



Queensland University of Technology

**Submission to the
Australian Research Council
policy review of the
National Competitive Grants Program**

Thank you for the opportunity to respond to the Australian Research Council (ARC) discussion paper, *A Plan for ARC-funded Research* (the Discussion Paper). We make some preliminary observations then take the review's consultation questions by turn.

QUT commends the ARC and the Australian Department of Education for their commitment to reviewing the National Competitive Grants Program (NCGP). The timing is right to reimagine the research and development priorities of the country, enabled by adaptable and flexible funding programs and investment strategies that will safeguard Australia's current and future research and development needs. This policy review and the accompanying Strategic Examination of Research and Development (SERD) together represent a significant opportunity to design and build a sophisticated research and development ecosystem that will deliver tangible and material benefits to universities, end-users and – most importantly – the Australian public. Bipartisan long-term support is critical to the success of this ambitious uplift agenda.

While we recognise that the NCGP funding envelope is outside the scope of the present review, and is properly the business of the government of the day rather than the agency, it would be remiss of us not to state for the record that many of the problems the proposed program restructure attempts to address are ultimately problems of under-resourcing. Some proposed reforms that bear considerable risk – most conspicuously the embedding of fellowships on a two-year duration – are apparently wholly motivated by the need to make severely limited funding stretch further. While we commend the ARC for seeking to provide precious funded research experience to more academics, we find the remedy risks being as harmful as the affliction. Instead of embedding and truncating fellowships, it is open to the Government to refresh and continue the successful schemes of fellowships – while retaining effective durations – by providing additional dedicated funding alongside the project-based schemes that constitute the reform proposal outlined in the Discussion Paper.

We urge the ARC and the Government to work towards a more ambitious model that will provide opportunities at key points in research career trajectories, enable the pursuit of genuinely innovative research, and favour the development of a more dynamic and open research culture in Australia. The problems that have always derived from next generation researchers' over-dependence on established research 'stars' for career advancement will only be exacerbated by the constraints the proposed model will place on early- and mid-career researchers, in particular. These problems include: a distinct tendency towards scientific conformism and incrementalism, instead of the radical new thinking that

breakthrough science always derives from; the developmental delay in establishing research independence that is critical to building a successful career; the suppression of gender and other forms of diversity across the research community, as researcher demographics tend towards replication rather than diversity; and the increased potential for varieties of bad behaviour, ranging from bullying to sexual harassment, research misconduct to financial malfeasance, as teams of young researchers become entirely reliant for their present livelihoods and future careers upon apex researchers possessed of concentrated power.

An influential 2018 paper in *Science* by Alberts et al.¹ addresses some of these issues as they confront American biomedical research: many of their observations are relevant to the Australian setting across the disciplines, as are their proposed remedies. The latter include: assessing grant applications within quarantined cohorts of similar career stage, to ensure early- and mid-career researchers are not out-competed every time by established academics; greatly expanding starter grants for new entrants to the research profession; and funding young researchers through specific calls built around identified national priority research problems. QUT encourages the ARC and the Government to consider implementing ideas on similar lines here in Australia, to ensure that we are working towards a research ecosystem that supports career establishment, professional self-reliance and the generation of genuinely new thinking, instead of moving away from these virtues, as the proposed model risks doing.

1. Does the proposed model provide a strong and clear basis for the NCGP over the next 20 years?

This is a challenging question to answer given the outcomes of the SERD are as yet unknown. The proposed changes in the Discussion Paper are broadly positive, with a focus on innovative, high-risk/high-return research, opportunities for early career researchers, Indigenous research capacity building, broader industry engagement and increased opportunities for international collaboration. The removal of the distinction between fundamental and applied research is welcome, as is the recognition of the importance of Humanities, Arts and Social Science (HASS) research.

The Discussion Paper does not address the question of additional investment in the new programs proposed by the ARC. Without additional investment, success rates and budgets are likely to continue to fall and the additional costs will inevitably be borne by universities. Currently, the Research Block Grant (RBG) falls well short of fully covering the indirect costs associated with ARC grants. Until recently, universities have met these costs by cross-subsidising from other sources, conspicuously international student fee revenues, but our capacity to continue doing so is being intentionally constrained by the Government. This significant resourcing shortfall needs to be addressed as a matter of urgency to ensure a sustainable funding model for the sector.

¹Bruce Alberts, Tony Hyman, Christopher L. Pickett, Shirley Tilghman and Harold Varmus (2018). 'Improving support for young biomedical scientists.' *Science* 360 (6390), 716-718. DOI: 10.1126/science.aar8405
Bruce Alberts was President of the American Academy of Sciences (1993-2005), co-chair of the InterAcademy Council (2000-2009) and editor of *Science* (2008-2013), on top of a highly distinguished career as a biochemist.

2. Does the proposed model adequately address your concerns or those expressed in the initial consultations?

The proposed reduction of grant schemes from 15 to 6 may simplify the application and assessment process for academics and support functions. This is seen as a positive change. Unfortunately, the Discussion Paper does not provide sufficient detail to assess how the new schemes and changes will be operationalised to deliver a more robust, efficient and fairer funding system for the country.

One of the recurrent themes to emerge in consultation was the vital role that ARC fellowships play in supporting universities in their collective objective of ensuring clear and structured career pathways for researchers. The new model proposes to remove dedicated targeted fellowships, which risks reducing opportunities for academics to secure independent funding to build or accelerate their careers or establish new lines of enquiry.

The Discovery Early Career Researcher Award (DECRA), has enabled early-career researchers (ECRs) to establish themselves as independent researchers, without undue dependencies on senior researchers, affording them valuable experience in developing and leading their own projects, under guidance but with a crucial degree of autonomy. Similarly, at the next career stage, Future Fellowships have been a critical mechanism to help mid-career researchers (MCRs) to transition into leadership roles. Without these development opportunities, career progression for ECRs and MCRs could be severely hindered. The lack of dedicated fellowships forces researchers to depend entirely on short-term project grants, leading to reduced job security and reduced opportunity for career opportunities, development and progression.

Laureate Fellowships have also been mission critical for universities, providing the opportunity to attract, return and retain the best minds to tackle legacy style problems. They have been one of the Australian university sector's most effective talent attraction mechanisms until now – and could be even more instrumental in the time of significant global uncertainty and upheaval in which we now find ourselves. There are signs that serious scientific and research talent is already looking for safe haven in stable and welcoming jurisdictions, and that trend is only expected to increase. However, Australia's capacity to compete in that activated market for the world's top minds will be significantly hampered by the loss of stand-alone Laureate Fellowships.

3. Do you foresee any unintended consequences or significant risks which have not been accounted for in the proposed model?

There are many unintended consequences and significant risks associated with the proposal.

Embedded Fellowships

While ECRs/MCRs can apply for some schemes as lead chief investigator (CI), it is highly likely based on past practices that there will be an increased reliance on senior researcher involvement to increase the competitiveness of applications, leading to a reduction in opportunities for ECRs/MCRs to develop independence and leadership experience suitable to their career stage.

Experience prior to the introduction of stand-alone fellowships showed that embedded fellowships had reliably gendered outcomes, to the detriment of women trying to establish research reputations and careers. This was true across the board but especially in male-dominated disciplines. Furthermore, the embedded model favours a master-apprentice approach that tends to generate professional replication, reducing workforce diversity, innovation and breakaway thinking. By common consent, none of these outcomes is desirable. There is no reason to think that these previously observed structural effects would not take effect once again under the return to the embedded fellowships model.

With the advent of embedded fellowships, additional investment would also be required from universities, causing additional pressure on the RBG, which is already failing to meet indirect costs by a wide and widening margin.

In light of the significant global competition for research brainpower, the removal of dedicated fellowships is highly likely to lead to a loss of academic talent.

The two-year limit is insufficient time for a scholar – especially an ECR – to establish a research program, undertake the work, produce indicative results and publish the outcomes. Furthermore, academics without secure employment will also be distracted by the need to find new work as their embedded fellowship nears its end. A fellowship duration of two years is impractically brief. This limit must be extended by at least a year, if not more.

National priority

To remain relevant to research funding processes, national priority areas must be reviewed at regular intervals to respond to emerging trends and societal needs, and must avoid being either too narrowly specific or too broadly vague.

Under the proposed reformed NCGP, there is a significant risk that federal government department and agencies will continue to run their own funding schemes rather than harmonise and amplify their investments via the ARC.

Collaboration

QUT is concerned about the Discussion Paper's stated intention to 'drive' and 'incentivise' greater collaboration (e.g. in the section 'A new foundation' on page 9). That is a worthwhile goal at a macro level, but care must be taken not to arbitrarily insist on collaboration at the level of the project where it may not always be useful or appropriate. This is particularly germane in the humanities and creative arts, and in some of the social sciences, where solo research projects are neither unusual nor deficient in any way. At the level of the project, it would be useful for the ARC to adopt the language of supporting and facilitating collaboration when it is organically suitable. Where it is useful for researchers to collaborate, the ARC should support and facilitate that, but when it is not required the ARC should not seek to impose it artificially, which only risks the concoction of manufactured, inefficient, needlessly complex project designs in the search for ARC approval.

Assessment Process

Peer review is fundamental to the assessment process and care must be taken to ensure the academic community retains trust and confidence in the new model.

General Assessors/College of Expert members will need training to competently assess the new schemes.

Particular attention will be required to ensure the new paradigm explicitly and directly addresses the historical low success rates for underrepresented groups.

There is a risk that the reforms could lead to a reduction in the quality of feedback due the breadth of schemes and workload of College of Expert and selection advisory committee (SAC) members.

Fundamental versus Applied

Despite the stated intentions of the Discussion Paper, the focus on national priority areas and industry engagement may still functionally bias funding towards applied rather than fundamental research. Investment in fundamental research must be protected and acknowledged as the key upstream ingredient to translation and future innovations.

Industry Engagement

Collaboration with industry is important, but it needs to be approached in a spirit of genuine co-design and mutual benefit. Researchers should not be unduly influenced to meet industry agendas or commercial timelines, any more than industry can be expected to participate in research that is driven by abstract theoretical questions rather than concrete practical needs.

Obtaining matched industry funding can be incredibly challenging, due to factors largely outside the influence of universities and the ARC – the SERD is also grappling with this at present. Tiered schemes have been tried in the past, where larger amounts can be requested as the proportion of matched funding increases (e.g. \$500k for 20% matched funding, up to \$1M for 50% matched funding), but experience shows they significantly distort the assessment process. The ARC and the university sector are not going to solve this problem on their own. The ARC should consult with the SERD panel and the Department of Industry, Science and Resources to discuss common approaches based on what they have learned from their parallel consultation.

Many of these issues were canvassed prior to the creation of the Industrial Transformation Scheme that was co-designed with strong input from industry partners and it would be worthwhile to evaluate or revisit these with industry before making further changes.

Equity in large scale schemes

Large-scale schemes like *Prioritise* and *Collaborate* may end up dominated by well-established researchers and institutions, unless targeted mechanisms are introduced to support new entrants.

Indigenous research

The ARC's commitment to Indigenous research is commendable, as is the stated intent to conduct research with, rather than research on, communities. However, it is disappointing that the only place in the discussion paper that calls for the tightening of conditions of grants is in the indigenous research section. Adding additional compliance above the normal institutional eligibility checks for all applicants would be highly problematic.

Without robust institutional support, ARC efforts to enhance Indigenous engagement may lead to tokenistic practices rather than genuine collaborations.

The section fails to distinguish adequately between the two quite distinct matters of Indigenous research and Indigenous researchers. In the first case, it is important to ensure

research on Indigenous topics, communities and practices is conducted with close attention to all relevant protocols and respect for the Indigenous persons, lore, history and culture that may be involved. In the second case, it is also necessary for us to provide pathways for Indigenous researchers regardless of discipline, including those working in areas outside the fields concerned with the first sense. We are aware of Indigenous engineers, applied mathematicians, and physicists, for instance, whose work would not make them visible to the first consideration, but whose involvement in scholarship and research must be nurtured and encouraged.

Job security

The proposed framework assumes that academics already have positions in universities. This is very frequently not the case, particularly at the ECR/MCR stages, posing a very real chicken-and-egg challenge for researchers and universities. The new schemes may drive an increase in short-term appointments, pending the outcome of grant applications.

4. What issues would need to be addressed in the transition from the current NCGP schemes to the new model?

Whatever new model is eventually implemented, clear, consistent communication about eligibility changes and how they will affect existing and future grant applicants is crucial. A detailed transition plan with accurate and realistic timelines would help mitigate confusion for applicants and research offices.

As the new model simplifies the application process, it is important that adequate training and resources are provided for both researchers and administrative staff. This will ensure that both applicants and institutions are equipped to navigate the new system without losing momentum in their research activities.

Assessment practices and assessor behaviours will need to be adjusted so they appropriately align with the intention of the relevant scheme. Training will be required to ensure underrepresented groups are not disadvantaged, and monitoring of these factors will be required, especially during and soon after transition, to minimise undesirable unintended consequences. While we support the emphasis on blind review, we note that it may not be practicable in certain smaller, more focussed disciplines.

5. Are there any features that you would add to, or remove from, the model?

Embedded Fellowships

While this concept may make solid financial sense in isolation, it fails to acknowledge the power of dedicated fellowships in terms of enabling academic independence and providing academics sufficient time to build a competitive track record for future employment. A two-year duration is simply not sufficient to launch a project, conduct the research, secure quality outcomes and put the results on the path to publication – all necessary steps to establish a case for the next stage of academic employment. As discussed above, we strongly encourage the ARC to consider retaining the dedicated fellowships, of a three-year duration or more, preferably as an additional program with new, dedicated funding.

Equity

While a number of the new schemes are premised on providing more opportunities for ECR/MCR academics, the reality is senior researchers will be much better placed to apply for high-risk/high-return projects based on their track record and experience. The ARC should consider instituting minimum quotas of ECR-led projects in relevant schemes.

Maintaining momentum

The ARC should contemplate a mechanism whereby *Initiate* grant outcomes are assessed for quality and novelty and then fast-tracked into *Breakthrough* funding, to ensure that research momentum can be maintained. The application cycle currently takes too long, with promising results ‘cooling down’ before work can restart under a new grant.

Industry engagement

Industry is often reluctant to contribute cash to projects – this program requirement is simply not realistic. Investment thresholds should be scaled on industry type and size, and even on project scope within industries, as the one-size-fits-all poorly accommodates industries at the extremes. The scale and expectations of defence and advance manufacturing, for instance, can be an order of magnitude (at least) greater than those of creative industries or community research, for projects of equivalent merit and impact, and program design needs to accommodate those legitimate differences. Also, timelines from application to outcome need to align with industry expectations.

Ministerial Oversight

The designation of the *Collaborate* scheme, which would subject these projects to Ministerial approval, is disproportionate to their scale and strategic scope, and is out of step with the intent of the designation provision in the *ARC Amendment (Review Response) Act 2023*, as describe in its Explanatory Memorandum: “The Minister will approve grants for designated research programs to recognise their role in creating research capability rather than programs that award individual research grants.”² While designation is appropriate for *Prioritise* grants under the amended ARC Act, we argue that *Collaborate* projects actually constitute “individual research grants”, albeit of some scale, rather than “key national programs”³ or standing structures of strategic research capability. We strongly recommend the removal of ministerial designation from *Collaborate*, noting that the Parliament may contest an attempt to designate the *Collaborate* research program, since the Minister can only designate a research program by means of a disallowable legislative instrument.

6. Do you have any feedback on the proposed grant schemes and their likely effectiveness?

Initiate

As mentioned above, two years for high-risk/high-return research is not sufficient. It also unrealistic to suppose that an ECR returning to the workforce will be as competitive as an

² *ARC Amendment (Review Response) Act 2023 Explanatory Memorandum*, pp. 3, 6 and 27.

³ “The Minister will approve grants for key national programs (known as designated research programs) in recognition of the role of those programs in creating research capability.” *ARC Amendment (Review Response) Act 2023 Explanatory Memorandum*, p. 28.

experienced MCR/SCR in this type of activity. These grants must be of a duration of three years at a minimum, with the opportunity to fast-track through to *Breakthrough* or other appropriate schemes.

Researcher Indigenous Capability (RIC)

This seems a step down from Discovery Indigenous, which was uncapped with a longer fellowship component. The proposed *RIC* is capped at two awarded grants per CI, and the fellowship will be two years maximum, unless drawing a salary as an ECR. In addition, Discovery Indigenous allowed the project leader (who must be Indigenous) to collaborate with non-Indigenous CIs, whereas *RIC* proposes an all-Indigenous team. This requirement may pose unintended barriers in relation to forming competitive teams.

Lead and Mentor

This scheme does not provide adequate incentives for busy senior academics to participate, and does not appear to be costed appropriately. There is a risk the outputs of ECRs and higher degree by research (HDR) students could be used to further the careers of senior academics, rather than establish career pathways for junior scholars in their own right.

Collaborate and Prioritise

Without significant care in scheme design, these opportunities run the risk of being completely dominated by well-established teams, making it difficult for new CIs to attract funding towards the genuinely innovative breakout work the Discussion Paper aims to support.

ARC Linkage-Infrastructure

The removal of a stand-alone research infrastructure scheme undervalues the importance of high-quality research infrastructure and facilities in driving innovation and new knowledge. In addition to providing the physical wherewithal for experimentation, this scheme has also driven strategic collaboration across the sector. Research infrastructure is already under significant strain nationally and cannot afford the removal of this significant and productive resource. The ARC must retain the Linkage Infrastructure, Equipment and Facilities (LIEF) scheme, however titled.