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From fragmented to future-ready: reforming research in Australia

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Right now, Australia's research system is not working as well as it should — and it is holding us back.

Funding is too fragmented, the rules are too complicated and there is a lack of coordination across government. More than a dozen portfolios are involved in running over a hundred different research programs often with no shared strategy, no consistent approach and no clear way to align efforts.

The result is a system that is inefficient, confusing and ultimately falling short of what Australia needs.

We are asking researchers to chase funding across a maze of grants with different rules and timelines. We are pushing universities to deliver more with less and sidelining basic research that powers long-term innovation. We are also expecting industry to collaborate in a system that even experts find difficult to navigate.

That matters more than ever in today's uncertain world. The global environment is shifting fast and its made one thing clear — Australia needs to be able to stand on its own two feet when it comes to research. We need to be able to turn our ideas into discoveries, products and solutions that our communities, industries and national security rely on.

There is a real opportunity here. By simplifying the system and improving coordination across government, we could make our research efforts far more effective — and we could do it with minimal additional cost.

But if we are serious about building and protecting our sovereign research capability, better coordination is not enough on its own. We also need renewed government investment in the core foundations that keep the whole system working.

What we are calling for

- Cut red tape by consolidating programs and aligning responsibilities through smarter government structures.
- Create a Ministerial Research Council to coordinate strategy and prevent future fragmentation.
- Raise public R&D investment in research and development to at least the OECD average of 0.74 per cent of GDP.

How we got here

The research funding landscape in Australia is scattered and lacking focus. Different ministers are responsible for different parts of the system:

- The Minister for Education sets overall policy.
- The Minister for Industry and Science sets national research priorities, but controls just seven per cent of competitive grants.
- The Minister for Health manages nearly 60 per cent of competitive grants funding.
- Defence, energy, agriculture and other portfolios run their own initiatives too.

The Minister for Education is also responsible for indirect research support and training the next generation of researchers, but funding for both has dropped sharply since 2008. Universities now get just 19 cents for every dollar of competitive grant funding, down from a peak of 50 cents.

This patchwork system creates gaps, overlaps and perverse incentives. It discourages collaboration and makes it harder to turn ideas into real-world solutions.

The government's Strategic Examination of R&D discussion paper recognises this fragmentation and the heavy influence of federal policy and regulation. But it underplays the fact that the government is no longer the main funder of research and that the current system makes coordinated, strategic planning difficult.

Fixing this will not happen by accident. We need deliberate consolidation now and a new mechanism to keep everything aligned into the future.



Time to cut the clutter

Right now, Australian researchers navigate more than 150 separate government research programs — each with different forms, systems and priorities. Some even overlap in purpose, like:

- Australia’s Economic Accelerator (education portfolio), and
- the Industry Growth Program (industry portfolio).

Similarly, competitive grants offered by Australian Research Council (education portfolio) are connected to the National Science and Research Priorities (industry portfolio).

These aim to support commercialisation in key areas, yet they operate with different rules, reporting lines and eligibility criteria. The result? Inefficiencies, a lack of coordination and duplication.

A more coordinated approach would make life easier for researchers and get better results from public investment. Aligning similar programs under the same portfolio — and linking strategy to delivery — is common sense.

Turning priorities into progress

The new National Science and Research Priorities are a step in the right direction. They identify the big challenges — like energy transition, public health and national resilience — and signal where our efforts should be focussed.

But setting priorities is only the first step. To drive real change, we need to:

- back them with meaningful investment
- link them to actual funding programs, and
- coordinate across all levels of government.

We also need a national roadmap to deliver on the priority of elevating Aboriginal and Torres Strait Islander knowledge systems — one co-designed with Indigenous communities.

Australia’s research priorities are not lacking. What is missing is coherence and follow-through.

A national research council: the missing link

We do not have a mechanism to connect research strategy, funding and delivery across the whole of government.

Currently five separate portfolios each invest at least \$500 million annually into Australia’s research ecosystem. Ministers across these and other critical portfolios have a vested interest in ensuring that this investment is complementary and connected.

That is why we need to create a Ministerial Research Council.

This Council would:

- align research funding with national priorities
- review and rebalance investment in different research types and disciplines, and
- coordinate research policy across portfolios before decisions go to Cabinet.

It would work much like the Digital Transformation Agency does for tech proposals — providing a whole-of-government lens to guide investments and avoid duplication.

The Council could also help deliver key reforms coming out of the Universities Accord and eventually be housed within the Australian Tertiary Education Commission.

Why we can’t forget basic research

The SERD paper appropriately focuses on increasing business investment in R&D and encouraging research collaboration. However, to ensure lasting impact, it is essential that we also protect and invest in basic research. Without this foundation, the research pipeline weakens, limiting future opportunities for commercialisation and innovation.

Australia’s current approach risks prioritising short-term gains at the expense of long-term competitiveness. Funding for basic research is limited, with universities bearing an increasing share of the burden. In 2022, the university sector spent nearly \$14 billion in R&D — a 10 per cent increase since 2020 — more than half of this (\$7.2 billion) was funded by universities themselves (largely sourced from international fee revenues).

Government funding continues to shift toward later-stage research with clearer commercial outcomes. In 2022, competitive grants made up just 14.8 per cent of university research funding. Only a small number of programs, such as ARC Discovery Projects and NHMRC Investigator Grants, support basic research — and even these represent a fraction of overall government investment.



Research from the University of Queensland and CSIRO has linked this underinvestment to Australia's declining position in global innovation rankings. The proportion of funding for basic research has fallen from nearly 60 per cent in 1996 to just 35 per cent in 2022. This decline undermines the very source of new ideas and breakthroughs.

Basic research often carries greater risk and longer timeframes, making it less attractive to private investors. This is why strong, strategic government investment is critical – to support the entire research pipeline, encourage private R&D and secure Australia's long-term prosperity and sovereign research capability.

With reduced international student revenue already affecting university budgets, the pressure on basic research is increasing. Any reforms must take into account the potential consequences for discovery research and ensure that this vital part of our innovation system is not left behind.

The power of basic research

Some of the most transformative discoveries of our time can be traced back to year – sometimes decades – of investment in basic, curiosity-driven research. While the path from idea to impact is rarely linear, these examples show just how essential early-stage research is to solving complex problems, delivering national benefit and changing lives.

From lab bench to lifesaving vaccines

Breakthroughs like mRNA technology behind COVID-19 vaccines did not happen overnight. They were built on decades of foundational research in molecular biology and immunology. Professor Ian Frazer's work on the human papillomavirus vaccine similarly began in basic research, ultimately leading to a world-first cancer-preventing vaccine. In agriculture, Australian research into the plant genetics helped eliminate a fungal disease threatening banana crops – a win for global food security.

Wi-Fi

In the 1990s, Professor David Skellern at Macquarie University was working on a problem facing communications companies – how to connect to multiple devices wirelessly in environments where radio waves were constantly bouncing off the walls and other surfaces, distorting signals.

At the same time, CSIRO radio astronomer Dr John O'Sullivan was exploring ways to reduce signal interference – originally as part of his work in radioastronomy. His breakthrough in formatting radio signals to transmit data more effectively became the foundation for Wi-Fi technology as we know it.

Skellern and O'Sullivan joined forces to create a microchip using CSIRO's patented wireless local area network (WLAN) format. They launched a company, Radiata, to commercialise the technology. Supported by CSIRO through the lengthy process of defending its patent, the intellectual property eventually returned hundreds of millions of dollars to Australia.

This globally successful innovation emerged from decades of research in mathematics, physics and engineering – and from a commitment to investing in big questions with no obvious answers at the time.

Medicare – a national policy rooted in research

Australia's universal healthcare system began not as a policy announcement, but as a research question. In the 1960s, University of Melbourne health economist John Deeble was disturbed by seeing patients denied cancer treatment simply because they couldn't afford it. Alongside colleague Dr Dick Scotton, he began studying hospital costs and access to care.

Their research revealed a deeply inequitable system – those with the least resources often paid the most for health care. In response, they proposed a bold new model: a publicly funded national health insurance scheme, paid through the taxation system and accessible to all.

Though radical at the time, their evidence-based proposal became the foundation for what we now know as Medicare. It was championed by the Whitlam Government and remains a cornerstone of Australia's healthcare system.



The Strategic Examination of R&D paper rightly recognises the growing importance of sovereign research capability in a rapidly shifting geopolitical landscape. It highlights the need to protect Australia's first-mover advantage — earned through decades of high-quality, fundamental research — and acknowledges the strategic value of maintaining that edge.

What it does not address, however, are the emerging threats to our capacity to sustain that research output. Without a strong foundation, even the most ambitious goals for translation and commercialisation will falter.

We strongly support of the Strategic Examination of R&D's focus on strengthening Australia's ability to translate research into real-world outcomes. But this cannot come at the expense of the discovery work that underpins the entire system. If we do not invest in the foundations — our people, our infrastructure, and our basic research — then we risk weakening the very capabilities we seek to grow.

A robust and balanced research ecosystem requires both ends of the pipeline — bold, blue-sky ideas and practical application. Building sovereign capability starts with ensuring we can continue to generate the world-class research that gives us our edge.

Recommendations

Reduce fragmentation and improve coherence

- Undertake a functional, cross-portfolio review of existing programs to better align national research priorities with portfolio responsibilities.
- Consolidate overlapping programs to reduce duplication, administrative burden, and inefficiencies across government.

Establish a whole-of-government mechanism for strategic oversight

- Create a Ministerial Research Council to coordinate research policy, funding mix, and governance across portfolios.
- Require all New Policy Proposals with research implications to be reviewed by the Council before Cabinet consideration.

Implement a national approach to research priorities

- Coordinate the implementation of the National Science and Research Priorities across all funding bodies and departments.
- Ensure these priorities are backed by adequate investment, clear implementation plans, and a commitment to Aboriginal and Torres Strait Islander knowledge systems.

Protect and invest in basic research

- Increase investment in basic research as a foundation for future commercialisation and national capability.
- Raise public R&D investment in research and development to at least the OECD average of 0.74 per cent of GDP.

Strengthen foundational research funding mechanisms

- Introduce a whole-of-government policy to address indirect costs of research to reach at least 50 cents per \$1 of competitive grants.
- Raise PhD stipends to at least \$36,000 per annum to attract and retain top research talent.
- Re-establish the Education Investment Fund to support research infrastructure and long-term capability.

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