Science & Technology Australia 2025 Federal Election Priorities

Securing Australia's wellbeing and productivity: a prosperous Australia made from Australian ideas

A prosperous Australia will be one made from Australian ideas.

A nation driven by innovation and smart thinking, in which all Australians can flourish. A technologically advanced, healthy, and resilient nation.

Our current path will not get us to that future.

With an economy languishing, a cost-of-living crisis, and a pathway to prosperity uncertain, the next Federal Parliament must work decisively to create the future Australia wants and needs – an economy powered by science, technology, ideas and innovations.

This means deploying the country's best minds, smartest technologists, and most savvy entrepreneurs to generate the new knowledge and industries that will deliver the jobs, productivity and prosperity of the future. And it means a strong focus on equity – elevating Indigenous Knowledges and building true partnerships with First Nations researchers and communities to solve our nation's challenges.

Research and development (R&D) is the engine room of modern, prosperous economies. Every dollar invested in R&D returns three to five times that investment. And as it builds our national prosperity, it creates the jobs, industries and the future we want. Right now, though, national R&D investment – across industry, academia and governments collectively – sits at just 1.7% of GDP, well below the OECD average of 2.7% and a country mile behind the global leaders.

If we don't act now to jump-start our economy, we risk jobs, wellbeing and prosperity. We risk being a nation that can't cope with the challenge of climate change, environmental degradation and biodiversity loss. An Australia unable to guarantee the health and wellbeing of its aging population or drive medical breakthroughs. A vulnerable country, a technological backwater, and a country reliant on other nations as a consumer – not a creator – of new technologies, services and essential products.

To avoid this decline in our national prosperity and wellbeing, we must capitalise on our many research strengths through enhanced translation and commercialisation efforts to put STEM at the heart of a new knowledge-driven economy. We must fix school-level numeracy and science, to build a STEM-skilled population to meet the predicted growth in STEM jobs. We must draw on the full diversity of the nation – supporting better pathways and partnerships with First Nations Australians, elevating Indigenous Knowledge, and improving gender equity and diversity across the STEM workforce.

This is the challenge Science & Technology Australia, with its network of more than 235,000 STEM professionals, presents to all candidates for the 2025 Federal Election. As you prepare your policy platform for the upcoming Federal Election, we call on you to commit to:

- deliver a whole-of-government STEM and innovation strategy to take ideas through to products and services, and secure the education, skills and training needed to secure the future workforce;
- establish a stable and long-term investment fund for R&D and future industries, and;
- fully support Australia's national science priorities – and national prosperity and wellbeing –through strategic research-intensive moonshot research initiatives.

STA's 2025 Federal Election priorities are a suite of policy initiatives that places STEM front and centre of Australia's future wellbeing. We invite you to read more about them below, and commit to these actions to deliver a prosperous Australia made from Australian ideas.

Science & Technology AUSTRALIA

Science & Technology Australia 2025 Federal Election Priorities

STEM R&D: an Australia built from Australian ideas		Cement STEM's critical role in building the industries for Australia's economic prosperity and wellbeing across the Parliament and in the public consciousness
		Lift Australia's R&D investment to a globally competitive level – build a strategy to boost Australia's R&D investment to 3% of GDP by 2035, including an Innovation Future Fund to build the next R&D-underpinned industries.
		Transform Australia's industrial base and deepen economic complexity through building sovereign capability in areas of research strength through a 10-year Strategic Moonshot Program to invest deeply in critically important areas.
Indigenous Knowledge: build a culturally confident nation		Elevate Indigenous Knowledge and genuine engagement with First Nations communities throughout Australian education, research and policy development.
STEM education: secure the next generation of STEM professionals		Inspire and ensure a strong pipeline of the next generation of STEM researchers, workers and thinkers through a robust uplift in STEM education.
Research: the foundation of all innovation	Unique strengths; discovery research	Secure Australia's capability to predict, adapt to and mitigate the economy-wide impacts of climate change through a new climate research and services agency.
		Enhance Australia's engine room of breakthrough research through an uplift to Australia's university research effort.
	Workforce	Strengthen work towards Closing the Gap targets, through supporting First Nations researchers throughout STEM careers.
		Secure Australia's most precious research resource – the STEM workforce – through improved security, mobility and diversity.
	Research infrastructure	Ensure stability and security for Australia's critical research infrastructure and leverage domestic and global collaboration through a renewed long-term NCRIS funding commitment.
		Secure Australia's future in a data-driven world by shoring up high-performance computing and AI sovereign capabilities.
Industry and beyond: deploy STEM knowledge to create jobs and inform policy	Research to product	Deliver effective incentives to give business confidence to increase its R&D investment, from discovery to applied research.
		Accelerate and derisk early-stage development and prototyping to help advance future industries.
	Research to public good	Support the translation of STEM research that delivers long-term economic, environmental and social benefits.

STEM R&D: an Australia made from Australian ideas

Cement STEM's critical role in building the industries for the future and securing Australia's economic prosperity and national wellbeing across the Parliament and in the public consciousness	Commit to keeping the Minister for Science in Cabinet, who has broad responsibility for science, research and research infrastructure.
	Commit to ensuring that all policy decisions will be underpinned by robust STEM research and evidence where applicable.
	Continue to support and expand the resourcing of the Parliamentary Library to conduct deep, forward looking reports on important and topical matters in collaboration with the science sector.
Lift Australia's R&D investment to a globally competitive level – set a target and build a strategy to boost Australia's R&D investment to 3% of GDP by 2035, including an Innovation Future Fund to build the next R&D-underpinned industries	Build and implement a comprehensive economy-wide strategy to increase Australia's R&D investment to 3% of GDP. The strategy should cover funding, regulation and incentives to support R&D activity and expenditure from all three components across the R&D sector – governments, higher education and business.
	Establish an Innovation Future Fund to build the next R&D-underpinned industries, similar to how the MRFF has reshaped Australian medical research. A potential revenue source for this fund could be through reform to current tax and royalty arrangements on Australia's extractive industries, modelled on Norway's successful sovereign wealth fund.
	Reform and revitalise Federal Government data collection and reporting systems to more effectively monitor Australia's R&D investment and track progress.
Transform Australia's industrial base and deepen economic complexity through building sovereign capability in areas of research strength through a 10-year Strategic Moonshot Program to invest deeply in critically important areas	Turbocharge Australia's R&D capacity through establishing a multi-billion dollar, 10-year Strategic Moonshot Program to invest deeply in a small number of areas critically important to Australia's national prosperity. These initiatives will drive job creation and boost economic complexity and involve a mix of: • grants to drive underpinning discovery research • shared equity to support commercialisation, start-ups and industrial job creation • collaborative ventures – translational science hubs, place/precinct-based initiatives • development of necessary technological supply-chains. Moonshots could be aligned with Australia's National Science and Research Priorities, or focus on cross-disciplinary approaches to meet objectives of national importance, e.g: bioeconomy, sovereign artificial intelligence capability, national resilience and critical threat preparedness.

Indigenous Knowledge: build a culturally confident nation

Alongside building an economy driven by science and technology and a scientifically literate Australian population, we must build a culturally confident nation that values and embraces Indigenous Knowledge. We must ensure deep and genuine engagement, grounded in truth-telling, to ensure First Nations Australians can enhance their role in Australia's STEM future – to the benefit of the entire country.

Build a culturally confident nation: elevate Indigenous Knowledge and ensure genuine engagement with First Nations communities throughout Australian education, research and policy development	Establish an Office for Indigenous STEM that would deliver: • a national plan to coordinate the elevation of Indigenous Knowledge related to science and technology – past, current and future • a coordinated approach to funding Indigenous-owned and -led STEM organisations • strategies to improve First Nations people's participation in STEM education (schools and university) and research • funding and oversight for programs to elevate Indigenous Knowledge in school curricula, and more broadly across higher education and research.
	Review existing structures to ensure First Nations researchers, knowledge-holders and communities are deeply and genuinely engaged in climate change adaptation and resilience measures.
	Develop a national First Nations STEM research strategy, with dedicated funding, to identify and respond to First Nations communities' needs, aligned with existing grant agencies programs, including: • Review grant guidelines to improve First Nations engagement. ARC and NHMRC grant guidelines should be amended to ensure genuine engagement and relationship building in research involving First Nations communities through extended grant application and project timelines. • Establish consistent arrangements across the various government research grants programs for dedicated grants for First Nations researchers and minimum funding allocations (of 5% of total grants budgets) for Indigenous research. • Establish a process for research investment in STEM partnerships with Indigenous Knowledge holders and communities to progress culturally relevant research and potential technologies that could address local and national needs.

STEM education: secure the next generation of STEM researchers, workers and thinkers

STEM jobs are predicted to grow by 14.2%, twice that of non-STEM jobs, with professional, scientific and technical services representing one of the highest growth industries. As such, Australia's future is dependent on a highly trained, agile and deeply capable STEM workforce. This starts in school. Australia needs a strong, inspiring and deep STEM curriculum that engages students and gives them the skills, motivation and confidence to pursue STEM careers.

Standardised testing can contain inherent bias that leads to poor results for students from diverse backgrounds – we need to ensure our school systems support our students, not discourage them. Including local culturally relevant context in NAPLAN testing has been shown to decrease the gap between reading results for First Nations students compared to non-First Nations students by 50% and the gap between rural and urban students by 33%.

Enrolments in intermediate and higher-level maths, as well as physics – subjects that provide a critical foundation for a highly skilled STEM workforce – have shown a slow but steady decline over the past decade. Nation-wide teacher shortages mean students across the country are being taught maths and science by teachers without training in these specialist subjects. Nationally, around 32% of maths teachers do not have specific maths expertise. Around 1 in 5 science teachers and 2 in 5 technology teachers are not specifically trained in those subjects.

These factors, combined with low levels of student interest and confidence levels in the critical subjects of maths and engineering pose a threat to Australia's future STEM workforce. We need to galvanise the next generation of STEM workers to ensure Australia can face the challenges of the coming decades head on.

Inspire and ensure strong pipeline of the next generation of STEM professionals and researchers through a robust uplift in STEM education	Ensure NAPLAN and other national testing is designed and delivered in ways that incorporate and appreciate local contexts while maintaining overall test robustness, comparability and fidelity.
	Implement a national approach to recording teachers' specialisations through teacher registration processes.
	Deliver support for out-of-field STEM – and particularly maths – teachers through a national upskilling program.
	Deliver sustainable long-term funding to projects and programs that embed Indigenous Knowledge in the Australian school curriculum.
	Implement strategies to improve culturally responsive learning across Australian schools to better support First Nations students – move beyond programs focusing purely on school attendance or engaging students through sport and show First Nations students a genuine STEM pathway.
	Deliver sustainable long-term funding to First Nations-led and First Nations-owned organisations that connect First Nations students with a STEM future.
	Ensure the national schools agreements work to boost Australia's students' STEM performance, particularly in maths and technology, to deliver the next generation of STEM skilled experts the nation will need.

Research: the foundation of all innovation

Research is the starting point of innovation – without discovery research, there are no new ideas to take through the path to translation and commercialisation. Investing in research is an investment in our long-term future prosperity. Australia must value our research expertise and double down on our strengths – and acknowledge and invest in our unique challenges. We need to secure our research workforce and ensure our researchers have the infrastructure they need to carry out world-class research, and we need to bolster efforts to lift diversity and equity in the STEM research workforce.

Sovereign capability: capitalise on our strengths and unique challenges

Australia's discovery research capability is world class. At the same time, our unique geography history and place in the world means we are faced with unique challenges – and opportunities. We must bolster our discovery research and focus deeply on the capabilities and challenges unique to Australia and our regional neighbours – and do the work that the rest of the world will simply not do for us.

Secure Australia's capability to predict, adapt to and mitigate the economy-wide impacts of climate change through a new climate research and services agency	Establish a new climate research and services agency to deliver cross-cutting support to various government agencies and inform climate adaptation and resilience. The agency would include fundamental climate research through to applied services, spanning various disciplines including climate and Earth systems science, health, agriculture, urban planning, energy/renewables and emergency management.
Enhance Australia's engine room of breakthrough research through an uplift to Australia's university research effort	Secure Australia's university research capability – the beginning of all innovation, translation and commercialisation. A significant uplift across the Australian Research Council, the National Health and Medical Research Council and the Research Block Grants would protect our critical discovery research capability from reliance on international student income, and other potentially variable funding sources.

Workforce

To deliver the world class research that will take Australia into the future, we must support the nation's most valuable asset – our people. We must ensure our research workforce is stable and secure, and equipped to do what it does best – generate new ideas and knowledge that will underpin Australia's future wellbeing. We need to support equity and diversity across the STEM workforce, and promote a culture of collaboration and mobility.

Strengthen work towards Closing the Gap targets through supporting First Nations researchers throughout their STEM careers	Develop a First Nations Research Framework to support First Nations HDR students and researchers. This could include targeted scholarships, professional development, mentoring, and support structures encompassing the entire higher education and research pathway.
	Fund the National Indigenous STEM Professionals Network. Establishing strong networks, mentorship and leadership requires resources, not just goodwill. Operational funding should be provided to NISTEMPN to support First Nations researchers to build a stable peer network.

Research: the foundation of all innovation

Secure Australia's most precious research resource – the STEM workforce – through improved security, mobility and diversity	Increase the minimum PhD stipend to better support PhD students.
	Improve mobility across the STEM sector to support career development and broaden STEM professionals' skills and cross-sectoral understanding through: • funding for university fellowships for STEM professionals currently working in government/industry • building career paths in Government that draw on deep STEM research expertise • encouraging industry to employ STEM research professionals through payroll tax concessions.
	Strengthen links with global strategic partners through targeted fellowships, research funding and schemes to encourage key researchers to work in Australia.
	Establish a Diversity in STEM Council to monitor equity and diversity across the sector and advise Government on policy and legislative reform.
	Deliver funding for programs that support migrants and people from diverse backgrounds to gain work experience and employment in the Australian STEM industry.
	Commission Jobs and Skills Australia to work with accreditation agencies and industry peak bodies to strengthen employers' understanding of overseas STEM qualifications.

Research infrastructure

The tools, instruments, networks, and expertise delivered through Australia's broad suite of research infrastructure facilities and projects underpin Australia's world-class research. Australia's research infrastructure capabilities need ongoing, secure funding to keep Australian research at the forefront of global discoveries.

Ensure stability and security for Australia's critical research infrastructure and leverage domestic and global collaboration through a renewed long-term NCRIS funding commitment	Commit to an ongoing uplift in Australia's national research infrastructure capabilities, especially NCRIS. The 11-year investment made in 2018 must be renewed prior to the next Research Infrastructure Investment Plan to provide certainty and enable the planning needed to keep Australia's capability world-class. This must include dedicated funding to secure Australia's access to global infrastructure facilities and programs.

Secure Australia's future in a data-driven world by shoring up high-performance computing (HPC) and AI sovereign capabilities	Develop a national HPC governance and funding plan for Australia's HPC capability.
	Establish a National Digital Research Infrastructure Agency to oversee and coordinate the nation's data, compute and AI needs and investments. The national coordinating agency would: • manage the current and future HPC needs and upgrade cycles for national research needs, making Australia a hub for the Asia-Pacific region • manage national and meritorious access to HPC to meet research priorities and Commonwealth needs • provide centralised HPC leadership and workforce to support and enable Australia's research community • develop a thorough and nationally coordinated data platform to manage Australia's ever growing and ever more complex datasets • support Australia's sovereign AI capability.

Industry and beyond: deploy STEM knowledge to create jobs and inform policy

Commercialisation – research to product

Building on our research capability and turning our great research ideas into new industries and jobs is key to deepening Australia's economic complexity. In 2023, Australia ranked 24th in the Global Innovation Index, but only 93rd in economic complexity. To build a future Australia made on Australian ideas, we must drive investment in areas of strength and comparative advantage across the economy, as well as tech-intensive sectors with low business R&D rates. This will help diversify Australia's industrial base and bolster Australian innovation leadership.

Deliver effective incentives to give business confidence to increase its R&D investment, from discovery to applied research	Introduce tax breaks to businesses to employ new STEM PhD graduates.
	Adjust the R&D Tax Incentive, drawing on overseas approaches to business incentives, e.g.: • Reform the R&D TI to be a tax credit, rather than an offset, to ensure incentives support R&D activities. • Set a premium rate for businesses that collaborate with the university or for purpose sectors.
	Create innovation competitions and challenges based on specific targets or goals aligned to National Science and Research Priorities, modelled on the X-Prize.
	Establish a competitive tax concession for companies developing and commercialising Australian IP, to keep more ideas and Australian innovation in Australia. Eligibility could be aligned with NRF and NRSP priorities.

	Government to more actively support early-stage commercialisation, to help businesses move from pilot to scale-up, e.g.: • Establish a sovereign venture capital fund – Government invests alongside private investors to help start-ups develop from pilot to scale-up. • Government to provide low- or no-interest loans, with income-contingent repayment plans, or take an equity stake in the business.
	Review Government procurement policies to better connect Commonwealth problems with industry capabilities.
	Ensure all Government research programs operate with a diversity lens – set targets for Government R&D programs to award set proportions of funding to Indigenous-led or owned ventures/projects or with leaders from under-represented groups.
Accelerate and derisk early-stage development and prototyping to help advance future industries	Establish a national prototyping and manufacturing facility/ies with appropriate ISO accreditations to support industry development at the critical 'valley of death' stage (technology readiness levels 4–7). Government support at this stage would de-risk proof-of-concept testing for products, giving industry greater confidence to invest. These advanced manufacturing hubs would serve both Australia and the broader Asia–Pacific – making Australia a key regional leader and partner in value-added manufacturing technologies.

Translation– research to public good

Not all STEM research leads to a new technology or device. Some STEM research examines processes, interrogates systems, explores preventative health measures or develops unique ways to mitigate environmental damage or preserve Australia's biodiversity. This research delivers enormous long-term benefits to the Australian economy and Australians' wellbeing – e.g. every $1 invested in health prevention returns $14.30 to the economy. This research needs a sustainable pathway to translation: to support program rollout, test potential policy levers, implement transformative programs for Australia's environmental and societal health and wellbeing.

Support the translation of STEM research that offers huge potential for long-term economic, environmental and social benefits	Establish an early-mid stage translation fund (social accelerator) to progress research and program implementation or scale-up to deliver long-term economic and social benefit, e.g. preventative health measures, environmental protection measures.
	Improve uptake of STEM research and evidence in policy design and implementation processes through targeted program funding to commission expert researchers for discrete periods during policy development.
	Explore opportunities for enhanced fellowship and internship programs that enable STEM researchers to provide specialised, evidence-based advice within Parliament. Either delivered through the Parliamentary Library or be direct opportunities with Parliamentarians' offices, these could be modelled on international programs and developed in partnership with key sector organisations like STA to facilitate a high-quality and diverse candidate pool.