Innovative Research Universities

# Review of the Australian Research Council

## IRU Submission – 19 December 2022

The Australian Research Council (ARC) has an important role in the national innovation system as the primary funder of excellence-based research across all non-medical fields of research, based on a rigorous peer review assessment process. This is the ARC's primary purpose. It must target its funding towards high quality projects and researchers, and be efficient and transparent in its allocation of funds. The ARC is a relatively small part of the larger system – the ARC budget accounts for approximately 7% of total Australian Government investment in research and innovation – but it has a disproportionate impact on Australia's investment in basic research and new knowledge. The ARC Act should enable the organisation to fulfill this role, allowing sufficient powers to be divested to the ARC in order for it to deliver on its mission as a strong and independent agency with a balanced approach to funding basic and applied research across the HASS and STEM disciplines.

The Terms of Reference for the ARC Review exclusively address the Act. The remit of the ARC's activities has clearly extended beyond what was envisaged in the original Act from 2001, which focuses on the ARC as a funder of research. The IRU supports a broader role for the ARC, including a focus on research quality, impact and integrity. The Act should be amended to ensure it enables the ARC to achieve its goals.

Many of the consultation paper questions extend beyond the content of the Act. This recognises that improvements to the ARC functioning will not be achieved purely by changes to the Act. The position of the IRU is that changes to both the Act and ARC operations are required to address current issues and to set the ARC up for success into the future. Operational improvements should include greater transparency, process improvements and reductions in administrative burden.

The Review Panel is "seeking input on how to strengthen the ARC within the current funding envelope", but the vital role of the ARC cannot be ensured without considering the broader research ecosystem. Australia has a dual funding system for research in universities, with competitive grants and research block funding. The ARC's role is dependent upon, and increasingly marginalised in the Research Block Grants (RBG) system which supports the indirect costs of all research. In 2001, the ARC budget was $213M, representing 42% of the Category 1 NCGP income and 18% of total research income for the university sector. By 2020, the ARC budget had more than tripled to $731M, but represented only 36% of the Category 1 NCGP income and 14% of total research income. The RBG is now spread across more research grants, which has forced universities to increasingly support ARC grants through other means. When the full scale of the Medical Research Future Fund comes into practice, the RBG will be spread even further. Funding the full cost of ARC grants "within the current funding envelope" would necessitate drastic cuts in the number of grants supported, narrowing Australia's fundamental research base. Any changes recommended from the ARC Review need to acknowledge these interdependencies and be aligned with the recommendations and outcomes of the Universities Accord process, which should also focus on the broader university research system.

Research in Australian universities funded by the ARC leads to a wide range of positive impacts, both within the academic community and in society more broadly. Investments in basic research today lead to new knowledge, national capabilities and innovation into the future.

Innovative Research Universities

## Summary of IRU Recommendations

1. The primary purpose of the ARC is to support basic research across all non-medical disciplines.
2. A commitment to the peer review process (based on the Haldane Principle) should be included in the ARC Act, with limited Ministerial discretion and no National Interest Test statements.
3. The ARC Act should include more detail and clarity about the role and responsibilities of the CEO.
4. The ARC should retain a role to provide advice on research quality, impact and integrity, and this should be included in the Act.
5. ERA should be discontinued, with a new model developed in consultation with the sector.
6. The ARC should lead a new and more proactive approach to research impact.
7. Administrative burden and duplication should be addressed, with any national security due diligence transparent and streamlined earlier in the process.
8. The ARC should increase transparency on selection report data, assessment criteria and support for postdoctoral researchers.
9. There are cross-cutting issues in the research system – such as Indigenous knowledge, equity and diversity and open access/open data – where the ARC could play a valuable leadership role.
10. Any changes recommended from the ARC Review need to explicitly acknowledge the interdependencies with other government review processes, such as the Universities Accord.

## IRU Feedback on Consultation Paper Questions

### 1. Scope and purpose of the ARC

**Support for basic research across all non-medical disciplines.** The ARC is the main funder of basic (or discovery) research in Australian universities, covering all disciplines except for health and medical research, which are supported by the National Health and Medical Research Council (NHMRC). The ARC also funds application-oriented research though the ARC Linkage scheme, but it is the ARC Discovery program that has the most unique impact on Australia's research system. According to the Frascati Manual, basic research is "experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view". For many researchers in pure or theoretical sciences and humanities, the ARC is the sole domestic external funding source for large scale research. The ARC should remain focused on its unique role as a funder of basic research, and promoter of its benefit to the Australian community.

**Broad definition of "Benefit" in ARC Discovery.** There is a need for a balance between Discovery and Linkage research funding, and this could be strengthened through a refinement of the Act, but it is even more important that Discovery research continues to support basic research projects based on excellence and peer review. "Benefit" is broadly defined in ARC Discovery schemes and weighted at 15%. It includes potential knowledge advancement, community benefit (economically, socially, environmentally, commercially or culturally), and contribution to Australian Government priority areas. Discovery projects do not need to excel in all elements. The assessment of Benefit is also determined through the peer review process, not by the ARC CEO. This is entirely appropriate.

**Clarity over funding eligibility.** The ARC Act could be clearer around who is (in)eligible to apply for funding (e.g. medical research institutes and museums).

**The Act should reflect the key functions of the ARC.** In addition to its primary function set out above, the IRU supports the ARC having a role to provide advice (to the Minister, government and broader community) about the quality, impact and integrity of research in Australian universities. The Act should be amended to ensure that it adequately describes these roles and enables the ARC to deliver upon its mission.

In sections 8 and 9 below, we address specifics about the role of the ARC in research quality and impact, recommending changes from current arrangements and practice. We do not believe that the ARC currently has the capability or resourcing to deliver upon this role, and so if this role is to be specified in the Act, government should ensure that the ARC has the capability to deliver.

**Broader issues in the research system.** In addition to its core roles above, we believe that there is an opportunity for the ARC to take a leadership role on specific issues across the research system – we identify three priority areas for IRU below. Unlike other research systems internationally, Australia does not have a coordinating body (such as UKRI in the UK system, or the Tri-Council in the Canadian system) that works on cross-cutting issues. The ARC could take on more of a leadership role on these issues in our system, but this is not currently part of the organisation's mandate or resourcing.

*Indigenous knowledge*

The Australian Government has committed to a referendum on enshrining an Indigenous Voice to Parliament in the Constitution. This is an important opportunity for a more proactive and coordinated approach to the inclusion of Indigenous knowledge in research and knowledge translation. Progress has been made with existing ARC programs in supporting Indigenous researchers and Indigenous-led research, but more remains to be done. In the United States, the White House Office of Science and Technology Policy (OSTP) has led a whole-of-government approach to Indigenous knowledge as part of its commitment to research integrity and evidence-based policymaking (see December 2022 announcement here). The ARC should lead a similar effort across Australian Government programs that support research in universities. Indigenous knowledge should be an integral part of future measures to drive research quality, integrity and impact, as well as distinctly Australian approaches to innovation.

*Equity and diversity*

The NHMRC has made commendable progress on gender equity in its research funding programs in 2022, taking a data-driven approach to achieving gender equity on grant outcomes. There is an opportunity to build upon this for a consistent approach to equity and diversity across all Australian Government research funding to universities. This should include consideration of both what and who is funded, along with equity in impacts from publicly-funded research.

*Open access/open data*

As the primary and most eminent funder of fundamental research that underpins the innovation ecosystem, the ARC should be at the forefront of open access and open data. The benefits of fundamental research are often not immediate. They often involve subsequent researchers building upon earlier research findings. This requires researchers to not only be able to access the research results via open access publications, but also conduct secondary analyses and replication studies. This requires access to research data. The ARC requires applicants to outline data management plans, including how data may be deposited in a national data repository. However, the ARC does

not require researchers to deposit data into a national data repository, even if specified in the application. Researchers seeking to conduct secondary analyses face practical and ethical problems gaining access to data from projects funded by the ARC, including requirements to offer authorship to chief investigators in exchange for access to data and veto powers to chief investigators should they not wish to publish results of secondary analyses. This leads to further costly data collection, or more likely, an underutilisation of publicly funded data.

**2. Governance and management**

**ARC Advisory Committee.** The IRU supports the continuation of an ARC Advisory Committee. The Advisory Committee may assist the ARC CEO with advice on:

- Developing ARC strategy and ensuring implementation (e.g. identifying suitably qualified and experienced researchers for the College of Experts or other committees);
- The balance between funding of basic and applied research (but should not determine the balance);
- The relationship between the ARC and other Australian Government research funding bodies and priorities;
- The role of the ARC in providing advice on research quality, impact and integrity;
- Ensuring strong links with world-leading research agencies and that the work of the ARC is informed by international best practice.

**Clarification and strengthening of the role of the ARC CEO.** The IRU recommends that the ARC Act be amended to provide more detail and clarity on the role and responsibilities of the CEO in delivering on the function of the ARC. As a reference point, there should be more consistency with the NHMRC Act and the ways in which it sets out the functions of the NHMRC CEO. The Minister should retain the power to appoint/dismiss the ARC CEO, but must provide reasons for termination (consistent with NHMRC Act). The Minister should continue to provide a clear, public Statement of Expectations, which the ARC CEO must respond to publicly in writing.

**3. Academic expertise and peer review**

**Peer review and the Haldane Principle.** Given the unique role and purpose of the ARC, we believe that protection of the integrity of the basic research funding system should be enshrined in the ARC Act. We recommend inclusion of a statement in the Act (similar to the Haldane Principle in UK legislation) to clarify that "decisions on individual research proposals are best taken following an evaluation of the quality and likely impact of the proposals (such as a peer review process)".

ARC research funding should be informed by government priorities and be subject to review – for example, to ensure that there are not long-term gender inequities in funding decisions – but this should be at the level of the program or agency, not at the level of individual project proposals. International best practice is that strategic direction and policy is set by Ministers/governments, while micro-level decisions on individual project proposals are left to the peer review process.

**4. Grant approval**

**Limited and transparent Ministerial discretion.** Given public money is being invested, there must be appropriate democratic oversight, accountability and transparency. There may be very specific circumstances (for example, relating to national security) under which the responsible Minister may

need the authority to require additional review of project proposals. There should be clear rules about this in the Act to ensure accountability, transparency and due process (including for review).

### 5. National Interest Test

**National Interest Test statements should be removed.** The purpose of the current NIT statement is unclear. If it is intended to demonstrate the longer-term value of the research beyond academia, it should be expanded into proper pathways to impact planning paired with evaluation. If, on the other hand, the NIT is intended to assist with the communication of the public value of funded research, it should apply only to projects approved for funding and should be considered as a public benefit statement, not a test.

As set out in sections 1 above and 8 and 9 below, benefit should be considered as part of best-practice grant assessment and peer review processes, and this should be paired with a new ARC-led initiative to improve the ways in which impacts are understood, documented and communicated. This would remove the need for a separate National Interest Test statement.

### 6. Administrative burden

In their submissions to the Review, IRU members have detailed specific concerns about administrative burdens in current ARC processes, including delays, duplication, changes to processes and onerous requirements for international partners. Below we focus on the specific issue of processes for reviewing project proposals for national security risk.

**National security due diligence should be clear, transparent and streamlined early in the processes.** Since the ARC was established in 2001, international collaboration in Australian university research has increased to the point where approximately 60% of research outputs now involve international co-authors (compared to a global average of approximately 25%). This high level of collaboration has led to huge benefits for a relatively small research nation like Australia, increasing quality, scale and impact.

However, the global research landscape has changed significantly since the early 2000s, with research and innovation now a site of heightened geopolitical competition and tension. This necessitates new risk assessment and management systems to ensure that the integrity and quality of Australian research is protected.

The Australian Government, in partnership with the university sector, has established an effective model for collaboration on research integrity and security through the University Foreign Interference Taskforce (UFIT). However, the introduction of a range of new regulations and reporting requirements has added complexity and administrative burden to university research. With the maturing of the UFIT model, the time is now right to streamline processes and regulation.

Given its role as an Australian Government agency, the ARC may be able to access information and assess risk in a way that universities cannot. However, roles and responsibilities for national security risk assessment and management need to be reviewed and streamlined across the system.

If the ARC is to include national security due diligence in its assessment of research proposals, this should be done earlier in the process, rather than at the end when funding recommendations have already been made. There should be clear and transparent processes for the ARC to consult with national security agencies earlier in the review of research proposals, with guidelines for when this consultation would occur that are publicly available and communicated to the research community.

## 7. Process improvements

**Make selection report data available to applicants**. The value and credibility of the ARC's competitive grants assessments could be enhanced at no administrative cost by providing applicants with selection report data at each stage of the selection process. Such data is already available under Freedom of Information laws, but this requires delays and additional administrative burdens for all parties. Providing applicants with detailed information on how their applications rank (on each selection criteria and overall) at each selection stage would improve transparency and specificity for the relative strengths and weaknesses of applications. For applications ranked in the bottom half of applications at the time of the rejoinders (i.e. unlikely to be funded), it would provide earlier indication that alternative research funding will likely need to be sought. For highly ranked applications, it would make it clearer when the ARC Selection Advisory Committee disregards the assessments and ranks of the detailed experts in favour of lower ranked projects.

**Transparent consultation on assessment criteria.** The ARC consults with the university sector on assessment and eligibility criteria, but details are not public. This leads to confusion in the research community. One example was the lack of public rationale behind the ARC's decision to make pre-print publications an eligibility criteria. Another example is the incremental changes made to criterion weightings. The importance of research track record (or Investigator/Capability) is now inversely related to career stage. For early career grants (DECRA), it has increased from 30% in 2011 (after being proposed as 20% in the ARC Discovery Program Consultation Paper in 2010), to 35% in 2018, 40% in 2019 and now 50% since 2021. It now exceeds the weighting for senior researcher grants (Discovery 35%; Laureate 40%). The validity of research track record as a predictor of success is likely to be weaker for early career researchers, given their lack of prior opportunity. The ARC may have a good rationale for its changes, but these are not always intuitive, communicated or understood by the research community.

**Support for postdoctoral researchers.** In 2022, 85% of DECRA applications were unsuccessful. The eligibility criteria favours researchers who already have postdoctoral experience. Most DECRAs are awarded to researchers who have held their PhDs for more than 4 years, including 40% with more than five years experience. Very few people apply within one or two years since their PhD. Unlike other grant schemes, the DECRA covers salary costs and most junior ranked applicants are insecurely employed. Unsuccessful DECRA applications are more likely to mark the end of a research idea (and potentially a career) than the start of process of refinement for future funding applications. The selection process in 2022 took more than seven months. Although this represented a significant improvement on previous years, it is still far longer than typical for academic recruitment and extended timeframes place considerable stress and uncertainty on applicants dependent on funding for their positions. It is therefore imperative that schemes targeting early career researchers are efficiently implemented.

Possible options for supporting postdoctoral researchers:

1. One option to consider is re-distributing DECRA funding to universities to administer. External peer review remains the "gold standard", but the negative effects are greatest in this scheme. Universities are well placed to identify high potential postdoctoral researchers aligned with institutional strengths, while maintaining external competition.
2. Another option is to re-examine the previous ARC Australian Postdoctoral Fellowship scheme, which targeted recent PhDs (within 3 years of their PhD) and funded around 110 per year, far

more than the number of recent PhDs funded through the DECRA scheme which replaced it. As previously outlined by Western Sydney University, the Australian Postdoctoral Fellowship scheme offered both sole investigator applications and applications which included the role of 'mentor'. This model could be adopted within the DECRA scheme. Such an inclusion would allow more very recent graduates the opportunity to gain a foothold in research and position them on an academic career path rebuilding the pipeline for new PhD graduates.

**8. ERA and EI**

**Retain an ARC advisory role on research quality and impact.** Evidence of the quality and impact of research produced at Australian universities is likely to remain an important topic for stakeholders, helping to justify the significant public investments into our university sector. ARC advice on areas of national strength and forward-focused capability are also important areas to consider. However, the ARC Act should remain general in its reference to the ARC's advisory role and not refer to specific research evaluation exercises. These may change over time and the ARC may not have the capacity or be the ideal organisation to conduct all future evaluation exercises.

**Discontinue ERA and consult with the sector on a new research excellence model.** ERA provided a credible evaluation of the quality of university research. Over its four assessments, ERA encouraged universities to ensure research investment was well directed to produce quality outcomes. It also provided assurance to stakeholders that Australia's research has improved over time. Overall, ERA met its objectives as an evaluation framework and national stocktake of research and the ARC is well placed to conduct future research excellence evaluation exercises. However, the costs of the current exercise no longer justify the investment of the sector and a new, streamlined process should be explored in consultation with the sector.

**Consult with the sector on new and more proactive approach to research impact.** Research undertaken by Australian universities leads to a wide range of positive impacts, both within the academic community and for society more broadly. The ARC should take a leadership role in improving the evaluation of these impacts, and this role should be included in legislation (as it is in the United States for the National Science Foundation).

The 2018 EI exercise provides a starting point for a new, proactive approach by the ARC to research impact and national benefit. Specifically, more attention should be placed on how the ARC can facilitate strategic planning to strengthen research engagement and impact, and promote the public contribution our university research makes to Australia and the world.

Benefit should be considered as part of existing grant assessment and peer review processes and this should be paired with a new ARC-led initiative (see below) to improve the ways in which impacts are understood, documented and communicated. (This would also remove the need for a separate National Interest Test statement prior to grants being awarded.)

Any assessment of research impact should allow for innovation and diversity in the system, recognising that a one-size-fits-all approach will not work across different fields of research, universities and partner organisations. The adversarial nature of previous ERA and EI exercises should be removed. ARC assessment of research impact should not rank engagement and impact or drive competition between universities, but rather seek to support collaboration and the sharing and dissemination of best practice.

## 9. Evaluation capability

The new ARC impact initiative should be organised around three streams of activity:

- Supporting a proactive approach to encourage researchers and universities to consider pathways to impact – catalysing impact thinking from the beginning of research projects rather than assessing them after the fact. The UKRI work on pathways to impact is a good reference point here.
- Allocating ARC funding to support impact and evaluation, including allowing for ARC grant proposals to include resourcing for a project team member to focus on the evaluation of engagement and impact through the life of the project. The ARC should also introduce new grants to support knowledge mobilisation, similar to the Canadian research funding councils. These relatively small grants enable researchers who have received another ARC grant for high quality research to focus on the translation of the knowledge developed through the preceding grant for the benefit of partners in the private, public or community sectors.
- Finally, the ARC should apply its existing capabilities in evaluation to the development of a new national program to evaluate the long-term benefits arising from government investment in university research. The ARC could play a valuable leading role across the system, creating a community of practice, helping to develop capabilities within universities and developing an evaluative framework that includes economic impacts as well as broader public good impacts.

The ARC does not currently have the capability or resourcing to deliver on this new initiative – this should be explicitly addressed through the Review.

## 10. Other comments

**Interaction with the Australian Universities Accord and broader research system.** There are strong interdependencies between the ability of the ARC to deliver on its mission and decisions taken about other Australian Government research funding programs and priorities. Where the ARC is to take on a broader leadership role, this should be clearly stated and resourced accordingly. If not, the ARC Review panel should specifically ask that these things be picked up through the Universities Accord process and other government reviews, such as the review of national research and science priorities and the review of pathways to diversity in STEM.

The role of the ARC should be seen in light of other government funding for research and innovation activities, i.e. as a distinct and important part of the broader Australian R&D ecosystem. The Australian Government should undertake a periodic evaluation of the balance and effectiveness of the system as a whole, to ensure that individual organisations are able to focus on their distinct roles.