

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 3:07:35 p.m.
Attachments: [Online-submission-form-uploadsdraft-research-science-and-innovation-strategy-submissionsubmission-form-research-science-and-innovation-strategy_101119.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

Sarah Berry

Name of organisation or institutional affiliation

Auckland Museum

Role within organisation

Research Manager

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

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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 , Non-profit, Other

If you selected other, please specify here:

Museum

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_101119.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.

Auckland War Memorial Museum Tāmaki Paenga Hira welcomes the opportunity to comment on MBE's draft Research, Science and Innovation Strategy. We support the intention to align the RSI system to current government priorities.

Our submission is provided under selected questions below. We make the following key points:

- Museums are research institutions who conduct research and contribute widely to the NZ RSI system. As New Zealand's oldest research institution, Auckland Museum has always put research at the heart of its activities and aspirations.
- Museum collections have rich and diverse collections and expertise for research creating novel opportunity for the RSI system in New Zealand. Auckland Museum has a 4.5 million object heritage asset and specialised subject expertise. This globally unique resource enables interdisciplinary, collaborative and connected research. The combination of diverse collections with a depth and breadth of subject expertise creates a synergy for research that is not replicated elsewhere.
- An essential component of a thriving RSI system must include public engagement. Museums provide an ideal opportunity to partner in public engagement in research – enabling research impact and knowledge translation.
- The shift to open science and open access needs to be recognised, with explicitly developed infrastructure to support this transition – whilst at the same time empowering and supporting issues of data sovereignty and indigenous knowledge systems.
- Funding mechanisms to reflect the strategic value of research impact, public engagement, connectivity across the sector, and open access need to be developed.
- Further consultation and development work are required to strengthen links

between the NZ RSI system and Vision Mātauranga.

Question 1:

An important aspect of transitioning to a clean, green carbon-neutral New Zealand is the engagement (and subsequent buy-in) of the public. We believe it is important for the RSI strategy to explicitly recognise the importance of public engagement and knowledge translation as core parts of RSI. This should be reflected in the infrastructure and funding mechanisms – supporting, facilitating, and incentivising genuine public engagement with RSI. Our position is that museums and more broadly the broad sector encompassing galleries, libraries, archives and museums can accelerate, diversify and strengthen public engagement with research – effectively and democratically connecting research to the public, and the public to RSI.

He orange tangata ka ao / Enriching lives: Inspiring discoveries is the vision of Tamaki Paenga Hira Auckland Museum. This vision reflects our paerewa – importantly in this context our role as a place of innovation, curiosity, learning and research. As a civic institution within a growing and increasingly diverse population we know there is a need to enhance and maintain a shared sense of belonging. In this context, we emphasise the role museums can play within communities as places to go for information debate, and discussion about the issues facing our society and environment.

We view public engagement as a ‘two-way’ process where on the one hand, the public can interrogate and explore current research, learning from subject experts and understanding where and how research is applied within society and on the other hand researchers and more broadly the RSI system can learn from and respond to public perspective. This would include creating opportunity for RSI specialists to listen to and develop greater understanding of those who are not specialists.

Our view is that an important aspect of the RSI system contributing to transitioning to a clean, green carbon-neutral New Zealand is through effective and compelling public engagement around new approaches, opportunities, technologies and research.

In addition to high quality public engagement with research as a priority for strengthening RSI contributions to transitioning to a clean, green, carbon-neutral New Zealand, museum collections offer other unique opportunities for basic research that will contribute to this goal. For example, Auckland Museum’s Natural Science collections present an ideal resource to understand changes in biological diversity over time – basic knowledge which is critical to understanding and responding to the impacts of climate change. We emphasise the need to support biodiversity and taxonomy infrastructure so that we can discover and document all species in NZ. This is the foundation of all studies on NZs unique biodiversity and is an important aspect of understanding the effects of climate change on species and ecological communities – thus also informing transition to a clean, green, carbon-neutral New Zealand.

Question 2:

The RSI system should make significant and critical contributions to all government priorities across economic, societal and environmental pillars. We agree with the position taken in the draft strategy that RSI is essential to any transformational change.

Question 3:

Institutions such as museums are ideally placed to play a role in engaging the public in research and in enabling dialogue about RSI – a critical aspect of an RSI system that supports and accelerates transformational change and consequently progress toward government priorities. As New Zealand’s oldest research and collecting institution, established in 1852,

Auckland Museum is recognised as a primary site of investigation. Our research is vital to the kaitiakitanga of the Museum's taonga and collections, and to ensuring that Auckland Museum is a place for all to reflect on the past, embrace the present, and look towards the future. Central to our research is our 4.5 million object heritage asset that enables research engagement through harnessing the power of collections to interrogate wider social questions. In addition, the Auckland Museum Library Te Pātaka Mātāpuna is one of New Zealand's major research libraries, creating an access point for the Museum's Documentary Heritage collections. This unique combination of resources enables a research approach that is interdisciplinary, collaborative and connected. We have diverse and specialised expertise that covers applied arts and design, archaeology, archives, biological sciences, conflict and peace, earth sciences, ethnology, photography, and social history. Taken together, our collections and our expertise create unique opportunity for research which will support the RSI system.

We note also that Museums are a good site for facilitating and enabling cross-disciplinary understandings – examining and interrogating a topic, object, collection or problem with multiple and diverse lenses. This creates a resource for the RSI system that could enhance connectivity and novel approaches to problem solving.

Our view is that progress towards the Government's priorities could be accelerated by engaging with the museum sector in a strategic and intentional manner to facilitate public engagement with research. We recognise our role as a civic institution who has a trusted voice within society, that we have broad reach to diverse communities and to formal learners. Taken together this creates unique opportunity to connect research to the public and to formal learners. Accordingly, we suggest that opportunity exists for the NZ RSI system and community to partner with museums to facilitate compelling and effective public engagement in research and more broadly in knowledge translation. Specific mechanisms within the RSI system to encourage, broaden and accelerate public engagement in RSI would be one way of accelerating the progress toward Government priorities. It is also useful to note that museums are both civic and social spaces. This means that it is often social interactions that are a primary driver of visitation – learning is an additional outcome as part of this broader context. The value of this is that public engagement with research through a museum setting can reach a broader audience than more traditional approaches to translating research knowledge.

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.

Question 4:

We agree in principle that the RSI system should be focused on innovation at the “frontier” – creating new knowledge. Investment in basic or ‘blue skies’ science is critical to achieving transformational change and global leadership. This should include valuing the research and disciplines that enable innovation at the frontier – for example, supporting biodiversity and taxonomy infrastructure so that we can discover and document all species in NZ, and archaeology so that we can record and understand human impacts.

We would add to that by emphasising the importance of RSI investments across a broad RSI sector that values indigenous knowledge systems including mātauranga Maori. Multiple approaches to science and knowledge should be enabled by the RSI strategy.

We think it is also useful to note that given the increasing contributions of eResearch and the use of existing data to inform new research (rather than collecting of new data) the definition of at the “frontier” and “behind the frontier” become less clear and consequently the metaphor may not be as valuable. Perhaps more important is placing emphasis valuing multiple knowledge systems and multiple ways of knowing and thinking about how these would be genuinely valued within the RSI system.

The draft RSI strategy refers to additional strategies and documents including an industry strategy (From a Knowledge Wave to the Digital Age) and an Industry Transformation Plan. We suggest that developing a strategy focused on strengthening public engagement with RSI to facilitate new opportunities and new practices would be an excellent complement to the RSI strategy.

Question 5 – 7:

Museums have unique resources for basic research, particularly in areas that are unique to

New Zealand. We are a kaitiaki for 4.5 million objects in our globally significant collections, which span Documentary Heritage (photographs, paintings, drawings, manuscripts, oral histories and personal papers), Human History (objects from New Zealand, the Pacific and the World) and Natural Sciences (specimens primarily from New Zealand and the Pacific). Notably our Māori and Pacific collections - which include objects from documentary heritage, human history and natural sciences - are among the most significant in the world.

In addition, more than one million objects are publicly accessible via Collections Online, and our online collection currently grows by 2,000 records every month.

Taken together, these resources provide unique opportunities for RSI in New Zealand. By being aware of these resources, and by strengthening connections between the tertiary and CRI sectors and museums, we can identify synergies and catalyse RSI that may not otherwise have been possible. Additional connections that needs to be valued by the RSI system include connections to community expertise – those knowledge holders, experts, that are not necessarily represented in more traditional academic circles.

Selected examples of unique research resource and opportunity at Auckland Museum that will contribute to the NZ RSI system include:

- **Biodiversity and taxonomy.** Natural Sciences collections which provide unique insights into New Zealand and South Pacific biodiversity, including how biodiversity has changed over time. New Zealand's long isolation has resulted in a unique biodiversity. Research into biodiversity, taxonomy and biosystematics will aid future evidence-based conservation of our unique and diverse species and will help to understand the influences of introduced species.
- **Human impacts.** Archaeology collections which provide unique insight into the broad and accelerating impacts of humans on the environment. Use of these collections as a resource for research will help amass the evidence required to influence changing cultural perspectives so that environments and landscapes can be protected and restored.
- **Identity.** Documentary heritage collections enable research into the experiences of migrant communities – in a contemporary context and across time. Auckland Museum has a programme that involves working with artists, writers, and poets who use documentary heritage collections as a source to reflect and critique changes in society.

Resources such as these provide unique RSI opportunities for New Zealand and represent areas within which NZ has a unique opportunity to become a world leader.

Question 9:

We note that the term public sector is broad and encompasses a range of organisations. In this context, we consider the definition of public sector to include organisations that may be centrally or locally funded, and that includes galleries, libraries, archives and museums.

We were pleased to see recognition that valuable and integral research may take place within the public sector, and that funding mechanisms to support this may be considered.

In our experience, challenges of innovating in the public sector include

- Few funding mechanisms available for the public sector. This is particularly the case for institutions within the culture and heritage sector (including museums, galleries, libraries and archives) which are largely funded by local government yet contribute to central government policy priorities and outcomes such as science and research.
- Narrow definitions in measuring, recording and viewing research track record, and

research activity (with the standard CV template favouring more traditional research outputs)

- Little specific recognition that RSI within the public sector is a critical and valued part of the NZ RSI system – need to demonstrate and acknowledge the unique contributions that the public sector can make to RSI

We agree with the proposed mechanism within the draft RSI strategy to specifically fund public sector research. We suggest that this mechanism include a focus on wellbeing within the context of the living standards framework and include the culture and heritage sector.

PROACTIVELY RELEASED

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.

We agree that a key challenge for the RSI system is enabling stronger connections across institutions and organisations, between disciplines, and between the RSI community and the public. We would like to see new and more opportunities and mechanisms for Museums to partner with tertiary institutions and the CRI sector – this would bring about new opportunity for public engagement with research and for research impact.

The focus of museums and museum practice has been rapidly evolving – to become sites of interrogation; civic duty; and a trusted voice within society: Auckland Museum’s role as a civic institution is to be relevant for our audiences and our Auckland constituency discussing the issues that impact their lives. This creates new potential to strengthen connections with other aspects of the RSI system – both in terms of public engagement and knowledge translation and in terms of museums being a unique resource for research.

In establishing connections as a key challenge for the RSI system, we propose that it will be essential to view leadership, coordination, and collaboration as activities in their own rights – needing expertise, support, and infrastructure. This is even more important in a small RSI system like that of New Zealand.

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.

We suggest that any definition of excellent be focused on quality. We note that excellence resists a single definition – making it hard to measure or whether you have achieved it. Measures of research excellence should reflect quality of inputs, processes, approaches, outputs, and impacts.

Guiding Policy – Impact

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

Please type your submission below.

As a Museum focused on enabling a site of interrogation we agree it is critical to have mechanisms in place that enable tracking and measuring of research impact.

We make the following suggestions for improving the way we measure the impact of research:

- Recognise the importance of robust evaluation; funding mechanisms should ask researchers to work with experts in evaluation to ensure that evaluation of research impact is included from the beginning of research projects
- Recognise the role of the GLAM sector can play in enabling research impact – connecting the public to research, dissemination, benefits
- Importance of a diversity of research outputs as integral to research impact – not just formal and traditional research outputs.

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.

Weak connections currently exist between the tertiary and CRI organisations and those research organisations that can partner with them to provide research impact opportunities. Barriers to connection include the funding mechanisms, which don't always encourage partnerships between these organisations and a lack of shared values and aspirations. A strategy for public engagement in research as an important component of research impact could be a valuable step.

Strengthening connections will also be facilitated by actively supporting existing government initiatives for open access (NZGOAL) and open data (Open Data NZ). The open science movement encourages discoverability of existing knowledge leading to the development of new knowledge. This will support the goals of Making New Zealand a magnet for talent and Connecting research and innovation.

Auckland Museum has been recognised as a global leader of open access by the World Wide Web Consortium. <http://www.scoop.co.nz/stories/SC1702/S00021/auckland-museum-recognised-as-global-leader.htm>. Open access to the Museum's collections is a core strategy for Auckland Museum. Open data is made available in a standardised format via our API (api.aucklandmuseum.com).

Auckland Museum also welcomes MBIE's proposed NZ Research Information System (NZRIS) as "an online hub where people can find information about research, science and innovation in New Zealand."

New Zealand should follow the EU and US policies of mandating that everyone who gets public research funding must make their data available, or at least metadata about the data. The ROI from making data available is clear. If data is linked to citations this leads to even more citations and greater impact. The international trend has been from initially recommending open access as a condition of funding, to mandating and more recently enforcing mandates. New Zealand benefits from open science initiatives and needs to play its part in global sharing of knowledge from its research and innovation.

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.

World class research, science and innovation can be achieved within a wide variety of research organisations including the museum environment. Creating alternative routes for researchers outside tertiary and CRI institutions could be an important aspect of making NZ a magnet for talent. Opportunities to look at attracting and developing the RSI workforce within the public sector is important need to be identified.

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.

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PROACTIVELY RELEASED

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.

Focus on renewable energy should be broad and encompass adaptation to changing environment,. This would mean incorporating RSI into carbon capture, alternative technologies and adaptations, biodiversity, climate science etc. The great challenge we face is much more than just energy demands.

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.

We suggest that a specific consultation process with Māori needs to take place linking the Vision Mātauranga to the RSI system. Consultation with Māori needs to be broad, resourced and in a wānanga format in line with tikanga Māori.

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