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Australian Academy of Science submission on the Policy Review of the National Competitive Grants Program

Australian research funding is a tangle of loose threads that do nothing to reinforce a fragile fabric that is no longer fit-for-purpose.

An important element within the research funding framework is the National Competitive Grants Program (NCGP) of the Australian Research Council (ARC). It was designed initially to be the primary mechanism to support basic research in Australian universities. Tinkering over many years has blurred its purpose.

The policy review of the NCGP is an opportunity to think imaginatively about how the program can be used as an effective vehicle to help Australia meet our local and global challenges and ambitions – to use research for rapid social and economic progress and to address complex, real-world situations.

Coordinated government investment in basic research is critical for Australia

As described in the Academy's submission to the [Review of the ARC Act](#), ineffective and uncoordinated Australian policy for research has produced a flawed narrative that implies that research is only valuable if it directly leads to a commercialised product.¹ Amongst the negatives of this approach, one is a steady decline in investment in pure basic research for over a decade.

Australia needs its own base of knowledge and expertise to draw from to respond to domestic and global challenges, and to capitalise on international developments.

Only government can provide the 'patient' capital needed to conduct the basic research and risk-taking that underpins discovery and often unexpected applications. It is this investment in knowledge that grows the economy and drives social progress and improves quality of life.

Recommendation: The NCGP is the government's primary vehicle for investment in basic research, and this *must* be its focus.

Implement mission-led research to enable multidisciplinary collaboration on complex challenges

Globally, research funders recognise that solving complex challenges requires mechanisms additional to the traditional model where investigators are awarded funding to pursue discrete projects aligned with their research interests.

Mission-led science offers a mechanism that can foster multidisciplinary collaboration, across Humanities and Social Science (HASS) and Science Technology Engineering and Mathematics (STEM). It can encourage co-design with stakeholders and long-term investment at scale with focus, and can link knowledge generation to impact. It refers to research aligned with 'missions' or challenges that are complex, require effort at scale and system-level solutions, and engagement with stakeholders, including society.² The mission format seeks to coordinate a nation's R&D effort and enables holistic strategy orientation and policy alignment.

¹ Australian Academy of Science, 2022, Australian Academy of Science submission on the Review of the Australian Research Council Act (2001), <https://www.science.org.au/files/userfiles/support/submissions/2022/review-australian-research-council-act.pdf>

² International Science Council, 2023, Flipping the science model: A roadmap to missions for sustainability, <https://council.science/publications/flipping-the-science-model/>

Missions under the NCGP would support research communities to coalesce around shared goals, which could be designed to align with national priorities, such as the Science and Research Priorities and global initiatives, and the Sustainable Development Goals.

To achieve this goal the ARC would need to implement a rigorous process to (1) identify missions and (2) assess the value of work that embraces multiple disciplines, which is greater than the sum of its (individual discipline) parts.

The ARC should focus the Linkage program on missions, which should be collaboratively designed with stakeholders and aligned with national science and research priorities or challenges that sit underneath those priorities.

Feedback on objectives for the National Competitive Grants Program

Under the *Australian Research Council Amendment (Review Response) Act 2024*, the purpose of the ARC is to fund pure basic research, strategic basic research and applied research. Thus, it is deeply concerning that the discussion paper is littered with references to commercialisation. Commercialisation must not be the job of the ARC or the NCGP.

As highlighted in the Academy's submission to the Review of the ARC Act, the focus of programs under the NCGP have become distorted.¹ For example, the ARC Linkage Program was introduced to build collaboration and partnerships between researchers. Now, it is focussed more on industry collaborations. Similarly, the Centres of Excellence program has become less of an opportunity for longer-term fundamental research and closer to a Cooperative Research Centres-like program.

The Academy recommends that 'Research Translation' be removed from the objectives of the NCGP proposed in the discussion paper. It confuses the purpose of the ARC and NCGP to support basic and applied research *not* translation and commercialisation. The objective 'Research Impact' can adequately capture the impact of research, whatever that is defined to be.

Translation, commercialisation and industry engagement can be supported through other agencies and targeted programs.

The 'Research Capacity' objective should be expanded to include support for vital equipment and research facilities, but there should be coordination and clearly defined roles for LIEF and NCRIS. Additionally, no current scheme supports relational research infrastructure, in contrast with overseas schemes such as the USA's National Science Foundation.

Recommendation: The 'Research Translation' objective should be removed. It does not align with the purpose of the ARC and NCGP, which is to support pure basic, strategic basic and applied research.

Recommendation: The 'Research Capacity' objective should be expanded to include support for vital equipment and research facilities.

The imperative for research councils to remain independent

Modern research councils have an important role in advising governments on research policy, and this is reflected in the object of the *ARC Amendment (Review Response) Act 2024*.

Initiatives and systems that allow scientists to have a policy impact are a current gap in the NCGP that could be included in the 'Research Impact' objective.

The ARC is one of Australia's most visible science funding bodies. It is also an independent body. However, the ARC has lacked the capacity or willingness to use its independence, particularly when its processes have been questioned by political interests.

Research funders have responsibilities that go beyond being accountants or contract managers. The ARC has a unique role—as reflected in the Act's objects—in shaping the science system and asserting its values in the public arena and to government.

Recent trends that have seen the ARC responding reactively to external national security or political agendas or allowing itself to be subordinate to the Department of Education must be reversed. The CEO and Board answer to the Minister—and no one else.

Recommendation: A refreshed NCGP must assert the ARC’s role in building public trust in science and in providing research policy advice, and the government must fund this capability.

Recommendation: Initiatives and systems that allow scientists to have a policy impact are a current gap in the NCGP that could be included in the ‘Research Impact’ objective.

Access to independent, expert advice on research policy through the Learned Academies

The ARC is required to “provide expert advice on research to the Commonwealth Government”. There needs to be reliable and predictable capacity to obtain such expert advice beyond the membership of the Board.

This has traditionally been provided by the Learned Academies through the Learned Academies Special Projects (LASP) scheme which has now not run for seven years.

Recommendation: The ARC should reinstate a process to obtain advice from the Learned Academies as the disinterested independent advisors on the disciplines to government, and sufficiently invest in this necessary capacity.

Other issues concerning the NCGP:

The NCGP should support the full costs of research

The public funding model for science and research is broken:

1. It puts a price on success – the more a university wins from external sources, the more of its internal revenues it has to divert to support that research.
2. It is dependent on growing discretionary internal revenues that now come largely from international student fees.

The *Australian Universities Accord Final Report* describes the full-funding problem universities face.³ The Academy supports the recommendations of the *Australian Universities Accord Final Report* to enhance transparency and measures to increase indirect cost support for national competitive research grants.

Recommendation: The Australian Government should fund the ARC to support the full cost of research.

Uncertainty in the NCGP EOI process

The Academy supports the two-stage application process commencing with the Expression of Interest (EOI) to reduce the administrative burden of applying for grants. However, the ARC should optimise this process to improve confidence in it.

EOI assessors are presently not able to confer with each other, and large variations in the assessments from different panel members give a sense that the system is not calibrated. It is confusing for researchers, and should not be.

Recommendation: The ARC should optimise the EOI process to improve confidence in the system.

Promoting international collaboration

Global collaboration and knowledge exchange among research communities is essential for the advancement of science and to answer the big questions facing society. Australia is a significant but relatively small player in international terms. International collaboration must be included in our national research strategy.

³ Australian Universities Accord Final Report, 2024, <https://www.education.gov.au/australian-universities-accord/resources/final-report>

The process for including international collaborators on grant applications should be streamlined. It requires full details of international partners, with no clear benefit, acts as a barrier to them joining research projects. Concerns around IP ownership is also a deterrent for international partners and should be addressed.

Recommendation: The ARC must eliminate obstacles to international research collaboration, including by streamlining the process for including international collaborators on grant applications.

Recommendation: The ARC should establish a clear mechanism in the NCGP to support participation in international funding programs such as Horizon Europe and the Belmont Forum.

Designing a strategic, informative research assessment system

Measuring the impact of research is an important part of accountability for public investment in research. Current metrics tell little about what research funding is achieving at a system level and do not encourage new, potentially transformative ideas from upcoming talent.

Do we have the portfolio of research activity we need? Are we achieving what we want to achieve from research? Are research funding councils supporting novel ideas and collaboration across disciplines? How can we measure the impact of good research leadership in fostering an effective system and supporting the research workforce pipeline?

Recommendation: A meaningful approach to research assessment should return to fundamental questions and take an innovative, data-driven approach to assessment to build indicators that actually measure what we want to know about our research system.

Implications of artificial intelligence (AI) for research funding

Research funding councils such as the ARC have a vital leadership role to play in shaping the responsible use of Artificial Intelligence (AI) in the national science system. The *Australian Universities Accord Final Report* highlighted that using AI or machine learning can open up new possibilities in evaluating research. However, while using AI in part to evaluate and assess research has attractions, such AI tools should not supplant peer review.

The NCGP policy review is an opportunity for deep, forward-thinking about preparing our funding mechanisms for the evolution of artificial intelligence (AI), how accelerated adoption of AI will impact funding practices and norms, and the development of clear, evidence-informed guidelines for using AI in evaluating research. These approaches should draw from global work to align frameworks and guidelines.

Supporting a strong and diverse research workforce pipeline

The discussion paper highlights women's participation in the NCGP and improving access to underrepresented groups as a particular issue. The ARC should be guided by the [Women in STEM Decadal Plan](#) and monitor the impact of interventions.⁴ This includes expanding the collection of data and reporting on diversity measures to improve assessment of participation and access and inform interventions.

One of the ways that the NCGP contributes to a diverse research workforce is through fellowships such as the Georgina Sweet and Kathleen Fitzpatrick Fellowships. The advantage of these programs is that they provide funding specifically to promote women in research and mentor the next generation of women researchers.

The NCGP should also look to deepen the intersections between contemporary science and research methods and traditional knowledges, including through supporting co-designed research and targeted funding for Aboriginal and Torres Strait Islander scientists.

Recommendation: The ARC should be guided by the Women in STEM Decadal Plan, expand data collection and reporting to inform interventions to improve access for underrepresented cohorts, and explore targeted fellowships that promote diversity.

⁴ Australian Academy of Science. (2019) *Women in STEM Decadal Plan*
<https://www.science.org.au/support/analysis/decadal-plans-science/women-in-stem-decadal-plan>

Recommendation: The NCGP should support co-designed research and targeted funding for Aboriginal and Torres Strait Islander scientists.

To discuss or clarify any aspect of this submission, please contact Mr Chris Anderson, Director Science Policy at Chris.Anderson@science.org.au.