

Senate Standing Committee on Education and Employment Legislation inquiry into the Australian Research Council Amendment (Ensuring Research Independence) Bill 2018

25 February 2022

Science & Technology Australia (STA) is the peak body representing more than 90,000 scientists and technologists in Australia. Our membership includes many researchers employed on major research projects for the benefit of all Australians funded through the Australian Research Council, the National Health and Medical Research Council and the Medical Research Future Fund.

Thank you for the opportunity to offer input to this inquiry into the [Australian Research Council Amendment \(Ensuring Research Independence\) Bill 2018](#). It takes place amid acute challenges for Australia's research sector. Intense pressures on the nation's science and research workforce have mounted amid a global pandemic. The [wellbeing and morale of Australia's scientists is under severe strain](#) – as last year's annual survey of the science workforce laid bare - right at a time when we are relying more heavily on science than ever before.

As the Explanatory Memorandum to the Bill notes, the intent of this legislation is:

“to remove Ministerial discretion from research grants administered by the Australian Research Council. The ARC is established as an independent Commonwealth body under the Australian Research Council Act 2001 (ARC Act). Currently, the Act gives the Minister a veto over research grants that are recommended by the ARC. Sections 51–53 of the ARC Act (in Division 1 of Part 7) are the key provisions relating to the approval of expenditure on research programs. In short, these provisions provide the process whereby the ARC makes recommendations and the Minister makes the final approval decision. This Bill amends various provisions in the Act to remove the Minister's discretion to approve a research proposal recommended by the ARC by providing that the Minister must approve a research proposal and the associated expenditure recommended by the ARC.”

Over the past 16 years, the Ministerial power has been used three times with broad general reasoning to decline to approve grants recommended for funding by the Australian Research Council.

Despite recommendation after a rigorous expert peer review, the Ministers said they deemed the proposed research did not offer value for taxpayer money and were not in the national interest.

- in 2006, Education Minister Dr Brendan Nelson did not approve 7 grants;
- in 2018, Education Minister Senator Simon Birmingham did not approve 11 grants; and

- in 2021, Acting Education Minister Stuart Robert did not approve 6 grants.

Separately, in 2020, Education Minister Dan Tehan sought further information from security agencies on 18 grants and ultimately did not approve 5 ARC grants, citing national security concerns.

Academic freedom and the independence of research are key to the healthy operation of liberal and Westminster democracies. They are also crucial to the advancement of science and knowledge. [The Haldane Principle](#), a Westminster concept first articulated in 1918, holds:

“decisions on individual research proposals are best taken by researchers themselves through peer review. This involves evaluating the quality, excellence and likely impact of science and research programmes and ensuring subsidiarity in decision making. It is accepted that there must be ministerial input into high level allocations between research themes, for national infrastructure and broader sector sustainability but that more granular decisions, for example the awarding of grants to specific research activities, should not be taken by Ministers or central government.”

In 2017, then UK Conservative Party Minister for Universities, Science, Research and Innovation Jo Johnson MP moved legislation in the UK Parliament to further enshrine this key principle in UK law. In [his Ministerial speech](#), he said:

“I am keen that we do more to reinforce our commitment to the independence of research. The government is unwavering in its commitment to the [Haldane Principle](#); we have consistently stated that decisions on individual research proposals are best taken by researchers through a process of peer review. I am therefore delighted to announce that we have today laid an amendment to enshrine it in law for the first time, using the definition articulated by David Willetts in 2010, with the result that all governments will, in future, need to have regard to the Haldane Principle when making a grant or giving directions to UKRI. We are also clear that UKRI and its councils will operate at arm’s length from government, and that they will have the delegated authority and autonomy to make key decisions. We have reinforced this today by tabling an amendment which commits the government to making and publishing separate budget allocations to each of the councils.”

In Australia, research grants awarded through the nation’s two major federal granting agencies – the Australian Research Council and the National Health and Medical Research Council – are subject to a rigorous process of expert review and exceptionally competitive assessment. In recent years, only around 1 in 10 of research proposals submitted could be funded within the council’s budget allocations. This means research proposals that are ultimately recommended for funding are judged to be in the top 10 percent of all competitive research proposals in a given round.

Australia’s competitive grants assessment systems are rigorous and thorough. The Australian Research Council College of Experts is drawn from Australia’s leading scientists and researchers, who assess their peers’ work in a comprehensive, multi-stage process. This work is done by reviewers mostly free of charge – a contribution that researchers make back to the sector. This ensures our nation’s research is judged by experts with the relevant expertise to understand the project, its broader applications and international relevance. In some ARC grant schemes, typical grant applications can range from more than a hundred pages to several hundred pages long. Reviewers scrutinise this information carefully to ensure only top quality research is recommended for funding.

It is important to let this system do its work. We should trust our experts to make expert decisions. This expert review system has supported Australia’s research sector to build its capacity and reputation for excellence to stellar levels for a nation with a much smaller population than many of our economic competitors. This is demonstrated by the most recent [Excellence in Research for Australia](#) (ERA) review, which confirms 84% of the research done by Australia’s universities is either at or above world standard – with 24% of Australian research judged to be ‘well above world standard’.

This record of excellence should fortify public trust that taxpayer funds are very well spent in research.

As a nation, we must back our world-class researchers to pursue new knowledge, noting the immediate application of some research avenues is not always readily apparent at the outset. Research breakthroughs are a combination of curiosity, serendipity, and painstaking hard work. The life-changing application of a research project can sometimes be years or decades in the making. New generations of researchers build on work that has been done before, taking it in new and originally unexpected directions. Any impediments to the open-minded curiosity and ingenuity that can lead to unexpected discoveries and benefits will ultimately weaken our research sector, to the detriment of the nation.

Science & Technology Australia supports accountability, integrity and decision-making rigour in all government funded programs. The expert peer review process in our nation's research system delivers all three of these goals. The current Ministerial decision-making power could be devolved to the ARC's expert-led processes – with decision-making roles for the ARC College of Experts, ARC CEO and the Advisory Council to the CEO (which includes many eminent senior research leaders).

Recommendation:

Noting the rigorous competitive process of expert peer review for all projects recommended for ARC grants, Science & Technology Australia recommends the removal of the Ministerial power not to approve grants for research projects recommended for funding by the ARC.

As in other comparable nations, this power could instead be devolved to the expert-led peer review processes and councils of the ARC, informed by the Project Description, the National Interest Test statement and assessed against Australia's official National Science and Research Priorities, and other supporting materials.

Ensuring accountability other than with Ministerial powers

Senior figures from major political parties have indicated in public remarks reported in the media that they favour retaining the Ministerial power to approve individual research grants.

If the Parliament opts not to enshrine the Haldane Principle in Australian law and retains a Ministerial power to approve or not approve individual research grants, there are further ways to enhance the confidence of both the research sector and the Australian public in the merits of grant decisions.

Referral to the ARC Advisory Council

A Minister's decision not to approve a grant for funding has serious implications, and there is currently no avenue for review of a Ministerial decision.

A positive step would be to introduce referral to the ARC Advisory Council to the CEO of the ARC. This Council is comprised of some of Australia's top leaders from the worlds of both research and industry.

Where the Minister has doubts about a proposal's merits, the Minister could be required to refer such proposals to the Advisory Council for rapid review of research excellence and whether proposals support Australia's National Science and Research Priorities and advance the national interest.

Recommendation: Where the Minister has doubts about the merits of a grant proposal, the Minister should approve the rest of the proposals in that round immediately so the vast majority of successful recipients can be advised swiftly under embargo.

The Minister should then refer any remaining proposals to the ARC Advisory Council to assess for research excellence and whether proposals advance Australia's National Science and Research Priorities and the national interest.

The National Interest Test

The purpose of the National Interest Test (NIT) is to provide a further layer of assurance that research proposals funded by taxpayers are in the national interest and provide benefit to the nation.

Researchers write 100–150 words to describe how their proposed research advances the national interest. This is in addition to a separate 100 word ‘plain English’ description of their proposed project. (the [ARC website provides examples](#) for each funding scheme). The Minister receives these two short statements in the brief from the ARC CEO when grants are recommended for funding. Compared to the hundreds of pages that the expert reviewers use to assess the excellence and importance of the proposed research, and how it fits in the evolution of knowledge in a particular field, the two brief summary statements are potentially insufficient for researchers to properly describe the merits, context and benefits of the proposed research.

This challenge is particularly acute if a Minister decides to not approve a grant based on the information in the project description and the NIT statement. Such a decision could effectively end a program of research, or a researcher’s career. Compared with the extensive information evaluated by the expert reviewers, who ultimately deemed the project of outstanding merit, it is a disproportionate dearth of information on which to base such a high-stakes decision.

Science & Technology Australia recommends that if the Ministerial power not to approve a grant recommended for funding remains in place, the Minister should seek and review detailed information on the proposal, not just the project description and the NIT statement, before making a decision.

Recommendation: Where the Minister is inclined not to approve a grant, the Minister should be required to seek and review further information before making a final decision.

Strengthen alignment with National Science and Research Priorities

All ARC grants must currently articulate how a proposed project aligns with Australia’s National Science and Research Priorities. While this is a requirement of the grant application process, this information is not taken into consideration during the expert assessment. In other countries, this consideration does form part of the assessment process. For example, each institute of the National Institutes of Health (NIH) in the United States conducts a grant review process that involves a first stage of expert peer review, followed by a second stage of review by members of an advisory council, who assess for ‘mission relevance’ – i.e. alignment with the institute’s established priorities¹.

Science & Technology Australia suggests a similar practice could be adopted in ARC processes. The ARC Advisory Council or a similar body would be well-placed to assess proposals’ alignment with the National Science and Research Priorities and the national interest.

Recommendation: Require expert peer reviewers or the ARC Advisory Council to assess proposed research proposals for excellence, alignment with the National Science and Research Priorities, and the project’s National Interest Test statement.

The ARC’s crucial role in Australian research

Central to this discussion is the critical role of the ARC to support the Australian research sector. The ARC supports research across all disciplines – the STEM disciplines of science, technology, engineering and maths and the HASS disciplines of the humanities and social sciences. The Act states that funding must be distributed across the different categories of research.

Crucially, the ARC supports both discovery research – curiosity-driven, ‘blue-sky’ research endeavours – and applied research – work with more direct nearer-term applications to industry or the community. Given the direction outlined in the Minister’s Letter of Expectations of December 2021, STA takes this opportunity to reiterate the importance of both of these types of research, and the crucial role the ARC plays in funding discovery research across the breadth of disciplines.

Discovery research funding must remain unconstrained, and available to support all fields of research. The request of the ARC in the Letter of Expectations to collect data in the Discovery program to start to track the proportion of applications for grants and successful projects relevant to the National

¹ <https://grants.nih.gov/grants/peer-review.htm>

Manufacturing Priorities and other national priorities – when this part of the program is intended to support the discovery research that is fundamental rather than applied – sits uncomfortably with the concept of unfettered discovery research.

STA acknowledges the importance of industry collaboration and including industry expertise in the development of research programs. Indeed, the current ARC College of Experts includes members from industry who have a deep and nuanced understanding of the national research system. This clarity about the importance of both discovery and applied research is crucial. It is essential to maintain strong academic and research expertise in the College of Experts to ensure the very best research is recommended for funding – to Australia’s strong benefit.

Science & Technology Australia also understands the Government’s strategic intent to bring more of the nation’s applied research into alignment with established national priorities. However there is a risk in tying a proposed threshold of 70% of ARC Linkages grants to the six [National Manufacturing Priorities](#) (as distinct from Australia’s nine broader [Science and Research Priorities](#)). This narrowing of scope could result in other research which would be hugely valuable to Australian job creation and industry growth misses out because it falls outside of the manufacturing sector.

Manufacturing is at the end of the technology pipeline (Technology Readiness Levels 8 and 9), sitting more closely to schemes that sit in the Department of Industry, Science, Energy and Resources. We need a constant stream of Australian discoveries and intellectual property feeding this pipeline. Tying early-stage ideas very tightly to manufacturing risks losing investment in either fundamental research (which leads to major breakthroughs) or applied research in other industry sectors with strong prospective job creation and vast economic benefit.

There would be merit in a sensible rethink of the proposed request for a minimum 70% of the Linkage Program budget to be expressly tied to the manufacturing priorities. Manufacturing research is also supported by DISER grants under the dedicated Modern Manufacturing Initiative. Most Linkage projects involve funding commitments from industry and end-users, which means industry sees clear value in investing in the proposed research to advance its business operations, jobs and profitability. It is important that industry invests in all areas of research to take them to maturity.

Recommendation: Reaffirm the crucial importance of unconstrained, curiosity-driven discovery research and safeguard its funding through the ARC Discovery Program.

Support and certainty for Australia’s research workforce

This public discussion on research independence comes at a time when Australia’s STEM research workforce is under great strain. The latest [Professional scientists employment and remuneration report](#) by Science & Technology Australia and Professionals Australia in October 2021 showed the stark reality of the state of our STEM research workforce. A steep spike in workloads and mounting exhaustion amid the pandemic, and a plunge in morale, have compounded deep underlying issues of job insecurity and the high-stakes lottery of careers that rely on competitive grants. One in five scientists surveyed last year said they intended to leave the profession. This is a brain drain Australia can not afford.

[Analysis of higher education data](#) released by the Department of Education, Skills and Employment in February 2022 showed the university sector lost 9,050 permanent or fixed-term contract staff in the 12 months between March 2020 and March 2021. This is a 6.9 % drop in staffing numbers. University staff numbers have only fallen two other times in the past 30 years, and this is by far the largest fall. Casual staff took an earlier hit, with casual jobs falling by 4,258 full-time equivalent in 2020 compared to 2019. 2021 data for casuals is not available, but predictions indicate similar numbers to 2020.

We need to support our researchers through these challenges, and ensure Australia’s world-class research capacity remains strong. One of the biggest factors eroding researchers’ morale is uncertainty and job insecurity. Australia’s researchers urgently need certainty of funding cycles to plan their research, employ post-doctoral staff, and take on PhD students.

The significant and destabilising uncertainty created by irregular and/or delayed grant round announcements cannot be overstated. In research, the precariousness of relying on short-term competitive grants can stymie the careers of our talented scientists – people who could potentially make the next crucial breakthrough in cancer research, or take discoveries in nanotechnology to the next frontier. We need to support our researchers to continue their ground-breaking work – work that supports the Australian economy and improves Australian lives.

Uncertainty in the timetables for research grant rounds is also a significant barrier to stronger university–industry collaboration. Industry partners work to tight timelines, and require quick responses and commitment from research partners. Researchers must be able to give certainty to their industry partners, which is simply not possible when anticipated cyclical grant rounds or decisions are delayed.

A key part of this process is the notification to institutions of which grants have been successful. A powerful no-cost reform could be implemented to inform universities and researchers of grant success (who can then share the information with industry partners) under a strict embargo, with an official public announcement made by the Minister at an appropriate time. This would enable institutions to issue new employment contracts and secure their staff for the project, and it would enable industry partners to plan their business strategies – making them far more likely to continue to collaborate with Australia’s publicly-funded research organisations. This would achieve the Australian Government’s goal of helping to drive stronger industry-university collaboration.

Fixed application dates and fixed approval and notification dates for grant outcomes under embargo would be a powerful step forward to support Australia’s scientists and research sector, and Australian industry. It would cost nothing – but would deliver a huge benefit to safeguard Australia’s brilliant science and research talent.

Recommendation: To deliver urgent certainty for industry and researchers, require fixed dates for applications, approvals and recipient notifications under strict embargoes to be set and published three years ahead.

We thank the committee once again for this opportunity to provide context and suggestions to this inquiry.

The Australian Research Council is a crucial national institution.

We look forward to continuing to work with policymakers to secure the continued strength of Australia’s research system.

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