

Wellington, 14th March 2022



Ministry of Business, Innovation and Employment

Te Ara Paerangi- Future Pathways

RE: Submission on behalf of the early career researchers of the Malaghan Institute of Medical Research

To whom it may concern,

Please accept this submission on behalf of the early career researchers of the Malaghan Institute of Medical Research regarding your consultation process of the Te Ara Paerangi- Future Pathways Green Paper. As a group, we are comprised of late-stage PhD candidates and early career post-doctoral fellows from the Malaghan Institute. Our research focusses on understanding the power of the immune system and discovering novel ways to harness the immune system and use it to develop therapeutics against cancer, allergic and auto-immune diseases. Whilst we have not directly answered all your questions outlined in the submission, we have focused on areas regarding the current funding structure that we have personal experience with. We hope this will give you an insight into how we interact and are affected by the current funding structure, and how we hope to see it change in the future.

We thank you for the opportunity to have our viewpoints recognized and considered and are excited to see how the outcome of this Green Paper will promote high level, efficient, and impactful science to New Zealanders.

Kind Regards,

Jodie Chandler

Yasmin Nouri, PhD Candidate:

The majority of funding grants do not currently allocate money towards PhD stipends. Students are instead required to live off university stipends, which do not exceed \$30,000 per year. This funding model means that many students are not able to carry out a PhD unless they have external financial help due to the high cost of living in university cities. This is turning the ability to undertake a PhD into something reserved for those who are already financially privileged, rather than something that is based on merit. Therefore, grants should allocate money for PhD stipends in the same way they do salaries, that can be given in combination with university scholarships in order to ensure that PhD students are receiving the equivalent of a living wage.

Furthermore, those carrying out a PhD are often left in a poor financial position when they finish, with large student loans and little savings. However, despite knowing we will be financially disadvantaged, we also know that a PhD is a requirement in the field if we are wanting to conduct our own research in the future. On top of this, there is little job security for recent doctoral graduates, who typically have to apply for a small number of postdoctoral positions, all with short contracts. In New Zealand, the salaries of these positions often do not reflect the expertise and the time spent studying of those applying, resulting in many researchers going overseas or leaving research altogether.

The industry would benefit from a review of the market when it comes to postdoctoral salaries, and subsequent modifications to grants to reflect fair salaries. Furthermore, changes to the way research objectives are measured in grants and how early-career projects are funded should allow for longer contracts and more job stability (i.e. a focus on professional development and research potential rather than exclusively based on specific pre-defined outcomes). Grants that have more consideration for researchers in the early stages of their careers, whether that be PhD students or postdocs, will ensure students from all socio-economic backgrounds are able to gain a PhD and furthermore, will keep PhD scientists in New Zealand and in research once they graduate.

Jodie Chandler, Post-doctoral fellow:

A primary concern of mine with the scientific research industry in New Zealand is the lack of clear pathways to carve out a successful career whilst remaining in New Zealand. I, as many others, have accepted a post-doctoral position overseas. This seems to be the most common route for NZ graduates as post-doc positions in NZ are both hard to find, and poorly paid. Furthermore, from my understanding fellowships are incredibly rare and prestigious and contestable grants are challenging for early-career researchers to be successful. I think the scientific community would hugely benefit from increased post-doctoral fellowships. This would make the position less dependent on the financial stability of the principal investigator and give the post-doc a level of independence and assurance to investigate questions or use techniques that may not have been otherwise available. The support of early-career researchers is imperative to foster an efficient and cutting-edge research sector in NZ. As it currently stands PhD graduates are leaving the country and frequently not returning. This exodus of highly trained scientists greatly impedes scientific advancement, whilst also coming at a financial loss due to the money spent throughout education.

In response to the pandemic, the New Zealand community has seen the critical value of scientific research. I believe this shift in mentality must lead to a direct translation to the value employers place on scientists. Science is frequently spoken about as the future, as the way to generate impactful progress on core issues within NZ such as climate change and inequity in human health. If this aligns with the government's perspective on scientific research, then it must be appropriately conveyed through salaries which come through contestable grants. The sole reliance on contestable grants for research groups results in an uncertain environment where salaries cannot be guaranteed long term. This leads to short contracts (typically 1-2 years) which is not conducive to scientific research which is inherently a slow-moving process. I would urge the government to introduce a funding system that enables long term security for researchers, where time isn't taken away from research by constant writing and reviewing of grant applications.

Additional notes on questions

How should we determine what constitutes a core function and how do we fund them?

Far reaching, multi-disciplinary work that integrates both basic and translational research. Core functions should answer unmet need with equity at the center regarding the researchers involved, the knowledge generated and who it could possibly affect in New Zealand. Core functions must be broad, and funding should not be outcome based and they should be funding for a substantial period to enable longevity of the project. We believe that core functions should not be to "cure" a particular disease as we know the value in fundamental research. The benefit of enhancing fundamental knowledge should not be overlooked as it is the backbone to developing novel, effective therapeutics down the line.

How do we design collaborative, adaptive and agile research institutes that will serve our current and future needs?

We should design and enable large research collaborative groups that are focused on key (high level) problems. We think by placing less emphasis on funding specific technology/methods this approach would enable the team to continue adapting to utilize new technology whilst still working towards the same outcome. Simpler transfer permits would significantly ease collaboration. We think a multi-disciplinary building that incorporates immunology, molecular biology, virology, biochemistry, and bioinformatics would be well placed to implement this approach.

How do we design Te Tiriti enabled institutions?

Enforce Maori advisory group within institutions to help ensure work is consistently putting Te Tiriti at the centre. We suggest that institutions that don't just consult Māori but integrate Māori policy advisors and researchers into key leadership roles within institutions.

How do we better support knowledge exchange and impact generation? What should be the role of research institutions in transferring knowledge into operational environments and technologies?

Fostering collaborative research and having centralised hub of multi-disciplinary research will aid this.

What impact would a base grant have on the research workforce?

Greater job security, more time to focus on the details of the project and how it is progressing than on trying to acquire more money to keep the lights on. This will have a profound impact on the mental health of those stressed and anxious about applying for funding. But also their staff because now have more time to interact with them and ensure they are happy and supported with their projects. Ultimately this will mean greater productivity on the project and thus more efficient funding.

How do we design new funding mechanisms that strongly focus on workforce outcomes?

We suggest that this could be incorporated into the grant by providing set hours of professional and personal development to ensure people are trained and fluent in new technology/methods/concepts. We should ensure the workforce has a certain percentage of women/minorities as it is well known that diversity in the workplace leads to more impactful outcomes that resonate with a larger range of sectors of the community. Would it be possible to switch the fundamental principle of funding by investigating in people, rather than specific, detailed projects. Have high level core goals (core functions) that researchers must contribute to, but give them flexibility as they are the experts and they are the best equipped to determine whether a project has legs or doesn't. Focus on developing the best scientists in particular fields that New Zealand critically needs more understanding in. We suggest that applications must show a project that is focussed on building knowledge but also enabling workforce development.