifications

5. How well are the degrees and other qualifications offered by the universities meeting the needs of students, employers, iwi and other communities?

6. Can the current university arrangements for approval and quality control of qualifications be improved? Should institutions take primary responsibility for their own qualifications, or should this be a system responsibility?

The Range of Disciplines

7. Are the universities matching their range of teaching and research disciplines to New Zealand's current and future needs? In what ways could the system better identify and plan for future needs?

8. How can the university system best respond to the demand for trans-disciplinary and inter-disciplinary research and graduates?

9. What role can existing and emerging technologies play in enhancing learning and research in a high performing sector?

10. How can planning and decision-making at both system and university levels be structured to ensure investment in cutting edge disciplines and technologies important to New Zealand?

11. How could teaching and research in academic disciplines with low demand best be supported in New Zealand's university system?

International Students

12. What scale and mix of international fee-paying students is appropriate for the NZ university system?

University Staffing

13. How can universities continue to attract and retain high quality staff and develop the next generation of staff? What should be the universities' obligations with respect to early career teaching and research staff including postdoctoral fellows?

14. Are universities appropriately setting the proportions of teaching, research and administrative staff and the mix of those on long-term and short-term employment contracts? If not, what policy changes should be considered?

University Governance and Management

15. Are current arrangements for university governance and management appropriate for ensuring optimal performance, quality assurance, and strategic focus on institutional and national needs?

16. What is the role and scope for academic-led decision-making that is desirable in a university?

Policy Setting

Currently responsibility for higher education policy sits with the Ministry of Education (with the Tertiary Education Commission responsible for allocating and investing funding), while the Ministry of Business, Innovation and Employment has responsibility for science and innovation policy and funding.

17. Are the policy-setting structures and arrangements for higher education optimal? Are there options for improvement?

Guidance on making a submission can be found here: https://uag.org.nz/submit/#questions

Please note that submissions will be publicly released.

Next Steps

The committee's feedback will be collated to inform Te Pūkenga's submission.

Contributors

- Brenda Massey, Tūāpapa Rangahau

Unitec New Zealand Limited

Meeting of Te Komiti Rangahau o Unitec | Unitec Research Committee
Date of Meeting: 8 August 2024

Title	2024 Institutes of Technology and Polytechnics (ITP) Research Symposium
Provided by:	A/P Marcus Williams – Director Research and Enterprise
For:	**INFORMATION**

Recommendation

That the committee receives this information, with feedback welcomed.

Purpose

The purpose of this paper is to share recent developments from the Rangahau Research Forum (RRF) on the topic of a 2024 ITP Research Symposium.

Information/Background

The committee is aware that there was no Unitec/MIT Research Symposium in 2023 and none is planned in 2024. The reasons for this decision are/were as follows;

- Unitec, MIT and all the other 14 ITPs are/were no longer independent organisations, hence such an event would be considered "in-house" and would not meet the definition of a verifiable research output, as detailed in the Tertiary Education Commission (TEC) Performance Based Research Fund (PBRF) research output definitions.
- At the time of the decision, the PBRF Quality Evaluation was imminent in 2026. The Unitec and MIT Research Output Management Systems (ROMS) showed a marked increase in outputs citing the "home" research symposium. Because the two institutes were not yet unified, they were verifiable outputs at the time these were run (2021 and 2022), however, they were not quality assured. They were 15-minute oral presentations to a general audience hosted in the home organisation, not strong knowledge transfer in the context of a national Quality Evaluation. Continuing along this path would have damaged performance in the PBRF.

Earlier this year however, the government suspended PBRF until further notice and announced the dissolution of Te Pūkenga. These factors have resulted in the decision within the RRF to run an ITP Research Symposium, even though Te Pūkenga is not yet fully disestablished.

Key Points

A draft "sketch" of how this symposium will look is as follows.

- Convened by Jamie Smiler, National Rangahau/Research Director
- A week of ITP research activities (December 2nd – 6th)
- Separate in person tranches of the symposium; Ara, Christchurch; Unitec, Auckland
- Co-hosted in person event for MIT and Unitec; Monday December 2nd, Unitec Mt Albert
- A national, online opportunity, either pre-recorded or live-online
- A Pacific tranche of the symposium
- A Māori rangahau forum
- Research workshops

Next Steps

The call for abstracts will open in the week beginning July 29th. Keynote speakers, workshops and full timetable pending. A decision on what type of research output this will be is going to be clarified by Jamie Smiler, who is speaking with TEC on the matter.

Appendices

Save the Date comms sent to all ITPs

Call for Abstracts

Save the Date - ITP Research Symposium

We are excited to announce a network-delivered week of collaborative rangahau and research events, Mon, 2nd – Fri, 6th December 2024.

After a pause in 2023, we are re-activating the ITP Research Symposium across a week of campus-based and online events.

The ITP Research Symposium will be delivered through several local, regional, and online events beginning in Tāmaki Makaurau | Auckland with an on-campus symposium held at Unitec's Wairaka | Mt Albert campus starting on Mon, 2nd December and ending with the OPSITARA symposium in Ōtautahi | Christchurch at the ARA campus, Thurs, 5th and Fri, 6th December, with other multiple other activities in between these dates.

For those who cannot make it in-person there will be several online events including the opportunity to present your rangahau and research, workshops, professional development sessions and keynote presentations designed to engage all kaimahi.

The week is also a great opportunity to get as many of our kaimahi together in person or online.

We want to support our Communities of Practice and kaimahi networks to come together during the rangahau and research week, please reach out if we can help.

Lastly, as we are yet to finalise the details of the event, we ask you to save the date in your busy calendars for this important week. We aim to have the details of the in-person events out to you shortly and some of the online events closer to the time.

If you have any questions, please contact the Pounuku Rangahau|Director Rangahau and Research, Jamie Smiler jamie.smiler@tepukenga.ac.nz.

Ko te manu e kai ana i te miro nōnā te ngahere, ko te manu e kai ana i te mātauranga nōnā te ao. Haere mai ki te kai!

The forest belongs to the bird who feasts on the miroberry, the world belongs to the bird who feasts on knowledge. Let us feast!

2024 ITP Research Symposium – Call for Abstracts

The **2024 ITP Rangahau and Research Symposium** will be held **2-6 December in Tāmaki Makaurau | Auckland; Ōtautahi | Christchurch; and Wānanga Ipurangi | Online**.

The Symposium will encompass several events across the week including:
- An in-person symposium event hosted by **Unitec and MIT** at their Wairaka | Mt Albert campus (2 December)
- A **virtua**l symposium event held online (4 December)
- An in-person symposium event, **OPSITARA 2024**, hosted by **Otago Polytechnic, Southern Institute of Technology, and Ara Institute of Canterbury** at Ara's Christchurch campus (5-6 December)
- Several online keynote and workshop events (2-6 December)

Please submit your abstract for either the in-person and/or the online events here. The deadline for abstract submissions is **Monday, 9 September**.

About the Symposium
The purpose of the 2024 ITP Rangahau and Research Symposium is to showcase the diversity of research undertaken by staff and postgraduate students across the vocational sector. All research disciplines and methodologies of inquiry are welcome, including (but not limited to) applied and technological research, rangahau Māori, creative practice, and pedagogical research.

Registration is free. Registrations for in-person attendance open on Monday, 9 September and close on Friday, 8 November.

If you have any questions, please contact the Pounuku Rangahau | Director Rangahau and Research, Jamie Smiler jamie.smiler@tepukenga.ac.nz.

Thank you for supporting the 2024 Rangahau and Research Symposium. We hope to see you there.

Ko te manu e kai ana i te miro nōnā te ngahere, ko te manu e kai ana i te mātauranga nōnā te ao. Haere mai ki te kai!

The forest belongs to the bird who feasts on the miroberry, the world belongs to the bird who feasts on knowledge. Let us feast!

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?