Science & Technology AUSTRALIA

POLICY SUBMISSION

30 JANUARY 2026

SENATE STANDING COMMITTEE ON ECONOMICS INQUIRY INTO FUNDING AND RESOURCING FOR THE CSIRO

Science & Technology Australia thanks the Senate Standing Committee on Economics for the opportunity to respond to its inquiry into Funding and resourcing for the CSIRO.

Science & Technology Australia is the peak body for the nation's science and technology sectors, representing nearly 150 member organisations and more than 250,000 scientists, engineers, educators and technologists. We connect science and technology with governments, business and the community to advance science's role in solving some of humanity's greatest challenges.

Key points

- The CSIRO is a vital national asset, and should be valued as such.
- As with CSIRO, Australia's broader STEM R&D sector is under severe budgetary pressures, placing Australia's STEM capability at risk.
- Slight increases to R&D funding appropriations are failing to keep pace with the cost of doing research across the STEM R&D sector.
- Investments in CSIRO and STEM R&D should not be viewed as a cost on the public purse – rather, they are investments in the nation's future sovereign capability and economic resilience.
- Every dollar invested in R&D returns $3–5 to the economy.

Science & Technology Australia recommendations

1. The Commonwealth Government should acknowledge that funding to CSIRO – and other critical STEM research agencies and programs – are investments in Australia's sovereign capability. They are patient capital for the national benefit, and should not be treated as an expense line to be constrained.
2. The Commonwealth Government should develop a new indexation rate for appropriation lines related to research that more accurately reflects the true rate of increases in the costs of doing research.
3. Acknowledging their critical role in Australia's STEM and innovation system, CSIRO's appropriation – and that of other Commonwealth-funded publicly funded research agencies – must be regularly reviewed to ensure R&D budget appropriations are increased at the true rate of inflation and the rising cost of doing research, not standard indexation.
4. The Commonwealth Government should secure Australia's STEM research capability by ensuring national competitive grant program budget appropriations are appropriately indexed to keep up with inflation, and the real cost of doing research.
5. The Commonwealth Government should deliver increased support for health and medical research by disbursing more funds from the MRFF, in line with maximum amounts determined by the Future Fund Board of Guardians.
6. The Commonwealth Government must acknowledge the complexities and challenges of managing research agencies and R&D programs and bring an investor mindset to budget decisions, rather than placing undue pressure on agencies to continually achieve efficiencies and work within ever-tightening budgets.

CSIRO – a national asset

CSIRO operates as a critical collaboration hub within Australia's research ecosystem, maintaining extensive partnerships across government, universities, and industry. In 2024, as per its 2024-25 Annual Report, CSIRO employed 6,316 staff (equating to 5,938 FTE) and maintains nearly 50 sites across Australia, facilitating widespread collaborative research activities.

A key collaboration partner across universities, industry and government

CSIRO works extensively with Australian universities through multiple mechanisms. The organisation supports undergraduates, postgraduates and postdoctoral researchers to increase the calibre and pipeline of Australian researchers across several research domains critical to Australia's national benefit, from agriculture to cybersecurity to marine science.

CSIRO is involved in over 800 international activities and is ranked in the top 1% of world scientific institutions in 13 of 22 research fields. Major industry partnerships include a 35-year relationship with Boeing, involving over $200 million in joint research, and strategic collaborations with Google on artificial intelligence.

CSIRO collaborates extensively with other publicly funded research agencies and Australian and state government departments, supporting policy and research in areas such as health, water and energy. Examples include with the Goyder Institute for Water Research with universities and South Australian government to improve water management and security in South Australia.

CSIRO's deep connection with the rest of Australia's STEM research sector extends beyond projects and partnerships – it also hosts several significant research infrastructure assets. These include marine research vessels, telescopes, supercomputing capability and essential research collections. The impact on the broader sector should these research infrastructure capabilities be diminished – or lost entirely – would be severe.

Support for PhD students

In 2024–25, CSIRO supported 1,413 undergraduate and postgraduate students through tertiary student programs. CSIRO offers more than 150 undergraduate vacation scholarships annually, and several 4-year postgraduate scholarships, with students co-supervised by university and CSIRO researchers.

The CSIRO Industry PhD (iPhD) program creates three-way partnerships between CSIRO, universities, and industry partners, providing students with fully funded government scholarships with industry top-ups and professional development training.

Inspiring the community in STEM

In 2024–25, CSIRO's national education and outreach initiatives engaged more than 41,000 students and 5,000 educators, fostering curiosity, capability and long-term interest in STEM careers. It also delivers programs like the Indigenous Women's STEM Academy. These activities are especially critical a time when maths and science enrolments are falling and Australia is set to face critical workforce shortages.

Research commercialisation success

CSIRO has established itself as Australia's most successful public research organisation for commercialisation, with innovations contributing billions of dollars to the Australian economy annually. More than 200 companies have been born from CSIRO technology, with a combined market capitalisation exceeding $3 billion[1].

CSIRO's most celebrated commercialisation achievement is wireless LAN (Wi-Fi) technology, invented in the early 1990s as a result of pioneering research in radioastronomy. Revenue for CSIRO from this technology has passed $430 million, with license agreements established with 23 companies. More than five billion

[1] https://www.csiro.au/en/work-with-us/ip-commercialisation/our-portfolio-companies

products were projected to incorporate CSIRO's invention by patent expiry in 2013. The lead inventor, Dr. John O'Sullivan, received the Prime Minister's Prize for Science in 2009.

Beyond Wi-Fi, CSIRO's commercialisation successes include polymer banknotes (now used in more than 20 countries), the insect repellent Aerogard, atomic absorption spectroscopy, and high-fibre wheat varieties developed through a 20-year partnership with Limagrain. CSIRO reinvests licensing revenue back into research, ensuring continued innovation cycles. CSIRO currently holds equity interests in more than 30 companies with combined market capitalisation exceeding $1 billion. Notable examples include Chrysos Corporation, which uses cutting-edge material analysis to improve gold mining returns, and FutureFeed, which developed a seaweed-based livestock supplement that simultaneously increases production and reduces methane emissions.

CSIRO is Australia's largest patent holder and operates multiple commercialisation pathways. CSIRO supports research commercialisation and start-ups through various initiatives, including Main Sequence Ventures, the ON Prime program, Kick-Start for SME collaborations, and the Lindfield Collaboration Hub.

Australia's STEM research sector

While CSIRO is clearly a nationally significant component of Australia's STEM research capability, it is part of a broader sector comprised of university researchers, other publicly funded research agencies (PFRAs), divisions and programs within Commonwealth departments, medical research institutes (MRIs) and other research organisations.

Much of the sector relies on Commonwealth funding – either through direct budget appropriations or Commonwealth grant programs. Australia's STEM research sector is vital to the nation's future productivity and economic resilience. Key Government priorities all depend on a strong STEM skilled workforce, from the Future Made in Australia initiative, the National AI Plan, AUKUS, meeting net zero, and ensuring productivity and sovereign capability in supply chains across critical areas of the economy, including critical minerals, medical technology and advanced manufacturing.

Public funding for research is essential, and Australia's world-class research sector must not be taken for granted – while there is a strong narrative of Australian research success, the nation will be unable to maintain global competitiveness without adequate and secure public funding. Australia's STEM research capability is the foundation of our innovation capacity. CSIRO has a critical role in the translation pipeline, often supporting universities through industry partnerships and research commercialisation.

Science & Technology Australia recommendation:

1. The Government should acknowledge that funding to CSIRO – and other critical STEM research agencies and programs – are investments in Australia's sovereign capability. They are patient capital for the national benefit and prosperity, and should not be treated as an expense line to be constrained.

Australia's research funding has flatlined

Commonwealth Government funding for STEM R&D shows a steady increase in total dollars over time. Total Commonwealth funding appropriations for the past 13 years are shown below: Figure 1 shows funding for Commonwealth funded national grant programs, Figure 2 for major publicly funded research agencies (PFRAs) and Commonwealth R&D programs.

In general, this data shows modest rises in budget appropriations – albeit with some fluctuations – for most programs and agencies. However, these slight increases have not been sufficient to keep pace with inflation: Figures 3 and 4 depict the same funding appropriations, adjusted to 2025 dollars. For the most part, the slight increase depicted in the unadjusted figures in no longer evident, particularly for PFRAs.

Funding has stagnated. Just as a meagre pay rise is insufficient for households to meet the rising cost of living, funding increases/indexation of 1–2% fail to adequately resource our vital STEM research agencies and researchers to do their critical work.

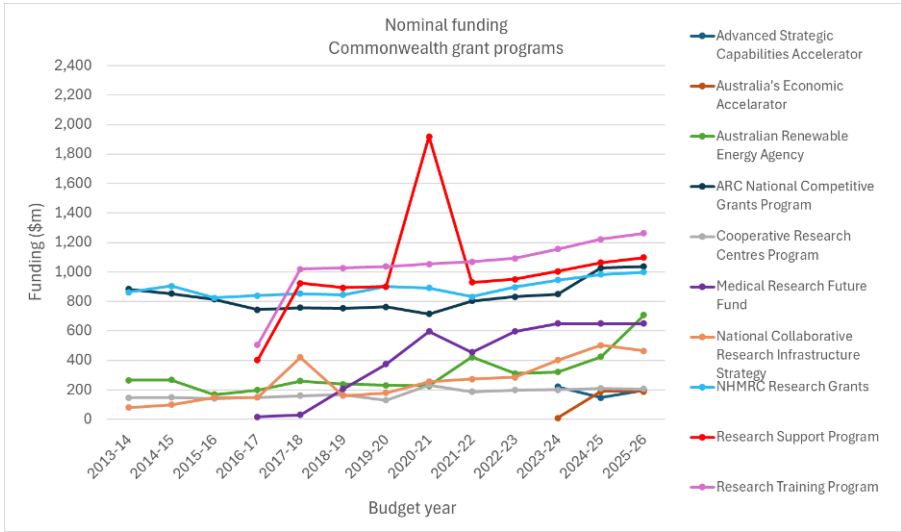

Figure 1. Data taken from the DISR Budget SRI Tables showing funding for Commonwealth grant programs 2013–14 to 2025–26.

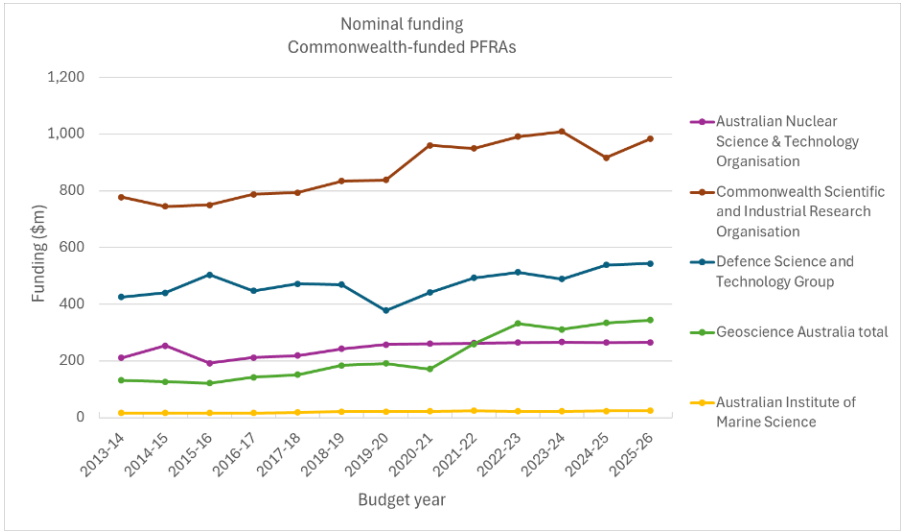

Figure 2. Data taken from the DISR Budget SRI Tables showing funding for Commonwealth PFRAs 2013–14 to 2025–26.

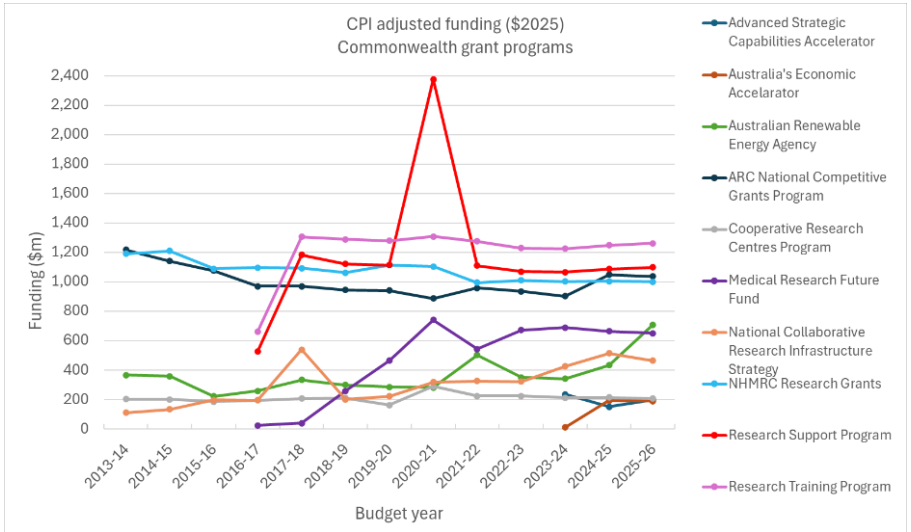

Figure 3. CPI-adjusted funding rates for Commonwealth research grant programs.

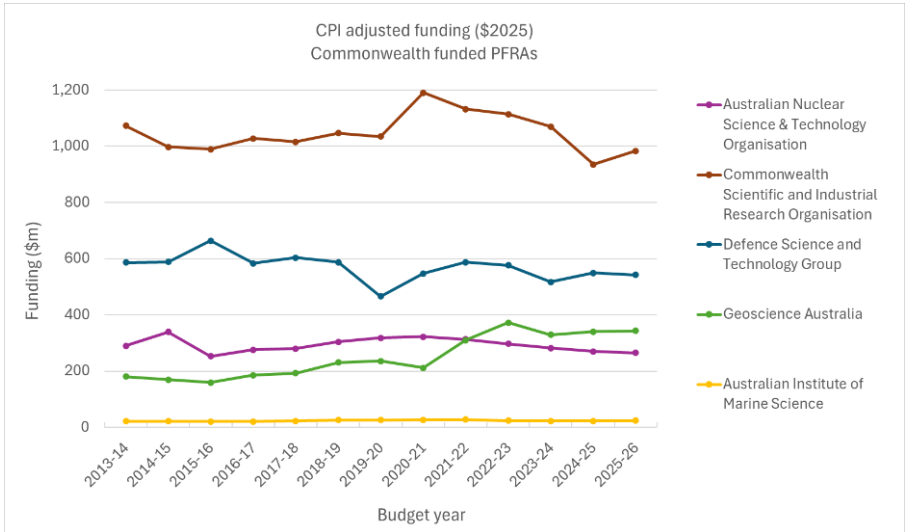

Figure 4. CPI-adjusted funding rates for Commonwealth PFRAs.

The rising costs of research

At the same time as this funding stagnation, the cost of doing research has increased significantly. There is no one single, simple way to quantify the cost of doing research across the STEM disciplines, given the wide and varied nature of STEM research. However, all research institutions and agencies face ever-increasing costs for power and utilities, staffing, equipment, maintenance, fieldwork, experiments and essential consumables.

Often, budget appropriations only increase by the wage cost index (WCI). This is generally lower than CPI, and fails to reflect that many unavoidable costs of research (e.g. protective clothing, chemicals, metals and gases) are increasing at rates far in excess of CPI.

The biggest component of the cost of research is the highly skilled people required to drive Australia's world-class research effort. This includes the researchers themselves, but also the specifically and highly trained technical staff who operate research infrastructure capabilities and other research support roles. Generally, the more specialised and complex a persons' skillset it, the more challenging recruitment and remuneration becomes. Indeed, some technical staff are in global high demand.

Pay increases for both researchers and technical staff secured through enterprise bargaining processes – both sorely deserved and necessary to retain highly skilled talent – are a significant impost on grant and organisations' budgets, including for CSIRO.

Cutting-edge research requires cutting-edge equipment – i.e. research infrastructure. Given the highly specialised and technical capabilities research infrastructure delivers, the cost of the procurement and maintenance is often in the order of millions of dollars. The specialised nature of equipment and facilities means that often the most effective way to ensure maximum benefit for research infrastructure investments is to purchase sizeable maintenance contracts with product suppliers at the time of purchase. This can often add significant amounts to capital expenditure budgets, but is deemed to be an operational expense, and is sometimes therefore not eligible to be covered by some government grants. While at first glance this could seem like a sensible way to stretch limited government funds further, it is essentially a false economy, as without sufficient provision for maintenance, specialised – and expensive – equipment can end up dormant or under-utilised.

Other obvious costs for research facilities include the costs of essential supplies and consumables necessary for their operations. Some specific examples include:

- ~50% increases in gases (ethylene oxide) and other essential chemicals such as liquid nitrogen since 2021
- 43% increase in costs for additive fabrication materials due to changes in supplier policies (reassessment of education discounts)
- 19% increase in costs for shoe covers used in clean labs since 2024, and
- 25% increase in costs for tri-blend gloves since 2024.

Volatility in global supply chains and price fluctuations can also have a significant impact on research operations. For example:

- KrF (Krypton Fluoride) gas has increased from $4,000 per cylinder in 2020 to more than $7,000 currently – a 75% increase, with a post-COVID price spike of ~$16,000 – an extraordinary 400% increase
- high purity gold is used in various experiments, and 100g has increased from ~$10,000 two years ago to more than $21,000 in 2025 – a 110% increase

Regulatory and quality assurance costs are another significant cost to research organisations, particularly those working in more applied and translational research. Meeting the requirements of industry partners, or global standards for product quality and/or government licensing requirements can incur stringent and expensive testing, accreditation and inspection costs – and the cost of time.

Detailed and time-consuming regulatory processes can add months or even years to research projects – time that research budgets often simply cannot stretch to.

Science & Technology Australia recommendation:

2. The Commonwealth Government should develop a new indexation rate for appropriation lines related to research that more accurately reflects the true rate of increases in the costs of doing research.

3. Acknowledging their critical role in Australia's STEM and innovation system, CSIRO's appropriation – and that of other Commonwealth-funded publicly funded research agencies – must be regularly reviewed to ensure they are increased at a rate that truly reflects inflation and the rising costs of doing research, not standard indexation.

Case study: the cost of increasingly essential high-performance compute capability

A discrete example is Australia's high-performance computing (HPC) capability. HPC is essential to analyse increasingly complex and large research datasets. HPC is also essential to drive AI applications.

There are several levels of HPC – some institutions (e.g. universities, industry entities) host their own supercomputers, generally known as a Tier 2 level. Tier 1 facilities offer significantly higher processing and compute power, and are of a scale that individual institutions are not capable of funding or supporting alone.

Australia currently has two Tier 1 HPC facilities – the National Computational Infrastructure (NCI) and the Pawsey Supercomputing Centre (which is a CSIRO facility operating as part of an unincorporated joint venture). These facilities are accessible to researchers across Australia's research sector, and rely on funding from the Commonwealth Government – Pawsey is supported through the CSIRO, and both receive essential funding through the National Collaborative Research Infrastructure Strategy (NCRIS). Both systems are also in dire need of system upgrades and replacement.

The GPU chips that comprise HPC that powers AI capability cost tens of thousands of dollars each, and a HPC facility requires thousands of GPUs – a bare minimum machine with ~2000 GPUs would have a starting cost of around $90 million. Additional costs to cover data storage, scratch disc space, data centre requirements bring the total price up to $150 million, not including operating costs, with electricity and people being major components.

The largest research HPC investment Australia has made in the past was in the order of $70 million, which in 2017–18, bought the country highly globally ranked computers at the time. However, the bare minimum costs outlined above – more than double the previous maximum investment – would only secure Australia a low-level capability compared other countries' current capabilities.

Yet, this is a capability Australia sorely needs. Researchers access both NCI and Pawsey through the National Computational Merit Allocation Scheme – a competitive process that allocates compute time to projects spanning climate, materials, bushfire, medical and engineering research. The cost for this compute time is covered through NCRIS funding.

Applications in the most recent (2026) NCMAS round totalled more than 2.2 billion hours of compute time. This is nearly 3 times what the two HPC facilities are capable of delivering – demonstrating HPC's critical importance to Australia's research capability, and Australia's need to boost HPC capacity.

While expensive, investments in HPC are a long-term investment that pays off for the nation. The vast range of research reliant on HPC could not be conducted if researchers were expected to pay the costs of accessing commercial cloud services. Dedicated HPC data centres for continuous AI workloads are also more cost effective than commercial cloud services.

Australia's entire R&D sector is under strain

Competitive grant funding is stagnating

The Commonwealth grant programs that Australia's university research sector relies on are coming under increasing pressure. Figure 3, depicting the CPI-adjusted funding for Commonwealth grant programs shows a steady decline then flatlining in the National Health and Medical Research (NHMRC) grants funding and a steady decline in the Australian Research Council (ARC) grants funding, albeit with a boost in the 2024–25 budget appropriation. Funding appropriations for these important programs are failing to keep up with rising costs. This compromises university researchers' ability to maintain Australia's research capacity, let alone explore new emerging research areas or deepen existing capabilities.

The Medical Research Future Fund (MRFF) operates in a slightly different context, in that it is a Future Fund established specifically to support health and medical research, particularly at the applied and translational stages. It shows variable funding disbursements in the early years of funding disbursement, as the fund was still building towards its capitalisation target of $20 billion, which was reached in 2020–21. Funding disbursements have been steady from 2022–23 onwards. This is unsurprising, given that the 3rd 10-year MRFF Investment Plan sets a target for funding disbursements at $650 million per year.

However, while setting a determined MRFF disbursement rate delivers a clear level of funding certainty, $650 million is significantly less than the amount determined by the Future Fund Board of Guardians responsible for managing the fund as the maximum annual distribution amount (MADA), and a maximum amount available for MRFF grants:

Financial year	Maximum available for MRFF grants
2023–24	$870 million
2024–25	$973 million
2025–26	$1,055 million
2026–27	$1,100 million

Medical Research Future Fund | Department of Finance

Additionally, unlike other grant program appropriations, including NHMRC programs, the total grant amount does not even increase by indexation each year.

Boosting MRFF funding by bringing total MRFF funding closer to the MADA each year would deliver a major – and much needed – boost to Australia's health and medical research sector.

Success rates are dropping as demand increases

Success rates for ARC, NHMRC and MRFF grant applications are shown in Figure 5 (ARC), 6 (NHMRC) and 7 (MRFF). All programs show very low success rates for recent years – and an overall downward trajectory. These low success rates represent an immense number of wasted hours in researchers' time compiling what would ultimately be unsuccessful grant applications.

They also indicate a sector under immense strain, in which researchers lack job security and certainty of funding to continue their work.

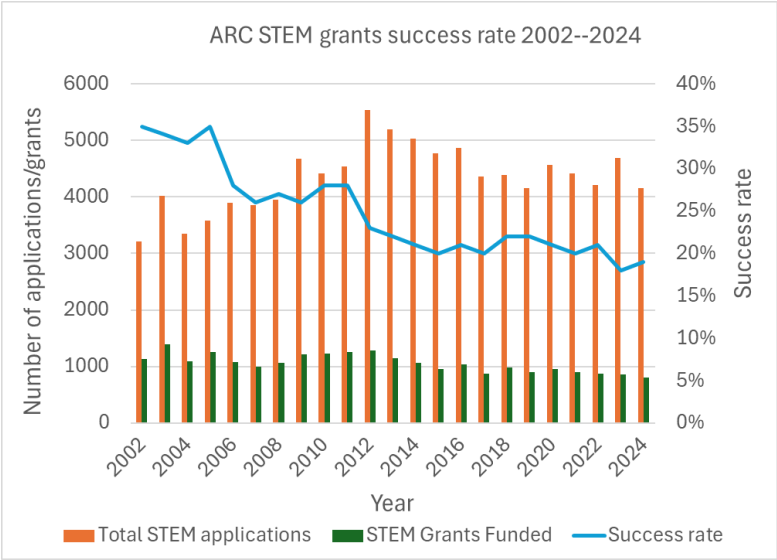

Figure 5. ARC STEM grant total applications, funded applications and success rates, 2002–24.

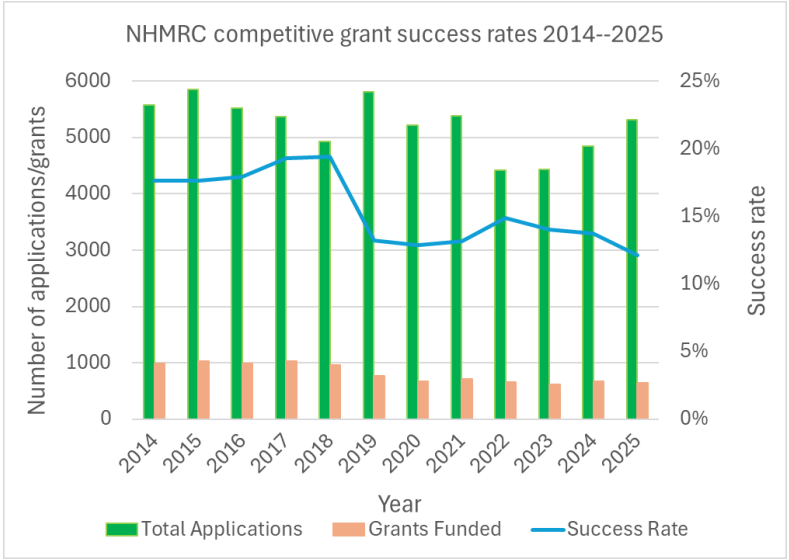

Figure 5. NHMRC grant total applications, funded applications and success rates, 2012–25.

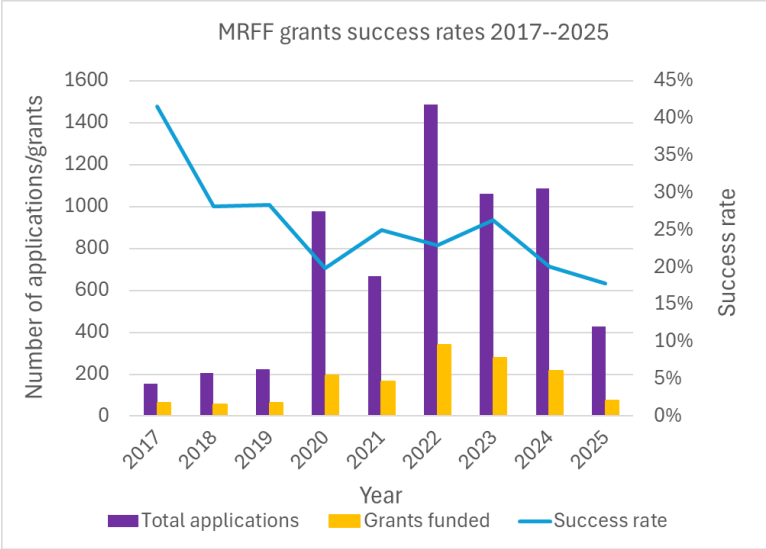

Figure 5. MRFF grant total applications, funded applications and success rates, 2017–25.

Sector morale is low

A 2025 survey of the STEM professional workforce conducted by Professionals Australia and Science & Technology Australia (STA) emphasises the strain the sector is feeling – with nearly half (47%) of respondents said they were thinking about leaving their current role. Nearly three-quarters of these think they will leave in the next 2 years, increasing to 95% in the next 3–5 years.

- The most cited reasons for wanting to leave their role were 'lack of career advancement', 'lack of recognition or opportunities', 'workplace culture issues', 'poor pay' and 'insecure work'.
- Around one third of respondents were dissatisfied with their workplace culture.
- 40% of respondents were unhappy with their current workload.
- Nearly one third of respondents were dissatisfied with their work/life balance.

Around half of the survey respondents were worried about their job security. Insecure roles and intensified workloads disproportionately burden emerging professionals, threatening long-term workforce sustainability.

Science & Technology Australia recommendation:

4. The Commonwealth Government should secure Australia's STEM research capability by ensuring national competitive grant program budget appropriations are appropriately indexed to keep up with inflation, and the real cost of doing research.

5. The Commonwealth Government should deliver increased support for health and medical research by disbursing more funds from the MRFF, in line with maximum amounts determined by the Future Fund Board of Guardians.

Good management requires tough decisions, but the ongoing squeeze is real

The sector understands that the Commonwealth Government is working under tight fiscal constraints, seeking to find efficiencies and savings wherever possible. Tight budgets are a reality, but fiscal restraint must not come at the cost of Australia's foundational STEM capability.

Research organisations of all types – universities, PFRAs and MRIs constantly assess their own budgets to ensure they are maximising Commonwealth Government investments in research. As demonstrated publicly in the case of the CSIRO decision making processes that ultimately led to this Committee inquiry. This often involves making hard decisions about what research to continue, and what research is perhaps no longer a top priority. While the sector understands these hard decisions sometimes must be made, it must also be broadly acknowledged that these decisions are usually final – once a research direction is discontinued, or a capability lost, it's complex and expensive to revive this again.

Additionally, often these decisions impact research programs or funding streams that support early- to mid-career researchers to build their careers, nascent research directions or other types of 'public good' schemes in which research entities offer free or low-cost services to small or emerging businesses. While these schemes may be small in themselves, they often have significant multiplier impacts and are sorely missed by those who benefit from them – particularly in the context of the overarching imperative for Australia to better support new industries and boost research translation and commercialisation efforts. Indeed, research commercialisation can be a very long journey, often taking decades from discovery to reach a viable product or translation outcome – with support needed along every step of the pathway.

Additionally, when budgets get tight there is a natural and logical tendency to focus on applied research – as this has a more easily demonstrable 'impact'. This risks diminishing Australia's discovery research capability, which is the basis for unique emerging technologies and products. The clearest example of this is wi-fi, which came from fundamental radioastronomy research.

It's imperative to ensure that Australia's STEM research sector does not suffer a death by a thousand cuts – with the ultimate demise of Australia's STEM capacity – and the innovation, industry and job creation it can drive. This would be a truly devasting loss to the nation and a dire threat to Australia's future economic security.

Science & Technology Australia recommendation:

6. The Commonwealth Government must acknowledge the complexities and challenges of managing research agencies and R&D programs and bring an investor mindset to budget decisions, rather than placing undue pressure on agencies to continually achieve efficiencies and work within ever-tightening budgets.

Please do not hesitate to be in contact if the Committee requires any further information, or wish Science & Technology Australia to appear at a public hearing on behalf of the sector.

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