



UK Science & Innovation Network Country Snapshot

Australia

Australian Science and Innovation Landscape

Australia has a strong reputation for science, research and higher education. Its scientists have contributed to a number of high-impact inventions, including penicillin, the bionic ear, the black box flight recorder and Wi-Fi technology. With 0.3% of the world's population, Australia produces 3% of the world's scientific research publications.

Australia currently spends around 1.79% of GDP on research and development (R&D), which is below the OECD average of 2.3%. Federal investment in R&D is currently estimated at AU\$9.7bn (£4.84bn) with about 20% of this going to the business sector, mainly through a tax concession for companies investing in R&D. Business expenditure on R&D has more than tripled in the last decade, reaching A\$17bn in 2017-18. International education is Australia's largest service export worth a record AU\$38.2bn (pre COVID).

The UK is Australia's
3rd academic
collaborator
by co-authored
research outputs

With 6 of its 40 universities consistently ranked in the global Top100, Australia is home to some world-class scientific research organisations. The Commonwealth Scientific and Industrial Research Organisation ([CSIRO](#)), founded in 1916, is a public research agency credited with several notable inventions, including the polymer banknote and Aerogard insect repellent. Other public agencies include the National Health and Medical Research Council ([NHMRC](#)), which supports research on human biology and health, and the Australian Research Council ([ARC](#)), which covers all disciplines including the sciences, humanities and social sciences.

Despite its world-class research and university sectors, Australia has struggled to translate these strengths into industry innovation and commercial success. Less than 5% of Australian businesses work with the scientific research community, ranking lowest in the OECD. Australia has developed a set of [National Science and Research Priorities](#) (and underpinning practical challenges) to increase investment in areas of immediate and critical importance to Australia and its place in the world. The nine priorities are: food, soil and water, transport, cyber security, energy, resources, advanced manufacturing, environmental change, and health. Announced in 2015, the [National Innovation and Science Agenda](#) saw the establishment of Industry Growth Centres, modelled on the UK's [Catapult](#) centres. The not-for-profit centres work to drive innovation and productivity in six areas of Australian research strength: food and agribusiness; mining equipment, technology and services; medical technologies and pharmaceuticals; advanced manufacturing; cyber security; and oil, gas and energy resources.



UK-Australia Cooperation in Science & Innovation

Collaboration between the UK and Australia is important across all aspects of higher education and research:

- there are 565 agreements between Australian and UK institutions – which makes the UK Australia’s 5th most frequent partner after China, the USA, Germany and Japan;
 - The University of Warwick has a [strategic partnership](#) with Monash University in Melbourne, offering courses made up of components from both institutions.
 - On the innovation side, [Oxford University Innovation](#), the commercialisation subsidiary of the University of Oxford, is present in Australia.
- the main focus of these agreements is student exchange (444), with academic and research collaboration (262) and staff exchange (172) also prominent;
- co-authored papers have a Field Weighted Citation Impact score of 3.02 – significantly higher than the overall output of both the UK (1.57) and Australia (1.59).
- 10% of UK papers are co-authored with Australia, which is up by 36% since 2018

Historically, collaboration with Australia has centred around researcher-to-researcher partnerships rather than through funder-level activity. However, Australia is now named as a key partner country for **the Fund for International Collaboration (FIC)**, due to the UK and Australia’s respective positions as global research and development leaders. The FIC aims to catalyse high quality research collaborations through developing new partnerships.

Since the creation of FIC, Australia’s involvement includes a multilateral partnership with InnovateUK on business-led collaboration; research infrastructure funding on gravitational wave observatories in collaboration with the US; and more recently a new bilateral partnership with the NHMRC on improving population health.

The **Square Kilometre Array (SKA)** is an international mega-science project to build the world’s largest and most sensitive radio telescope. Headquartered in the UK, the SKA telescopes will be constructed and operated in Australia and South Africa. They will improve our understanding of the evolution of the Universe and help map hundreds of millions of galaxies.

SIN Australia activities

SIN Australia undertakes bilateral engagement on all science and innovation issues. Some recent examples include:

- Negotiating an MOU between the UK and Australian Space Agencies in 2019 and working on the subsequently [announced](#) **Space Bridge** to cooperate on policy, regulation, trade and technological as well as human development to support our growing space sectors.
- Supporting Australia during the 2020 **bushfire crisis** by helping coordinate the UK’s [Bushfire-recovery support package](#), including emergency seed collection and using satellite imagery for mitigating fire damage and risks.



- Demonstrating UK excellence in **clean technologies** through the [H21 Leeds City Gate](#) project which has led to discussion with the Australia Gas Network to hydrogen to Australia's gas grid.
- Enhancing UK expertise on **foreign interference** by connecting the Australian [Universities Foreign Interference Taskforce](#) with the UK [Trusted Research Campaign](#) to share best practices on engagement with the academic community
- Promoting UK leadership in **earth observation** at the 2020 Group on Earth Observation (GEO) Summit, announcing a £100,000 contribution to the GEO Secretariat and launching a [£8m call with CSIRO](#) to support Small Island Developing Nations.
- Delivering an InnovateUK GBIP on **AgriTech** with a focus on Satellite Applications to build strategic and innovative engagement and a pipeline of opportunities and collaboration.
- Agreeing an MoU on **Health** cooperation between the British and Australian health departments in 2019 with a focus on digital health, AMR and genomics.
- Demonstrating UK civil society engagement by organising 'Burger & Beers' events for students and, most recently, the Department of Culture, Media and Sports to inform whole of society views on the **ethics of data usage** and foreign interference.
- Informing a visit programme for the FCO's Head of **Polars** to share perspectives on the strategic context and security issues to science and innovation and environmental management in the Polar Regions.

SIN Australia Priorities

For 2020-21, SIN Australia has five priority themes for exploration and development:

- Global Health
- Clean Energy Technologies
- Space and its Satellite Applications
- Agriculture Technologies
- Critical Minerals for Environmental Change

In addition to these priorities, SIN Australia works on emerging and disruptive areas of importance for the UK. Impact is delivered by supporting high-level strategic dialogues, identifying fruitful collaboration opportunities, influencing Australian science and innovation policy and feeding into UK policy development. SIN Australia works across government departments and teams both at Post and in the UK.

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