From:	no-reply@mbie.govt.nz
To:	Research, Science and Innovation Strategy Secretariat
Subject:	Draft Research, Science and Innovation Strategy submission
Date:	Sunday, 10 November 2019 4:30:48 p.m.
Attachments:	Online-submission-form-uploadsdraft-research-science-and-innovation-strategy-submissionssubmission-form-research-science-and-innovation-strategy-FMHS-PDS_submitted.pdf

Submission on Draft Research, Science and Innovation Strategy recevied:

Are you making your submission as an individual, or on behalf of an organisation?
Organisation

Name
Brya Matthews

Name of organisation or institutional affiliation
University of Auckland Faculty of Medical and Health Sciences Postdoctoral Society

Role within organisation
Representative of early career researchers

Email address (in case we would like to follow up with you further about your submission)
brya.matthews@auckland.ac.nz

Which of the below areas do you feel represents your perspective as a submitter? (Please select all that apply)

If you selected other, please specify here:

Gender

Ethnicity

Name of organisation on whose behalf you are submitting, if different to the organisation named above

In which sector does your organisation operate: (Please select all that apply)
Research

If you selected other, please specify here:

How large is your organisation (in number of full-time-equivalent employees)?
5000+

Please indicate if you would like some or all of the information you provide in your submission kept in confidence, and if so which information.

Please upload your submission document here
submission-form-research-science-and-innovation-strategy-FMHS-PDS_submitted.pdf - Download File

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

Research, Science and Innovation Strategy

Submission form

The Government is developing a Research, Science and Innovation (RSI) Strategy to set out our vision for RSI in New Zealand and its role in delivering a productive, sustainable, and inclusive future.

We are keen to hear the views of New Zealanders on the draft Strategy so that we can get a better understanding of what our country needs from RSI. We also are looking for feedback on how we can take action to ensure New Zealand's RSI system is optimised for success. These views will inform the direction of Government investment in RSI and the research and innovation areas for us to focus on as a country, as well as help us understand the challenges we need to overcome.

We encourage anyone with an interest to make a written submission.

How to have a say

We have included a number of questions in the draft RSI Strategy document to highlight issues on which we would like further input. We encourage you to use these questions as a guide when submitting your feedback.

This document provides a template for you to provide your answers. Please upload the completed document using our online submission page.

You do not have to fill out every section – we welcome submissions on some or all of the questions.

The closing date for submissions is 10 November 2019.

After the consultation period finishes, we will analyse the submissions received and incorporate the feedback in the final version of the strategy.

Confidentiality

Please note: All information you provide to MBIE in your submission could be subject to release under the Official Information Act. This includes personal details such as your name or email address, as well as your responses to the questions. MBIE generally releases the information it holds from consultation when requested, and will sometimes publish it by making it available on the MBIE website.

If you do not want some or all the information you provide as part of this consultation to be made public, please let us know when you upload your submission. This does not guarantee that we will not release this information as we may be required to by law. It does mean that we will contact you if we are considering releasing information that you have asked that we keep in confidence, and we will take your reasons for seeking confidentiality into account when making a decision on whether to release it.

If you do not specify that you would prefer that information you provide is kept in confidence, your submission will be made public. While we will do our best to let you know that we plan to publish your submission before we do so, we cannot guarantee that we will be able to do this.

Contribution of Research, Science and Innovation

This strategy is about New Zealand's Research, Science and Innovation (RSI) at a high-level. Its aim is to identify challenges and opportunities that will have the broadest impact on our research and innovation activities. For this reason, it mentions few specific areas or sectors of research and innovation. For this draft version of the Strategy, we are keen to hear from researchers, innovators, businesses, and providers of public services on what the RSI system could be doing to accelerate progress on Government's priorities.

Question 1: Where can the RSI system make the greatest contribution towards the transition to a clean, green, carbon-neutral New Zealand?

Question 2: Where else do you see it making a major contribution?

Question 3: What else could else the RSI system be doing to accelerate the progress towards the Government's priorities*?

* see list of the Government's twelve prioritiesincluded in Part 1 of the draft Strategy.

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Researching and innovating towards the frontier

Question 4:	Do you agree that the RSI Strategy should be focused on innovation at the "frontier" (creating new knowledge) rather than behind the frontier (using existing knowledge to improve the ways we do things)?
Question 5:	In which research and innovation areas does New Zealand have an ability to solve problems that nobody else in the world has solved? Why?
Question 6:	In which areas does New Zealand have a unique opportunity to become a world leader? Why?
Question 7:	What do you consider to be the unique opportunities or advantages available to the RSI system in New Zealand?
Question 8:	What RSI challenges are unique to New Zealand, that New Zealand is the only country likely to address?
Question 9:	What are the challenges of innovating in the public sector? How do they differ from those in the private sector?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Our key challenge – Connectivity

Question 10:	Do you agree that a key challenge for the RSI system is enabling stronger connections? Why or why not?

Please type your submission below.

Guiding Policy – Excellence

Question 11:	Do you agree with the definition of excellence presented here as the best thing possible in its context? Why or why not?
Question 12:	How can we achieve diversity within our research workforce? What are the current barriers preventing a diverse range of talent from thriving in the RSI system?
Question 13:	Do you agree that excellence must be seen in a global context, and draw from the best technology, people, and ideas internationally? Why or why not?
Question 14:	Do you agree that excellence is strengthened by stronger connections?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Guiding Policy – Impact

Question 15: How can we improve the way we measure the impact of research?

Please type your submission below.

We acknowledge that some measurement of probable impact is an essential factor in assessing the value of proposed research, however, the current system for many grant mechanisms favours research in which tangible contributions are anticipated immediately after the grant period. Whilst this is possible in some clinical or advanced translational projects it is very difficult for a lot of basic research which seeks to develop the basis for future impact. This leads to a conflicting situation for early-career researchers where their ability to continue in research is in conflict with the morality of over-stating impact. In some ways this approach discourages integrity, and while grant applications will always be a sales pitch, having to be disingenuous about outcomes and impact puts researchers in an uncomforable position that directly clashes with scientific caution.

Guiding Policy – Connections

Question 16:	Where do you think weak connections currently exist, and what are the barriers to connections at present?
Question 17:	What actions will stimulate more connectivity between parts of the RSI system?
Question 18:	How could we improve connections between people within the RSI system and people outside it, including users of innovation, and international experts, business communities, and markets?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Actions – Making New Zealand a Magnet for Talent

Question 19:	How can we better nurture and grow emerging researchers within New Zealand and offer stable career pathways to retain young talent in New Zealand?
Question 20:	How could we attract people with unique skills and experience from overseas to New Zealand?
Question 21:	What changes could be made to support career stability for researchers in New Zealand? What would be the advantages and disadvantages of these approaches?
Question 22:	Do you agree with the initiatives proposed in the Strategy to support and attract talented researchers and innovators? Are any changes needed for these initiatives to be successful? Are there any other initiatives needed to achieve these objectives?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

We are responding on behalf of the University of Auckland Faculty of Medical and Health Sciences Postdoctoral Society. We represent a large body of emerging researchers in New Zealand, specifically involved in a wide range of health related research including clinical, translational and biomedical. We recently completed a survey of our members (July-August 2019) where we asked various questions about work conditions related to contracts and FTE of our members. We received 82 responses which we believe represents around 40% of the Research Fellows and Senior Research Fellows in the Faculty. Much of the data presented below is from this source. While this survey was not completely comprehensive, we received responses from the majority of departments and centres and we believe it paints a clear picture of some of the challenges faced by early career researchers in New Zealand.

We very much welcome additional funding into the research sector, and believe that expansion of start-ups and private sector research can only be a good thing if it means more opportunities for researchers at all levels considering the large number of PhD graduates we are producing. However there are certainly challenges for emerging researchers in the system at present.

Q19: Job stability and stable career pathways are a huge challenge to our members, and an issue that the majority of Research Fellows and Senior Research Fellows struggle with. The vast majority of us are on fixed term contracts (91%), with 22% on a contract that was originally less than a year and another 12% having signed a 1 year contract (in total, 34% were signed to one year or less). As for current status, 47% of respondants had less than a year left on their current contract. An additional 26% of respondants were between 1 and 2 years left, for a cumulative of 73% of respondants under 2 years left on their contract. As most grant funding bodies (even internal funding) require proof of existing multi-year salary support, this means that nearly half of all postdocs are incapable of applying for the next grant round and almost 3 out of 4 would require additional departmental commitments to ensure eligibility for any grants that do not include salary support. And

better job security isn't in the next contract. Many people are employed on long term rolling contracts, with 30% of respondents having had 5 or more (fixed term) employment contracts as academic staff at the University of Auckland. Some of these people have worked as academic staff for over 10 years. This insecurity presents barriers (ranging from increased difficulty navigating applications and logistics through to firm ineligibility) to interacting with fundamental parts of academic life, including grant applications, graduate student supervision, service opportunities and university benefits (e.g. UoA paid parental leave, research and study leave). These barriers remain in place even for those "fortunate" enough to have an extended fixed-term presence at the University.

There is a systemic problem in NZ Universities where research-only positions (nominally 1.0 FTE research) are for the most part not supported in the same way as traditional lecturing positions (nominally 0.4 FTE teaching, 0.4 FTE research, 0.2 FTE service). Thus the core research capabilities are represented by researchers (such as our members) without career stability. This leads to a high level of attrition, particularly for those in 'equity groups', which is detrimental to the strategy of building strong research capability.

There are a number of things that would improve prospects for emerging researchers that government investment or policy can contribute to:
- Increase funding pools and caps on HRC and Marden project grants to make it more realistic to hire postdocs for 3 years on these grants.

- Mandate minimum terms for postdoctoral researchers employed with funding from these agencies.

- Reduce or remove university overheads on postdocs to encourage hiring them over technicians.

- Offer more 3 year fellowships for early career researchers that cover full salary.

- We support mid career fellowship programmes such as Rutherford Discovery Fellowship (RDF) and Sir Charles Hercus Health Research Fellowship (CHF) as these schemes pave the way to an independent research career and often provide a pathway to permanent employment. However, we note that a number of the RDF recipients in recent years are already Associate Professors with successful research groups, and we question the need to provide career development fellowships to researchers who have already 'made it'. This also contradicts the goal of RDF as stated by RSNZ - to attract, retain and support talent. We also believe that these type of fellowships would work better for researchers if they required some buy in from the host universities (such as schemes like NIH K99 awards in the US). This is essentially the case for RDF since the salary component does not cover 100% FTE, but it would be very beneficial if these prestigious fellowships were contingent on an offer of a permanent position. Matching start up funds from the host institution to assist with setting up a new lab or transition to independence would also be beneficial. The CHF, for example, does not provide enough research funds to cover even a 0.5 FTE technician, so hands to assist with the work must be provided by other sources. Unless the government plans to offer continued fellowships for more established researchers throughout their careers like in Australia (which still have the issue of long term job security), these fellowships need to be going to people who are seen as having a long-term future in the system by both the funding bodies and the institution where they are based.

- We also support the provision of grants aimed at emerging researchers such as Marsden Fast Start and HRC Emerging Researcher First Grants, however some of the regulations and budget restrictions associated with these funding mechanisms put researchers and institutions in a very challenging position regarding their time commitments. Most people who would be eligible for these grants are funded by soft money. Requiring emerging

researchers funded by soft money to commit a significant portion of their time to a grant without being able to commit sufficient salary (or in some cases any salary) puts them in a very difficult position where they either have to have a generous and well-funded PI, or simultaneously get a fellowship that will cover their salary. Allowing them to commit up to 50% salary on the grants, even if it could be rebudgeted if fellowship or university funding was received would give a wider range of applicants an opportunity to apply for these funds. In order to achieve this it is likely that the overall size of these grants must be adjusted to allow for current postdoctoral salary levels and overheads.

- Mandate ethical hiring and retention practices for Universities receiving government funding. Whilst there are acknowledged reasons for hiring researchers on a fixed-term basis due to soft money, loss of these researchers after this money is spent represents a poor return on investment. This loss becomes greater with each sequential fixed-term that a researcher works. The funders should consider the investment in skill as well as research outcomes and at some stage Universities should offer stable employment commensurate to the skill and experience of researchers.

Q20: There appear to be few schemes aimed at international recruitment or repatriation. Realistically, it is always going to be challenging for New Zealand to recruit established international scientists without huge investment which risks disadvantaging those who have committed to a career in New Zealand. However, there is certainly value in completing training overseas. Careful thought needs to go into the balance between outside recruitment, and providing sufficient support for those who are already here.

One stage at which it is common for people to want to return is after various periods of postdoctoral training when they are ready to establish their own research group. While it is possible to repatriate on some of the mid career fellowships and this appears to be looked upon favourably, there is really no acknowledgement that this is a lot more challenging and potentially costly setting up a group from scratch that continuing what you are already doing in an established space and group. Considering providing extra start up funds to RDF or CHF recipients moving from overseas in the first couple of years could be an option.

We are currently recruiting overseas talent at PhD level. Many of these people wish to remain in New Zealand afterwards and some get postdoctoral positions. However, many early career grants or fellowships require permanent residency or citizenship which is not possible for recent graduates who came to NZ specifically for PhD training. Thus, many international recent graduates are at a competitive disadvantage to maintaining their research in New Zealand.

Q21: Researchers need contracts with greater long-term job stability. Supporting (or mandating) postdoc contracts at greater than 2 years would be a major start. While this would restrict the number of researchers (those with funding for a year or less), it would make this funding available for more long term prospects. Year-to-year contracts have little to no benefit to those trying to attain job stability in the research job market. The drawback would be that there is less “bridging” funding for researchers who fail to maintain salary support – but that could be attained through other mechanisms (such as a dedicated funding stream for short term salary support).

Actions – Connecting Research and Innovation

Question 23:	What elements will initiatives to strengthen connections between participants in the RSI system need to be successful?
Question 24:	What elements will initiatives to strengthen connections between participants in the RSI system and users of innovation need to be successful?
Question 25:	What elements will initiatives to strengthen connections between participants in the RSI system and international experts, business communities, and markets need to be successful?
Question 26:	Are there any themes, in addition to those proposed in the Strategy (research commercialisation and international connections), that we need to take into consideration?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Actions – Start-up

Question 27:	How can we better support the growth of start-ups?
Question 28:	Do the initiatives proposed in the draft Strategy to support growth of start-ups need to be changed? Are there any other initiatives needed to support start-ups?
Question 29:	What additional barriers, including regulatory barriers, exist that prevent start-ups and other businesses from conducting research and innovation?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Actions – Innovating for the public good

Question 30:	How can we better support innovation for the public good?
Question 31:	What public-good opportunities should our initiatives in this area be focused on?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Actions – Scale up

Question 32: What is the best way to build scale in focused areas?

Question 33: Do the initiatives proposed in the Strategy to build scale in focused areas need to be changed? Are there any other initiatives needed to build scale?

Note: see following page to comment on possible areas of focus

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Scale up – Choosing our areas of focus

For this draft iteration of the strategy, **we seek input on the selection of possible areas of focus**. We will consider establishing around five focus areas, but, depending on the eventual selection, are likely to introduce them over time, rather than immediately. In addition to the criteria set out in the Strategy document, we invite stakeholders to consider the following factors in their suggestions –

- The ambition of this strategy to focus efforts in the RSI portfolio at the global frontier of knowledge and innovation.
- Ways in which the RSI system can accelerate progress on the government's goals.
- The focus areas already determined by *From the Knowledge Wave to the Digital Age*.
- Work already underway where we are already seeking to build depth and scale in the RSI system.

The following areas could be a useful start, and are highlighted in *From the Knowledge Wave to the Digital Age:*

- **Aerospace**, including both autonomous vehicles and our growing space industry.
- **Renewable energy**, building on recent investments in the Advanced Energy Technology Platform.
- **Health technologies** to improve delivery of health services and explore opportunities in digital data-driven social and health research.

We invite comment on these suggestions and welcome input on other possible focus areas.

Please type your submission below.

Actions – Towards an Extended Vision Mātauranga

This section of the draft Strategy signals our intention to consult and collaborate further with Māori stakeholders to co-design our responses and initiatives. From that perspective, we consider the signals in the draft Strategy to be a start, rather than a set of final decisions. Nonetheless, we are keen on initial feedback in the following areas.

Question 34: Does our suggested approach to extending Vision Mātauranga focus in the right five areas? If not, where should it focus?

Question 35: How can we ensure the RSI system is open to the best Māori thinkers and researchers?

Question 36: How can we ensure that Māori knowledge, culture, and worldviews are integrated throughout our RSI system?

Question 37: How can we strengthen connections between the RSI system and Māori businesses and enterprises?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Actions – Building Firm Foundations

Question 38:	Do the current structures, funding, and policies encourage public research organisations to form a coordinated, dynamic network of research across the horizons of research and innovation? What changes might be made?
Question 39:	Is the CRI operating model appropriately designed to support dynamic, connected institutions and leading edge research? What changes might be made?
Question 40:	What additional research and innovation infrastructure is necessary to achieve the goals of this Strategy? What opportunities are there to share infrastructure across institutions or with international partners?
Question 41:	What elements will initiatives in this area need to be successful?

Please type your submission below. If applicable, please indicate the question(s) to which you are responding.

Actions – General

Question 42: How should the Government prioritise the areas of action, and the initiatives proposed under each area?

Please type your submission below.

General

Question 43:	Do you have any other comments on the Strategy which have not yet been addressed?

Please type your submission below.