

#83

COMPLETE

Collector: Web Link 1 (Web Link)
Started: Monday, March 14, 2022 10:53:59 AM
Last Modified: Tuesday, March 15, 2022 8:45:44 AM
Time Spent: 21:51:45

Page 2: Section 1: submitter contact information

Q1

Name

Neil Gemmell

Q2

Email address

Privacy - 9(2)(a)

Q3

Yes

Can MBIE publish your name and contact information with your submission?
Confidentiality notice: Responding "no" to this question does not guarantee that we will not release the name and contact information your provided, if any, as we may be required to do so by law. It does mean that we will contact you if we are considering releasing submitter contact information that you have asked that we keep in confidence, and we will take your request for confidentiality into account when making a decision on whether to release it.

Q4

Yes

Can MBIE contact you in relation to your submission?

Page 3: Section 2: Submitter information

Q5

Organisation

Are you submitting as an individual or on behalf of an organisation?

Page 4: Section 2: Submitter information - individual

Q6

Respondent skipped this question

Are you a researcher or scientist?

Q7 Respondent skipped this question
Age

Q8 Respondent skipped this question
Gender

Q9 Respondent skipped this question
In which region do you primarily work?

Q10 Respondent skipped this question
Ethnicity

Page 5: Section 2: Submitter information - individual

Q11 Respondent skipped this question
What is your iwi affiliation?

Page 6: Section 2: Submitter information - individual

Q12 Respondent skipped this question
If you wish, please specify to which Pacific ethnicity you identify

Page 7: Section 2: Submitter information - individual

Q13 Respondent skipped this question
What type of organisation do you work for?

Q14 Respondent skipped this question
Is it a Māori-led organisation?

Q15 Respondent skipped this question
Which disciplines are most relevant to your work?

Q16 Respondent skipped this question
What best describes the use of Mātauranga Māori (Māori knowledge) in your work?

Page 8: Section 2: Submitter information - organisation

Q17

Organisation name

School of Biomedical Sciences, University of Otago

Q18

University

Organisation type

Q19

No

Is it a Māori-led organisation?

Q20

Otago

Where is the headquarters of the organisation?

Q21

There is some Mātauranga Māori, but it is not the main science knowledge

What best describes the use of Mātauranga Māori (Māori knowledge) in your organisation?

Page 9: Section 3: Research Priorities

Q22

Priorities design: What principles could be used to determine the scope and focus of research Priorities?(See page 27 of the Green Paper for additional information related to this question)

We favour a portfolio of research that spans basic to applied targeted research. In recent times, the investment in basic research has dwindled, and we would welcome a reversal in this trend. This is particularly important as basic funding has a critical role in supporting cutting-edge projects that are often at the forefront of method development and technological innovation. Even if the specific project is not a national priority, the workforce involved in such projects will invariably have an important role in bringing new technologies into the New Zealand science ecosystem. For example, until the latest COVID-19 pandemic, the study of viral evolution would not have been a key national priority, yet it has been fundamental to the way our nation managed our response to COVID over the past two years.

Q23

Priority-setting process: What principles should guide a national research Priority-setting process, and how can the process best give effect to Te Tiriti?(See pages 28-29 of the Green Paper for additional information related to this question)

We favour a joint priority-setting and governance approach involving research, industry/end users, government, and Māori, which would help align the various strategies and mechanisms.

Q24

Operationalising Priorities: How should the strategy for each national research Priority be set and how do we operationalise them?(See pages 30-33 of the Green Paper for additional information related to this question)

National priorities of research with direct application to New Zealand should be set through broadly consultative processes. Furthermore, we should be ambitious in setting long-term, mission-led, objectives that meet our national and international aspirations and obligations. It will be important to ensure that they are not rooted in past successes or areas of strength that favoured by senior research leaders at the expense of innovative young scientists.

Page 10: Section 4: Te Tiriti, mātauranga Māori, and Māori aspirations

Q25

Engagement: How should we engage with Māori and Treaty Partners?(See page 38 of the Green Paper for additional information related to this question)

Māori aspirations and the application and enhancement of mātauranga Māori needs to be Māori led. To appropriately engage Māori there needs to be funding in the system to support and expand that engagement.

Q26

Mātauranga Māori: What are your thoughts on how to enable and protect mātauranga Māori in the research system?(See pages 38-39 of the Green Paper for additional information related to this question)

We favour a multi-strand approach, such as that emerging in healthcare, where Māori have an independent authority for funding and promoting mātauranga Māori, which works in conjunction with the existing funding bodies and science providers. Each funding entity has capacity to set its own path, while encouraging work that weaves mātauranga and western science. Such an approach, over time, could address capacity issues, support the establishment of Māori knowledge hubs, and the integration of Te Tiriti throughout our science sector.

Q27

Regionally based Māori knowledge hubs: What are your thoughts on regionally based Māori knowledge hubs?(See page 39 of the Green Paper for additional information related to this question)

We broadly support the idea of establishing regionally based Māori knowledge hubs, but additional new funding will be essential to develop and sustain these. Further if established in isolation, without substantial systematic change we are unlikely to meet the aspirations of Māori. Achieving this will require an ongoing commitment across the science sector to make all institutions Tiriti-enabled. In our view, each entity needs to prioritise and fund appointment of Māori staff at the highest levels to inform and drive the institution's research agenda, and to encourage and support their mahi.

Page 11: Section 5: Funding

Q28

Core Functions: How should we decide what constitutes a core function, and how do we fund them?(See pages 44-46 of the Green Paper for additional information related to this question)

Basic science should continue to be funded based on excellence. The RSNZ Marsden fund, MBIE Smart Ideas and HRC project grants work well, but with success rates of ~10%, they remain brutally competitive. Internationally similar funds have success rates ranging from 18% (Australia) to >30% (Switzerland, Israel). Comparisons of the economic growth achieved by OECD competitors, which invest more in research and development than our nation, suggest strongly that increasing our basic science funding would deliver substantial benefits to Aotearoa-New Zealand .

1. [https://one.oecd.org/document/DSTI/EAS/STP/NESTI\(2015\)8/en/pdf](https://one.oecd.org/document/DSTI/EAS/STP/NESTI(2015)8/en/pdf)

Q29

Yes

Establishing a base grant and base grant design: Do you think a base grant funding model will improve stability and resilience for research organisations?(See pages 46-49 of the Green Paper for additional information related to this question)

Q30

Establishing a base grant and base grant design: How should we go about designing and implementing such a funding model?(See pages 46-49 of the Green Paper for additional information related to this question)

The time cost associated with extensive annual application processes, coupled with low success rates, remains a burden on our system and results in scientists spending less time on research activities than they might and causes attrition of young scientists from the system. We believe that in addition to the classic contestable funds we currently have, that there is value in establishing base grants for all scientists which would provide a greater level of stability, resilience and science activity across the sector and reduce the time cost of the grant application process. Such a system, where individual researchers are reviewed every three to five years, would reward achievement while ensuring basic allocations for all. The Canadian science and engineering research system operated in this manner for many years and was highly successful. Our TEC funded PBRF system, at face value does this, with remuneration to tertiary providers linked to individual staff performance that is reviewed every five years. However, as currently implemented our PBRF system does not result in direct research support to staff based on their performance.

To meet its objectives, which are commonly long-term, science needs to be funded appropriately to encourage and facilitate collaboration. Continual cycles of short-term grants with low budgets result in “compartmentalisation” of science, at the detriment of the ‘big-picture’ thinking needed to tackle our most challenging problems. Our most significant societal problems cannot be tackled, innovation is hampered, and discovery is dampened, when research cannot gain or retain traction. Unfortunately, we have a poor history when it comes to long-term investment in science, allowing it to become captured by entities that often become focused more on maintaining the funding than on delivering value. This issue is particularly acute when funding does not adjust for inflationary pressures. We note that many of our National Science Challenges, CoREs, Science Platforms, and other strategic investments have not achieved their full potential because we manage our larger science investments poorly, allow them to become captured by one or two entities, and lose sight of their role and mission.

The overhead model currently applied to science funding in New Zealand is also problematic and can drive quite adverse behaviours that promote the recruitment of students to deliver our research over staff, which contributes to the perceived over supply of PhDs and lack of job opportunities for new graduates. Review of the overhead funding methodology might help address some structural concerns and provide a heightened number of opportunities for early career researchers.

As a last point, we need to be mindful of the ongoing need to keep the compliance costs of science funding modest, whilst ensuring that our processes are robust, defensible, and deliver the intended outputs and outcomes. We tend to over manage and over govern our science investment. Science absolutely needs to be accountable, transparent in the way we spend public money, and able to demonstrate the value we deliver to our stakeholders. However, as a nation, complex governance structures often manage relatively small investments (10% of some CoRE budgets are spent on governance). There is also opportunity to simplify reporting for some entities – we favour the yearly reporting adopted by funds such as Marsden. We would welcome a higher trust model that supports our science sector than the low trust watchdog model we have had this past 30 years.

2) https://www.cca-reports.ca/wp-content/uploads/2021/05/Powering-Discovery-Full-Report-EN_DIGITAL_FINAL.pdf

Q31

Institution design: How do we design collaborative, adaptive and agile research institutions that will serve current and future needs?(See pages 57-58 of the Green Paper for additional information related to this question)

The New Zealand science ecosystem has not always incentivised collaboration. Notably, the business models used to run our predominantly publicly funded CRIs and tertiary institutions for the past decades have often proven an impediment. We believe the creation of collaborative, adaptive and agile research institutions will significantly enhance research.

We have had some success when we have approached problems from a mission led perspective, with various CoREs, NSCs and other entities established to deliver against our various mission-led objectives. Unfortunately, because science funding remains so competitive and budgets remain static, these entities frequently become insular, institutionalised clubs, that are hard or impossible to join, and thus rarely achieve value that is greater than the sum of their parts. As a result, such entities are often a barrier to a diverse workforce. If we are to pursue these sorts of models in the future, care must be taken to ensure they remain open, collaborative, dynamic and responsive to embracing new opportunities, new knowledge, new approaches and new talent.

Q32

Respondent skipped this question

Role of institutions in workforce development: How can institutions be designed to better support capability, skill and workforce development?(See page 58 of the Green Paper for additional information related to this question)

Q33

Respondent skipped this question

Better coordinated property and capital investment: How should we make decisions on large property and capital investments under a more coordinated approach?(See pages 58-59 of the Green Paper for additional information related to this question)

Q34

Respondent skipped this question

Institution design and Te Tiriti: How do we design Tiriti-enabled institutions? (See page 59 of the Green Paper for additional information related to this question)

Q35

Respondent skipped this question

Knowledge exchange: How do we better support knowledge exchange and impact generation? What should be the role of research institutions in transferring knowledge into operational environments and technologies?(See pages 60-63 of the Green Paper for additional information related to this question)

Q36

Workforce and research Priorities: How should we include workforce considerations in the design of national research Priorities?(See pages 69-70 of the Green Paper for additional information related to this question)

Our science workforce is world class, but ongoing issues remain. Key among these is the need to enhance the diversity of our workforce and provide career paths that have flexibility and stability. Base grants may reduce some of this precarity, but to ensure that funding supports research, and not other institutional activities, the details of how funding follows through our science system will matter.

For many young people the structural challenges of the system are a significant impediment to recruitment and retention. At many levels salaries have been eroded, while positions lack security and opportunity. These issues pose challenges when trying to build a bright and diverse workforce – for many being a scientist is considered alongside opportunities as a health professional/IT specialist etc. When compared to the opportunities in other careers, a research path of short, fixed term positions, with little prospect of promotion, and high degrees of uncertainty, does not hold much appeal for our best and brightest students. These issues need to be addressed to ensure we have a strong workforce in the future.

Additional funding for postdoctoral and career development fellowships would help develop early career researchers into research leaders, but in addition to training these individuals as academic leaders we need to develop and support a greater level of entrepreneurship in our science workforce. This will require greater focus on career path and security of funding – not just for the leaders of research initiatives, but also for the excellent practitioners (senior technical staff and research fellows) that are vital to the success of all research groups.

In general, we need to strengthen our business linkages to create workforce outcomes. We also need to retain and, enhance our international connections. These connections are vital for knowledge and skill transfer. Schemes that encourage and support a nationally mobile and internationally connected workforce, and that ensure New Zealand develops and maintains connections with international leaders, is critical to our future success. Such matters are easy to overlook when focused on the issues within our science sector, but we need to look outward as well as inward.

Capacity building for Māori and Pacific research needs greater resourcing, starting early with a focus on widening participation. Engaging Māori and Pacific communities so that they can observe and experience the value and impact of science on their daily lives and the value of science as a career, of equal value to that of a doctor or lawyer is essential. Again, this is where career stability is a necessity. We must provide a system that nurtures, supports and values our researchers to enable healthy and productive research careers. This needs to be achieved through mechanisms that support researchers at all career stages.

Q37

Respondent skipped this question

Base grant and workforce: What impact would a base grant have on the research workforce?(See pages 70-71 of the Green Paper for additional information related to this question)

Q38

Respondent skipped this question

Better designed funding mechanisms: How do we design new funding mechanisms that strongly focus on workforce outcomes? (See page 72 of the Green Paper for additional information related to this question)

Q39

Funding research infrastructure: How do we support sustainable, efficient and enabling investment in research infrastructure?(See pages 77-78 of the Green Paper for additional information related to this question)

We support UNZ's position that there is a need for large capital infrastructure to be funded by government, perhaps via competitive rounds, and that this is accessible to all relevant researchers at appropriate market cost. However, alongside any large infrastructural investment, it is important to ensure that highly skilled technical staff are funded alongside capital investment so that we can achieve maximal benefit for New Zealand from our infrastructural investments.

The Australian and Canadian science systems seem to have tackled infrastructural support better than many and may be models worth considering. There are good models where access to infrastructure is managed in an independent manner that avoids issues of institutional capture.

As with our points above, there needs to be a more collaborative and integrated approach across our science sector to the acquisition, running and maintenance of our research infrastructure.

Increasing New Zealand's national research infrastructure will have positive effects for the workforce, including technical support capability. Improved research infrastructure will also help in training, recruiting and retaining research talent.
