

## **Briefing for the Incoming Minister for Science, Innovation and Technology November 2023**

Universities New Zealand – Te Pōkai Tara is pleased to welcome you as the new Minister of Science, Innovation and Technology (SI&T).

This briefing is prepared by Universities New Zealand – Te Pōkai Tara (Universities NZ<sup>1</sup>) on behalf of the eight universities. The briefing provides an overview of the role of universities and their key contribution to the SI&T system in New Zealand and globally.

If you would like more information on any matter in this briefing paper, please contact Dr Bronwen Kelly, Deputy Chief Executive and Portfolio Manager for Research & Planning Systems – [bronwen.kelly@universitiesnz.ac.nz](mailto:bronwen.kelly@universitiesnz.ac.nz).

### **Introduction and overview**

New Zealand has eight universities – Waipapa Taumata Rau the University of Auckland, Auckland University of Technology, the University of Waikato, Te Kunenga ki Pūrehuroa Massey University, Te Herenga Waka Victoria University of Wellington, the University of Canterbury, Lincoln University, and the University of Otago.

New Zealand universities are highly collaborative despite a competitive funding model, and together, form a strong and effective system that, by any measure, makes significant contribution to New Zealand’s productivity and performs well in international terms. A range of key statistics is included in the Appendices.

New Zealand’s eight universities are primarily focussed on quality valuable teaching and research. 55% of university sector income comes from teaching and 30% comes from research. That 30% represented around \$1.33 billion dollars in 2022. Of that \$1.33 billion:

- \$301m was through the Performance-Based Research Fund – administered through Vote Tertiary Education.
- \$419m was through other channels such as Marsden Funding, the Health Research Council, Centres of Research Excellence, and other funds – mostly sitting within Vote SI&T, or subject to policy overseen by yourself as Minister of SI&T.

Universities are directly responsible for 25%<sup>2</sup> of all research carried out in this country. Nearly everyone who does research has gained their research skills in a university. This highlights the key role of universities in building New Zealand’s future science, innovation and technology workforce.

---

<sup>1</sup> Universities NZ is the operating name of the New Zealand Vice-Chancellors’ Committee, a body established under Part 19 of the Education Act 1989. It has statutory responsibilities for university quality assurance, the approval and accreditation of university academic programmes, entrance to universities, and scholarships. It also represents the interests of the universities on a wide range of other matters, such as education and research policies.

<sup>2</sup> Economic Impact of Universities, NZIER, 2016, p 6.

University teaching is 'research-led' meaning that most university teaching is done by academics who are research active. These academics develop research skills in their students and also successfully guide a proportion through to postgraduate and doctoral qualifications.

We recognize that in a post-pandemic environment, the Government must carefully consider New Zealand's future. New Zealand's future economy, workforce and society will be much stronger if its universities' full potential is unlocked through an improved funding system. This can only be done with the understanding and support of yourself as Minister of SI&T.

Universities New Zealand looks forward to meeting with you soon to better understand your priorities and to identify opportunities for supporting them. This briefing outlines what they see as the key matters we hope you will keep in mind as you become even more familiar with your new portfolio.

## Key areas of opportunity

There are seven key areas of opportunity we hope you will keep in mind.

### 1. Contestable research funding should be inflation adjusted (Vote SI&T)

Contestable funding research, science, innovation and technology funding through Vote SI&T is the lifeblood for many researchers and research organisations, including universities. This funding underpins the development of new ideas, the transformation of these into impact and the training for our future generation research workforce. Governments over the past decade have recognised the need to increase investment in research, science, innovation and technology, but increases have been occasional and sporadic, with many funds remaining static for the past six years when inflation has risen 24% since 2018. The lack of increased funding effectively means universities are investing nearly a quarter less now than they were in 2018 in basic research and developing our research, science and innovation workforce.

Alongside transformative system change, commitment to growing core contestable fund levels at a level 2-3% above CPI annually would increase system stability. This would allow universities and other research institutions to stabilise then build the research workforce which will further contribute to New Zealand economic and productivity growth.

### 2. Invest more in Māori and Pacific research capability (Vote SI&T)

Universities would like to see greater government support to develop and retain Māori and Pacific researchers in the university system. This is best done through targeted initiatives to attract and support more Māori and Pacific postgraduate students and to support their research careers in universities.

Universities New Zealand is currently running two programmes for Māori; one is funded by universities<sup>3</sup> and the other<sup>4</sup> is funded by MBIE and which runs out in early 2024.

There are currently no initiatives specifically for Pacific research capability development.

---

<sup>3</sup> <https://www.tekei.co.nz/>

<sup>4</sup> <https://www.universitiesnz.ac.nz/piki-ake-transition-programme>

### **3. Invest more in ‘applied’ postgraduate qualifications (Vote SI&T)**

We believe the ‘Applied Doctorates’ scheme announced in Budget 2023<sup>5</sup> could be significantly expanded which will improve the relevance and impact of university postgraduate research and deepen connections between universities and research end-users.

We suggest expanding this Budget 2023 initiative with a 10–15-year goal of more than 50% of doctoral research being done with and for end-users. The benefits of this will include:

- more research being done to address real-world problems and opportunities,
- ensuring a much greater proportion of the academic workforce have links to end-users and opportunities for them to supervise or lead more research, and
- reducing the time to end-user adoption for an ever-growing proportion of university research.

The scheme could eventually be further expanded into the Honours and Masters programmes to create a healthy pipeline of students into the doctoral scheme.

### **4. Reintroduce the postgraduate student allowance (Vote Education)**

In 2013 eligibility for student allowances was removed for students studying postgraduate qualifications above Level 8 (Honours). In the UNZ submission<sup>6</sup> to Parliament’s Education and Workforce Select Committee earlier this year, we made a strong case for the reintroduction of the postgraduate student allowance. By reinstating post-graduate student allowances New Zealand can incentivise and increase the number of postgraduate students which will be critical in lifting our long-term productivity and economy.

### **5. Restart and grow the ‘Entrepreneurial Universities Fund’ (Vote Education)**

The Entrepreneurial Universities (EU) Fund that was introduced by the National government in 2016 was highly successful in attracting world-leading entrepreneurial researchers to build stronger and more relevant links with existing and emerging industries and firms. A competitive round in 2018 led to nine awardees, eight of whom have remained in the country. Their areas of expertise are of great value to New Zealand and include immersive gaming, sustainable seaweed aquaculture, artificial intelligence, empathic computing, additive manufacturing and space systems engineering.

Unfortunately, unallocated EU funding was reprioritised to other areas in Budget 2019 and the funding for existing awardees comes to an end in December 2023. Therefore, universities must either find the funding to continue to support these academics or risk losing them offshore.

### **6. Grow funding in real terms for the Centres of Research Excellence (Vote Education)**

The Centres of Research Excellence (CoREs)<sup>7</sup> were first established in 2002. Since then, competitive funding rounds have occurred approximately every six years. CoREs are inter-organisational research networks with researchers working together on commonly agreed work programmes. CoREs build research capacity and capabilities through post-graduate programmes and the training of new researchers by delivering world-leading research programmes that are highly connected to end-users such as local communities and industry.

Their research strategic direction is governed by a high-level Impact Statement that describes how the CoRE will deliver or contribute towards high-level impacts for New Zealand’s economy, society, and environment. Their delivery on impact statement is reported annually to the Tertiary Education Commission.

---

<sup>5</sup> <https://www.mbie.govt.nz/science-and-technology/science-and-innovation/agencies-policies-and-budget-initiatives/te-ara-paerangi-future-pathways/valuing-our-people/>

<sup>6</sup> <https://www.universitiesnz.ac.nz/latest-news-and-publications/postgraduate-scholarship-and-stipend-support-university-sector>

<sup>7</sup> <https://www.tec.govt.nz/funding/funding-and-performance/funding/fund-finder/centres-of-research-excellence/>

The current 10 CoREs need an inflation-adjusted increase to their current funding levels which have remained static since 2016.

Furthermore, new funding should be made available to increase the number of CoREs. This includes the establishment of a Pacific CoRE that focusses on Pacific research and developing Pacific research capability. The contributions of a Pacific CoRE to the SI&T landscape in the region and internationally would be significant and would also support New Zealand’s diplomatic focus on the Pacific Islands.

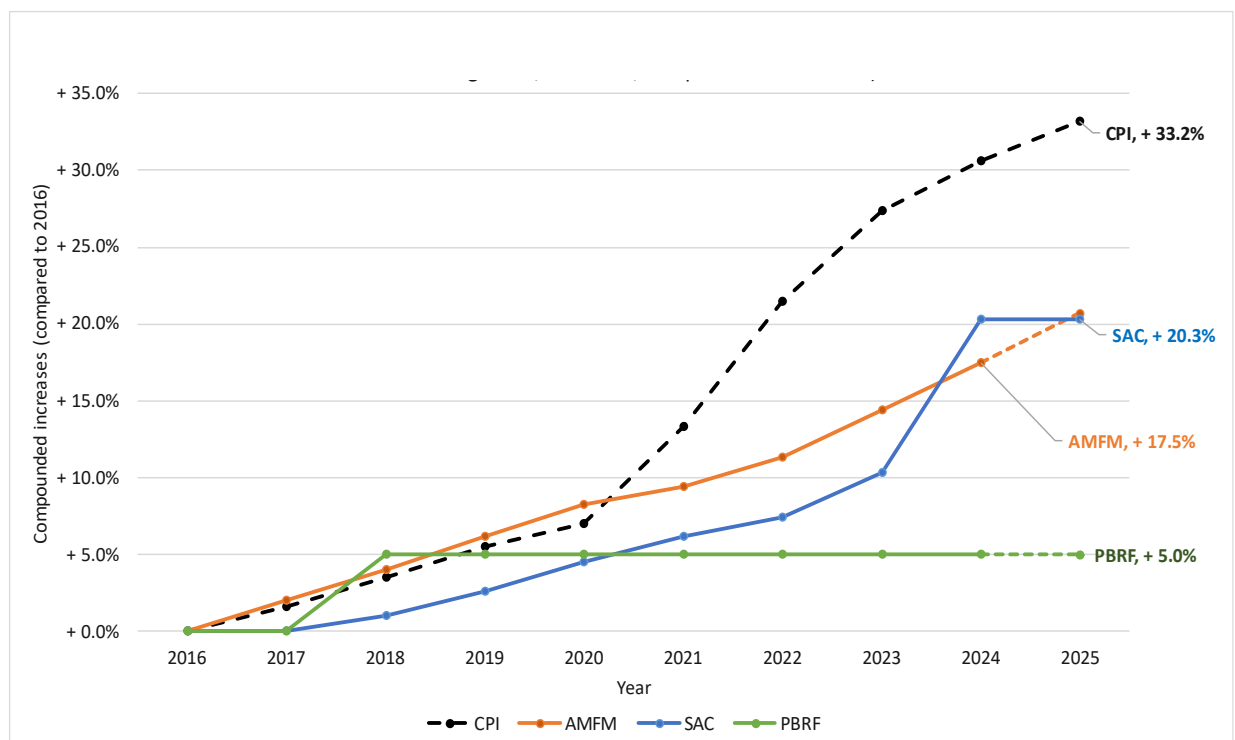
**7. Performance-Based Research Funding (PBRF) needs to increase (Vote Education)**

PBRF is a highly effective fund that is awarded based on a retrospective assessment of individual researcher portfolios over a 6-year period. It is primarily used to support:

- doctorates (through scholarships),
- early career workforce by helping them to establish their research programmes, and
- carry out the basic and fundamental research that underpins applied research in other parts of our economy.

However, it is important that you are aware that the relative value of the PBRF has plateaued since 2018 and is falling far behind CPI. Since 2018 inflation has risen 24%. The lack of increased funding effectively means universities are investing nearly a quarter less now than they were in 2018 in basic research and developing our research workforce. Figure 1 below shows the increasing divergence between CPI and PBRF (and other major university funds) since 2016.

**Figure 1. Compounded CPI vs compounded increases in domestic student fees, SAC/DQ7+ fund rates and PBRF compared to 2016 rates.**



*NOTE: SAC/DQ7+ is the tuition subsidy universities receive on student enrolments. AMFM is the Annual Maximum Fee Movement is the maximum amount by which domestic student fees can be increased. Annual percentage changes are based on general policy announcements and do not take into account additional increases given to courses for Mātauranga Māori and Te Reo Māori which differ on an institution-by-institution basis.*

Significant consequences of this funding decline in real terms are that universities have had to reduce:

- the number of doctoral scholarships,
- support to early career researchers, and
- investment in basic research infrastructure and equipment.

If not reversed, the decline in PBRF will impact long-term on the country's research-capable workforce and on research activity. An increase is needed urgently.

## Higher Education Funding Review

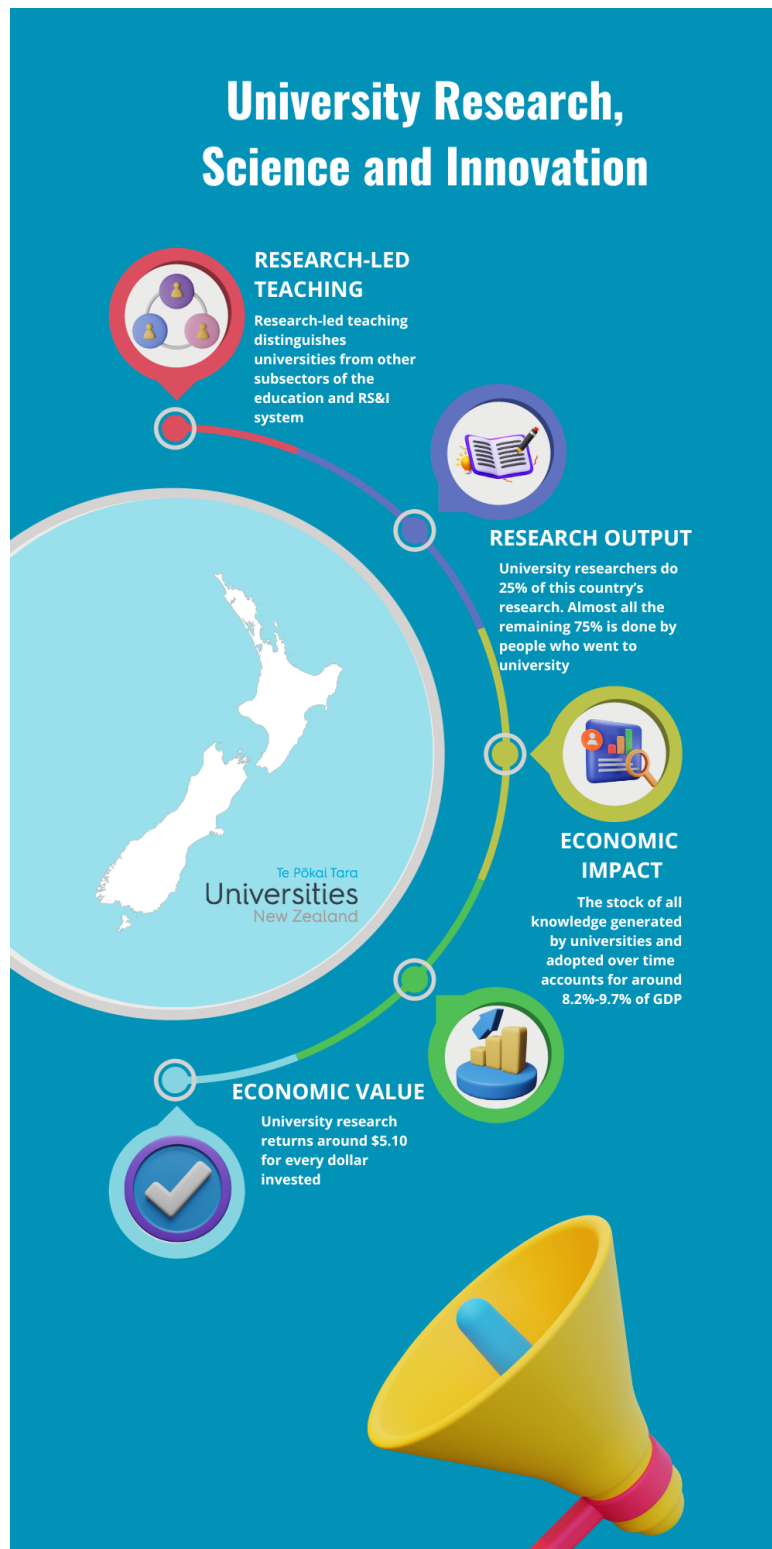
Officials will be providing the Minister of Education with advice on the potential scope of a Higher Education Funding Review towards the end of this year.

It will be important that you, as Minister of SI&T, take an active interest in any decision made about a Higher Education Funding Review given the role universities play in the SI&T system.

The key messages we are hoping Ministers will hear are:

1. **Our university system is not broken.** We have one of the world's best university systems by every metric. In terms of teaching, we enjoy some of the best progression rates, best completion rates, highest graduate employment rates, and lowest rates of graduate unemployment. By international standards our research is high quality and impactful. All eight universities are ranked in the top 500 internationally.
2. **The core mission of our universities must be preserved.** If our universities are (a) to engage in knowledge exchange and research collaborations, and (b) to attract international staff and international students and (c) to produce domestic graduates with qualifications recognised internationally, then our universities must conform to the norms of what is an international university. Key norms for universities internationally include:
  - teaching is *research-led* with almost all academic staff being research active (unlike other tertiary education subsectors which provide *research-informed* teaching) - critical in the development of students' innovation and problem-solving skills,
  - a high level of academic freedom - the ability for academics to test and question ideas in advancing knowledge and understanding, and
  - a high level of institutional autonomy – which enables universities to be politically neutral and focus on excellence and quality in research-led teaching.
3. **The main problem is the quantum of funding.** Government controls about 77% of university income. The rate at which that income has been increased is not indexed to inflation and, therefore, in the past three years it has fallen well below inflation. The system needs an injection of catch-up funds then ongoing CPI-driven increases.

# Appendix 1. Key facts about NZ university contributions to science, innovation and technology



## Appendix 2. NZ university sector - at a glance

<p>Overview</p>	<ul style="list-style-type: none"> <li>• New Zealand has eight universities – seven are ‘comprehensive universities’ meaning they provide a wide range of courses and subjects for students.</li> <li>• The number of universities in NZ per capita is on par with Australia, UK and Canada - one university per 640,000 people.</li> <li>• Altogether, NZ universities had 136,270 equivalent full-time (<b>both domestic and international</b>) students (EFTS) enrolled in 2022. These EFTS were made up of 177,495 actual students.<sup>8</sup></li> <li>• Combined, the universities had 118,095 equivalent full-time <b>domestic</b> students (EFTS) enrolled in 2022. These EFTS were made up of 152,895 actual students.<sup>9</sup></li> <li>• Combined, the universities had 18,175 equivalent full-time <b>international</b> students (EFTS) enrolled in 2022. These EFTS were made up of 24,600 actual international students.<sup>10</sup></li> <li>• All New Zealand universities were placed in the 2024 QS World University Rankings top 500. Three universities were in the 2023 Times Higher Education World University Rankings top 350, and all eight in the top 800.<sup>11</sup></li> <li>• Individual NZ universities appear in the 2023 QS World University Rankings by Subject for courses in: Anthropology, Archaeology, Anatomy &amp; Physiology, Civil &amp; Structural Engineering, Dentistry, Development Studies, Education, English Language &amp; Literature, Geography, Library &amp; Information Management, Pharmacy, Sports-related Subjects, Veterinary Science.<sup>12</sup></li> <li>• There is at least one (and typically more) NZ universities ranked in the top 200 for all but seven of the subjects considered by QS.<sup>13</sup></li> </ul>
<p>Economic impact</p>	<ul style="list-style-type: none"> <li>• Universities employed around 21,888 FTE staff in 2022, which is about 1.0% of New Zealand’s total labour force. The flow-on effect of university employment accounts for another 2,190 to 4,380 jobs in the wider economy.<sup>14</sup></li> <li>• The university sector spent \$4.4 billion in 2022 on staff, capital and the purchase of goods and services<sup>15</sup>, this is equivalent to about 1.6 percent of GDP and 46.7% of country’s expenditure on education and training in 2021.<sup>16</sup></li> <li>• Universities make a significant contribution to the regions that house them, their contribution representing up to 5.9% of regional GDP counting University and student spending that contributes directly to regional GDP.<sup>17</sup> For example, University of Auckland and their student spending contributes</li> </ul>

<sup>8</sup> Ministry of Education, Education Counts Statistics, Provider based enrolments and provider based equivalent full-time enrolments (Custom table supplied to UNZ ) Updated April 2023.

<sup>9</sup> Ministry of Education, Education Counts Statistics, Provider based enrolments and provider based equivalent full-time enrolments (EFT.9 and ENR.31 tables) Updated April 2023.

<sup>10</sup> Ministry of Education, Education Counts Statistics, Provider based enrolments and provider based equivalent full-time enrolments (EFT.9 and ENR.31 tables) Updated April 2023.

<sup>11</sup> From the Master Longitudinal QS & THE World Rankings spreadsheet – 2023 results.

<sup>12</sup> From the Master Longitudinal QS & THE World Rankings spreadsheet – 2023 results.

<sup>13</sup> From the Master Longitudinal QS & THE World Rankings spreadsheet – 2023 results.

<sup>14</sup> NZIER, Economic Impact of NZ’s Universities, 2022 update.

<sup>15</sup> University annual reports.

<sup>16</sup> Statistics New Zealand, GDP December 2022, GDP 271,272 million, expenditure on education and training; - 9,587 million.

<sup>17</sup> NZIER, Regional activity of universities, June 2022 update.

	<p>to 2.1% of Auckland’s regional GDP. This is 5.9% for University of Otago and their students.<sup>18</sup></p> <ul style="list-style-type: none"> <li>• International education generates at least \$742 million for New Zealand and New Zealand universities’ earnings from export education represent 0.9 percent of all New Zealand’s exports of goods and services.<sup>19</sup></li> <li>• There were 14,630 international EFTS at NZ universities in 2022,<sup>20</sup> with NZ having one of the highest proportions of international students in the world (21% at Bachelor’s level, 21% of all tertiary-level programmes).<sup>21</sup></li> <li>• International education generates at least \$742 million per year for New Zealand.<sup>22</sup></li> </ul> <p><u>Research and the transfer of knowledge</u></p> <ul style="list-style-type: none"> <li>• The stock of all knowledge generated by universities and adopted over time across the wider economy accounts for around 8.2 percent to 9.7 percent of GDP.<sup>23</sup></li> <li>• A 10% increase in higher education research spending will eventually increase GDP by 1.75% to 1.84%.<sup>24</sup></li> <li>• Universities generate around a quarter (24%) of all research in NZ.<sup>25</sup></li> <li>• In 2021, universities spent about \$1.19 b on research.<sup>26</sup></li> <li>• According to the most PBRF results (2018), 35% of the university sector’s active researchers are in STEM subjects.<sup>27</sup></li> <li>• According to the 2018 PBRF results, 17% (N=1,077) of all university researchers (N=6,299) are emerging researchers, 42% were in STEM subjects.<sup>28</sup></li> </ul>
--	--

<sup>18</sup> NZIER, Regional activity of universities, June 2022 update.

<sup>19</sup> NZIER, Economic Impact of NZ’s Universities, 2022 update.

<sup>20</sup> Calculated by adding international student numbers reported in each of the eight universities audited annual reports. From the Master University Finances Spreadsheet.

<sup>21</sup> Education at a Glance 2022: OECD Indicators Table B4.1. EAG 2022 is based on 2020 first-time entrants numbers.

<sup>22</sup> NZIER, Economic Impact of NZ’s Universities, 2022 update.

<sup>23</sup> NZIER, Economic Impact of NZ’s Universities, 2022 update.

<sup>24</sup> NZIER, Economic Impact of NZ’s Universities, 2022 update.

<sup>25</sup> Statistics NZ “Research and Development Survey: 2022”.

<sup>26</sup> This in the Master University Finances Spreadsheet – row 67.

<sup>27</sup> Used TEC definition of STEM subject from 2018 Evaluation report. STEM subjects were defined as Architecture, Design, Planning, Surveying; Agriculture and Other Applied Biological Sciences; Chemistry; Computer Science, Information Technology, Information Sciences; Earth Sciences; Ecology, Evolution and Behaviour; Engineering and Technology; Molecular, Cellular and Whole Organism Biology; Physics; Pure and Applied Mathematics; and Statistics.

<sup>28</sup> PBRF summary table, Universities New Zealand.