Election policy 2016
Science priorities for Australian innovation

Australia's future economic prosperity and social wellbeing depend above all else on improvements in performance in science, technology, engineering and mathematics (STEM). From solving our grand challenges in agriculture, environment and health, to basic research that will deliver unexpected but transformative breakthroughs, STEM is the engine room of innovation. All Australians depend on a vibrant, well-planned and well-resourced science education and research capability with the capacity to drive innovation and growth into the future.

To deliver this future, the **Australian Academy of Science** calls on Australia's next government to put science and innovation at the heart of economic and social policy.

Priority one: **A society with the understanding and skills to use and apply STEM in their lives and careers** through world-class science and mathematics education for every student in every school and every tertiary institution

1. Set a **target for Australian school students to be in the top 10 ranked OECD countries by 2025** in mathematics (up from 19th currently) and science (up from 16th currently)
2. Expand **pre-service and in-service professional learning for maths and science teachers in indigenous communities and disadvantaged, regional and remote schools** with an additional $10 million over four years
3. Provide $15 million over three years to support the roll-out of **proven programs that increase student participation and performance in maths and science**
4. Establish a **national science and maths education evaluation program** with $3 million over four years to identify factors associated with positive and poor/inconsistent learning outcomes and inform future funding priorities and program development

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5. Support universities to **extend relevant work placement opportunities to undergraduates in all STEM disciplines**
6. Establish a **national-scale industry placement scheme for Higher Degree Research candidates** with an appropriate coordinating body

Priority two: The most intellectually and experimentally able scientists solving Australia's current and future challenges by dismantling systemic barriers that prevent many women and diverse groups from achieving their full potential in STEM

7. Provide targeted **mid-career and senior research fellowships** through the ARC and NHMRC to address gender imbalance in STEM disciplines
8. Commit to achieving **gender parity by 2030 in appointments to government STEM boards and committees and senior management positions**

Priority three: A strong, secure and globally connected research and innovation capability

9. Use the 2030 Strategic Plan for Australia's innovation, science and research system to set a **target for Australia's public and private investment in research and development** as a proportion of GDP to be among the **top ten OECD nations**
10. Implement the **findings of the National Research Infrastructure Roadmap** and establish rolling **triennial updates** to ensure Australia's long-term research infrastructure needs are met
11. Ensure **continued capacity to support public good research** through CSIRO, cooperative research centres and other significant research funding programs
12. Continue to **support Australian scientists to conduct investigator-driven research** with enhanced support for basic science through the ARC and NHMRC granting schemes
13. Maintain **Australia's climate science capability** to discharge international obligations and continue stewardship of climate knowledge of the Southern Hemisphere
14. Shift the **balance of direct to indirect government support for industry R&D** from 10:90 to 20:80 by 2020
15. Remove **tax disincentives for pre-liquidity acquisition** by STEM entrepreneurs in start-up ventures
16. Expand long-standing and strategically important **bi-lateral and multilateral science partnerships** with Indonesia, Japan, China, India the EU, Israel, Brazil and the US with an additional $40 million over four years.

WHY NOW?

Australia is at a crossroads. Our economy is in transition as demand for natural resources plateaus, as global manufacturing consolidates in Asia, and as international competition for services intensifies.

More than three decades of exponential growth in Australia's per-capita GDP is tapering, and if nothing changes Australia will fall out of the G20 within 15 years.

The only way in which Australia can maintain its long-term prosperity is to follow the lead of comparable nations in Europe, North America and Asia. We must foster an outstanding science and innovation system to drive new and advanced services and high-tech and transformative industries that deliver continued prosperity and solve grand challenges.

THE AUSTRALIAN ACADEMY OF SCIENCE

The Australian Academy of Science was established by Royal Charter in 1954 to champion, celebrate and support excellence in Australian science, to promote international scientific engagement, to build public awareness and understanding of science and to provide independent, authoritative and influential advice. The Academy comprises more than 500 of Australia's leading scientists, each of whom is elected for her or his outstanding contribution to science.

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