TE ARA PAERANGI FUTURE PATHWAYS GREEN PAPER 2021

Response from the University of Otago, Dunedin School of Medicine, Postgraduate and Early Career Research Committee

We are grateful for the opportunity to provide feedback to Ministry of Business, Innovation and Employment (MBIE) on the future of research in Aotearoa New Zealand. We wholeheartedly support the assertion that future research in this country must enhance and strengthen the role of Māori within the research workforce, as well as focus on research outcomes in terms of health equity.

The Otago Medical School, Te Kura Hauora o Ōtākou, is New Zealand's first medical school, established in 1875. At any one time, our Dunedin campus hosts approximately 900 students and 500 academic, research, and professional staff. The Postgraduate & Early Career Research Committee (PERC) is a sub-committee of the Dunedin School of Medicine (DSM).

The mission of this committee is to shape the future of postgraduate students and early career researchers in the DSM, by fostering active engagement between students and early career researchers, supporting professional development of students and early career researchers, and facilitating interactions between junior and senior members across the DSM. From that standpoint, we have prepared the following submission. Our submission is structured using the main themes, though the ideas are not mutually exclusive, and some responses will cross over to other themes. We have provided our thoughts on five out of the six main themes.

The following early-career researchers have contributed to this submission: Dr Sharon Leitch, Dr Sunali Metha, Dr Helen Owen, Morgan Jones, and Dr Lara Vlietstra.

1. Research Priorities

- The scope and funding of research should be relevant to current needs of our national health system and should promote principles of health equity, quality, and accessibility, particularly for Māori and Pasifika, within the New Zealand population. Research priorities should not be influenced by the political landscape but should focus on the essential health needs of the people of Aotearoa New Zealand. To best give effect to Te Tiriti, panels focusing on prioritizing research should be diverse with cross-disciplinary expertise including research and RSI governance/policy makers.
- The following should be considered: Research prioritization runs the risk of having a negative impact on researchers carrying out basic science, building the foundation for tackling issues that may arise in the future. With limited financial resources, national research priorities may be broadly categorized into two parts:
    1. Research relevant to the New Zealand population (e.g., health research involving Māori, environmental research pertaining to New Zealand).
    2. Research questions that align with global needs (e.g., basic science research, health research, climate change, social media, science, and technology).
- The scope and focus of these two categories are dynamic and will depend on the needs both nationally and globally. Category 1 can focus on immediate needs of the country and increase Partnership with Māori and Pasifika. Category 2 addresses more global needs and provides a platform for NZ to contribute to science and innovation globally, while incorporating Mātauranga Māori.
- The metrics to assess strong research leadership can be biased if based on a funding track record. This may have the unintended effect of overfunding specific groups and in turn a specific research priority, while undervaluing another innovative research that can be carried out in New Zealand. One possible solution could be to include a section in the funding applications on how the proposed project is likely to benefit the New Zealand population. Research priorities should

be set out to help inform policy development and could be more effectively coordinated with work conducted by government agencies.

2. Te Tiriti, Mātauranga Māori Me Ngā Wawatao Te Māori

- To enable Mātauranga Māori in the RSI sector, it is essential to encourage Māori students in high school and early university years to pursue careers in science. Funding support and insight into research topics at the high school and university undergraduate level, is needed to incentivize Māori students to pursue a career in science. Additionally, there is a need to systematically upskill all New Zealanders in understanding Te Ao Māori. Efforts on both those initiatives will in the long run lead to incorporation of Mātauranga Māori in the science and innovation sector.
- To protect Mātauranga Māori in the health science research system, it is important that research exploring aspects of the health and wellbeing of New Zealanders oversamples Māori participants and adopts a Kaupapa Māori theory (i.e., a non-deficit, system-level approach). Research focused on Māori population health should be led by Māori researchers. However, non-Māori researchers who work in a health equity space could benefit and grow personally and professionally by being Named Investigators on these projects. Depending on the research location and whether region-specific factors are considered, local iwi could be involved and consulted at every stage of the research process and/or represented on the project.

3. Funding

- The requirement for researchers to pay high overhead expenses to their institution out of research funding is a serious problem within the current funding model. At the University of Otago, we are charged approximately 115% of our research costs to cover overheads. Not only does this reduce the funding available to undertake the proposed research, but it also makes it unfeasible to compete with commercial research organizations, which typically charge far less. If University overheads were funded in a different way, researchers could ensure funding was spent directly on research expenses. The current funding system is insufficient to support stable science careers in New Zealand, with many scientists choosing to move overseas for better employment prospects. Funding institutional overheads separately to competitive research grants secured by the researchers would permit maintenance and extension of institutional research infrastructure, whilst enabling researchers to support employment of their team, many of whom are typically early career researchers and postgraduate students. We recommend defining the costs that will be covered by institutional funding and ensuring those monies provided match the inflation rate.
- Current funding models incentivize PhD graduates to move overseas for postdoc opportunities. In Australia the average postdoc salary is AU$95,000 compared to an average in New Zealand of NZ$71,000. High institutional overhead charges make funding postdoctoral students and early career researchers difficult. One postdoctoral student could cost upwards of 150k per year. Other countries have adopted alternative institutional funding methods, outlined in this document https://hea.ie/assets/uploads/2017/06/Report-Of-The-Group-On-Research-Overheads.pdf. Implementing such a method used by the UK or US could be beneficial for the New Zealand system.
- A base grant institutional funding model would improve stability for research staff and enable continuity of research projects with minimal disruptions. Many university staff are currently funded by “soft” grant money, such that they work on serial fixed-term contracts without guaranteed job security. Opportunities for within-university base grant funding could be awarded to research units with a strong overall track-record in a particular area or theme to provide funding for their staff. Research units may be therefore less reliant on successful project-specific outcomes, which vary with national priorities and competition. Funding schemes

within-university could be developed to provider research units with theme or subject-based funding that is not necessarily project specific. Additionally, more small grant funding opportunities should be available for early career researchers to conduct their own research as a Lead Investigator (under supervision from a mentor or Unit director) and receive their own salaries over the course of the project.

4. Institutions & 5. Workforce

- One of the main issues affecting our Postgraduate and Early Career Group is employment precarity, being employed in fixed-term positions without permanent or continuous employment prospects. Employment precarity is detrimental to well-being. A highly competitive employment environment is inaccessible and demotivating. These factors cause many emerging researchers to abandon a research career despite investing the better part of a decade in attaining the necessary qualifications and experience. It has been suggested these factors may contribute to the lack of diversity among researchers. The Organisation for Economic Co-operation and Development (OECD) published a comprehensive review of this issue, and we recommend that MBIE consider the recommendations contained within that publication in relation to reducing academic employment precarity. *OECD (2021), "Reducing the precarity of academic research careers", OECD Science, Technology and Industry Policy Papers, No. 113, OECD Publishing, Paris.*
- In addition to this, there are limited academic employment pathways available after a PhD, due to the limited postdoctoral fellowships available and the limited academic posts within universities. There is greater demand for the limited lecturing and tenure track positions than their availability. Research-only positions are seldom available and entirely dependent on very limited number of fellowships with little or no support available from the institution despite those staff having skilled technical expertise. Suggestions for improvements could include:
    - Encourage alternative career pathways for scientists from undergraduate level, perhaps by fostering relationships between RSI and Universities, and consider increase bio-tech funding
    - Educate students early on about the expectations in an academic career and provide opportunities to carry out short-term employment placements both in academic institutions and industry settings
- The base institutional funding model suggested above will support employment stability for early career researchers, thus supporting their career development. Early career researchers who have worked continuously from one research contract to another should be prioritised for permanent employment.
- A possible idea that may help support capability, skills, and workforce development for Postgraduate students and early career researchers could involve research collaboration across research units, depending on where there are knowledge and skill gaps. This would provide further research opportunities for Postgrads and early career researchers.