

# SCIENCE & TECHNOLOGY AUSTRALIA

## POLICY SUBMISSION

13 MAY 2024

### POLICY REVIEW OF THE AUSTRALIAN RESEARCH COUNCIL NATIONAL COMPETITIVE GRANTS PROGRAM

Science & Technology Australia thanks the Australian Research Council for this opportunity to give feedback on the National Competitive Grants Program.

Science & Technology Australia is the peak body for the nation's science and technology sectors, representing 140 member organisations and more than 225,000 scientists and technologists.

#### Science & Technology Australia Recommendations

1. As a first step under the Future Made in Australia initiative, and to lifting national investment in R&D towards 3% of GDP, the Australian Government should significantly boost funding to the Australian Research Council National Competitive Grant Program.
2. To protect the NCGP's critical role in supporting Australia's discovery research capability – and capacity to drive future innovation – the ARC should formally allocate a minimum of 70% of NCGP funding to the Discovery Program.
3. The newly legislated purpose for the ARC in the Australian Research Council Amendment (Review Response) Act should be used as a basis to develop specific objectives for the NCGP that ensure:
  - support for a mix of discovery and applied research, fully acknowledging its singular importance in funding discovery research in Australia
  - support for collaborative research
  - support for a diverse range of Australian researchers across all career stages, with continuing targeted support for Aboriginal and Torres Strait Islander researchers and Indigenous knowledge
  - grant proposals are assessed using best practice application of peer review.
4. To enable longitudinal research critical to Australia's needs, ARC should consider developing a longer-term grant scheme that delivers funding over 8–12-year periods.
5. The ARC should acknowledge the primacy of the NCGP's support for discovery research, but also continue to support the Linkage Program, which delivers strong and productive university–industry collaborations.
6. The ARC should consider developing an evaluation strategy and framework similar to that used in the MRFF to evaluate projects against clear – and legislated – objectives.

7. The ARC should consult across other government agencies to develop a streamlined approach to assessing national security risks and implications in NCGP grant proposals as well as clear communication protocols to educate and update the research community on their obligations.
8. The ARC should carefully audit all NCGP program guidelines and application processes to remove duplication and unnecessary bureaucratic requirements.
9. The ARC should create budget 'bands' based on the project discipline and the type of work it entails – theoretical, experimental, field-based or a combination of these. Applicants would select the relevant budget band for their project and provide justification for any additional funding.
10. The ARC should make unsuccessful proposal details available in a searchable database for external funders to identify any projects of interest. This would require amending ARC application forms to give their consent for their project details to be included.
11. The ARC should commit to notifying successful applicants (under embargo) within 21 days of grants being approved by the ARC Board.
12. Expert peer review panels for ARC schemes should have capacity and the appropriate discipline/domain expertise to properly assess:
  - inter- and trans-disciplinary research proposals
  - Linkage Program grant proposals – through inclusion of discipline/domain experts
  - ARC Linkage Infrastructure and Equipment and Facilities proposals – through inclusion of national research infrastructure experts.
13. To improve equity and diversity across the NCGP, the ARC should consider:
  - adjust the assessment focus for Discovery projects to place more emphasis on the quality of the proposal, rather than researchers' track records
  - adopting measures similar to the NHMRC gender equity measures to lift the number of women supported by NCGP grants
  - introduce structural priority funding for 'near miss' women grant applicants
  - introducing 'banded' budget methods in grant applications to help eliminate gender bias in the funding amounts awarded to successful grant applicants
  - reporting publicly at a discipline level on grant data by:
    - gender
    - career stage
    - ethnicity of Fellows and Chief Investigators
    - regionality
    - reported career interruptions.
14. To support Aboriginal and Torres Strait Islanders researchers:
  - the ARC should establish an Aboriginal and Torres Strait Islander Advisory Committee to improve engagement with Indigenous researchers across the sector
  - the ARC should ensure funding support for Aboriginal and Torres Strait Islander researchers includes adequate support – e.g. additional teaching relief – for these researchers to undertake outreach and engagement, as appropriate
  - the Australian Government should deliver ongoing funding to support the National Indigenous STEM Professionals Network.



15. To effectively invest in and elevate Indigenous Knowledge in Australia's research effort, the ARC should consider:
  - implementing a dedicated funding stream to support strong and equitable engagement with First Nations communities
  - including considerations of Indigenous Knowledge in NCGP grant proposals.
  
16. As a crucial part of the Future Made in Australia initiative, the Australian Government should conduct a comprehensive review of Australia's R&D system to identify gaps, challenges and solutions to ensure maximum return on government R&D investment. Short-term solutions to improve cohesion and connection across the sector could include:
  - joint Board appointments
  - shared administration processes
  - targeted sequential grant rounds to transition research across different schemes towards translation and impact
  
17. Science & Technology Australia cautions against tying all NCGP schemes overly tightly to set priorities or desired outcomes. The Discovery Program intent is to support curiosity-driven, ideas-based research – clear objectives can be derived from the ARC purpose outlined in the Act. The Linkage Program's applied research focus lends itself much more readily to be aligned with identified national priorities – but the primary assessment focus must be quality and excellence rather than rigid alignment to a forced outcome.

## General comments

Science & Technology Australia notes that the quantum of funding administered through the National Competitive Grants Program (NCGP) is not in scope for this review. However, the point must be made that many of the objectives aspired to in the discussion paper will not be possible without a significant uplift in the NCGP budget. Even ensuring the current program is fit-for-purpose and strikes the right balance between supporting research careers, innovative new discovery research and applied research with translation and commercialisation opportunities and benefits will be extremely challenging at current levels of funding. Enhancing benefit from one area of the NCGP will necessarily come at a cost to other areas – an outcome that is neither optimal nor desirable.

Notwithstanding the desire to implement these improvements, to secure Australia's place in global research, the NCGP budget must also grow as our research sector grows. The annual funding determinations should be pegged to the size of the research sector<sup>1</sup> – it is not tenable to expect Australian researchers to simply do more with less in an already competitive and constrained budget context for research institutions.

As the Government progresses its Future Made in Australia agenda, R&D's critical underpinning role must be acknowledged – and take front and centre in the plan. A significant boost to the NCGP budget would be transformative for the nation, and make a powerful contribution to moving Australia's overall investment in R&D closer to the 3% of GDP goal needed to secure our nation's future.

### Science & Technology Australia recommendation 1:

**As a first step under the Future Made in Australia initiative, and to lifting national investment in R&D towards 3% of GDP, the Australian Government should significantly boost funding to the Australian Research Council National Competitive Grant Program.**

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<sup>1</sup> This could be measured through the [Department of Education university staff data collections](#).



## Response to discussion paper

### Question 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?**

According to the Australian Government Department of Industry, Science and Resources [2022–23 Science, Research and Innovation Budget Tables](#), in 2022–23 (the most recent data available) the National Competitive Grants Program accounts for 6.9% the Commonwealth Government’s investment in R&D. This may be a small proportion of all Commonwealth investment in R&D, but its significance is mighty.

The NCGP is the primary source of funding for (non-medical) discovery research in Australia – the critical, curiosity driven research that is the first step of the innovation pipeline. It is the knowledge-generating work that underpins all future applied research and any subsequent translation or commercialisation outcomes. As such, the NCGP supports the very foundations of Australia’s STEM research capability – and this must be acknowledged as its primary objective.

This critical role for the NCGP must be formally protected. Science & Technology Australia calls for a minimum of 70% of NCGP funding be allocated to the Discovery Program.

### Science & Technology Australia recommendation 2:

**To protect the NCGP’s critical role in supporting Australia’s discovery research capability – and capacity to drive future innovation – the ARC should formally allocate a minimum of 70% of NCGP funding to the Discovery Program.**

Updates to the [Australian Research Council Amendment \(Review Response\) Act 2024](#) include a clearer outline of the ARC’s objectives – many of which will be fulfilled through the NCGP. As such, these should form the basis for developing specific objectives for the NCGP, which would in turn be articulated in the [ARC Strategy](#) document, or a specific NCGP strategy document. The ARC’s newly legislated purpose is laid out in Section 3 (a)–(h):

*(a) support Australian universities in conducting excellent research, including collaborative research with local, national and international partners, for Australia’s economic, social, environmental and cultural benefit; and*

*(b) promote and conduct activities to shape and foster the Australian research landscape and community, including by supporting academic career pathways, expanding Indigenous knowledge systems and evaluating the excellence, impact and depth of Australian research; and*

*(ba) support Australian universities to attract and retain academic researchers and promote quality academic jobs; and*

*(c) support research integrity, promote ethical research and facilitate access to research publications and research data; and*

*(d) uphold peer review as a core process to identify excellent research; and*

*(e) administer funding of excellent pure basic research, strategic basic research and applied research in all disciplines under the National Competitive Grants Program, except experimental development; and*

*(f) administer funding for nationally significant research programs; and*



(g) provide expert advice on research to the Commonwealth Government; and

(h) partner with other Commonwealth entities to deliver research grants by those other entities.

Items (a), (b), (ba), (d) and particularly (e) are clearly directly related to the NCGP and should form the basis for specific NCGP objectives.

Following these broad objectives, the NCGP should:

- support a mix of discovery and applied research, fully acknowledging its singular importance in funding discovery research in Australia
- support collaborative research
- support a diverse range of Australian researchers across all career stages, with targeted support for Aboriginal and Torres Strait Islander researchers and Indigenous knowledge
- assess grant proposals using best practice application of peer review.

### Science & Technology Australia recommendation 3:

The newly legislated purpose for the ARC in the Australian Research Council Amendment (Review Response) Act should be used as a basis to develop specific objectives for the NCGP that ensure:

- support for a mix of discovery and applied research, fully acknowledging its singular importance in funding discovery research in Australia
- support for collaborative research
- support for a diverse range of Australian researchers across all career stages, with continuing targeted support for Aboriginal and Torres Strait Islander researchers and Indigenous knowledge
- grant proposals are assessed using best practice application of peer review.

### Question 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?

#### ***Support for knowledge-generating discovery research***

Discovery research is the basis for the advancement of knowledge – and the NCGP is the primary funder of such research in Australia. The importance of this point cannot be overstated – **without the NCGP's support for knowledge-generating discovery research, all other R&D pathways of applied research, and subsequent translation and commercialisation will be stymied.** This role should be protected through a formal allocation of a minimum of 70% of NCGP funding to the Discovery Program. Given the timeframes involved in Linkage grants, this would need to be done over several grant cycles, each allocating a larger proportion of funds to the Discovery Program until a 70:30 balance is reached.

#### **Science & Technology Australia recommendation:**

Please see Recommendation 2.

#### ***Support for longer-term research projects***

The ARC should consider developing schemes that run for 8–12 years to support longitudinal research, e.g. long-term studies of ecological dynamics. These projects would not necessarily always



need significant amounts of more money, but merely the flexibility to stretch funding over an 8–12 year period, rather than just three years.

#### **Science & Technology Australia recommendation 4:**

**To enable longitudinal research critical to Australia’s needs, ARC should consider developing a longer-term grant scheme that delivers funding over 8–12-year periods.**

#### ***Maintain sensible balance between discovery and applied research***

Science & Technology Australia cautions against taking an overly-simplistic view of research – that all research must have a clearly defined translation and/or commercialisation pathway to be deemed fundable. This would constrain the discovery research that is so important to generating ideas and future breakthroughs that can have massive, yet unforeseen, impact and value to society down the track.

Further, given the numerous other Commonwealth Government schemes that support later-stage R&D, requiring all NCGP research has a translation and/or commercialisation aspect is unnecessary and would be over-reach.

The proposed 70:30 between the Discovery and Linkage Programs is an appropriate way to deliver critical support for both discovery and applied research.

#### ***Linkage Program***

While the NCGP’s primary role should be to support discovery research, the Linkage Program, with its focus on collaboration with non-university partners, certainly performs an important role. This program has had excellent success, particularly in enabling HASS researchers to partner with government to develop policy or service models.

However, despite its goal to facilitate engagement with industry, the Linkage scheme’s current operation leaves significant room for improvement:

- The application processing times are too slow to foster effective industry partnerships – industry partners need quick decisions and certainty for business planning.
- The scheme/application process is modelled on the Discovery scheme process, and as such, requires unnecessary levels of detail which can also deter industry partners from participating.
- The level of financial engagement required from an industry partner is low – while this can be an incentive to participate, it can also lead to perverse outcomes in which industry partners gain valuable IP through predominantly tax-payer funded research.
- Despite the low level of financial commitment required from industry partners, it can still be challenging for research in some disciplines – e.g. forensic sciences – to secure financial input from ‘industry’ partners.
- The complexity involved in meeting all the requirements for a Linkage grant can be a barrier that prevents good projects from being put forward. Oftentimes, Linkage scheme outcomes are more strongly tied to the ability to secure industry participation than to the proposal’s research quality.
- The Industrial Transformation Research Program has successfully supported teams of researchers – collaborations that would otherwise not have been possible. However, the funding available for individual projects (capped at \$5M over 5 years) under this scheme is low, given the high expectations for the number of partners involved in a bid.





### **Science & Technology Australia recommendation 5:**

**The ARC should acknowledge the primacy of the NCGP's support for discovery research, but also continue to support the Linkage Program, which delivers strong and productive university–industry collaborations.**

#### **Question 3.**

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

The [Medical Research Future Fund Act 2015](#) sets out operational guidelines for the Medical Research Future Fund (MRFF), including the establishment of the Australian Medical Research Advisory Board, and its responsibility to set MRFF funding and priorities. The MRFF strategy includes 5 impact measures, and each project funded through the MRFF must report on a set of 8 measures of success aligned to these impact measures.

As noted in the response to Question 1, given the newly legislated scope for the ARC included in the [Australian Research Council Amendment \(Review Response\) Act 2024](#), the ARC could develop a similar mechanism for post-project reporting where projects report on how they met specified NCGP objectives, that in turn support the legislated ARC goals.

The ARC could develop 'success measures', similar to those used to evaluate MRFF projects and schemes as a way to report on how these objectives are being met through the NCGP. These should be developed in consultation with the sector to ensure they are meaningful and workable.

Tracking the impact of discovery research – which often does not manifest until several years or even decades after the work is done – is a persistent challenge.

### **Science & Technology Australia recommendation 6:**

**The ARC should consider developing an evaluation strategy and framework similar to that used in the MRFF to evaluate projects against clear – and legislated – objectives.**

#### **Question 4.**

**What structure and design of the NCGP would:**

- a) **best support the NCGP's objectives?**
- b) **reduce complexity and deliver grants more efficiently?**
- c) **rebalance risk settings to encourage frontier basic research with potentially transformative outcomes?**
- d) **set the right balance between different scheme types and duration?**
- e) **use peer review in the most effective way?**
- f) **leverage the opportunities and manage the risks of using artificial intelligence?**

To best support the NCGP's objectives, schemes must be structured and administered with efficient and transparent processes.

#### ***Streamline national security requirements***

Research funded through the NCGP takes place in a global context – Australia must be supported to maintain international partnerships and attract the best talent from all over the world. The compliance load related to national security measures – imposed across multiple government departments – is increasing and must not be allowed to constrain important global collaborations nor universities' ability to recruit world-class researchers from other countries.



Science & Technology Australia commends the ARC for providing some level of transparency on how proposals are assessed in a national security context and notes the complexities in delivering absolute transparency on these issues. The compliance and regulatory requirements upon university research are significant<sup>2</sup>, and ensuring effective communication across government departments would help streamline and facilitate improved understanding and reduced burden on the sector.

Given the recent reforms in the Defence Trade Controls Amendment 2023, STA urges the ARC to maintain strong lines of communication with other government departments – Home Affairs, Defence, DFAT – to ensure compliance and regulatory burdens are as streamlined as possible. For example, the national security checks conducted by the ARC could potentially include liaison with Defence to flag if the proposed research raises any concerns regarding dual use technologies and applicants can then be supported through the DTC permit process should that be required. This would help ameliorate compliance burden and avoid the irony of researchers potentially receiving Australian Government funding to conduct research that is then curtailed by a different Government department.

### **Science & Technology Australia recommendation 7:**

**The ARC should consult across other government agencies to develop a streamlined approach to assessing national security risks and implications in NCGP grant proposals as well as clear communication protocols to educate and update the research community on their obligations.**

#### ***Remove duplication and unnecessary detail in grant applications***

A careful audit should be conducted of all ARC processes to remove duplication and unnecessary bureaucratic requests. For example, consideration should be given to consolidating application processed across the Discovery Program – a single application could be submitted for a Discovery Project, with an option to indicate if any of the Chief Investigators would also like to be considered for a fellowship. This would negate the need for nearly identical applications to be prepared, submitted and assessed in different processes.

Another seemingly minor, but important, example would be rather than rejecting/penalising applications for using the incorrect font size, an alternative approach could be to clearly note that all parts of the application must be clearly legible or reviewers will not assess part or all of the proposal. This puts responsibility on the applicant to provide a clearly presented proposal, rather than requiring researchers and the ARC to check minor typographical details in grant proposals.

### **Science & Technology Australia recommendation 8:**

**The ARC should carefully audit all NCGP program guidelines and application processes to remove duplication and unnecessary bureaucratic requirements.**

#### ***Two-stage application process***

Science & Technology Australia commends the work the ARC has already done to shift Discovery Program scheme applications to a two-stage process with the goal to reduce the administrative burden on researchers. This has saved many researchers significant amounts of time. To ensure the

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<sup>2</sup> Legislation and other regulations include: the [Defence Trade Controls Act 2012](#), (including the recent changes made by the [Defence Trade Controls Amendment Act 2024](#)) and the [Defence and Strategic Goods List](#); the [Sanctions Regime](#); enhanced visa screening under the [Migration Amendment \(Protecting Australia's Critical Technology\) Regulations 2022](#); the University Foreign Interference Taskforce [Guidelines to Counter Foreign Interference in the University Sector](#); the [Australia's Foreign Relations \(State and Territory Arrangements\) Act 2020](#); the [Foreign Influence Transparency Scheme Act 2018](#); the [Security Legislation Amendment \(Critical Infrastructure\) Act 2021](#) and [Security Legislation Amendment \(Critical Infrastructure Protection\) Act 2022](#).





long-term benefits of this move are realised, the ARC should continue to monitor how this change affects the sector.

#### ***Simplify budget details in grant applications***

NCGP grant applications require excessively detailed budget descriptions that ask researchers to predict the costs – to the dollar – of very specific aspects of a project, years in advance of doing the actual work. This is unnecessarily demanding on applicants, as well as assessors, who are required to scrutinise budgets closely. Given that Discovery Projects are only funded on average at a rate of around 73%<sup>3</sup>, requiring such detailed budgets, and spending extended amounts of assessors' time scrutinising them is a waste of time for applicants and assessors alike.

A practical solution would be to establish budget 'bands' according to project discipline and the type of work it entails – theoretical, experimental, field-based or a combination of these – set at internationally competitive levels. Applicants would select the appropriate band for their proposed project, and provide a justification should their project require increased funding.

Given that expenditure is governed by funding rules and researchers must provide a detailed budget acquittal at the project's conclusion, this simplified budget mechanism would not pose any risks, and save countless hours in lost productivity.

#### **Science & Technology Australia recommendation 9:**

**The ARC should create budget 'bands' based on the project discipline and the type of work it entails – theoretical, experimental, field-based or a combination of these. Applicants would select the relevant budget band for their project and provide justification for any additional funding.**

#### ***Improve visibility and access for other funding sources***

A simple yet potentially powerful tool to boost support for university researchers is to make all unsuccessful ARC grant proposals available in a searchable database for external funders – other government agencies, philanthropic organisations – to identify projects of interest. This would potentially streamline government granting processes and enable other research funding agencies to better reach into the vast array of university research. ARC application forms would need to include an additional check in which applicants indicate they agree to their proposal's details being made available to external agencies should it be unsuccessful for ARC funding.

#### **Science & Technology Australia recommendation 10:**

**The ARC should make unsuccessful proposal details available in a searchable database for external funders to identify any projects of interest. This would require amending ARC application forms to give their consent for their project details to be included.**

#### ***Increased certainty and security for researchers***

Science & Technology Australia also commends the ARC for working to process grant rounds according to 'delivered on time, to a predetermined timeframe' as specified by the Minister for Education Jason Clare's [Statement of Expectations to the ARC](#). Ensuring grant rounds are opened, assessed and outcomes published within defined and set timeframes, without long delays between grant rounds closing and outcomes announced helps researchers – and universities – plan their time and vastly improves certainty and productivity.

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<sup>3</sup> According to [ARC Discovery Project Selection Outcome Reports](#), return rates on requested funds for projects during the past 6 rounds were: DP 2019: 73.6%; DP 2020: 70.7%; DP 2021: 70.0%; DP 2022: 71.4%; DP 2023: 72.5%; DP 2024: 79.9%.



To further increase certainty, Science & Technology Australia recommends the ARC commit to informing successful grant applicants within 21 days of grants being approved by the ARC Board. This can be done under embargo, with public or Ministerial announcements made at the appropriate time down the track.

**Science & Technology Australia recommendation 11:**

**The ARC should commit to notifying successful applicants (under embargo) within 21 days of grants being approved by the ARC Board.**

**Question 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?**

One way to support multi- and interdisciplinary work is to issue ‘mission-based’ funding calls that call for researchers to come together to address a pressing challenge or issue, rather than based on researcher proposals. However, this should not come at the cost of the researcher-driven discovery research schemes.

Another way to support interdisciplinary research is to ensure applications are assessed by experts who appreciate the research proposal’s full breadth. The ARC could consider establishing interdisciplinary panels, with complementary expertise, to assess and carry proposals through the selection process, rather than assigning members from multiple panels to interdisciplinary projects.

ARC Linkage Program grant proposals should also be assessed by discipline-specific assessment panels. The current system involves a unified/single panel with limited representation from expert domains. As proposals contain detailed and complex project descriptions, it is critical that assessors have sufficient expertise to properly understand and fairly assess projects’ merit.

It would also be sensible for ARC Linkage, Infrastructure, Equipment and Facilities grant applications to be reviewed by national research infrastructure experts. Applicants should also indicate if and how the proposed new infrastructure would align or complement (and not duplicate) existing National Collaborative Research Infrastructure Strategy (NCRIS) facilities.

**Science & Technology Australia recommendation 12:**

**Expert peer review panels for ARC schemes should have capacity and the appropriate discipline/domain expertise to properly assess:**

- inter- and trans-disciplinary research proposals
- Linkage Program grant proposals – through inclusion of discipline/domain experts
- ARC Linkage Infrastructure and Equipment and Facilities proposals – through inclusion of national research infrastructure experts.

**Question 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?**

***More emphasis on ideas, less emphasis on track record***

The extremely competitive nature of the Discovery Project scheme means the vast majority of proposals rely on previous work, or preliminary data as part of the project application – pure ideas



are rarely funded. Given the Discovery Program's purpose to support truly foundational, blue-sky research, it would be a huge boost to the sector if more ideas-based proposals could be funded.

For non-fellowship grant applications, there should be less emphasis placed on the Chief Investigator criteria. Many early- and mid-career researchers may not have as impressive a track record, even if their record clearly shows they are capable of carrying out the research. Track record assessments for Discovery Project grants should only consider whether or not the team is suitable for the project.

This increased focus on the ideas and the project, rather than the individuals involved, would also contribute to improving equity across grant outcomes.

### ***Improved support for early-career researchers***

A significant challenge for early-career researchers is the inability to draw a salary from Discovery Project grants. Many early-career researchers actively develop grant proposals, but as they are not able to draw a salary from the grant if named as a Chief Investigator, they do not receive the recognition they deserve. Although the underlying policy reason for this is sound – ARC grants are intended to support the research work of university employees whose salaries are funded through the Department of Education Research Support Program or other university funds – the reality is that these funds are no longer sufficient to support the salaries for all university researchers. As such, early-career researchers are left in the position of having to 'ghost-write' grant proposals so their salary can be taken from project funds as a post-doc position.

The ARC should consider including a different category of researcher for Discovery Project application – e.g. an Associate Investigator – that is eligible to draw salary from the grant, on the grounds they meet early-career researcher eligibility criteria.

### ***Increased support for equity and diversity***

While the various NCGP schemes show admirably similar success rates for women and men, the overall numbers of grant recipients show a different story. As noted in the discussion paper, across the NCGP, women account for only around one third of grant recipients.

While it is easy to fall back on the crux of the problem of women's underrepresentation being a pipeline problem – that it is broadly reflective of the applicant pool – if the ARC is truly committed to improving gender equity across the research programs it funds then a more proactive attitude and action is required. Being content with parity only in success rates will not actively shift the status quo – we must create conditions for equal application numbers as well as equal success rates.

There have been strong examples from other funding agencies of initiatives working to address the decades of systemic disadvantage women face in many parts of the research sector. For example, the Snow Medical Foundation has set [gender equity benchmarks](#) that guide funding decisions – and organisations' eligibility for funding. The NHMRC has implemented [gender equity measures](#) to improve equity in the senior levels of the Investigator Grant scheme.

The ARC should consider how such an approach could be adopted across NCGP schemes. Targeted approaches specific to disciplines would likely be necessary, which could present logistical challenges, but seem likely to be the only means within the ARC's scope to make a meaningful impact. Setting targets for minimum proportion of women receiving grants, based on realistic increases from the status quo would be a sensible approach.

The ARC could also consider ensuring that success rate gender parity extends beyond the assessment panel level to more granular discipline levels – and publish this data to support transparency. Public reporting should also extend to gender balance of successful grant applicants across different career stages, the gender balance of project teams (as well as Chief Investigators) and funding amounts awarded by gender.



Another measure the NHMRC deployed is ‘priority structural funding’ for women applicants whose proposals were deemed fundable, yet missed the funding cut-off. The ARC should consider a similar approach for grant allocations in disciplines where women remain under-represented.

Shifting to a ‘banded’ budget method as proposed earlier would also help improve equity in funding allocations. Women commonly request smaller overall project budgets, and shifting to set budget bands would help eliminate this underlying gender bias in total awarded funding amounts.

Another simple administrative measure that can have a significant impact on gender equity is simply to ensure that grant application rounds do not close or have important milestone dates that fall during the school holidays.

Diversity also extends beyond gender equity. While the ARC reports on funding allocated to ‘Australian citizens’, ‘Foreign nationals’ and ‘Returning Australians’ in Fellowship rounds, it would be useful to report on other diversity factors: ethnicity of Fellows and Chief Investigators, geography and regionality, and reported career interruptions.

### **Science & Technology Australia recommendation 13:**

**To improve equity and diversity across the NCGP, the ARC should consider:**

- **adjust the assessment focus for Discovery projects to place more emphasis on the quality of the proposal, rather than researchers’ track records**
- **adopting measures similar to the NHMRC gender equity measures to lift the number of women supported by NCGP grants**
- **introduce structural priority funding for ‘near miss’ women grant applicants**
- **introducing ‘banded’ budget methods in grant applications to help eliminate gender bias in the funding amounts awarded to successful grant applicants**
- **reporting publicly at a discipline level on grant data by:**
  - **gender**
  - **career stage**
  - **ethnicity of Fellows and Chief Investigators**
  - **regionality**
  - **reported career interruptions.**

### **Question 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?**

The ARC should look to the recommendations outlined in the [Trusting Australia’s Ability](#) report – the [government response](#) to which indicates that the Minister has asked the ARC to commission the work required to act *on Recommendation 4: Advancing Indigenous Australians*. While the discussion paper notes the Review Panel’s call to increase support for postdoctoral fellowships for Indigenous researchers, it neglects to mention any of the report’s specific recommendations.

### ***An Indigenous Advisory Committee***

To strengthen the ARC’s engagement with Aboriginal and Torres Strait Islander researchers, Science & Technology Australia proposes the ARC establish an Indigenous Advisory Group. This would be a high-level grouping of Aboriginal and Torres Strait Islander senior leaders from the research



community to advise the ARC on further expanding the ARC's support for Indigenous research and researchers.

#### ***Support for Aboriginal and Torres Strait Islander researchers***

Ensuring Aboriginal and Torres Strait Islander researchers receive the support they need to thrive in academic careers – and inspire others to follow them – is critical. Providing ongoing funding for the National Indigenous STEM Professional Network is one way the Australian Government could provide valuable support for this goal.

In addition, the ARC could consider ensuring all fellowships awarded to Aboriginal and Torres Strait Islander researchers include additional support components – e.g. additional teaching relief – should they wish to undertake more outreach or engagement activities.

#### ***Dedicated funding to build enduring relationships***

The ARC could consider creating a dedicated funding stream to help forge meaningful relationships with First Nations communities and support Indigenous-led and community-driven work. Protecting Indigenous intellectual property and developing potential business and/or employment opportunities on Country would be key considerations in developing such a scheme. This would also include allowing NCGP funding to be used to remunerate Traditional Owners or community members for their time, knowledge or other contributions to research projects. Dedicated funds to remunerate communities for contributions helps reduce burden on First Nations people and communities to engage in research projects.

#### ***Supporting and elevating Indigenous Knowledge***

Given the expected focus on investing in and elevating Indigenous Knowledge in refreshed National Science and Research Priorities, the ARC should look to these priorities for guidance on how to support this goal through the NCGP. As noted in the discussion paper, applicants could be required to indicate potential Indigenous Knowledge contributions or components in grant proposals. This would be a valuable way to track Indigenous Knowledge contributions to Australia's research effort.

### **Science & Technology Australia recommendation 14:**

**To support Aboriginal and Torres Strait Islanders researchers:**

- **the ARC should establish an Aboriginal and Torres Strait Islander Advisory Committee to improve engagement with Indigenous researchers across the sector**
- **the ARC should ensure funding support for Aboriginal and Torres Strait Islander researchers includes adequate support – e.g. additional teaching relief – for these researchers to undertake outreach and engagement, as appropriate**
- **the Australian Government should deliver ongoing funding to support the National Indigenous STEM Professionals Network.**

### **Science & Technology Australia recommendation 15:**

**To effectively invest in and elevate Indigenous Knowledge in Australia's research effort, the ARC should consider:**

- **implementing a dedicated funding stream to support strong and equitable engagement with First Nations communities**
- **including considerations of Indigenous Knowledge in NCGP grant proposals.**

### **Question 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?**

As outlined in responses to previous questions, the primary role of the ARC NCGP is to support Australia's discovery research capability. As such, a minimum of 70% of NCGP funding should be formally allocated to the Discovery Program.

#### ***Improved coordination of Australia's research architecture***

Australia's research funding/support system is complex and piecemeal. While government support exists across the entire research pipeline from discovery through to translation and commercialisation, these schemes are disparate and administered by several different government departments. This leads to a level of disconnect between the various programs.

This issue can not be fixed by tweaks to the NCGP alone. A more comprehensive review of all R&D funding is required to identify challenges – and solutions – to ensure maximum return on government R&D investment. This will be critical to ensure the success of the Future Made in Australia initiative.

In the short term, potential solutions that could be implemented now to improve connection across the R&D landscape in Australia would be joint Board appointments, shared grant administration processes, or targeted sequential grant rounds to transition research across the various schemes.

#### **Science & Technology Australia recommendation 16:**

**As a crucial part of the Future Made in Australia initiative, the Australian Government should conduct a comprehensive review of Australia's R&D system to identify gaps, challenges and solutions to ensure maximum return on government R&D investment.**

**Short-term solutions to improve cohesion and connection across the sector could include:**

- **joint Board appointments**
- **shared administration processes**
- **targeted sequential grant rounds to transition research across different schemes towards translation and impact**

#### **Question 9.**

**How should the NCGP be structured to best support and deliver on national research priorities, as they evolve over time?**

First and foremost, the NCGP should be structured to support knowledge-generating discovery research. As such, tightly constraining research directions towards specified goals or outcomes risks curtailing the creativity and innovation of Australia's researchers – and means we could miss out on research breakthroughs which are so often serendipitous or come from unexpected areas.

Given the Linkage Program's applied research focus, this scheme could be more directly aligned with identified national priorities. However, the quality of research proposals must remain the primary assessment criterion rather than rigid alignment to forced outcomes.

#### **Science & Technology Australia recommendation 17:**

**Science & Technology Australia cautions against tying all NCGP schemes overly tightly to set priorities or desired outcomes. The Discovery Program intent is to support curiosity-driven, ideas-based research – clear objectives can be derived from the ARC purpose outlined in the Act.**





**The Linkage Program’s applied research focus lends itself much more readily to be aligned with identified national priorities – but the primary assessment focus must be quality and excellence rather than rigid alignment to a forced outcome.**

Please do not hesitate to be in contact with us to discuss these ideas further or if any additional information is required.

**Professor Sharath Sriram**  
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Science & Technology Australia

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