

Online submission

15 May 2024

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

The Australian Academy of Science's Early- and Mid-Career Researcher (EMCR<sup>1</sup>) Forum welcomes the opportunity to comment on the Policy Review of the National Competitive Grants Program.

The EMCR Forum's main points are that:

- EMCRs are key drivers of scientific discovery in Australia. Actively including EMCRs in grant evaluation and the College of Experts will broaden expertise and improve assessment quality.
- EMCRs are facing increasing demands as grants are not meeting the full cost of research, grant success rates have decreased, and there are minimal opportunities for recognition including receipt of salary from grants. The NCGP needs to be changed to prevent the loss of skilled researchers to other sectors and overseas.
- Researchers require consistent NCGP guidelines and timelines to reduce academic job insecurity, particularly for EMCRs on fixed or short-term contracts.
- To conduct Indigenous Australian research in a respectful manner, long-term relationships with Indigenous peoples are necessary. However, this is impeded by a lack of strategy to protect Indigenous Cultural Intellectual Property and inadequate resources to fund trustworthy partnerships.

Below are the EMCR Forum's recommendations on the individual questions outlined in the discussion paper for the Policy Review of the NCGP:

**1. What are the best guiding objectives for the NCGP to support excellent pure basic, strategic basic and applied research that will enable it to deliver economic, social, environmental, and cultural benefits for Australia?**

A 'Research Culture' objective is required in addition to the draft objectives set out in the discussion paper. The NCGP plays a significant role in Australia's research culture by highlighting role models for individuals, research teams and communities through the awarding of grants. The NCGP should take ownership of this by providing an objective to guide Australia's research culture and incentivising role model behaviour.

*"Research Culture – enhance the diversity, ethics and research integrity of the national research workforce through equitable assessment relative to opportunity."*

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<sup>1</sup> An EMCR is an individual between 0 and 15 years (0-5 for early career, 5-15 for mid-career) of graduating from a PhD or equivalent (discounting career interruptions) who actively engages in research, either as a researcher or in a role that substantially supports the delivery of research and that requires substantial research training and experience. This includes researchers in academia, industry, government, public, commercial or not-for-profit sectors. Researchers without a higher degree but with equivalent professional experience may identify as EMCR, typically in circumstances of non-traditional career pathways and/or of belonging to underrepresented intersectionalities.

Research culture is a necessary objective for the NCGP to take strong action against bullying, harassment, and research misconduct in workplaces.<sup>2</sup> Evidence of bullying and violations of research integrity should be grounds for terminating grants and considered when assessing funding.

The 'Research Capacity' objective should clarify whether diversity refers to research areas or researchers with diverse attributes such as gender and cultural background. Groups composed of individuals with diverse attributes generate more innovative ideas and improve productivity.<sup>3,4,5,6</sup>

## **2. How can the NCGP further support and encourage: (a) high-calibre research that drives the advancement of knowledge? (b) the utilisation, translation or commercialisation of research to deliver benefits to Australia's society, economy, and community?**

Researchers' roles and responsibilities have increased. They are creators of knowledge but also advocates, translators and commercialisers. Improving the specialisation of researchers' roles in Australia's research ecosystem would enable better 'knowledge advancers', 'knowledge communicators', and 'knowledge commercialisers'.

High-calibre research can be facilitated by identifying and reducing systemic barriers that slow collaboration such as:

- Challenges to working across institutions limiting the ability to conduct multicentre research
- Insufficient funding that does not fully cover research costs
- Lack of interdisciplinary forums to prioritise research agendas

## **3. How can the outcomes, impact and contribution of NCGP funded research be best identified and communicated?**

Demonstrating outcomes, impact and contribution of NCGP-funded research is often difficult for EMCRs due to our limited research tenure compared to the time required to realise impact. This is acutely experienced by EMCRs conducting fundamental research.

We recommend assessing fundamental research projects on the quality of the concepts, the design and feasibility of the research program, with less weight given to eventual application, commercialisation outcomes and societal impacts.

## **4. What structure and design of the NCGP would:**

### **(b) reduce complexity and deliver grants more efficiently**

Many in the EMCR community support the concept of the EOI two-step grant process, as it reduces the grant development burden and accelerates grant outcomes for EMCRs. We await a more detailed evaluation of the process on the impact on EMCRs, collaboration, and innovation.

To improve efficiency in grant delivery, we suggest that the ARC provide consistent timelines (>6 months), more consistent application guidelines and forecasting of changes.

### **(c) rebalance risk settings to encourage frontier basic research**

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<sup>2</sup> <https://futurecampus.com.au/2023/09/20/research-misconduct-linked-to-bullying-emcrs/>

<sup>3</sup> <https://www.apsc.gov.au/sites/default/files/2022-09/Diversity%20and%20Inclusion%20Report%202022%20-%20Accessible.pdf>

<sup>4</sup> <https://www.ipaustralia.gov.au/tools-and-research/professional-resources/data-research-and-reports/australian-ip-report/chapter-7-diversity-and-innovation-in-australia>

<sup>5</sup> Slater, S., Weigand, R. & Zwirlein, T. (2008). *The business case for commitment to diversity*. Business Horizons, 51(3), 201–209.

<sup>6</sup> Garcia Martinez, M., Zouaghi, F. & Garcia Marco, T. (2017). *Diversity is strategy: The effect of R&D team diversity on innovative performance*. R&D Management, 47(2), 311–329.

The rebalancing of risk should consider current and/or a new scheme that adjusts its approach to assessing feasibility. Specifically, it should acknowledge that fundamental research has a larger level of uncertainty, and the weighting of the investigators should be decreased.

**(d) set the right balance between different scheme types and duration**

A systematic, longitudinal, and evidence-based approach should be used to compare and evaluate the costs, effectiveness, and impact of scheme duration. The longer duration of schemes delivered by global peers in the US and Europe (US National Science Foundation's CAREER awards and ERC Starting and Consolidator Grants) spanning 5 years are attractive to many in the EMCR community. The EMCR Forum would welcome an increase in the duration of grants offered under the NCGP. We think that the job insecurity reported by many EMCRs would decrease if the ARC and employers work together to guarantee employment for the duration of the longer grants. Researchers on contracts should not be prevented from applying for grants with a longer duration.

We encourage comprehensive tracking of measures of diversity beyond binary gender to assess the effectiveness of the different schemes in supporting intersectional researchers across career stages.

**(e) use peer review in the most effective way**

We advocate for the scoping and possible inclusion of double-blind assessment of grant proposals. Less-established academics such as EMCRs are often disadvantaged by the traditional reviewing systems, as reviewers may be influenced by the applicant's reputation or affiliation. Implementing double-blind or anonymised reviewing may lead to a fairer evaluation process and result in better inclusion of EMCRs in research funding.<sup>7</sup> The EMCR Forum is disappointed that peer review feedback continues to permit the use of gendered language.

**5. How can the NCGP best support collaboration between disciplines (between and across HASS and STEM) among researchers (both national and international), across sectors and funding programs?**

Collaboration between disciplines can be supported by improving the alignment of assessment panel composition to the proposed research, noting the different definitions and cultures regarding the expectations and scope of single, multi-, inter- and trans-disciplinary collaborations.

The ARC should look at international schemes that leverage individual country funding to participate in multi-disciplinary, global initiatives where these are strategically aligned with Australian research priorities. Examples include NSF-Global Centres and Belmont Forum.

**6. How can the NCGP promote a strong and diverse research sector, including through supporting research training and opportunities for early career researchers, women researchers and other under-represented groups?**

Nurturing a diverse and sustainable national research training pipeline that is characterised by research excellence should be a primary mission of the NCGP. The EMCR Forum Executive do not think that the solution to nurturing under-represented minorities is to create separate classes of, often short-lived, grant programs. Instead, grant assessor training should be improved to minimise potential bias and increase recognition of the merit of diverse ways of thinking arising from diverse personal attributes and non-linear career experiences.

Programs should report on a greater number of diversity measures beyond applicant gender to improve assessment and iteration of guidelines and policies to ensure that changes to the NCGP are having the desired impact on the sector.<sup>8</sup>

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<sup>7</sup> Office of Australia's Women in STEM Ambassador <https://womeninstem.org.au/anonymised-review-study/>

<sup>8</sup> <https://www.arc.gov.au/funding-research/funding-outcome/grants-dataset/trend-visualisation/ncgp-trends-gender-data-visualisations>

**7. Are there aspects of the NCGP that could be strengthened or redeveloped to advance support for: (a) Indigenous Australian research, incorporating Indigenous knowledge and knowledge systems (where appropriate)? (b) Indigenous researchers, irrespective of their areas of research?**

*In seeking to answer these questions the EMCR Forum Executive Committee consulted Indigenous early-career researchers.*

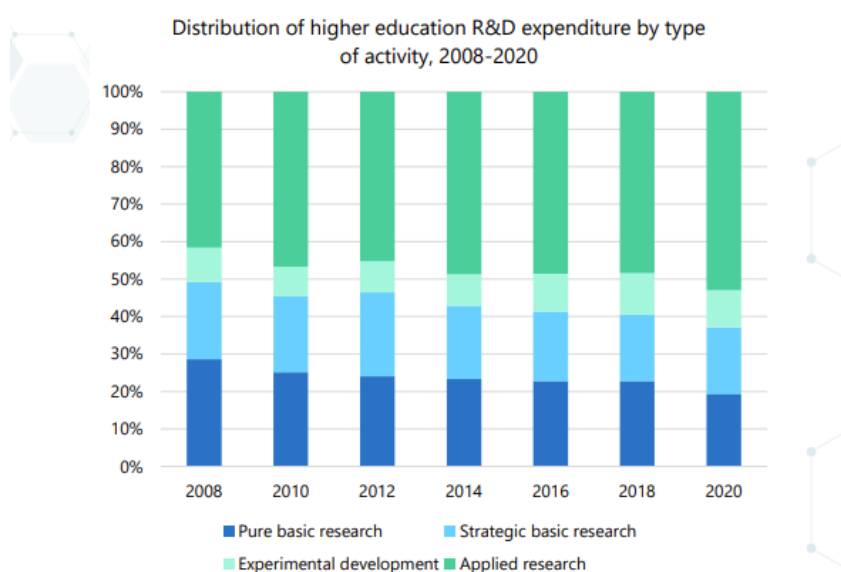
The NCGP should include an Indigenous Cultural and Intellectual Property (ICIP) strategy. While the ARC Intellectual Property Policy makes a commitment to protecting Australian IP, Australian IP laws only protect some forms of ICIP. For example, Australian laws protect individuals but do not recognise communal rights. We recommend that IP requirements are strengthened by including an expectation to uphold ICIP. Doing so would signal the ARC's commitment to upholding Aboriginal peoples' rights to their heritage, knowledge, and cultural expressions.

The NCGP should provide additional funding to adequately cover the costs of conducting Indigenous Australian research that is built on trusting and reciprocal relationships. This should include cultural mentoring of non-Indigenous researchers working in Aboriginal and Torres Strait Islander communities and adequate funding for the co-designing of research.

Assessors of the Indigenous Discovery Program need to better understand the program's purpose of explicitly mentoring early-career Indigenous researchers. Training should be provided to assessors so that they can recognise the impact of intersectionality on research opportunities for early career Indigenous researchers.

**8. In the context of other government funding for research and development: (a) How should the NCGP promote an appropriate balance of basic and applied research? (b) How can the NCGP improve its connectedness to the research ecosystem to help progress the research it funds further along the pipeline towards translation and impact?**

The NCGP supports basic/fundamental research programs and schemes, which are critical for EMCRs and future impacts of research. Other government programs fund applied and commercialization research, while the ARC should focus on fundamental research. Fundamental research is where many EMCRs train and develop the expertise that we rely on throughout our careers. The ABS reports that expenditure on pure basic research and strategic basic research in



**Figure 2: The proportion of higher education expenditure on R&D towards applied research has increased, while the proposition of expenditure on pure basic research has declined. Source: Australian Bureau of Statistics.**

universities has dropped almost 15% between 2006 and 2020<sup>9</sup>. The continual decline in funding for fundamental research is concerning for EMCR Forum members and is reported as a primary factor in EMCRs leaving research in Australia<sup>10</sup>.

This submission was prepared on behalf of the EMCR Forum by the Executive team. The EMCR Forum represents over 7,000 of Australia's EMCRs across science, technology, engineering, mathematics and medicine, and thus offers a unique perspective from the future leaders of STEM research across Australia.

To discuss or clarify any aspect of this submission, please contact Dr Mari Kondo, Manager - EMCR Policy and Programs at [emcr@science.org.au](mailto:emcr@science.org.au)

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<sup>9</sup> Australian Academy of Science 2024-25 Pre-budget submission, referencing data from the Australian Bureau of Statistics <https://www.science.org.au/supporting-science/science-policy-and-analysis/submissions-to-government/2024-25-pre-budget-submission>

<sup>10</sup> Hardy, M., Carter, A., Bowden, N., What do postdocs need to succeed? A survey of current standing and future directions for Australian researchers. 2016