

From: no-reply@mbie.govt.nz
To: [Research, Science and Innovation Strategy Secretariat](#)
Subject: Draft Research, Science and Innovation Strategy submission
Date: Friday, 8 November 2019 1:08:30 p.m.
Attachments: [Online-submission-form-uploadsdraft-research-science-and-innovation-strategy-submissionsMarsden-Fund-submission-form-research-science-and-innovation-strategy.docx](#)

Submission on Draft Research, Science and Innovation Strategy received:

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

Organisation

Name

Prof David Bilkey

Name of organisation or institutional affiliation

Marsden Fund Council

Role within organisation

Chair of Council

Email address (in case we would like to follow up with you further about your submission)

david.bilkey@otago.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)?

11 Council members

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.

n/a

Please upload your submission document here

Marsden-Fund-submission-form-research-science-and-innovation-strategy.docx -
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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 the RSI system be doing to accelerate the progress towards the Government's priorities*?

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

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

Kia ora

This submission is from the Marsden Fund Council. We have provided a general response to the draft RS&I strategy document (Question 43).

Ngā mihi

Prof David Bilkey

Chair

Marsden Fund Council

david.bilkey@otago.ac.nz

General

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

Please type your submission below.

The Marsden Fund Council welcomes the introduction of a Research Science and Innovation (RS&I) Strategy and strongly supports the Government's aim to grow national research and development expenditure to two per cent of GDP by 2027. The strategy reflects an awareness of the importance of RS&I to achieving a productive, sustainable and inclusive future built on knowledge of our rich cultural heritage.

The Council also supports the continued focus that the government has maintained on excellence in the RS&I strategy. Excellence has always been a top-most priority for the Marsden Fund and we have continued to maintain our focus on this while developing our processes to ensure that we are selecting the most excellent investigator-led research, regardless of discipline. This, we believe, is the fundamental basis from which innovation arises.

The Marsden Fund Council also supports the continued focus on impact. The Marsden Fund Council and its subject panels currently regard the ability to demonstrate scholarly impact, defined as 'a demonstrable contribution to shifting understanding and advancing methods, theory and application across and within disciplines' as a key criterion for funding. We believe this definition of impact is most appropriate for the Fund given its basic-research focus. Our focus on excellence and impact underlie our support for research conducted at the global frontier.

The Marsden Fund Council supports the new focus on connectivity within our research system. We already have a strong record in this area as a high proportion (62%) of the projects we have funded over the last ten years involve a collaboration between researchers from at least two different research institutions and 53% involve a collaboration with a researcher from outside New Zealand. Furthermore, by the time they complete, the vast majority (90% of contracts finishing in the last decade) report significant linkages with researchers based outside New Zealand. This connectivity underpins the development of New Zealand's research endeavours. We also support the encouragement of further links into the wider community (broadly defined), where that is appropriate. We are, at present, actively promoting increased connectivity through the prestigious Marsden Fund Council Award that specifically targets multidisciplinary projects developed by researchers who are building connections across disciplines, research institutes and countries. This year, two large interdisciplinary projects received inaugural Marsden Fund Council Awards worth \$3 million (excluding GST) each. One project will contribute to knowledge about predicting the behaviour of biological systems and their response to shifting temperatures, as might occur with climate change. The other investigates the genetic markers associated with metabolic diseases, such as diabetes and gout, in Pasifika populations and asks how these diseases might have evolved. These projects develop collaborations between New Zealand researchers and those located in the USA, UK, Australia, Ireland and the Pacific Islands.

The Council also recognises that an important aspect of connectivity involves increasing diversity within our research teams and supports the directions outlined in the RS&I strategy that move in this direction. The Marsden Fund Council and support team have been active in

this area for some time now and we have good data on equity, diversity and inclusion in the projects that we fund. For example, our data show that success rates for applicants identifying as female or Māori are very similar to those for applicants identifying as male or non-Māori respectively.

The Marsden Fund Council recognises and strongly supports the development of Vision Mātauranga within the RS&I strategy. We are already working in this space by running Vision Mātauranga development workshops for Council and through the provision of further support information for applicants to the fund. We are pleased to note that, over the last few years, there has been increasing engagement with mātauranga Māori in Marsden applications across many disciplinary areas. Recently funded examples include a project investigating kaitiakitanga over the Kāwhia, Manukau and Whangarei harbours, a project that uses Māori oral history of seafaring and wayfinding to understand low clouds and their link to surface meteorological variables, and one that revitalises whai (Māori string figures), the unique, complex mnemonic system that documents and transmits Māori knowledge and practice. If there is a challenge, it is to grow Māori research capability to capture the benefits of a greater emphasis on Vision Mātauranga.

The Council fully support the plan outlined in the RS&I strategy to grow, support, attract and retain the best talent in our research and innovation systems. Marsden Fund support has previously played a major role in developing research talent in New Zealand through both its direct and indirect support of graduate students and postdocs. The Fund also provides critical support for our best early-career researchers through the Fast-Start grant process and continues to provide funding that encourages our best researchers to work from a New Zealand base. The Marsden Fund has, therefore, a key role to play in further developing New Zealand's research capability, through the nurturing and development of talent and skills from the ground up.

Despite our general support for the directions outlined in the draft RS&I strategy, there were several areas where the Marsden Fund Council felt that the document could be improved. In particular:

- 1) The draft RS&I strategy suggests that funding should be focussed into particular areas of research (e.g. page 35). What is not clear is at what point in the 'results-chain' this focussing would occur. While the Council acknowledges that developing a focus might be appropriate for applied research, we would argue strongly that the investigator-led basic research that the Marsden Fund supports should be encouraged to be wide-ranging, rather than being directed towards particular targets. There are several reasons for our position. First, history shows us that most significant applied outcomes are built on basic research. There are countless examples, but applications in the areas of computing, electronics, mobile phones and the internet are obvious ones. Thus we see investigator-led research as the seed-bed of ideas that feed New Zealand's innovation pipelines. Second, by supporting a wide range of research activities, the Government can ensure that our research community will be able to meet the uncertain demands of the future and as a result, will be resilient against any unknown changes that may be sitting over the horizon. Having a rich diversity of research activity ensures that there is a breadth of capability and expertise in a wide variety of fields so that when the unexpected occurs, we have the resources available to address these challenges and/or leverage them to our advantage. By letting the investigator lead rather than

by leading the investigator, the Marsden Fund ensures that we get the greatest breadth and excellence in our available research capacity. For these reasons, we believe that the draft RS&I strategy should be amended to more clearly delineate the important role that the Marsden Fund plays in being able to support the wide-ranging basic research that underlies much of our applied outcomes and which ensures ongoing research capability.

- 2) The draft RS&I strategy document and the MBIE *Impact of Research* position paper have been released at around the same time. It is apparent that they should fit together as part of the overall RS&I strategy and yet they are not particularly well integrated. The two documents should therefore, be better coordinated as part of a unified strategy. This may require changes to both documents. As just one example, the Council notes that while both the RS&I strategy and the impact paper focus on excellence, impact and connectivity, the impact paper also makes the important point that science (research) needs to maintain its social license and credibility with the public, and that this is particularly important at the present moment in history. The Council believes that this latter point is a critical aspect of a 21st century RS&I strategy that is absent from the current document. In this vein, while the public need to know that government funds are being well spent in developing economic advantage, they should also be aware that basic research in a wide variety of disciplines can underlie government decision-making, can form the basis for informed personal decision-making, can be relevant to their own experiences and can be valued for its own sake and for its role in enriching our own understandings.
- 3) We also note that the *Impact of Research* paper aims to measure impact at the level of an institution or funding agency. We support this approach as we understand that while not every individual project will lead to impact, as a whole, Marsden Funded projects will have significant impact. We suggest that this be clearly acknowledged and incorporated into the RS&I strategy document.
- 4) Further to comment 1) above, in both the RS&I strategy document and the *Impact of Research* paper, there is some ambiguity and uncertainty around how the government sees the Marsden Fund in relation to line-of-sight to impact. This is likely to be unsettling for many of our basic researchers, the outcome of which is to undermine the aim of the strategy to 'grow, support, attract and retain the best talent in our research and innovation systems'. It would assist enormously if the strategy document explicitly described the Marsden Funds' role in our research landscape in both underpinning applied research, and in maintaining diversity of research within the country. The Fund's terms of reference (2017) state that '<Marsden funded> research is not subject to government's socio-economic priorities.' This does not mean that research funded by the Marsden Fund cannot support these priorities, but rather that there is no requirement that it does, which is an important distinction. In fact, without explicit directives to do so, current Marsden funded projects are relevant to many areas of the Government's well-being focus, including: cultural identity, environment, health, knowledge and skills, social connections and subjective well-being.

5) Success rates for the Marsden Fund currently sit at around 10%. This figure is a result of funding limits, rather than a lack of quality in the research applications that sit below this funding cut-off point. There is, therefore, significant opportunity being lost here, as many world-class research proposals (across all disciplines and as judged by peer review from both international experts and the national expert panels) are currently being declined funding. The highly competitive funding pool also inhibits the collaborative networks to which the Government aspires and creates frustration within the research community which ultimately can lead to retention issues for our brightest investigators. While Marsden Fund Fast-Start grants have allowed for the growth, support, attraction and retention of the best early career talent in our research and innovation systems, it is clear that the limitations on funding are stifling research opportunities and career development, particularly at the mid-career level. We have welcomed previous increases to the Marsden Fund, but continued support will be required in order to foster a vibrant New Zealand research community. The Council is gratified to see that the draft RS&I strategy describes the need for additional Government spending on R&D from 2020 in order to meet the two-per cent of GDP goal by 2028 (figure 1, RS&I strategy). It is critical that the appropriate proportion of this funding is directed to supporting investigator-led research, as these projects will underpin more applied and focused work and this funding will be critical to providing for resilience, diversity and succession in our research infrastructure. In a related vein, while the Council fully supports the further development of Vision Mātauranga, we note that this goal must be supported by appropriate funding. For example, grants with a Vision Mātauranga component need to be funded to allow for the inclusion of appropriate staff in the budget and also allow for an appropriate timeframe to build and maintain relationships.