

SUBMISSION

Submission to the Australian Research Council

Submission to the National Competitive Grants Program Review Discussion Paper

13 April 2025

The Australian Academy of Technological Sciences and Engineering (ATSE) is a Learned Academy of independent, non-political experts helping Australians understand and use technology to solve complex problems. Bringing together Australia's leading thinkers in applied science, technology and engineering, ATSE provides impartial, practical and evidence-based advice on how to achieve sustainable solutions and advance prosperity.

Ensuring Australia's research ecosystem is as strong as possible is foundational for Australia's future prosperity. The National Competitive Grants Program (NCGP), as the largest funder of non-medical fundamental research, is a core component of this ecosystem. The NCGP is currently underfunded, with success rates as low as 9.5% for some schemes – meaning a significant amount of work is being wasted¹ each year as high-quality, viable projects go unfunded (Australian Research Council n.d.). This position is unsustainable for Australia's research sector – more investment would only benefit Australian research and development, and the advances it brings in economic growth, social resilience, and health and wellbeing. ATSE acknowledges that the ARC is not responsible for the quantum of funding through this scheme and welcomes the ARC's work to improve the NCGP within its limited budget position.

ATSE supports the simplification of the 15 NCGP grants into a more streamlined system. ATSE considers that changes to the system should champion fundamental/discovery research and that grant rules and criteria should not be so onerous as to limit the freedom required to genuinely derive the most impactful benefits of discovery research. Along with its responsibility to fund research, the ARC also has statutory responsibilities to support research careers as the essential building block of Australia's future research sector.

To support these goals, ATSE makes the following recommendations:

Recommendation 1: Engage with the expert panel of the Strategic Examination of Research and Development to ensure changes to the National Competitive Grants Program are aligned with the broader research and development ecosystem.

Recommendation 2: Amend grant assessment criteria to better incentivise genuine and respectful collaboration with Traditional Knowledge holders.

Recommendation 3: Ensure early career researchers have access to grant opportunities by guaranteeing allocations of the proposed Initiate and Breakthrough grants.

Recommendation 4: Amend the proposed Initiate Grants to allow for a longer funding period.

Recommendation 5: Redesign the Lead and Mentor Grants to allow greater support for early career researchers or redirect funding towards grant opportunities early career researchers can apply for.

Recommendation 6: Adopt a 40-40-20 model for Chief Investigator gender to support equitable funding outcomes.

Recommendation 7: Streamline grant application processes to reduce burdens on researchers.

Recommendation 8: Integrate the NCGP with state and territory near-miss funding schemes to leverage more high-quality research without needing additional grant applications.

Recommendation 9: Ensure support for research on Australia's research ecosystem by continuing with the Learned Academies Special Projects grants.

Aligning the National Competitive Grants Program with changes in Australia's research and development ecosystem

While changes to the NCGP are overdue, the broader implications of these changes must be considered. The NCGP does not operate in isolation: the program is part of a research funding ecosystem that consists of over 200 schemes across 13 government departments at a federal level, and additional separate funding arrangements at the state and territory level (Industry Innovation and Science Australia 2021). While the NCGP is intended to fund university-based research, changes to the NCGP can have ramifications for other sectors like industry research and development. A wholistic view of the research and development sector would ensure there are no unintended knock-on effects. Engaging with other funding bodies and reviews of research funding would help to produce a more coherent research funding system and reduce administrative red tape, both for applicants and for assessors. The current Strategic Examination of Research and Development (SERD) will likely have major implications for the way in which research is supported through the ARC as well as the broader research ecosystem. Engaging with the SERD will help to ensure that changes to the National Competitive Grants Program are a part of a cohesive strategy for Australia's research and development ecosystem. This does not mean that the changes to the NCGP

¹ Both in terms of the significant amount of time and preparation required to submit a grant application and in terms of lost research progress as larger programs of research stall while waiting for the next opportunity for grant funding.

should not proceed ahead of the SERD's final report or the implementation of its recommendations. Instead, the ARC should liaise with the SERD expert panel throughout the development process and review the changes to the NCGP following the release and implementation of the SERD's recommendations.

Aligning government grant funding schemes has the potential to vastly improve the system's efficiency, unlocking more researcher and assessor time to dedicate to research, and reducing administrative red tape for funding bodies. ATSE's response to the SERD consultation emphasises the need for more coordination between government grant schemes, including the NCGP, and structurally supported engagement with industry- and philanthropy-supported research.

ATSE's submission to the SERD also highlights the benefits of combining western science with Traditional Knowledge systems to learn from tens of thousands of years of connection with the land, while creating new economic opportunities for Aboriginal and Torres Strait Islander peoples. [ATSE's Traditional Knowledge Innovation Award winners](#) provide strong examples of how, through genuine partnership, Traditional Knowledge can be respectfully and authentically woven with western science for the benefit of all. Equal research partnerships involve active inclusion of the custodians of Traditional Knowledge in planning and decision making through co-design arrangements, ensuring adherence to customary protocols and governance and protection of cultural and intellectual property (CSIRO 2020). This work takes additional time and resources that are often not recognised by traditional metrics that focus on publication and citation counts. This can put researchers who conduct this research at a disadvantage in applying for grants that are highly competitive. The ARC's Research Opportunity and Performance Evaluation (ROPE) criteria account for personal interruptions to research and opportunities for industry engagement but fail to account for community and cultural engagement (beyond personal community obligations). Better accounting for the work required to develop respectful and equal research partnerships with custodians of Traditional Knowledge would help to incentivise this behaviour and ensure that this important research is properly recognised.

Recommendation 1: Engage with the expert panel of the Strategic Examination of Research and Development to ensure changes to the National Competitive Grants Program are aligned with the broader research and development ecosystem.

Recommendation 2: Amend grant assessment criteria to better incentivise genuine and respectful collaboration with Traditional Knowledge holders.

Sustaining Australia's research and development workforce

ATSE's [initial submission to the National Competitive Grants Program review](#) highlighted the issue of job security within Australia's research workforce, noting that this work is broader than the National Competitive Grants Program. Nonetheless, the ARC plays a significant role within Australia's research ecosystem and grant funding supports the careers of thousands of Australian researchers. The *Australian Research Council Act 2001* (Cth) makes it a role of the ARC to "promote and conduct activities to shape and foster the Australian research landscape and community, including by supporting academic career pathways" and to "support Australian Universities to attract and retain academic researchers and promote quality academic jobs".

The existing structure of the National Competitive Grants Program provides clearly delineated grant funding schemes for researchers at various stages of their careers – Early Career Awards, Future Awards and Laureate Fellowships through the Discovery Grants program. Under the proposed changes, there are no funding schemes specifically for early career researchers (ECRs), with all proposed funding schemes being open to anyone. For example, the Initiate Grants, which are described as being ideal for ECRs, are described as being obtainable by researchers "at any point in their career". Breakthrough, the other main proposed grant scheme highlighted as being directed at ECRs, is also open to senior researchers. As a result, ECRs are asked to compete with those more established in their fields for these grants that may be essential to starting their careers. Even if these grants do not consider a researcher's track record, or balance track records against opportunity (e.g. using the ROPE criteria), the increased experience of senior researchers is likely to make them more proficient at writing effective grant applications, putting them at an advantage. Global trends are towards reducing grant application success rates for ECRs, while senior researchers have seen increased success rates (Deo et al. 2012). Unless some grants are specifically held for ECRs, it is likely that awards will be dominated by senior researchers. Setting aside guaranteed allocations of the proposed grants (i.e. a set percentage of the available grants) for ECRs will prevent the schemes being monopolised by more experienced researchers.

The proposed Initiate grant scheme attempts to support research careers by making a larger number of short grants available to researchers – a maximum of two years. ATSE agrees with the stated intention of this grant scheme – supporting breakthrough or untested work to fail fast, while supporting ECRs and returning researchers. While the design of the scheme will increase the number of researchers receiving grants, a two-year timeframe will severely limit the extent of work that can be conducted and with force an increase in applications, as applicants attempt to rely on multiple short-term grants. Given that up to a year of preparation is suggested for competitive grants (Victoria University n.d.), limiting the Initiate grants to just 2 years would see researchers working on application for new grants halfway through their existing grants. It is unlikely that after just a year, researchers will have progressed enough to apply for the Breakthrough round (a stated goal of the Initiate grants), leading them to reapply for more Initiate funding and increasing the number of applicants. The short timeframe may also limit the types of research that can be conducted under these grants. For example, research that collaborates with the custodians of Traditional Knowledge often takes longer to complete due to the need for genuine partnership and co-design (CSIRO 2020) – a two-year grant period may therefore preclude researchers from this type of research or may lead to more superficial engagement with Aboriginal and Torres Strait Islander peoples. A longer grant period would allow researchers to conduct a greater range of research and be more prepared to advance their projects to the Breakthrough stage, while also reducing burdens on researchers and number of applicants to the Initiate scheme.

ATSE notes that the positive intention of the Lead and Mentor grants in supporting the development of early career researchers and research students. The Lead and Mentor grants are the only grants under the proposed scheme to directly target only researchers at a specific stage or their research careers, with the intention that they will mentor and support ECRs through the grant. Grants are intended to provide project funding and salary support for ECRs and PhD candidates. However, the funding limit of \$250,000 over up to 4 years would not support a single full time post-doctoral researcher at most universities and would only support a single PhD student at an average Research Training Program stipend rate². This will make it difficult for the Lead and Mentor Grants to achieve its stated goals of supporting ECRs to develop their research independence. While the specific grants focused on women and Aboriginal and Torres Strait Islander researchers have value, given this restriction in meeting the aims of the grant, the money allocated to the Lead and Mentor grants may be better served by rolling that funding into a mentorship top-up for Breakthrough grants, redirecting the funding to ECR specific grants or by providing a higher value Lead and Mentor Grant to allow it to support more ECRs and PhD candidates.

Recommendation 3: Ensure early career researchers have access to grant opportunities by reserving allocations of the proposed Initiate and Breakthrough grants.

Recommendation 4: Amend the proposed Initiate Grants to allow for a longer funding period.

Recommendation 5: Redesign the Lead and Mentor Grants to allow greater support for early career researchers or redirect funding towards grant opportunities for early career researchers.

Ensuring gender diversity across ARC grants

Male researchers are more than twice as likely as female researchers to be awarded grant funding, with women only accounting for 32% of all grants in 2024 (Australian Research Council n.d.). While this is the highest success rate for women to date, it remains well below gender parity. The National Health and Medical Research Council (NHMRC) recently made changes to their Emerging Leadership and Leadership level grants to ensure that equal numbers of grants are awarded to men and women (based on the gender of the chief investigator; Wesselingh 2024). These changes resulted in an increase in the proportion of funding received by women and near parity in the total number of grants awarded (Wesselingh 2024). During the consultation of these measures, [ATSE supported](#) the adoption of a more flexible 40-40-20 model, where 40% of grants are reserved for women, 40% are reserved for men and the remaining 20% can be used freely between genders (or for non-binary researchers). Such a model would raise the proportion of grant recipients who are women from 32% to at least 40%. Adopting this model would allow

² For example, a single Level A Postdoctoral Research Fellow at the University of Queensland would cost between \$321,795 and \$428,416 in direct salary alone, without on-costs, over 4 years (University of Queensland n.d.). A single PhD student stipend at the Research Training Program rate at the University of Western Australia is \$37,000 per annum, or \$148,000 over 4 years, before additional allowances (e.g. conference travel) are considered (University of Western Australia n.d.).

the ARC to provide stronger support for gender equality in the research sector, without needing to make any major changes to the proposed NCGP model.

Recommendation 6: Adopt a 40-40-20 model for Chief Investigator gender to support equitable funding outcomes.

Improving efficiency of the grant application process

While the reduction in the number of funding schemes can improve the efficiency of the ARC, so too can simplifying application processes. Many application processes require large amounts of information that can take a long time to prepare. The trialling of two-step grant application process is a positive step to reduce administrative demands on researchers (particularly where grants are uncompetitive) and is something ATSE supported in [our previous submission](#). However, the total volume of information required for successful or near-successful applicants is still burdensome. Furthermore, researchers regularly need to input the same information repeatedly when applying for multiple grants schemes (e.g. personal information and publication lists). Being able to transfer information from one application to another, to cut down on unnecessary application processes, would assist in reducing the administrative burden on researchers – giving them more time to focus on their research.

Many state and territory governments have also established near-miss funding schemes to support high-quality research that misses out on funding through the ARC and NHMRC. For example, the Western Australian Government provides near miss funding for emerging leaders who miss out on NHRMC funding through the [Western Australian Health Research and Innovation Fund](#), and has committed to delivering further near-miss programs under the [WA Science and Technology Plan Action Plan](#). Encouraging state and territory governments to establish near-miss grant funding programs through application and information sharing would allow the ARC to increase the impact of its NCGP without increased Commonwealth investment. Developing an application system that enables researchers to apply for near-miss funding automatically – with near-miss grants sent directly to state or territory funding providers without a need for reapplication to the local funders.

Recommendation 7: Streamline grant application processes to reduce burdens on researchers.

Recommendation 8: Integrate the NCGP with state and territory near-miss funding schemes to leverage more high-quality research without needing additional grant applications.

Fostering sectoral research

Established in 2002, the Learned Academies Special Projects (LASP) grants were a sub-category of the Linkage program and intended to support whole-of-system and whole-of-economy research on the Australian higher education and research landscape that is rarely conducted elsewhere and which deeply informs strategic and long-term thinking and reform to ensure Australia's system is best placed to maximise our national advantages and opportunities, and respond to national challenges. This work also helps to translate research findings towards broader audiences to inform policy and research practices. The scheme supported 59 projects from its establishment to 2017 (when the last grants were awarded), including projects on big data in Australian research and social policy, workforce planning for research, sustainable resource management, the deployment of green technologies and improving human security (Australian Research Council n.d.). This research provides a service to the Australian government, business, and research community that is not supported by other schemes and is not reflected in the proposed model of the NCGP. ATSE strongly urges continued support for this sector-wide research that empowers Australia's research community to contribute most effectively to national priorities, challenges and opportunities. Restarting this research support as part of a redesigned grant scheme would enable a robust, reflexive research sector that maximises value and outcomes.

Recommendation 9: Enable a reflexive research ecosystem by continuing the Learned Academies Special Projects grants.

ATSE thanks the Australian Research Council for the opportunity to respond to the National Competitive Grants Program Review Discussion Paper. For further information, please contact academypolicyteam@atse.org.au.

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