

Queensland, Australia + Germany

Collaborating on science



Australia is known for its diverse environment, modern infrastructure, and multicultural society. Our people come from every nation. Our workforce is highly educated, digitally literate and recognised for its innovation and early adoption of new technology.

We are also world leaders in science.

Queensland offers a globally unique proposition

Queensland is fast becoming a global research and innovation hub in the Asia Pacific with significant investment in infrastructure, and a great track record for attracting talent and collaboration partners. Our natural environment, geographic size, regional location in the Asia Pacific, and multicultural society offer multiple advantages for international collaborators, which are unique to our state.

Established connections

Queensland is currently home to more than 700 German researchers and academics who continue the long-standing connection between our two territories, helping to shape our cultural and research landscape.

Importantly, visiting students and post-doctoral research fellows feel their career aspirations are understood and supported by academics with strong ongoing connections to Germany. Our higher education institution exchanges and partnerships, such as with Fraunhofer and the German Space Agency result in thoughtful and important research collaborations and investments.

We continue to enjoy strong links at both government and institutional levels. Our agreements—such as the recently signed Accord with the President of the German Bundesrat and Governing Mayor of Berlin—pave the way for experts from Queensland and Germany to collaborate in research and development. Together we are already working on a process to inform the future of health care, medical science, innovation, education and training.

Our connections extend even further—companies such as Siemens, BMW, Strabag Construction and Rheinmetall are partnering with our universities, or setting up operations here. Rheinmetall has made a sizable investment in Queensland, and due to our state's unique advantages is planning for rapid growth.



Great reasons to connect

Geographic advantages

- Easy access to south-east Asian markets and collaboration opportunities, while being based in a country with systems and IP protections similar to Europe.
- A range of climate zones and environmental conditions—wet and dry tropics, subtropics and arid, coastal and marine—makes it easy to grow and test products under various conditions.
- Opposite time zones to Europe provide accelerated research with 24-hour turnarounds.
- Abundant sunshine enabling year-round agricultural and solar energy production
- Wide open space—land, sky and sea—vast distances and varied terrains for testing space-demanding research into vehicles and autonomous technology.

Demographic advantages

- Highly educated and digitally confident society reflected in our local workforce including researchers.
- Digitally advanced systems and infrastructure enables designing and testing new ideas.
- Multicultural society making it easy to test for diverse perspectives and feedback.



Queensland–German collaborations

The Queensland Government supports higher learning, and has a history of investing in research, development and innovation. Our research programs are making a difference throughout the world, particularly in the fields of medical and health sciences; environmental sustainability; food and agriculture; engineering; and defence/aerospace.

With more than 700 German academics and researchers, plus leading German companies like Rheinmetall and Strabag with regional headquarters here, the opportunities to collaborate and make a difference to our communities and globally, just keep on increasing. For further information:

www.qld.gov.au/Science-with-Germany

Health

Improving access to services

Queensland's geographic size has made it difficult to provide universal health care. Developed over the past decade, our telehealth initiatives are making it easier for people living in regional and remote communities to access health services.

The Queensland Department of Health has been pioneering the use of digital communication systems. Patients gain convenient access to the best health specialists without the need to travel prohibitive distances.

Queensland and Berlin experts in healthcare, medical science and innovation are working together to advance healthcare systems and innovations.

Developing solutions for antibiotic resistant drugs

The Fraunhofer International Consortium for Anti-Infective Research (iCAIR®) is a partnership founded by Fraunhofer Institute for Toxicology and Experimental Medicine (ITEM), the Hannover Medical School, and Queensland's Institute for Glycomics at Griffith University.

Designed to discover new treatments to combat respiratory illnesses caused by viruses, bacteria and fungi, the approach is to develop new anti-infective therapies to preclinical proof of concept stage. Queensland Government funding has been provided through the Advance Queensland program.

Aerospace/defence

Safety in space partnership with the German Space Agency

The University of Southern Queensland (USQ) has a long-standing partnership with the German Space Agency (DLR) which is helping address the challenge of space debris.

The southern hemisphere location offers advantage for northern winter testing and round-the-clock observations.



More than 500,000 pieces of debris are tracked as they orbit the Earth. Travelling at speeds up to 28,000 kilometres per hour, they pose a significant risk to satellites and spacecraft. Through this joint initiative, USQ will install a dedicated new optical telescope at its Mt Kent Observatory to deliver geostationary space debris tracking and improved collision avoidance for spacecraft.

USQ will be working with DLR's unit of Space Operations and Astronaut Training on the project until 2029.

Queensland–German research collaborations delivering excellence

Our collaborations have more than doubled in the past decade. The data shows that the resulting joint publications have **4.25** times higher impact than the global average.

Preparing for the future

Queensland science is making a difference because of our unique combination of location, people, modern infrastructure and capabilities, making it the perfect place to research, design and test new ideas and products.

We are a western multicultural society within the Asia-Pacific offering research excellence for problems facing our own region and beyond, together with strong governance and IP protection.

German research priorities and needs can be matched with Queensland research proficiencies and capabilities.

Below are just a few examples of how Queensland research institutions are working to address current and emerging research priorities of interest to both our lands.

Bioeconomy

Developing biomass-based energy and products

Working with industry, QUT researchers have established a unique research and development facility converting sugar cane waste into biofuels, green chemicals and other bioproducts.

Available for use by industry and research partners to develop and demonstrate a wide range of technologies at the pilot scale, this facility is contributing to the Queensland Government's goal to transform the state into a leading bio-based economy.

Environment

The power of seaweed

The University of Sunshine Coast is working on domesticating new species of algae and seaweed for nitrogen sequestration (to improve waste water quality) as well as opportunities with energy, functional foods, and nutraceuticals.

Red seaweed Asparagopsis
Photo courtesy USC Australia

Agriculture and technology

Improving productivity with farm automation

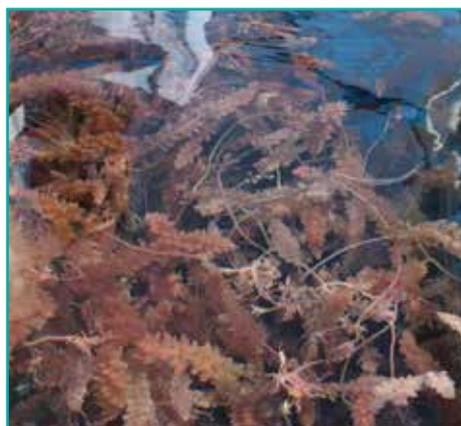
The University of Southern Queensland has partnered with John Deere to successfully develop the next generation of precision agricultural technology, such as driverless tractors and drones technologies useful across all aspects of the growing cycle.

Health

Natural assets

Our marine and terrestrial biodiversity offer exceptional opportunities to discover new and useful compounds.

Researchers at The University of Queensland have found that funnel-web spider venom could protect stroke victims from further brain damage.



Queensland is an ideal research partner for Germany as it provides the same commitment to a rule-based economy and dedication to innovation, while offering a range of complementary assets and capabilities.



Professor Dr Michael Rosemann, QUT Business School and Honorary Consul of the Federal Republic of Germany in Brisbane

Health and care—enabling an active and self-determined life

Social robots that can autonomously communicate could play a greater role in how mental health is treated by encouraging patients to discuss sensitive topics. Initial results from studies indicate a beneficial change as a result of interactions between robots and humans (ARC Centre for Robotic Vision, QUT).

Energy

Sustainably sourced energy for mass transport

Hydrogen fuel for cars, buses and even trucks is a step closer—thanks to work by CSIRO. Their researches, based in Brisbane, created a metal membrane that filters out pure hydrogen gas from ammonia. This now provides the ability to store and transport the gas safely and efficiently, which means hydrogen is becoming a viable option for dispensing at fuelling stations.

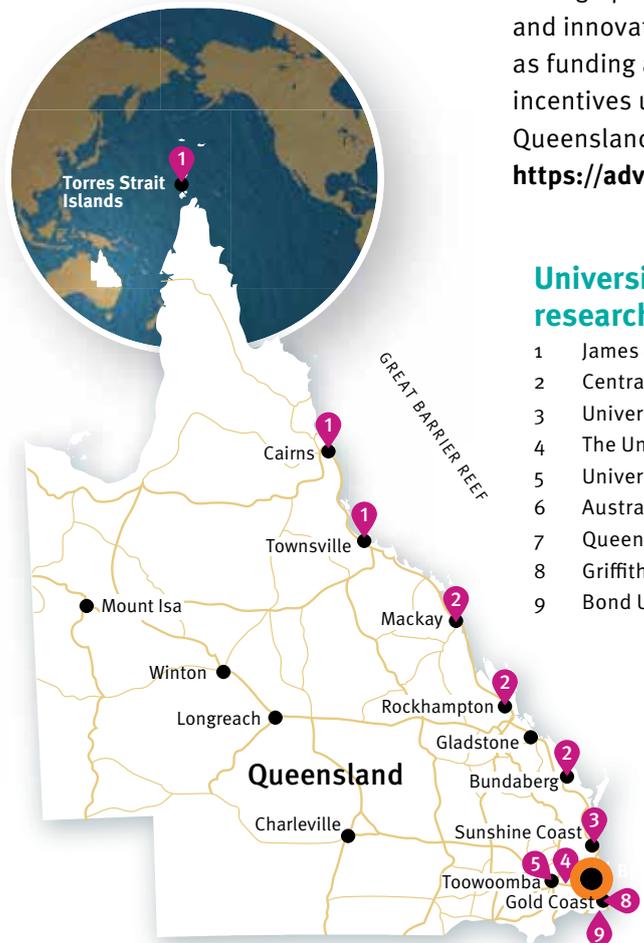
For more on these and other projects visit: www.qld.gov.au/Science-with-Germany

Working to create opportunities now to build knowledge intensive industries for the future

Industry 4.0 is here. Queensland will be looking to develop and attract talent in order to grow our research, development and commercialisation capabilities across new industries— advanced manufacturing and precision agriculture; personalised and preventative healthcare; circular commodities; and next generation aerospace and space technology. In turn we will make these available anywhere in the world.

Encouraging more international links and collaboration

We live in a connected world, and recognise the value of multi-disciplinary, inter-institution, and international teams to answer science questions and solve problems. The Queensland Government is working to encourage and support greater international collaboration.



How you can link in with our research and development opportunities

Queensland’s plan to invest more into international collaborations is highlighted in the soon to be released Queensland Science Strategy. The aim is to facilitate greater connections, including between Queensland and Germany by:

- expanding existing relationships
- attracting international talent
- facilitating technology testing locally
- facilitating joint virtual research centres and access to infrastructure and services.

Grants

Australian Government grants information system provides details of the many grants available via national government departments and institutions including those supporting international research collaborations.

www.grants.gov.au

The Queensland Government supports scientific research in Queensland through policies, strategic science and innovation initiatives as well as funding assistance and financial incentives under the Advance Queensland program.

<https://advance.qld.gov.au/>

Universities with research capabilities

- 1 James Cook University
- 2 Central Queensland University
- 3 University of the Sunshine Coast
- 4 The University of Queensland
- 5 University of Southern Queensland
- 6 Australian Catholic University
- 7 Queensland University of Technology
- 8 Griffith University
- 9 Bond University



Queensland Alliance for Agriculture and Food Innovation



Queensland University of Technology



QIMR Berghofer

Contact us

Find Queensland’s science capabilities and connect with University Research and International engagement offices www.qld.gov.au/Science-with-Germany

For more information on our key research capabilities and science expertise, visit:

www.qld.gov.au/ScienceDirectory or email: qld.science@qld.gov.au

Trade and Investment Queensland, helping businesses connect to our research capabilities:

www.tiq.qld.gov.au/connect

Study Queensland:

www.studyqueensland.qld.gov.au

Honorary Consul of the Federal Republic of Germany in Brisbane brisbane@hk-diplo.de

Australian–German Research Network (AGRN) platform for bilateral cooperation in research, science and innovation is open to academics, government and industry:

www.linkedin.com/groups/13531832