

**COMMUNIQUÉ FROM THE NATIONAL ACADEMIES FORUM:
SUMMARY OF A WORKSHOP IN RESPONSE TO THE CUTLER REVIEW OF
AUSTRALIA'S NATIONAL INNOVATION SYSTEM**

The National Academies Forum welcomes the review of Australia's national innovation system, [Venturous Australia](#). We strongly affirm the importance of a well-connected and dynamic innovation system for the social, economic and cultural development of Australia. In the 21st century our progress and productivity will be secured by innovation resulting from robust and evolving partnerships between research organisations, business, government and civil society. Sustained innovation, harnessing all our creativity and ingenuity, is essential in identifying and pursuing opportunities to enhance our competitive capacity and finding solutions to the complex, pressing and frequently global problems that confront our nation. Innovation contributes to a healthy, well-educated and socially engaged citizenry, enjoying secure and meaningful employment. The contributions of science, technology, engineering, social science and the humanities are critically important. We note with concern the evidence of the report pointing to a significant decline in public and private investment in research and innovation over the last decade, and strongly endorse the need to develop a long-term investment strategy for innovation to better position the Australian economy to deal with future challenges.

It is for these reasons that the National Academies Forum urges the Australian Government to act on the review's principal recommendations, and to consider our additional suggestions, for full and rapid implementation.

The review's recommendations encouraging business innovation and access to information are welcomed and critically important. Consistent with our charters, we comment here more specifically on support for innovation from research, education and training, the governance of Australia's national innovation system, and innovation priorities and principles, noting where the National Academies Forum and the individual learned academies might most valuably contribute as the government considers its white paper response.

The National Academies Forum and the learned academies wish to contribute fully to the continuing, urgent dialogue on the innovation agenda. Through their capacity to draw upon the multi-disciplinary skills of more than two thousand eminent Fellows in science, social science, humanities and technological sciences and engineering, and their expanding international networks, the learned academies, individually, and their National Academies Forum, collectively, are uniquely positioned to provide advice in identifying future challenges and building innovative new perspectives and strategies to address them. Building on the past engagement of the learned

academies in the development of innovation policy, the National Academies Forum is keen to open discussions with the government on how best to it might contribute to improving the coherence, inclusiveness and performance of our national innovation system.

Support for innovation from research

Meeting the full costs of research

Support for full funding of both direct and indirect costs associated with all national competitive research grants is essential. Crucially, to ensure costs are properly covered, this includes the maintenance of block funding for research as well as competitive grant funding. Full funding of research in universities will help eliminate the need for cross-subsidy from international fee paying students, liberating those funds, appropriately, for quality teaching. Better research, better teaching, and better researchers will result.

The distribution of block funding based on excellence in research, subject to appropriate quality indices for different discipline clusters, will lead to better planning of research, improving its contribution to Australia's future. The National Academies Forum can provide important input to the continuing and developing *Excellence in Research for Australia* exercise.

Catching up with our competitors

Public funding for Australia's research should increase to match that of our competitors. It is important that this have a time line attached to it, so that investment of additional funds can be properly planned. Innovation investment through strengthening publicly-funded research agencies should match the Organisation for Economic Co-operation and Development (OECD) average within five years and be within the top quartile of the OECD by 2020.

Supporting international connections

There is a pressing need for increased investment and new schemes for international collaboration and 'brain circulation', including international fellowships, participation in international research schemes and the development of internationally focussed 'National Priority Research Centres'.

The principle of promoting international research experience is strongly supported, but it is essential to encapsulate a return mechanism within any supporting scheme to bring young researchers back to Australia. Re-engaging with our diaspora, flexible exchange programs, mentoring schemes to connect early-career researchers with overseas experts, and appointment of our most successful expatriate researchers as 'innovation ambassadors' will provide opportunities for collaboration that would not otherwise be available in Australia. The learned

Academies and the National Academies Forum can contribute expertise and utilise international connections to accelerate this engagement.

Winning hearts and minds for innovation

Cultural change is necessary to promote engagement between industry and research institutions. The National Academies Forum welcomes the emphasis on promoting broad academic collaboration with industry, going well beyond the limited relationship of commercialisation of research to one where industry and the research community participates actively in the full research and innovation cycle. We endorse open access to research outputs to facilitate academic, industry and community-wide collaboration. The National Academies Forum will continue to act strongly as a vector to promote this access.

Prizes for innovation excellence

We strongly endorse the creation of prizes for innovation to recognise and reward exemplary contributions to innovation. The Academies would happily assist in nominating candidates and/or assisting in the selection process.

Building foundations for innovation

Infrastructure is an essential ingredient to the international competitiveness and excellence of research. The establishment of a 'National Research Infrastructure Committee' guided by the goals of innovation and committed to research excellence to oversee a successor program to NCRIS is welcomed.

Education and skills

Enhancing education for innovation

The National Academies Forum strongly endorses the view that high quality human capital is critical to innovation. An education and training system . primary, secondary and tertiary; public and private . that enhances the development of skills essential for innovation will enable *all* Australians to be constructive contributors to our national innovation system. Moreover, it is not just about specific skills: it is about creating a culture of openness to new ideas. The National Academies Forum endorses all recommendations in the reports section on ~~S~~Strengthening people and skills. In particular we support the following principles:

- Australia's capacity for innovation and creativity must draw on as wide and diverse a talent pool as possible. Gender equity and diversity must be explicit requirements of all government-funded research and innovation agencies.
- Creativity and innovative thinking should be encouraged at all stages of the education system and across all subjects. All students across Australia can benefit from a curriculum

aimed at enhancing creativity and problem solving abilities. We recognise the extensive efforts being made by the government in curriculum reform. While part of the solution is embedded in the existing recommendation to better train and resource teachers, additional new approaches are needed to bring together knowledge across a range of disciplines. Examples of existing activities, which are supported by the Department of Employment, Education and Workplace Relations, include the linkage of science with literacy through the *Primary Connections* and *Science by Doing* programs of the Australian Academy of Science and the CSIRO's *Scientists in Schools* where scientists from a wide range of disciplines are embedded in classrooms. In addition, the *Science and Technology Education Leveraging Relevance* program of the Australian Academy of Technological Sciences and Engineering is designed to stimulate a continuing interest in science in secondary school students. We envision a much wider program of such activities that should include internships in business, industry and the community.

Broadening the educational experience of future research workers

Our next generation of researchers needs a broader skill base to foster innovation and knowledge exchange. Research training today is often narrow and discipline-based. It is important that every early-career researcher be mentored, and that they have the opportunity to acquire a diverse set of skills, including media training, research and innovation management, ethics, communication skills, teamwork and collaboration. This will require the extension and modification of existing schemes.

Governance

From the perspective of the National Academies Forum it would be most helpful if the governance structures of the national innovation system were as clearly and simply defined as possible and reflect the critical importance of innovation to all areas of Australian life. This of necessity will demand the active involvement of departments across a number of ministerial portfolios, and governance structures designed to encourage innovation should reflect that breadth.

The National Academies Forum appreciates that government will be considering a variety of structures to oversee the next phase of the national innovation system's development. Given the importance of innovation to our future prosperity and social wellbeing, a specific committee of Cabinet might be considered to focus on the development of strategic initiatives for innovation and the allocation of funding for national innovation priorities. This would elevate innovation to an appropriately high level of government consideration.

A high-level advisory body is essential to provide counsel on research and innovation strategy to Cabinet and government more generally. To increase business commitment to innovation this

body should include leaders of innovative businesses, as well as those from research and education providers. The National Academies Forum and the learned academies would like to explore with government how best they could bring their valuable perspectives to this body. As the review acknowledges, such an entity should include an international consultative panel to monitor and advise on international best practice.

An 'Office of Innovation', as outlined in the review, should provide high-level support to the innovation policy framework, develop appropriate evaluation metrics, and advocate innovativeness in government. A formal mechanism should be established for the National Academies Forum and the learned academies to tender advice to this office.

Priorities and principles

Cabinet, guided by the Minister for Innovation and informed by recommendations from its advisory bodies, should determine innovation priorities. Identifying the goals, opportunities, and potential support mechanisms for an integrated system of innovation should be the focus of priority setting. These should include innovation capability building, the development of emerging innovation-supporting technologies and infrastructure, and building consensus through community engagement with the national innovation system.

Principles underlying the development of our national innovation system must recognise Australia's existing national needs, areas of excellence, and potential for increased contributions from universities, research institutes and the private sector. They should include purposive collaboration, connectivity, and internationalisation, and democratisation of the innovation system to enable the emergence and development of ideas at local levels. A national innovation system should complement and seek to enhance the principles of social inclusion, wellbeing, and equity, recognising its place in a larger system of governance that is charged with building a strong, secure and internationally competitive nation.