Research Australia

An alliance for discoveries in health

Comments on the National Research Investment Plan Discussion Paper

August 2012

About Research Australia

Research Australia is an alliance of 170 members and supporters advocating for health and medical research in Australia. Independent of government, Research Australia's activities are funded by its members, donors and supporters from leading research organisations, academic institutions, philanthropy, community special interest groups, peak industry bodies, biotechnology and pharmaceutical companies, small businesses and corporate Australia. It reflects the views of its diverse membership and represents the interests of the broader community.

Research Australia's mission is to make health and medical research a higher priority for the nation. We have four goals that support this mission:

- A society that is well informed and values the benefits of health and medical research
- Greater investment in health and medical research from all sources
- Ensure Australia captures the benefits of health and medical research
- Promote Australia's global position in health and medical research

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Introduction

Research Australia welcomes the opportunity to provide comments on the National Research Investment Plan Discussion Paper.

Comments on specific questions raised in the Discussion Paper

Question 1. Representation of the national research fabric and the notion of focusing on the development of enabling capabilities (domains) in the NRIP.

Research Australia supports the emphasis the National Research Investment Plan places on collaboration. Promoting collaboration is one of Research Australia's 10 Strategic Imperatives, in recognition of the fact that successful health and medical research requires a research culture, funding models and organisational structures that better facilitate, support and reward collaboration, both nationally and internationally.

Research Australia endorses the statement in the discussion paper that 'The fabric should not be seen as outlining separate silos but as a highly interlinked and interdependent system that encourages collaboration and multi-disciplinarity'. This is clearly a reference to collaboration across the domains identified in the paper, but an equally strong and unambiguous statement needs to be made about the interlinked nature of the Fundamental Research Elements, particularly as they relate to public and private sector investment; collaboration between public and private sector researchers; sharing of infrastructure; and development of career structures for researchers that encourage and support mobility of employment across public and private sector employers.

Research Australia submits that the NRIP should explicitly recognise the importance of collaboration across the Fundamental Research Elements.

'Multi-disciplinarity' would appear to be a reference to the convergence of different disciplines, which is the hallmark of many modern research projects. The Monash Vision Group provides an example of collaboration across different entities and the convergence of disciplines:

> Monash Vision Group (MVG) brings together engineering, computer scientists and medical researchers from Monash University and Alfred Health and industry partners Grey Innovation and MiniFAB, with all partners dedicated to developing and manufacturing our direct to brain bionic eye ready for first patient tests by 2014.
> (Source: www.monash.edu.au/bioniceye/aboutus.html)

It is not apparent that the scope of the relationships and activity being undertaken by the Monash Vision Group is adequately encapsulated by the term 'collaboration' as it is described in the discussion paper. The importance of the involvement of multiple disciplines in modern research should be specifically acknowledged.

Research Australia submits that convergence needs to be recognised as a fundamental research element; alternatively collaboration needs to be defined to explicitly include collaboration across disciplines.

The role of the non-profit sector is acknowledged in the discussion paper's description of the existing capability of the Earth and Biology domains. What is not acknowledged in the Plan or the Fabric is the significant role philanthropy plays in funding research, particularly in the health and medical research sector. In recognition of its importance to health and medical research, fostering philanthropy is another of Research Australia's 10 Strategic imperatives.

It is important that the role of philanthropy as a source of funding for research is explicitly identified at this early stage in the development of the National Research Investment Plan because it has a specific role, motivations and objectives that need to be addressed if the contribution of philanthropy to Australian research is to be optimised. Like private sector investment, philanthropy cannot be controlled by state or Commonwealth governments, but it can be influenced and fostered by appropriate policy measures.

Research Australia submits that philanthropy should be included as a separate Fundamental Research Element; alternatively Public Research Investment should be explicitly defined to include the funding provided by philanthropy.

Question 2. Is the scope of the domains appropriate and are they sufficient to cover Australia's needs into the future?

Research Australia has no comment on the domains other than to note that under the Earth Domain, the 'Existing capability' makes a reference to biology as an area within the Earth domain. This is somewhat confusing as there is a separate Biology domain.

Question 5. What other structural or policy issues could be addressed to further strengthen the research system?

The OECD has defined five stages of health innovation, (and these are probably applicable to scientific innovation generally):

> Health innovation is an interactive and distributed process which involves five main phases:
>
> i) identification of need,
> ii) research and development,
> iii) commercialisation, (*and other translation*)
> iv) delivery, and
> v) diffusion.
>
> These stages are increasingly understood to be circular, iterative and highly interconnected-unlike the traditional notion of a linear step-by-step process, as so often inbred in policy.
>
> Health innovation is tightly connected to the provision, uptake and use of new treatments: feedback from purchasers, providers and patients is essential in shaping the innovation process. Feedback mechanisms are

built in throughout the innovation cycle, and are the source of modifications that improve individual products and enhance innovative capacity as a whole as well as oftentimes the focus of research.
(Source: Biomedicine and Health Innovation: Synthesis Report, OECD 2010, p.6)

At the bottom of Figure 1 in the discussion paper is a box that is separated by a dotted diagonal line. Below the line is 'Research: increasing the stock of knowledge'. Above the line is 'Innovation: implementing new products and processes'.

Research Australia assumes that the purpose of placing 'Research' and 'Innovation' in the one box in this manner is to convey the idea that while different, the boundary between research and innovation (or the other stages of innovation if we adopt the OECD paradigm) is not clearly defined, and Research Australia accepts that this is the case.

It is also generally acknowledged that while Australia undertakes a significant amount of world leading research, it falls behind many other countries in its success in commercialisation of research. (Refer for example, to the *National Survey of Research and Commercialisation 2008 and 2009*, Department of Innovation, Industry, Science and Research, May 2011.)

Within health and medical research there is the so-called 'valley of death'- the gap between the largely publicly funded research that results in the publication of research results, and the further development of the research findings to a sufficient level to attract commercial partners to translate the research into new drugs and devices. Developing strategies and measures to overcome this gap and take evidence from research into practice is another of Research Australia's 10 Strategic Imperatives.

Part of the difficulty is a definitional one- at what point in the innovation cycle does research (increasing the stock of knowledge) end, and innovation (implementing new products and processes begin)? As noted above, the reality is that there is no clear delineation, but the creation of programs to fund research on the one hand, and to support commercialisation and translation on the other, require a distinction be made between the two, to determine eligibility for funding.

This distinction between the research and innovation phases is particularly important when designing research funding programs such as the project grants offered by the National Health and Medical Research Council and the ARC's Discovery Projects, and commercialisation programs such as the ARC Linkages Program and Commercialisation Australia. However, at present there is a gap between the point at which grants for research end and the point at which research is sufficiently developed to benefit from commercialisation support programs- the aforementioned 'valley of death'. The activities required to develop the published findings to a point where a commercial proof of concept exists are often not eligible for funding as research or commercialisation activities. There is an evident need to fund research activities and innovation support activities in such a way that this gap is eliminated.

One important role the National Research Investment Plan could play is to more clearly define 'Research' and 'Innovation' in such a way that there is a clear delineation, and equally importantly, there is no gap between the two; an activity is either clearly still 'Research' (and eligible for funding as such) or is now 'Innovation', and eligible for support under appropriate commericalisation and translation programs.

Research Australia submits that the National Research Investment Plan should ensure that 'Research' and 'Innovation' are clearly defined and differentiated, so that the interface between research activities on the one hand and commercialisation/translation activities on the other is clear and effective, and there are no activities that fall through the funding gap.

Conclusion

Research Australia supports the general direction of the Plan proposed in the discussion paper, and believes its development could make a significant contribution to directing Australia's research effort. This contribution would be enhanced by ensuring that the National Research Investment Plan fits seamlessly into the broader Innovation framework described in Figure 1 of the Discussion paper.

Research Australia has appreciated this opportunity to make this submission.