



Australian Government

Government Scientists Group

Connecting government science
and research capability

chiefscientist.gov.au/GSG



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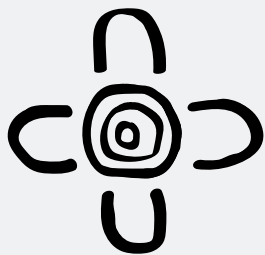
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Acknowledgement of Country



In delivering *Government Scientists Group, Connecting government science and research capability*, we pay our respects to Australia's First Nations people, their Elders past and present, and their ancestors, who have always cared and continue to care for our lands and communities. We recognise the First Peoples of this nation and their ongoing cultural and spiritual connections to the lands, waters, seas, skies and communities.

The members of the Government Scientists Group (GSG) acknowledge 65,000 years of Aboriginal and Torres Strait Islander connection with the Australian continent and recognise that much of the knowledge held by Australia's First Nations peoples is critical to living sustainably in Australia.



The Government Scientists Group (GSG) was established in 2021 by Australia's Chief Scientist, Dr Cathy Foley. It brings together chief scientists or equivalents from 24 Australian Government departments, agencies and regulators with a science capability.

The GSG aims to build awareness of shared contributions to the national science agenda and to coordinate across agencies for better impact. The agencies, regulators and departments represented in the GSG undertake significant scientific and regulatory work to address complex national challenges and support critical government operations.

The primary purposes of the GSG are to:

- increase accessibility to government science expertise
- promote cooperation and collaboration between member organisations.

The GSG maximises the impact of Australian Government funding into the organisations by sharing best practice, optimising the use of each other's expertise and removing duplication.

The GSG meets formally 4 times a year.







Message from Australia's Chief Scientist Dr Cathy Foley, GSG Chair

Since Federation, the Australian Government has called on science to progress the nation's prosperity. From the first publicly funded agency, the Bureau of Statistics established in 1905, to the most recent, the Space Agency established in 2018, each GSG agency was set up to address a national need or solve a national challenge that existed at the time. As a result, there is tremendous breadth and depth of scientific endeavour taking place across the Australian Government. The group welcomes all agencies with a science and research capability.

The members of the GSG represent 24 organisations, employing more than 20,000 people. The scientists, researchers and regulators in the agencies undertake and use highly impactful, world-class research. They regulate Australia's industries and standards, and fund research by academic and industry partners. They also contribute to international science diplomacy and regulatory operations. The staff of these organisations contribute to about 4.6% of Australia's research publications and collaborate widely, and collectively the GSG can be seen as Australia's largest patent holder. They have been responsible for many things that impact on our everyday, from the black-box recorders in all aircraft, to wifi, and nuclear medicine that every Australian will experience in their lifetime.

Unlike the university sector, GSG staff are directed in their work to support government to protect our population. They undertake long-term programs, often working many years for their organisation. The GSG provides a great career pathway for STEM graduates.

This booklet provides a snapshot of each organisation represented at the GSG, highlighting the responsibilities, research capability and current cross-government collaborations for each. It is a point-in-time overview of the exceptional science on which the Australian Government relies to address the needs of the nation. Collectively, the GSG helps Australia prepare for the unexpected. It is a jewel in our crown and something as a nation we should be proud of.

A handwritten signature in black ink that reads "Catharine Foley". The signature is written in a cursive style.

Dr Cathy Foley, GSG Chair





Australian Government

Department of Climate Change, Energy,
the Environment and Water
Australian Antarctic Division

Australian Antarctic Division

antarctica.gov.au

The Australian Antarctic Division (AAD) delivers the Australian Antarctic Science Program on behalf of the Australian Government and is the logistics operator for Australian researchers in Antarctica. It operates 3 research stations in East Antarctica and one on Macquarie Island. The AAD also operates a scientific research and resupply vessel, RSV Nuyina, and inter and intracontinental aviation to support the movement and transit of scientists in Antarctica.

The AAD is a division of DCCEEW.

The AAD is represented at the GSG by the division's Chief Scientist

600 staff

Science and research focus

The AAD science branch comprises 5 research programs, the Australian Antarctic Data Centre and program support activities.

Antarctic climate

- Understanding Antarctica's critical role in global climate and weather.
- Research supporting improved forecasts and projections of climate change.
- Providing the scientific basis for climate mitigation and adaptation.
- Focusing on the physical basis for the Antarctic climate and an Earth system approach.
- Interconnected research across atmosphere, sea ice, ice sheet and sea levels.
- Paleoclimate research based on ice cores.

Environmental stewardship

- A 'cleaner Antarctica' science program and environmental management programs.
- Science for evidence-based conservation, management, remediation and mitigation.
- Minimising environmental impacts through integrating science with best-practice environmental management strategies.

Southern Ocean ecosystems

- Krill and krill ecosystems and fisheries programs.
- Research underpinning Australia's engagement in international forums.
- Integrating multidisciplinary science across the Southern Ocean ecosystem.
- Research to ensure well-managed and sustainable Southern Ocean fisheries and the protection and conservation of Antarctic wildlife.

East Antarctic monitoring program

- Ocean, climate, molecular, seabird and nearshore and terrestrial programs.
- Supporting scientific observations of essential biological, physical and marine variables.
- Interdisciplinary monitoring planning.
- Focusing on variables at most risk from multiple stressors including climate change.

Integrated digital East Antarctica

- The acquisition, analysis and synthesis of Antarctic and Southern Ocean data.
- Antarctic simulation and modelling science.



Australian Bureau of Statistics

abs.gov.au

The Australian Bureau of Statistics (ABS) is Australia's national statistical agency. The role of the ABS is to help inform decision-making by delivering relevant, trusted and objective data, statistics and insights. The ABS provides trusted official statistics on a wide range of economic, social, population and environmental matters of importance to Australia.

The ABS has leadership roles in maximising the use of public data for statistical purposes and improving the Australian Government's data and statistical capabilities.

The ABS is represented at the GSG by the Australian Statistician

400 staff

Science and research focus

The ABS has 5 enterprise-level strategic priorities to:

- produce high quality statistics
- generate timely new insights
- exercise leadership in the data landscape
- reduce burden on data providers, and
- enhance organisational capability, resilience and adaptability.

The ABS works collaboratively with other government entities to enhance the use of public and private sector data for statistical purposes and improve the Australian Government's data capability. The ABS advises official bodies on producing and using data and statistics, formulates standards, works with states and territories, and liaises internationally.

The ABS researches methodological improvements for the production of official statistics. This includes improved statistical methods, and advances to improve the confidentiality of data to ensure privacy is not compromised. Increasingly, it also involves methods to use administrative datasets (for example, from the ATO's Single Touch Payroll system) to generate new statistics and reduce the need for surveys that place a burden on respondents.



Australian Centre for International Agricultural Research

aciar.gov.au

The Australian Centre for International Agricultural Research (ACIAR) amplifies the impact of Australia's capabilities in agricultural science by brokering and funding agricultural research for development partnerships with developing countries and Australia.

ACIAR works with research institutions to improve the productivity and sustainability of agricultural systems and the resilience of food systems in 31 countries in the Indo-Pacific region, including the Pacific, East and South-East Asia, South Asia and Eastern and Southern Africa.

ACIAR is represented at the GSG by the Chief Scientist of the centre

80 staff

Science and research focus

ACIAR funds partnerships in 10 research areas:

Agribusiness – focuses on research and innovation to improve business outcomes for smallholder farmers, their communities and their industries at all points along the agricultural, forestry and fisheries value chains.

Climate change – progresses the science and practice of how to transform food systems and livelihoods under the most pressure, to adapt or to reduce emissions.

Crops – aims to increase the productivity and sustainability of major crops by exploring improved varieties and new crop management methods.

Fisheries – brokers research partnerships to improve food security and fishers' livelihoods through aquatic farming and sustainable wild-catch fisheries; aims to improve human health and wellbeing by making food systems and policies more nutrition sensitive.

Forestry – contributes to conservation, rehabilitation and sustainable use of forests.

Horticulture – aims to improve the productivity, profitability and sustainability of fruit, vegetable, ornamental and beverage crops in developing countries.

Livestock systems – considers animal health and production technologies within broader sociocultural, gender, policy and economic contexts; animal-welfare and gender-sensitive approaches are central themes.

Social systems – takes a people-centred approach to agricultural research for development to reduce poverty; research on gendered social relations to ensure equitable development.

Soil and land management – aims to help smallholders boost productivity through sustainable use of limited resources in a changing climate.

Water – addresses the challenge of efficient, sustainable water for agriculture in an environment of the increasingly uncertain climate, competition from other sectors and declining water quality.





**ACT
Policing**

Australian Federal Police

afp.gov.au

The Australian Federal Police (AFP) enforces Commonwealth and Australian Capital Territory criminal law and protects Commonwealth interests from criminal activity in Australia and overseas. The AFP works closely with domestic and international partners to combat complex, transnational serious and organised crime affecting Australia's national security. The AFP investigates state offences with a federal aspect in partnership with domestic partners.

The AFP is represented at the GSG by the AFP Chief Scientist, who leads the Forensics Command

370 staff

Science and research focus

AFP Forensics Command delivers unique forensic science and technical intelligence capabilities. These include:

- chemical criminalistics
- crime scene sciences
- forensic drug intelligence
- weapons and technical intelligence
- digital forensics
- biometrics (fingerprint, face and DNA)
- document sciences
- firearms and toolmark identification
- geospatial services
- forensic training and education
- international forensic engagement.

Operationally focused research areas include:

- countering encryption
- forensic investigative genetic genealogy
- massively parallel DNA sequencing
- DNA phenotyping
- craniofacial reconstruction
- in-field hand-held drug profiling technologies
- virtual and augmented reality.

Longer-term programs will target:

- next-generation digital forensics
- missing persons and forensic identification capabilities
- in-field technology (including wearables, sensors and robotics)
- forensics of additive manufacturing.



AUSTRALIAN INSTITUTE
OF MARINE SCIENCE

Australian Institute of Marine Science

aims.gov.au

The Australian Institute of Marine Science (AIMS) is Australia's tropical marine science agency, established in 1972 to explore, understand and build knowledge about tropical marine ecosystems in northern Australia. This research helps governments, industry and the wider community to make informed decisions about the management of Australia's marine estate.

AIMS is a world leader in tropical marine research, providing insight into features such as the Great Barrier Reef in the east, the Top End in the north, and Ningaloo in the west. Staff are based in Townsville, Perth and Darwin; they have access to facilities such as the National Sea Simulator, research vessels and laboratories.

AIMS is represented at the GSG by one of its research program directors

320 staff

Science and research focus

AIMS improves marine health and resilience, creates economic, environmental and social benefits, and protects coral reefs from climate change, using:

- large-scale, long-term monitoring
- risk assessments of cumulative impacts
- prediction of ecosystem change
- new technologies and data science
- decision-support systems
- Indigenous knowledge.

AIMS produces a biennial report, the *AIMS Index of Marine Industry*, which assesses the contribution of Australia's 'blue economy' to the nation's economic bottom line.

Research focus areas include:

- building coral reef resilience against the effects of climate change
- blue carbon solutions for Australia

- strengthening reliability and standardisation of monitoring data
- providing insights on past and future reef trajectories from modelling
- embedding new technologies including artificial intelligence and machine learning for data analysis
- tropical ecotoxicology and risk assessment
- oceanography and shelf processes
- marine fauna ecology and pressures
- tropical marine water quality and impacts
- sustainable development of offshore industries
- embedding Indigenous and traditional ecological knowledge into scientific practices and publications.



Australian Nuclear Science and Technology Organisation

ansto.gov.au

The Australian Nuclear Science and Technology Organisation (ANSTO) is a leading global nuclear science and technology organisation delivering research and expertise to benefit Australia and support a more sustainable world. Delivering research based on nuclear science and technology, ANSTO is addressing Australia's national priorities, providing advice to government on nuclear technologies and contributing to the development of a nuclear workforce through 4 Science Impact Areas.

ANSTO is represented at the GSG by the Group Executive, Nuclear Science and Technology

1400 staff

Science and research focus

ANSTO focuses on nuclear science as an essential tool in the treatment of disease, as a powerful tool to protect the environment, and to support a safer and more sustainable nuclear industry.

ANSTO empowers researchers to deliver on national priorities through access to research infrastructure that delivers atomic-scale science with impact:

Open Pool Advanced Lightwater reactor (OPAL) – Australia's nuclear research reactor.

Australian Synchrotron – enables scientific research and innovation using synchrotron light.

Australian Centre for Neutron Scattering – the home of neutron science in Australia and a leading facility in the Asia Oceania region.

Centre for Accelerator Science – world-leading centre for ion beam analysis and accelerator mass spectrometry.

National Deuteration Facility – chemical and biological deuteration to investigate molecular structure.

ANSTO also delivers science and research supporting nuclear safeguards, stewardship and security. It delivers nuclear expertise to support the Australian Radioactive Waste Agency and the Australian Submarine Agency, and critical minerals extraction and processing.







Australian Government

Australian Pesticides and
Veterinary Medicines Authority

Australian Pesticides and Veterinary Medicine Authority

apvma.gov.au

The Australian Pesticides and Veterinary Medicines Authority (APVMA) regulates agricultural and veterinary (agvet) chemicals to manage the risks of pests and diseases for the Australian community, and to protect trade and the health and safety of people, animals and the environment.

Staff include regulatory scientists, risk managers, compliance and investigation officers, and a range of enabling staff ensuring activities specified under the *Agricultural and Veterinary Chemicals Code Act* are delivered efficiently and effectively. APVMA has offices in Armidale (NSW) and Canberra (ACT).

The APVMA is the national regulator of agvet chemicals in Australia up to and including the point of retail sale, and oversees the import and export of those chemicals and medicines that contain them.

The APVMA assesses products and activities against the statutory criteria of safety, efficacy, trade and labelling. It approves labels, ensuring they accurately reflect how the product is identified, used, stored and disposed of. The APVMA undertakes chemical reviews of an approved active constituent or registered agvet product and its label to ensure products continue to satisfy the statutory criteria. It considers applications for permits to use an agvet chemical in a manner different to the directions for use on the product label.

The APVMA is represented at GSG by the Executive Director, Risk Assessment Capability

180 staff

Science and research focus

APVMA staff include regulatory scientists providing and reviewing assessments of agvet chemicals.

The major areas covered include:

- chemistry and manufacture
- efficacy and safety
- environment

- human health (including toxicology and occupational health and safety)
- residues and trade.

The APVMA does not undertake primary research; however, it maintains awareness of relevant emerging science.



Australian Radiation Protection and Nuclear Safety Agency

arpansa.gov.au

The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is the Australian Government's primary authority on radiation protection and nuclear safety. It protects people and the environment from the harmful effects of radiation through research, policy, advice, codes, standards and services, and is the independent regulator of Commonwealth entities that use or produce radiation.

ARPANSA experts and scientists apply scientific knowledge and international best practice to promote awareness of the effects of radiation and advance a consistent approach to radiation protection of people (the public, workers, and patients undergoing medical procedures using radiation) and the environment.

ARPANSA builds and maintains expertise in the measurement of radiation and assessment of health impacts, including the assessment of risks and responses to radiation incidents.

ARPANSA is represented at the GSG by the agency's chief executive officer

168 staff

Science and research focus

ARPANSA's research focuses on 5 areas:

Optimising services – research to optimise services aimed at improving health outcomes, including research relating to the medical use of radiation, emergency preparedness, sun protection, radioanalytical service, and radon.

Supporting regulatory activities – responsible for assessing and authorising complex nuclear and radiological facilities, including siting, construction, operation, decommissioning and closure. ARPANSA commissions research to ensure sources and facilities are effectively regulated.

International best practice – committed to international best practice and promoting national uniformity.

Enhancing Australian innovation – houses facilities of national importance, including medical linear accelerators (linacs), a radiofrequency anechoic chamber, calibration facilities and various laboratories. These facilities are made available to the broader scientific community to enhance innovation.

Developing our people – staff are recognised as experts in their field of science, regulation, engagement and service.



Australian Space Agency

space.gov.au

The Australian Space Agency (ASA) was established in July 2018 to provide leadership on civil space capability to improve the lives of Australians and strengthen our society.

The ASA is a division of the Department of Industry, Science and Resources. Its staff are located in Adelaide, Canberra and across Australia.

The ASA is represented at the GSG by the Head of Agency

94 staff

Science and research focus

The agency does not conduct direct scientific research, but supports space science projects from across the sector and maintains science and engineering expertise in the following areas:

- position, navigation and timing
- Earth observation
- communications technologies
- space situational awareness, space sustainability and debris monitoring
- robotics and automation on Earth and in space
- applied space medicine and life sciences.



The Australian Sports Commission (ASC) is the Australian Government agency responsible for supporting and investing in sport. From grassroots to the pinnacle of elite international competition, the ASC works with the sport sector, other government partners, businesses and the wider community to champion the role sport can play in engaging every Australian.

Specifically, the purpose of the ASC is to increase participation in sport and continue Australia's international sporting success through leadership and the development of a cohesive and effective sector, the provision of targeted financial support, and the operation of the Australian Institute of Sport (AIS) campus in Canberra. The ASC is governed by a Board of Commissioners appointed by the Minister for Sport.

The ASC has a full-time sport science community made up of physiologists, biomechanists, nutritionists, dieticians, psychologists, and a skill acquisition specialist. The organisation also has medical practitioners, including doctors, physiotherapists and soft tissue therapists. The ASC has technology related expertise in computer science, data analytics and engineering, as well as expertise in meta-research and the use of scientific methods to study research itself, and employs a team of specialists in social and market research.

The ASC is represented at the GSG by the commission's Chief Science Officer

463 staff

Science and research focus

The AIS campus in Canberra includes a physiology laboratory, a haematology laboratory and a biomechanics laboratory. The ASC's research focus areas include:

Participation in sport – How active are people in Australia and what sports and physical activities are they taking part in?

The value and benefits of sport – What are the preventative health, mental health, and social, cultural and community benefits of participation in and involvement with sport?

High performance sport – What are the critical elements of developing successful athletes? How might Australia use science to create effective and impactful coach development? How might science and technology optimise sports performance? How

might the Australian sports sector enhance practice with the deployment of quality scientific methods?

Major event impact and legacy – How might major sporting events best deliver an enduring legacy for residents and businesses, traditional owner groups, creative and cultural organisations, and communities?

Sport system sustainability – How does Australia ensure community sport grows and maintains a strong and capable volunteer workforce? How can community sports clubs provide desirable participant experiences? What are the ideal governance and operating models for sporting organisations? How can Australia minimise the environmental impact of sport? How can the value of sport infrastructure in Australia be maximised? How does Australia minimise integrity threats to sport?



Australian Government
Bureau of Meteorology



Bureau of Meteorology

bom.gov.au

The Bureau of Meteorology (BOM) is Australia’s national weather, climate, water, oceans and space weather agency and one of the few organisations that touches the lives of all Australians and all of Australia, every day.

Products and services include observations, forecasts, warnings, analysis and advice covering Australia’s atmosphere, water, oceans and space environments. The Bureau undertakes scientific research in support of its operations and services.

The Bureau’s vision is to be an organisation of global standing that is highly valued by the community for its pivotal role in enabling a safe, prosperous, secure and healthy Australia.

Bureau staff are located across Australia, on remote islands, and in Antarctica. The Bureau observes and forecasts from the Antarctic to north of the Equator, and from the Indian Ocean to the Pacific.

The Bureau is represented at the GSG by the agency’s Chief Scientist

2374 staff

Science and research focus

The Bureau conducts research to develop world-class weather, climate, ocean and hydrology models. It collects, processes, analyses and assimilates environmental observations, and investigates science questions to add value to its services.

Its research objectives include:

- developing higher-resolution, more localised, customised and accurate forecasts, updated hourly for cities and regional areas
- enhancing the quality of, and, as appropriate, the quantity of observational data for analysis and

for assimilation into Bureau models, to provide more precise, accurate and reliable information

- developing a full Earth system numerical prediction capability with coupled subcomponents, to deliver a wider breadth of information-rich data that is consistent across the atmosphere, land, ocean, waves, sea-ice and hydrology
- developing seamless weather and climate risk-based services, providing insights from minutes to decades to enable improved decision-making and risk reduction.



Commonwealth Scientific and Industrial Research Organisation

csiro.au

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) is Australia's national science agency and has been in operation for more than 100 years. CSIRO is one of the largest and most diverse scientific research organisations in the world. Its teams work with governments, the research community, and businesses of all sizes, to turn science into solutions that address Australia's greatest challenges.

CSIRO's experts work across 50 Australian sites and 3 overseas sites. These include the world-class facilities CSIRO manages for the Australian research community, collaborative sites where it works closely with partners in industry and universities, and international locations where it facilitates global relationships.

CSIRO is represented at the GSG by the organisation's Chief Scientist

5500 staff

Science and research focus

CSIRO delivers solutions to create unique advantages for Australia through science in the following areas:

Future industries – creating Australia's future industries and jobs by collaborating to boost innovation performance and STEM skills.

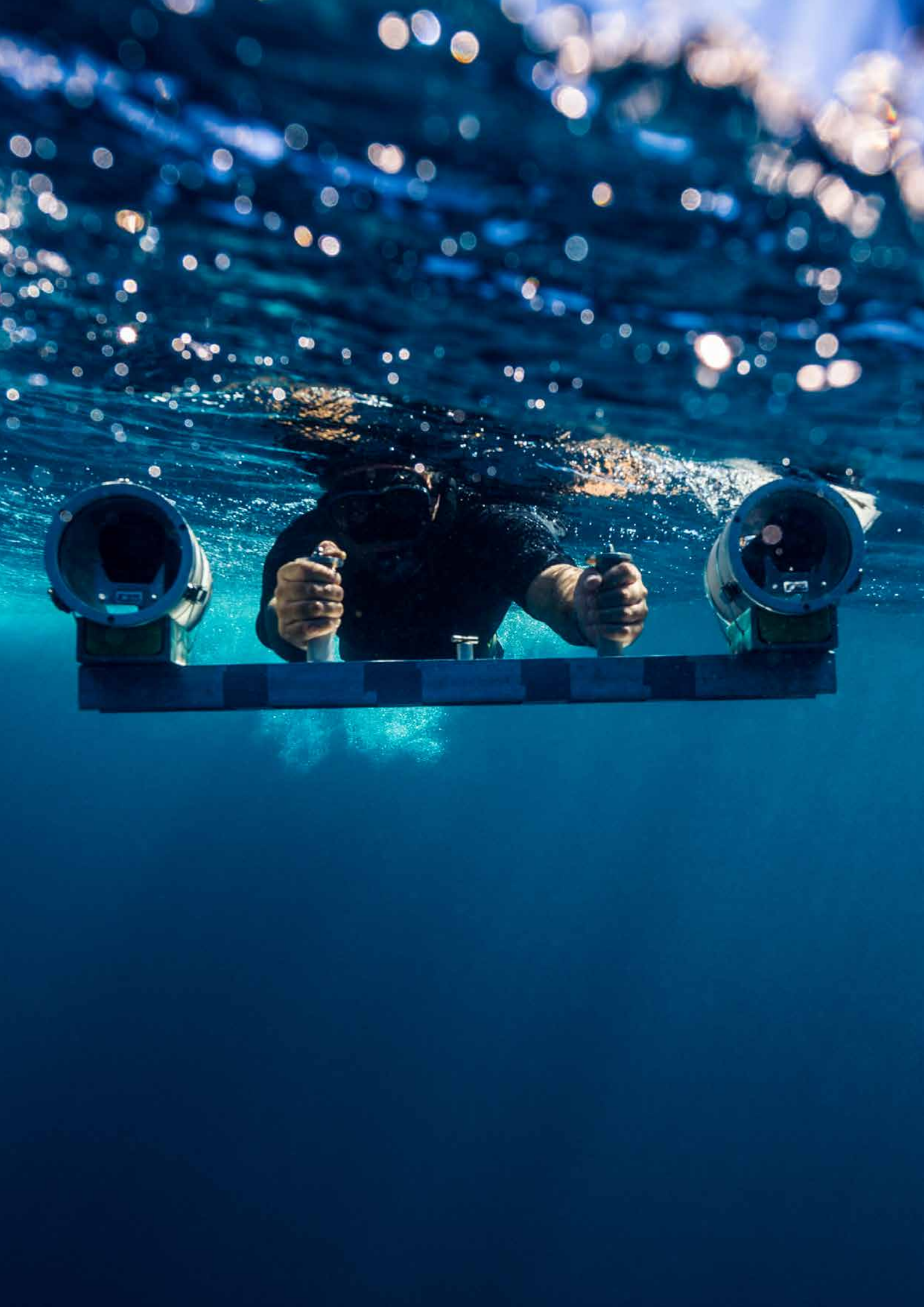
Sustainable energy and resources – building regional energy and resource security, and Australia's competitiveness, while lowering emissions.

A secure Australia and region – safeguarding Australia from risks including war, terrorism, regional instability, pandemics, biohazards, disasters and cyber-attacks.

Resilient and valuable environments – enhancing the resilience, sustainable use and value of Australia's environments, including mitigating and adapting to the impacts of climate and global change.

Food security and quality – achieving sustainable regional food security and growing Australia's share of premium agrifood markets.

Health and wellbeing – enhancing health for all through preventive, personalised, biomedical and digital health services.





Australian Government

Department of Defence

Defence Science and Technology Group

Defence Science and Technology Group

dst.defence.gov.au

The Defence Science and Technology Group (DSTG) is the Australian Government agency dedicated to developing innovative capabilities and technologies that can be delivered by industry and transitioned into defence capability. DSTG undertakes secure, sensitive research that can only be done within government.

The DSTG is Australia's second largest publicly funded science agency after the CSIRO. It has staff at 8 sites: Fairbairn (ACT), Fisherman's Bend (Victoria), Edinburgh (South Australia), HMAS Stirling (Western Australia), Sydney, Brisbane, Scottsdale (Tasmania) and Innisfail (Queensland). The DSTG has international science counsellors in the United States, the United Kingdom, Singapore, Japan and South Korea.

The DSTG is represented at the GSG by the Chief Defence Scientist

2100 staff

Science and research focus

The DSTG's science and research capability includes:

- advanced sensors
- aerodynamics and hydrodynamics
- artificial intelligence
- chemical, biological, radiological and nuclear defence, including cell harvesting, disease modelling and medical countermeasures
- communications and electronic warfare
- cyber and cyber assurance
- decisions sciences
- directed energy capabilities
- enhanced human performance
- hypersonics
- integrated intelligence, surveillance and reconnaissance
- multidisciplinary material sciences, including metal fatigue
- operations research/analysis

- platform signatures assessment and control
- power and energy systems
- quantum technologies
- social sciences
- space capabilities
- specialised and advanced scientific computing
- submarine and land weaponry and platforms
- trusted autonomous systems and platforms.

This includes 6 priority areas:

Hypersonics – hypersonic rockets and hypersonic aerodynamics and structures, including scramjet air-breathing engines.

Long-range fires – land-based long-range strike capability to attack, neutralise, suppress and destroy targets using missile-delivered indirect precision fires to reduce collateral damage.

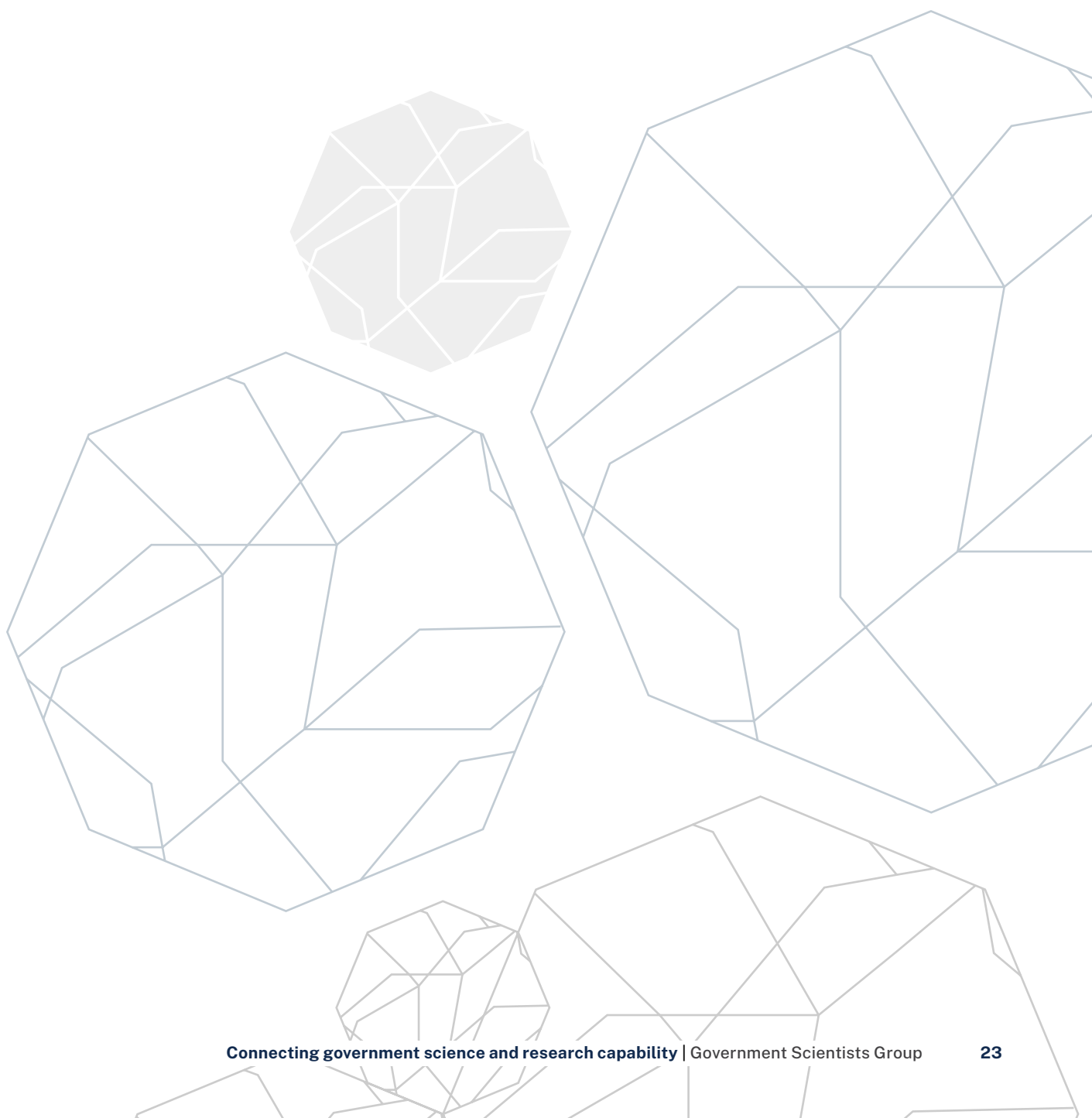
Directed energy – electrically powered directed energy systems, including high-energy laser and high-power microwave/high-power radio frequency sources, particle and sound beams to direct highly focused electromagnetic energy at the speed of light.

Trusted autonomy – understanding and engineering the interaction space between humans and machines to increase capability across battlespace, while reducing risk to personnel and costs.

Quantum technology – encompassing technologies that use subatomic particles, with 3 main applications – sensing and imaging, communications, and computing.

Information warfare – using information for competitive advantage. Information warfare capabilities integrated across human, information and physical dimensions will allow the Australian Defence Force to fight in and through contested information environments.

The DSTG's Science Technology and Research (STaR) Shots program focusses on command and control (Agile C2), resilient multi-mission space, information warfare, quantum-assured position, navigation and timing, remote undersea surveillance, and operating in chemical, biological, radiological and nuclear environments.





Australian Government

Department of Agriculture,
Fisheries and Forestry

Department of Agriculture, Fisheries and Forestry

agriculture.gov.au

The Department of Agriculture, Fisheries and Forestry (DAFF) works to enhance Australia's agricultural, fisheries and forestry industries. It creates new, and maintains existing, agricultural export opportunities to provide gains for Australian agriculture. DAFF manages biosecurity risks to Australia to protect the country's multibillion-dollar agricultural industries and way of life.

DAFF is represented at the GSG by the Australian Chief Plant Protection Officer

5484 staff

Science and research focus

DAFF supports research to enhance biosecurity, agricultural production and trade.

The Australian Bureau of Agricultural and Resource Economics and Sciences includes:

- forest sciences, geospatial analysis, land-use modelling, and indicators for sustainable forest and land management
- statistical, mathematical and simulation systems modelling for biosecurity, spatial modelling and mapping, quantitative risk analysis, invasive species ecology and social science
- fisheries stock assessment and status determination, science-based policy reviews and implementation for fisheries management
- climate and agronomic forecasting.

Work on **animal and plant health and environmental biosecurity** includes national preparedness for exotic pests and diseases of biosecurity concern, management of established pests, diseases and weeds, and market access.

The **Australian Plague Locust Commission** undertakes research in population ecology, ecophysiology and behaviour; the environmental impacts of locust control and monitoring activities; and control agents and application technology.

The **innovation pilots initiative** involves testing and piloting new technologies and approaches to enhance Australia's biosecurity capability and operations.

The Australian government (through DAFF) co-invests with primary producers in Australia's Rural Research and Development Corporations (RDCs) to help drive agricultural innovation and benefit industry and regional communities. The department assists the RDCs to adhere to their statutory and contractual requirements.





Australian Government

Department of Climate Change, Energy,
the Environment and Water

Department of Climate Change, Energy, the Environment and Water

dcceew.gov.au

The Department of Climate Change, Energy, the Environment and Water (DCCEEW) leads Australia's response to climate change and sustainable energy use, and protects the country's environment, heritage and water.

The Australian Antarctic Division (refer page 6) is a division of DCCEEW.

DCCEEW is represented at the GSG by the Office of the Science Convener within Environmental Information Australia

Science and research focus

DCCEEW strives to incorporate the best available science and knowledge in its programs and policy development, and recognises the importance of learning from 65,000 years of First Nations' conservation knowledge in working towards achieving sustainability in Australia.

DCCEEW makes large investments in research and applied science including through its Australian Antarctic Division, and portfolio agencies, including the Bureau of Meteorology, the Director of National Parks, and the Australian Institute of Marine Science.

DCCEEW shares and commissions scientific information and expertise from staff and partners in other government agencies, universities and industry.

It supports several statutory scientific committees and provides scientific advice to ministers through avenues such as the Threatened Species Scientific Advisory Committee.

DCCEEW also provide grants for policy-relevant research to provide up-to-date and reliable environment information to decision-makers within and beyond the Australian Government.

DCCEEW's science and research focus includes:

- priority Antarctic science through the AAD that leads the Australian Government's scientific program in Antarctica, the subantarctic and the Southern Ocean
- environment and climate research funded by the National Environmental Science Program
- rehabilitating the Ranger Mine, led by the Office of the Supervising Scientist
- facilitating science that informs the Director of National Parks' management of Australia's national parks and the world's largest representative system of Marine Protected Areas
- conducting and supporting innovative research programs through the Office of the Chief Remote Drone Pilot
- facilitating authoritative taxonomic research and biodiversity conservation through the Australian Biological Resources Study and the Australian National Botanic Gardens seed bank, living and herbarium collections and biodiscovery programs
- delivering projects that improve the safety and/ or reliability of water supply for regional, remote and First Nations communities through the National Water Grid Fund's Science Program, in collaboration with state and territory governments and leading science organisations.





Australian Government

Geoscience Australia

Geoscience Australia

ga.gov.au

Geoscience Australia's (GA) purpose is to be the trusted advisor on Earth sciences to inform government, community and industry decision making. This contributes to a strong economy, a resilient society and a sustainable environment.

Geoscience Australia's work aligns with the National Science and Research Priorities and supports global and domestic government initiatives.

Geoscience Australia is represented at the GSG by the organisation's Chief Scientist

600 staff

Science and research focus

Geoscience Australia's work is focused in 7 impact areas:

Building resources wealth – to maximise benefits from Australia's mineral and energy resources.

Supporting community safety – to strengthen Australia's resilience to natural hazards.

Securing water resources – to optimise and sustain their use.

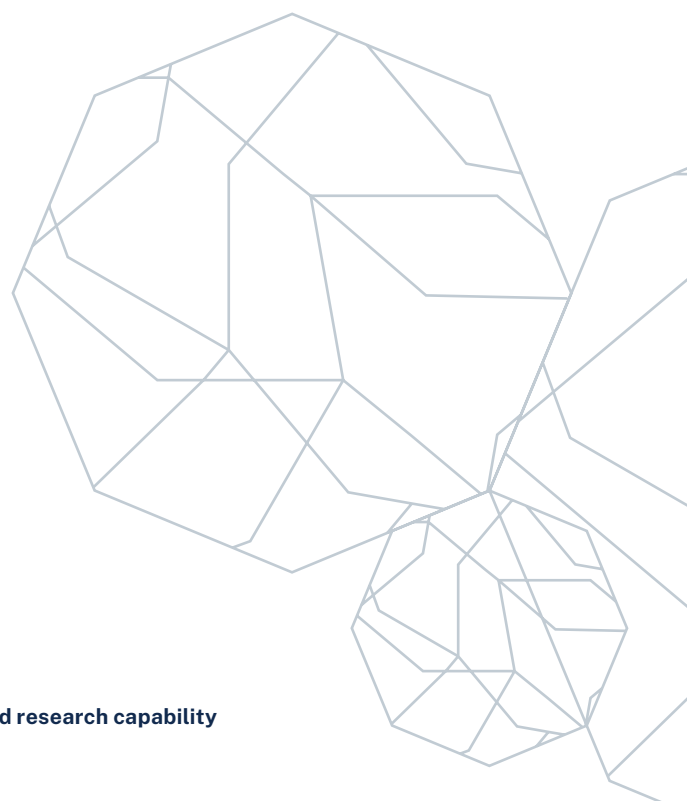
Managing marine jurisdictions – supporting sustainable use of Australia's marine environment.

Creating a location-enabled Australia – to increase economic, environmental and social prosperity.

Enabling an informed Australia – to equip government, communities and industry with geoscience data and information to make decisions for the nation.

Ensuring a high-performing organisation – supporting sustainability, innovation and diversity for the successful delivery of the organisation's objectives.

Geoscience Australia is the custodian of geoscientific data, products, services and significant collections that relate to Australia and that draw upon marine, continental, global and planetary information. Geoscience Australia is part of an integrated global effort that collectively maps Earth's systems and, in partnership with other Commonwealth entities, supports international Earth science initiatives and programs within the Australian region.







Australian Government

Great Barrier Reef
Marine Park Authority

Great Barrier Reef Marine Park Authority

www.gbrmpa.gov.au

The Great Barrier Reef Marine Park Authority (Reef Authority) is the Australian Government statutory authority responsible for protecting and managing the environment, biodiversity and heritage values of the Great Barrier Reef Region.

With a broad remit, including as reef stewards, policymakers and advisors, and science-led managers, the Reef Authority provides expert knowledge, manages and regulates the park, and builds capacity through partnerships and education.

This work includes in-water conservation and upholding compliance; development and implementation of policies, plans and programs to protect biodiversity; building capacity through partnerships and education; and synthesising knowledge to guide innovation, adaptive management, and ecologically sustainable use.

The Reef Authority is represented at the GSG by the organisation's Chief Scientist

258 staff

Science and research focus

The Reef Authority's *Science and Knowledge Needs for Management* publication sets out its priority science and knowledge needs that span 4 themes, focusing on elements that will help improve management and protection strategies over the long-term:

- What is the condition and trend of key values of the Reef?
- How can we optimise management impact?
- How is the Reef used?
- How can we improve our management through innovation and technology?

These themes support a series of priority questions to guide science and knowledge programs and clearly articulate what is needed by management.

The Reef Authority's research focus areas include applied science to inform resilience-based management of the Great Barrier Reef under a changing climate, including:

- climate change vulnerability of key habitats, species groups and human communities
- Marine Protected Area management and compliance
- control of crown-of-thorns starfish and other marine pest species
- Reef habitat restoration research
- island management and restoration
- protected species management and recovery research
- participatory monitoring programs including citizen science to enhance understanding of the reef.



Australian Government
IP Australia

IP Australia

ipaustralia.gov.au

IP Australia collaborates with businesses and the Australian Government to register and administer intellectual property (IP) rights and legislation for patents, trademarks, designs, and plant breeders' rights.

IP Australia's vision is to create a world-leading IP system that builds prosperity for Australia. To achieve this, it aims to give customers efficient access to products and services so they can continue to innovate.

The Office of the Chief Economist provides evidence on the economic impact of IP policies and ownership, such as innovation, competition, trade, productivity and economic performance.

The Patent Analytics Hub offers tailored analytics reports to researchers and policymakers to help enhance business intelligence, providing information on technology, market trends, collaborators and commercial opportunities across different industries.

IP Australia is represented at the GSG by the organisation's Director-General

1100 staff

Science and research focus

IP Australia's research focus includes:

IP data analytics – using patent application data, this research provides tailored analytics reports to researchers and policymakers, information on industry trends and commercial opportunities, and details about other inventors and patents.

Economic research – providing evidence on the economic impact of IP policies and ownership.

IP Australia has scientific and research capability and expertise across a range of areas, including mechanical/civil engineering, computer science, physics, physics telecommunications, electrical and electronic engineering, and biotechnology.



National Measurement Institute

measurement.gov.au

The National Measurement Institute (NMI) is Australia's peak measurement body, and a division of the Department of Industry, Science and Resources.

NMI maintains Australia's capabilities in measurement science and administers Australia's regulatory framework for measurement, particularly for trade. By ensuring Australia's measurement system is trusted and effective, NMI plays a foundational role in an inclusive, sustainable and confident economy. NMI's unique and sovereign capabilities assist industry to adopt new technologies, enable access to global markets, underpin national infrastructure, and respond to critical incidents.

NMI advances Australia's interests internationally in the global governance framework for measurement, as well as through development of standards, scientific and technical collaboration and diplomacy.

NMI is represented at the GSG by the Chief Metrologist

400+ staff

Science and research focus

NMI's expertise includes:

- setting Australia's **peak standards of physical measurement** (e.g. time, mass, length), and calibration of measuring instruments and reference standards at the highest level of accuracy
- developing Australia's **peak chemical and biological reference materials and methods**, including the operation of specialist laboratories for illicit drug analysis, anti-doping testing, and 'ultra trace' testing of persistent organic pollutants
- **chemical and microbiological analysis services** for public and private sector clients
- adopting new instruments and techniques under Australia's **legal framework for measurement**.

Measurement science changes with advances in science and technology, and NMI works continuously to develop the measurement capabilities Australia needs.

Current research focus areas include:

- electrical standards to **support energy transformation and emissions reduction** initiatives
- testing capabilities to address emerging **food, water and environmental issues**, including for safety and trade
- genetic standards to support **human health outcomes** relating to diseases, biotechnology applications, and production of mRNA vaccines.



The Office of National Intelligence (ONI) leads the National Intelligence Community (NIC) and is the principal advisory agency to the Prime Minister on intelligence matters. The NIC brings together 10 agencies to protect and enhance Australia's security, prosperity and sovereignty.

ONI is a globally engaged organisation that delivers an intelligence advantage for the nation through innovation, insight and leadership.

ONI is represented at the GSG by the First Assistant Director-General

Science and research focus

ONI's Cyber and Critical Technology Intelligence Centre fosters collaboration with non-government research and development partners, helping to fund, shape and deploy advanced science, research and technology to build the nation's resilience to evolving threats.

The NIC Research Program facilitates unclassified post-doctoral and discovery research to gain insights and develop future capabilities. Open, competitive grants enable the NIC to systematically engage with Australia's world-class research and technology community. This helps to deepen understanding of and develop expertise in emerging science, engineering, humanities and social sciences.

The NIC's unclassified 8 priority challenges are:

- covert collection challenges
- space-based challenges
- identity management challenges
- emerging biological and material science exploitation challenges
- cyber security, protective security and offensive cyber challenges
- human behaviour and influence challenges
- data-driven and real-time analytical challenges
- situation awareness and multi-source assessment challenges.



Office of the Chief Scientist

chiefscientist.gov.au

Australia's Chief Scientist is appointed by the Prime Minister to provide authoritative, independent advice to government on science, research (including education), technology, engineering, mathematics and innovation.

The Chief Scientist is supported by the Office of the Chief Scientist (OCS), which is hosted by the Department of Industry, Science and Resources. The OCS includes significant policy expertise across Australia's science and innovation system, a dedicated communications team, and administrative and secretariat support for the work of Australia's Chief Scientist.

The Chief Scientist is appointed as executive officer to the National Science and Technology Council (NSTC), which is chaired by the Prime Minister, with the Minister for Science as Deputy Chair. The NSTC commissions reports from the research sector.

Australia's Chief Scientist is the chair of the GSG

21 staff

Science and research focus

The Chief Scientist develops an annual workplan, agreed with the Minister for Science, which determines the work priorities. The workplan is focused on areas of current or emerging interest to the government of the day. The Chief Scientist also responds to specific targeted requests for advice from government ministers. The OCS commissions research on behalf of the Chief Scientist and the NSTC to provide an evidence base for policymakers.

Dr Cathy Foley, Australia's current Chief Scientist, is focused on:

- enhancing connectivity and collaboration across science sectors and government
- making the research sector as efficient, effective and impactful as possible
- reducing barriers to the translation of science and research to commercialisation outcomes.

In 2024, focus topics for the Office of the Chief Scientist include:

- building demand for quantum technologies
- exploring ways to reduce barriers to STEM career pathways
- advancing consideration of open access to research literature
- considering better ways to measure success in research careers
- supporting the Government's new National Science and Research Priorities.

Dr Foley will continue to lead the Science Node of the Critical Technologies Hub.

Questacon, the National Science and Technology Centre, facilitates science engagement and awareness activities for all Australians. Questacon achieves this through rich, hands-on science engagement for visitors at its Canberra centre and through national programs targeting students, educators and the community, including in remote and regional areas of Australia.

As a division of the Department of Industry, Science and Resources, Questacon works to support portfolio ministers, policy teams and other agencies by providing advice on significant issues within its areas of responsibility, including on matters of science, technology, engineering and mathematics (STEM) engagement and participation.

Questacon is represented at the GSG by the organisation's Head of Division

273 staff

Science and research focus

Questacon supports young people to develop the STEM attributes, skills and knowledge required to face future societal challenges through:

- hands-on exhibits, inquiry-based and experiential learning
- science shows, interactive workshops and digital experiences
- building educator confidence and capability to teach STEM in the classroom
- supporting the development of science communication skills in public-facing staff, industry and research professionals.

Working with a variety of academic and industry partners, Questacon contributes to research focused on:

- science communication
- young people's participation in STEM
- educator engagement and professional learning
- public attitudes to science and technology.

Questacon offers a 'living lab' environment for innovative research activities that explore public engagement with the sciences.



**SPORT INTEGRITY
AUSTRALIA**

Sport Integrity Australia

sportintegrity.gov.au

Sport Integrity Australia (SIA) leads the Australian Government's efforts to protect sport against threats to its integrity, namely doping, competition manipulation, and the mistreatment and abuse of sports participants. It is the cornerstone of the government's sport integrity strategy.

Sporting organisations and other stakeholders benefit from the ability to deal with a single nationally coordinated organisation to address all sport integrity issues. SIA offers guidance on integrity matters to sports that do not have developed integrity capabilities.

SIA is focused on policy development, intelligence, investigations (primarily of doping cases), education, outreach and capability building. It is Australia's national anti-doping organisation.

SIA is represented at the GSG by the agency's Chief Science Officer

336 staff

Science and research focus

SIA's scientific research focuses on:

- enhancing collection and analysis of anti-doping samples
- assessing prevalence of substances prohibited in sport and available in Australia.

SIA's science and medicine teams provide specialised advice, information and intelligence to all areas of SIA's operations with a primary focus on the anti-doping program.





Australian Government

Department of Health
Therapeutic Goods Administration

Therapeutic Goods Administration

tga.gov.au

The Therapeutic Goods Administration (TGA) is the Australian government organisation responsible for evaluating, assessing and monitoring products that are defined as therapeutic goods. The organisation regulates medicines, medical devices and biologicals to help Australians stay healthy and safe.

The TGA is represented at the GSG by its Assistant Secretary for the Complementary and Over-the-Counter Medicines Branch

1000 staff

Science and research focus

The TGA includes regulatory scientists covering a wide variety of scientific disciplines, including:

- biochemistry
- biological sciences
- biomedical engineering
- goods manufacturing practice inspections and auditing
- information technology
- pharmacy and pharmacology
- pharmaceutical chemistry
- public health general practice
- toxicology
- naturopathy and herbal medicines.

The TGA does not undertake primary research; however, it maintains awareness of relevant emerging science.

The TGA is responsible for regulating the supply, import, export, manufacturing and advertising of therapeutic goods. It is responsible for ensuring that therapeutic goods available for supply in Australia are safe and fit for their intended purpose. These include goods on which Australians rely every day, such as vitamin tablets and sunscreens, through to goods used to treat serious conditions, such as prescription medicines, vaccines, blood products, and surgical implants.

