



6 October 2023

Mr Duncan McIntyre
Deputy Secretary, Science and Technology Group
Department of Industry, Science and Resources
GPO Box 2013
Canberra, ACT, 2601

via e-mail: priorities@industry.gov.au

Dear Mr McIntyre,

Re: Australia's draft National Science and Research Priorities

The University of Melbourne welcomes the opportunity to provide feedback on the draft National Science and Research Priorities.

We are pleased to note that the consultation document has thoughtfully incorporated the perspectives shared during the previous submission process. We support the overarching priorities outlined in the draft document and applaud the acknowledgment of the value of First Nations knowledge systems and the need that they be properly recognised within these priorities.

While the stated priorities are admirable, we believe that further clarification of the document's purpose would be valuable. The Group of Eight has advocated for a National Research Strategy that incorporates national science and research priorities. We concur that such an approach would more aptly reflect the multidisciplinary and multisectoral efforts needed to tackle our nation's most pressing challenges.

We also provide the following further suggestions:

Identifying the challenges facing our nation

General comments

The document's framework, in which overarching priorities are underpinned by objectives, aims, and critical research questions, is well-suited. However, in their current form there could be greater distinction between "objectives" and "aims". To enhance clarity, we propose consolidating these categories. Additionally, recognising that the nation will not be starting from scratch in its efforts to address these priorities, the framework would benefit from a brief discussion of the known "enablers" and "inhibitors" under each priority, which could inform the "critical research" questions.

A critical research question (or "enabler") that might underpin all priorities is "ensuring the availability of robust capabilities and infrastructure, such as AI, quantum robotics, mathematical sciences and biotechnology, to address these priorities".

Furthermore, we find that the current priorities could more directly address the imperative for Australia to invest in digital technologies, digital science, and engineering. We propose the inclusion of an additional priority, "Empowering a Digital Australia". Australia's current investments in these crucial areas are lagging behind other countries, despite their potential to disrupt and transform every sector. This new priority could encompass digitalisation, networking, automation, and other technological advancements, fostering regional

connectivity, enabling smart cities, embracing industry 4.0, and fast-tracking 5G adoption. Prioritising these elements is vital to accelerate our efforts and position Australia at the forefront of global initiatives in this critical domain. Achieving these objectives is essential for Australia's long-term competitiveness and growth.

Priority 1

We believe that “ensuring a net zero future” and “protecting Australia's biodiversity” are distinct priorities with their own unique objectives. For clarity, we suggest renaming this priority to “securing our environmental future”, under which “supporting our pathway to net zero”, “understanding and sustaining our environment”, and “protecting and restoring biodiversity” continue to serve as appropriate objectives.

Furthermore, we advocate for a broader perspective on sustainability that transcends geographical boundaries. Australia should embrace an international perspective, moving beyond a narrow focus on net zero emissions for our nation alone. Embracing this broader vision will enable us to tackle a wider range of sustainability issues, make meaningful contributions to global environmental well-being, and help mitigate geopolitical security and stability challenges.

Additionally, it is worth expanding the term “environment” to encompass not only the physical environment but also the health system environment, as the latter is intricately linked to our overall well-being.

Priority 2

Greater emphasis could be placed on ensuring the sustainability of our healthcare system. Currently, healthcare expenditure accounts for approximately 11% of our GDP, and this figure continues to rise at a rate of approximately 0.5-1% annually. This trajectory is unsustainable, and addressing this is paramount to fulfilling the objectives of this priority, including healthcare access for all. To achieve this, we must harness technology and innovation to effectively manage healthcare costs while upholding the quality of care. Preventative health is key to this pursuit, alongside the potential utilisation of personalised medicine, robotics, IT, and other cutting-edge technologies for the automation and streamlining of healthcare.

Priority 3

As one of the stated aims is that “Australian businesses will engage in more research and development increasing our global competitiveness”, we recommend adding a corresponding critical research question on “incentives and systems to support stronger business engagement with the research and development sector”.

Embedding First Nations knowledge and knowledge systems

We appreciate the recognition that First Nations knowledge systems hold broad relevance across all priorities. However, it is imperative that this emphasis translates into concrete actions and dedicated resources. This review should consider a range of mechanisms to facilitate and safeguard First Nations knowledge while elevating the aspirations of Aboriginal and Torres Strait Islander communities and organisations within the research landscape. These include:

1. Ensuring that Aboriginal and Torres Strait Islander people are in decision-making roles across the research sector, granting them the agency to influence the status quo.
2. Collaborating with relevant government departments to formulate a national strategy aimed at attracting and retaining more First Nations students within STEM disciplines throughout the educational system. (This aligns with the Department’s ongoing Pathway to Diversity in STEM Review).
3. Allocating funding to bolster initiatives within institutions to attract, nurture and retain Aboriginal and Torres Strait Islander researchers.
4. Providing resources to enable institutions to enhance the competencies of both Indigenous and non-Indigenous individuals in all aspects of First Nations knowledge and knowledge systems.
5. Dedicating resources to empower First Nations communities to become equal research partners.

It is essential to foster frameworks that enable the coexistence and respectful interaction between First Nations knowledge and 'establishment' science, with appropriate attribution and management of Indigenous Cultural Intellectual Property and Indigenous data sovereignty.

Genuine, reciprocal engagement with First Nations communities throughout the research lifecycle is central to valuing and enabling First Nations knowledge. While the endeavour to collaborate with First Nations people to embed their knowledge and knowledge systems remains essential, we believe that the current framing may benefit from refinement to ensure practical implementation. The priorities should embody an open-minded approach towards all knowledge systems, avoiding excessive prescription.

Refining critical research paths

The University recommends the establishment of a community consultation process, facilitated by expert working groups, to refine critical research paths every two to three years. This process should be implemented by the Office of the Chief Scientist in a consultative, light touch manner.

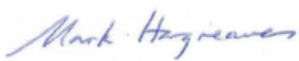
The role of our science systems in delivering the priorities

The revision of our national research priorities presents a unique chance to reform research funding regulations, establishing a framework for international cooperation that is characterised by greater flexibility, efficiency, and impact. There is also an opportunity to strengthen both local and international partnerships, fostering collaborations that align with shared objectives. These partnerships will not only facilitate the formulation of a comprehensive and inclusive research agenda but also guarantee the resilience of the Australian research sector on a global scale.

The University of Melbourne sincerely appreciates the efforts of Australia's Chief Scientist and the Department of Industry, Science, and Resources in formulating Australia's National Science and Research Priorities. We hope that our feedback will contribute to the refinement and effective implementation of these priorities. We stand ready to engage constructively in further discussions and collaborative efforts aimed at addressing national challenges through science and research.

For further information, or to discuss the submission, please don't hesitate to contact me at dvc-research@unimelb.edu.au.

Kind Regards,



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