

From: no-reply@mbie.govt.nz
To: [Research, Science and Innovation Strategy Secretariat](#)
Subject: Draft Research, Science and Innovation Strategy submission
Date: Thursday, 7 November 2019 3:05:20 p.m.
Attachments: [Online-submission-form-uploadsdraft-research-science-and-innovation-strategy-submissionsubmission-form-research-science-and-innovation-strategy-v5.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

Dr Swee Tan

Name of organisation or institutional affiliation

Gillies McIndoe Research Institute

Role within organisation

Executive Director

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

swee.tan@gmri.org.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)?

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-v5.docx - [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.

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.

Introduction to the GMRI

The GMRI is a world-class stem cell research institute, investigating the role of stem cells in disease and health, especially cancer, vascular anomalies, fibrotic conditions and regenerative medicine. Our focus is on translational research to achieve paradigm shifts in the treatment of unsolved medical problems in order to relieve human suffering. We seek to acquire an understanding of the fundamental mechanisms of these diseases and apply our learnings to addressing health issues in a practical manner to achieve better and more cost-effective and equitable outcomes.

The GMRI is a not-for-profit NGO almost exclusively funded to date by philanthropic donations.

Information on the GMRI is available at <http://gmri.org.nz/cms/the-gmri-at-a-glance/>

General comments on the RSI draft Strategy

The GMRI is supportive of the RSI Strategy providing a framework to help guide investment decisions in New Zealand's innovation ecosystem.

Aspects of the Strategy that the GMRI is particularly pleased to see include:

- Recognition of the need to identify key strategic focus areas for investment to enable New Zealand's limited RSI funding to deliver a meaningful impact, and the requirement for these areas to be ones where New Zealand has a unique opportunity or advantage. It also makes sense for these areas to be those where New Zealand can credibly hold a globally relevant position at the frontier of research and innovation.
- The perspective that innovation is the translation of research and science into the creation of valuable products, processes and services for customers and clients to secure a productive, substantiable and inclusive future for New Zealand and New

Zealanders. The recognition that research and science are important components in innovation but are not enough in isolation is significant.

- The focus on:
 - Seeking impact from both economic/commercial and societal/community innovations from involvement by businesses, government agencies and community groups;
 - An outward focused global perspective, which requires excellent world-class people and facilities to embed innovation which provides value for New Zealand and New Zealanders;
 - The importance of developing and strengthening connections between researchers, between researchers and businesses, and between businesses – both within New Zealand and internationally.

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.

PROACTIVELY RELEASED

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.

PROACTIVELY RELEASED

Guiding Policy – Impact

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

Please type your submission below.

PROACTIVELY RELEASED

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.

PROACTIVELY RELEASED

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.

PROACTIVELY RELEASED

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.

PROACTIVELY RELEASED

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.

PROACTIVELY RELEASED

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.

The GMRI endorses the RSI Strategy's identification of Health Technologies as a possible area of focus. A key reason underscoring the GMRI's support for this area of focus is that it reflects our experience in:

- Establishing a world-class research institute with the requisite laboratory facilities (including a world-class human tissue bank) and reputation;
- Attracting, developing and retaining outstanding local and international staff;
- Building partnerships and collaborations within NZ (DHBs, private hospitals, clinicians, universities) and international partners (Scripps Research Institute, Salk Research Institute, Melbourne Medical School, University of Melbourne.)

These factors underpin our ability to undertake research to achieve paradigm shifts which translate to elegant and cost-effective treatment solutions of unsolved medical problems.

The GMRI's internationally recognised pioneering work in understanding and treating strawberry birthmarks in children was led by our Executive Director, Dr Swee Tan. This contributed to the development of the world standard treatment for this condition using repurposed low-cost existing medications taken by mouth. This replaced treatments which were unpleasant, invasive, costly and usually took many years.

The GMRI's cancer treatment research to control cancer stem cells by targeting the renin-angiotensin system using combinations of low-cost medications has the potential to provide effective, inexpensive and less invasive treatment approaches that:

- Greatly reduce the cost and, consequently, promote equitable access to cancer care, typically delivered closer to communities rather than through centralised high-cost hospital access;
- Improve access and the quality of cancer care available to Maori, Pasifika and other minority communities;
- Adopts a holistic approach to the delivery of cancer care involving medical, nursing and allied health and other relevant professionals, particularly GP's in a community environment;
- Focuses on the treatment opportunities provided by low-cost drug repurposing;
- Could provide the basis of early cancer diagnosis based on the detection of circulating cancer stems cells in bodily fluids.

In summary, we believe the GMRI's novel approach to cancer treatment has the potential to achieve substantial cost savings for New Zealand's health system relative to conventional and emerging treatments and, very importantly, enhance access, equity and quality of life outcomes for New Zealand patients. However limited commercial incentives currently exist to provide funding support because of the inconsistency with current pharmaceutical drug

discovery approaches, development and commercialisation practices, and the low margins associated with generic, off-patent, medications. In the case of New Zealand, as a small country with escalating cancer treatment costs and constrained health budgets, we believe that there is substantial scope for innovative policy interventions and engagement, locally and internationally, which would mitigate this market failure.

The GMRI would welcome the opportunity to discuss these and other insights arising from our work with MBIE if that would be useful.

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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.

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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.

PROACTIVELY RELEASED

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.

PROACTIVELY RELEASED

General

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

Please type your submission below.

PROACTIVELY RELEASED