

From: no-reply@mbie.govt.nz
To: [Research, Science and Innovation Strategy Secretariat](#)
Subject: Draft Research, Science and Innovation Strategy submission
Date: Wednesday, 23 October 2019 5:57:07 p.m.
Attachments: [Online-submission-form-uploadsdraft-research-science-and-innovation-strategy-submissionsDAE_6931-submission-form-research-science-and-innovation-strategy.pdf](#)

Submission on Draft Research, Science and Innovation Strategy received:

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

Individual

Name

David Eccles

Name of organisation or institutional affiliation

Malaghan Institute of Medical Research

Role within organisation

Post-doctoral Research Fellow (Bioinformatics)

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

bioinformatics@gringene.org

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

Researcher, Provide services to researchers

If you selected other, please specify here:

Gender

Male

Ethnicity

NZ European / Maori

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)

If you selected other, please specify here:

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

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.

I am happy with all provided information to be made public

Please upload your submission document here

DAE_6931-submission-form-research-science-and-innovation-strategy.pdf - [Download File](#)



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.

Actions – Building Firm Foundations

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

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?*

No. I believe that competitive funding is inappropriate for research.

You state on p. 14, "Competitive funding creates dynamism and the opportunity for new ideas," but this is contrary to how it actually works from a researcher's perspective. Scientists are discouraged by traditional competitive funding models, because these models essentially cause scientists to avoid risky, innovative research (see [Laudel, 2006](#), [Laudel & Gläser, 2014](#)). Scientists rationalise that risky research is less likely to be identified as an effective use of funds by the review panels (a view supported by the types of research that get funded). Failure is a necessary part of the scientific process of discovery, and yet it is common for funding agencies to either ignore failure, or punish applicants for their past, or predicted, science-based failures.

The primary issue I have with competitive funding is that it is not sustainable, and creates unnecessary and wasted effort on the part of both researchers and review panels. It sets up a positive feedback loop that drives researchers to exert more and more effort each year to get the same level of funding, because other researchers are attempting to do the same to pass a quantile-based threshold. The effort required for preliminary research for competitive funding applications is expensive, and due to the feedback loop that expense will not reduce. In 2009, NHMRC researchers spent on average about \$14,000 on their application (excluding voluntary time, as well as technical and administrative help), with a success rate of 30% (see [Graves, Barnett & Clarke, 2011](#)). That means that determined, persistent researchers applying for NHMRC funding would have spent, on average, a little over \$45,000 before getting funded. ***The competitive aspect is not fixable: the increasingly demanding quantile-based thresholds for establishing fund vs reject are an integral part of competitive funding, and will eventually lead to researchers seeing that they're wasting more money in applying for funding than they get back from a successful application.***

In a world where competitive funding does not exist, researchers will not need to spend increasing amounts of time getting money from the same pot. Thresholds can still be used, but they must be fixed and deterministic (i.e. with evaluation methods made open and available to all), so that researchers know in advance how much work will be required for a particular funding application. If competitive funding is removed, then three possible options are left open:

1. Fund every successful applicant, but fund less per applicant
2. Fund a random selection of successful applicants
3. Do not provide any research funding

I recommend that researchers be given the option of being able to be funded from a universal fund (i.e. option 1) or a lottery (i.e. option 2). Research has been carried out comparing a simulation of competitive funding vs lottery vs universal funding, and demonstrated that a low-payout universal funding model produced the best return on investment, with a high-payout lottery coming in second (see [Pluchino](#),

[Biondo & Rapisarda 2018](#)). Regardless of the specifics, a non-competitive funding model would also reduce the work of researchers who are *reviewing* proposed research, as their only work would be in evaluating whether proposals crossed the well-known thresholds. Given this, ***I think that a fixed-threshold universal funding model will work well as a firm foundation for future research.***

PROACTIVELY RELEASED