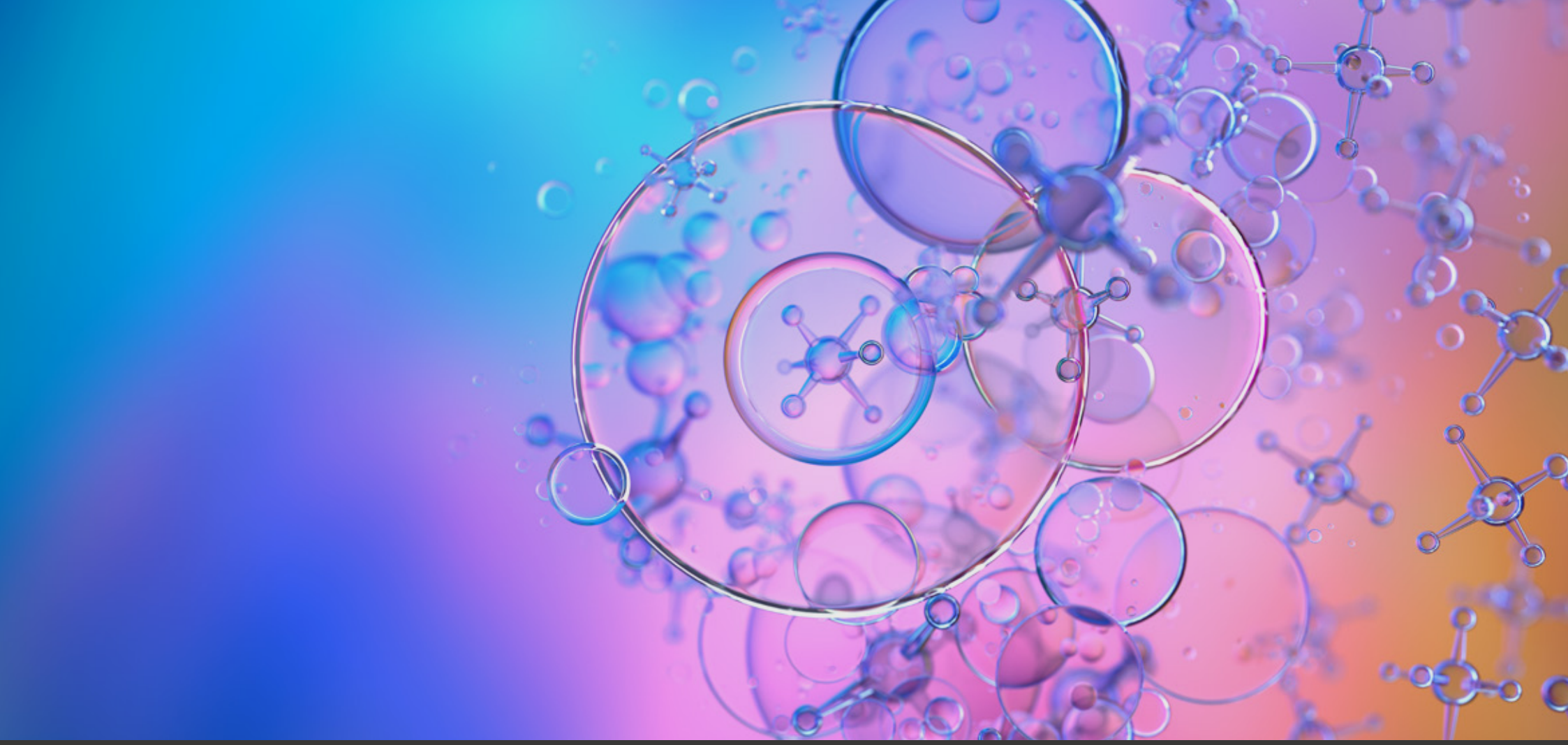


FUTURE QUEENSLAND SCIENCE STRATEGY 2024–2029

Generate and translate globally significant science for the prosperity and wellbeing of Queenslanders

Queensland Government

FOREWORD

Science benefits the lives of all Queenslanders.

In a rapidly changing world, science has never been more important to the social, economic and environmental wellbeing of Queenslanders.

Science enhances our lifestyle through technological advancements, medical breakthroughs and policy development.

The Future Queensland Science Strategy 2024-2029 builds upon our world-class research and innovation over many years. It provides the strategic vision for Queensland to be world leading in the translation of science for economic impact and social and environmental outcomes.

Complementing the Queensland Quantum and Advanced Technologies Strategy, released in 2023, the Future Queensland Science Strategy 2024–2029 also outlines a plan to maintain and increase Queensland's national and international competitiveness.

Queensland's scientists are international leaders at the forefront of many discoveries which benefit Queenslanders every day. We are committed to maintaining Queensland's science leadership position by increasing our science infrastructure, and training and attracting the skilled people we need.

We will support Queensland scientists to work with industry and use their research insights to create new products that have the potential to improve people's lives. Through maximising Queensland's science strengths, we can develop commercial opportunities, accelerate decarbonisation, grow new industries and drive innovation in key sectors such as agriculture, health, mining and energy.

There is also a focus on ensuring greater engagement between scientists and the community to build trust in science and inspire Queenslanders to develop the skills needed in our future industries.

Science provides critical information and the knowledge to drive change. We can use the power of science to unlock solutions to some of the biggest challenges of our time.

We are confident this strategy provides the framework we need to generate and translate globally significant science for the prosperity and wellbeing of all Queenslanders.

The Honourable Steven Miles MP
Premier

The Honourable Leanne Linard MP
Minister for the Environment
and the Great Barrier Reef
Minister for Science and Innovation

MESSAGE FROM THE QUEENSLAND CHIEF SCIENTIST

Science is not just about running experiments. It's about using new ideas, innovation and technology to understand and respond to current and emerging issues. Science provides the evidence base to underpin decision-making and government policy, and through commercialising scientific knowledge we can develop new products and services.

In Queensland, we have a rich science ecosystem comprising environment, agriculture, resources, medical and health sciences, engineering, biological and chemical sciences, and tropical science. This is a direct result of targeted Queensland Government investment to drive the growth of our research and development capabilities.

Historical investments through initiatives such as Smart State and Advance Queensland have gifted us with world-class research infrastructure and talent, vital for discovery and development. More recently, we've supported industries that are crucial for a decarbonising world through the Queensland new-industry development strategy. The $89.7 million Queensland Quantum and Advanced Technologies Strategy and the Queensland Quantum Academy are excellent examples of how we are proactively building systems to advance emerging deep technologies that will transform our future.

We need to leverage our strong foundation to sustain and grow Queensland's science and innovation ecosystem, and significantly increase our competitive advantage. The Future Queensland Science Strategy 2024-2029 will benefit Queensland through:

- contributing to economic recovery and growth
- attracting new industry, talent and investments
- supporting jobs growth, especially in the regions
- attracting and retaining a skilled workforce.

Our science ecosystem is underpinned by our outstanding people—our passionate students, our research teams collaborating across disciplines, our thought leaders pioneering new discoveries and our First Nations peoples' knowledge and values, informed by more than 65,000 years. Our education systems are already training industry ready graduates with the skills needed by our largest employers and new industries. Investors, knowledge brokers, small businesses, start-ups and industry also have a pivotal role to play in Queensland's science success.

We need to streamline and consolidate long-term and targeted investments in people, places of innovation and partnerships, while improving accessibility to and delivery of funding programs. We need stable, scalable, long-term initiatives to support the development of knowledge, technology and industries. This will ensure the best available scientific evidence informs decisions around the challenges facing our state.

This strategy will help Queensland identify and set our science priorities, direct funding to initiatives and infrastructure aligned with those priorities, engage the right stakeholders to find solutions that require coordinated and concerted effort, and foster a science literate community that values science.

Professor Kerrie Wilson
Queensland Chief Scientist

ACKNOWLEDGEMENT OF COUNTRY

The Department of Environment, Science and Innovation acknowledges the First Nations peoples across Queensland. We pay our respect to elders, past and present. We acknowledge the continuous living culture of First Nations Queenslanders—their diverse languages, customs and traditions, knowledges and systems. We acknowledge the deep relationship, connection and responsibility to land, water and sky Country as an integral element of First Nations identity and culture. This Country is sacred. Everything on the land has meaning and all people are one with it. We acknowledge First Nations peoples' sacred connection as central to culture and being. First Nations people speak to Country, listen to Country, sing up Country, dance up Country, understand Country and long for Country. We acknowledge and thank First Nations people for the enduring relationship connecting people, Country and ancestors—an unbreakable bond that safely stewarded and protected the land, waters and sky for thousands of generations.

CONTENTS

BUILDING A THRIVING FUTURE SCIENCE ECOSYSTEM

Queensland's science ecosystem consists of a diversity of actors including those in research, government, industry, First Nations groups and not-for-profits who come together to share knowledge and conduct research and innovation to solve problems. Targeted investment in Queensland has created a rich science ecosystem across diverse fields and emerging technologies, making a significant contribution to the creation of jobs and the growth of the economy.

Science can be described as the rigorous and systematic study of the physical world and its phenomena—applying observation, experimentation and testing to enhance existing bodies of knowledge and make new discoveries. Disciplines are wide ranging across the natural, social, physical and life sciences and, depending on the intent of the research, can have impact contributing to fundamental and foundational sciences, evidence-based policy, applied science and commercial outcomes.

Associate Professor Zahra Gharineiat from the University of Southern Queensland School of Surveying and Built Environment.

QUEENSLAND'S SCIENCE ECOSYSTEM

Context influencing science ecosystem:

- Economy (state and national)
- Global events, geo-political shifts, trade relations

FUNDAMENTAL

Basic research to generate knowledge and advance our scientific understanding.

FOUNDATIONAL

Key elements that enable and facilitate impactful science and research. This includes but is not limited to longitudinal data, infrastructure, precincts, First Nations knowledge, technologies, human and financial capital.

EVIDENCE-BASED POLICY

Science and research enable evidenced-based decision making to inform government policy.

APPLIED

Science and research have a focus on application to address environmental, social and economic challenges.

COMMERCIAL

Translation of science and research for commercial use to drive innovation in business, industry and government. This includes protection for Indigenous Cultural and Intellectual Property and Australian Intellectual Property.

> *We need to leverage our strong foundation to sustain and grow Queensland's science and innovation ecosystem, and significantly increase our competitive advantage.*
>
> *— Professor Kerrie Wilson, Queensland Chief Scientist*

The *Future Queensland Science Strategy 2024–2029* sets out the strengths, opportunities, strategic priority pillars and focus areas, to achieve its vision to generate and translate globally significant science for the prosperity and wellbeing of Queenslanders. It will achieve this through a focus on five pillars to build critical mass in key translational research areas of significance to government and industry where Queensland has existing or emerging international excellence. Importantly, delivery of the strategy aims to be inclusive of diverse groups and recognise Queensland's commitment to the National Agreement on Closing the Gap.

STRATEGY ON A PAGE

VISION

Generate and translate globally significant science for the prosperity and wellbeing of Queenslanders

STRENGTHS

- World class science and research capabilities
- Leading-edge science infrastructure and innovation places
- Strong research engagements with industry
- Strong network of universities, government departments and research institutions involved in domestic and international research collaborations
- A talented cohort of scientists, leaders and students who support and underpin research
- A maturing entrepreneurial ecosystem for the conversion of science for impact

OPPORTUNITIES

- Build on Queensland's scientific excellence and innovation to advance key existing and emerging industries
- Develop and harness our science strengths and capabilities in research to accelerate decarbonisation and grow new industries
- Convert and apply new scientific knowledge through improved adoption and commercialisation
- Develop and retain a skilled, diverse and inclusive workforce
- Attract greater co-investment from a diverse range of sources
- Enhance collaborative efforts to generate high quality and accessible data

PILLAR 1 TALENT

Train, attract and retain the skilled people needed for a vibrant science ecosystem

- Increase the diversity and inclusiveness of the science workforce in Queensland, including First Nations talent
- Attract and retain the best talent by encouraging large-scale research collaborations to support high value jobs
- Recognise and reward outstanding talent and support researcher pathways to industry and entrepreneurship

PILLAR 2 INFRASTRUCTURE

Grow Queensland's science infrastructure and capabilities

- Expand and sustain world-class scientific infrastructure that aligns with Queensland's priorities
- Support strategic use and sharing of research infrastructure
- Advance opportunities for existing and new knowledge driven precincts including regional precincts

PILLAR 3 PARTNERSHIPS

Maintain Queensland's leadership position in science

- Support collaborative projects involving research, industry, government and entrepreneurs
- Increase opportunities for business and industry investment in science
- Leverage precinct capabilities to develop and support collaborations
- Enhance Queensland science's connections to the rest of the Australia and the world
- Partner with First Nations peoples and communities to deliver Indigenous led scientific solutions, embedding, valuing and acknowledging cultural knowledge and its connections to western science

PILLAR 4 TRANSLATION

Support initiatives and attract investments to facilitate translation of science

- Maximise impact by supporting projects having a translational component, including enhancing Queensland's economy and protecting its environment and lifestyle
- Encourage and support the clear link between science, policy and innovative solutions
- Support, grow and amplify partnerships and intellectual property models, which include protections for Indigenous Cultural and Intellectual Property

PILLAR 5 COMMUNITY

Empower community awareness and engagement in science

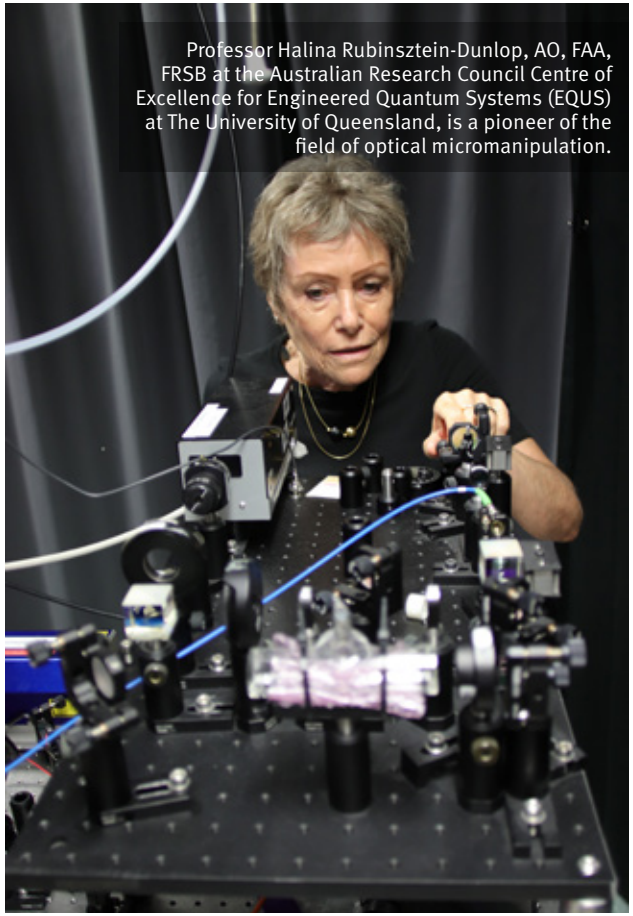
- Increase public awareness and appreciation of science and innovation, including acknowledgement of First Nations cultural knowledge in local communities and its connections to western science
- Promote the importance of science literacy and critical thinking skills
- Grow opportunities for scientists to engage with the community
- Promote STEM careers to increase the pipeline for the jobs of the future

STRATEGY PILLARS

PILLAR 1: TALENT

Train, attract and retain the skilled people needed for a vibrant science ecosystem

A healthy and sustainable science ecosystem relies on a skilled workforce. Queensland's success depends on a pipeline of students and workers in science, technology, engineering and mathematics (STEM) occupations and opportunities in our state to attract and retain outstanding talent. Queensland has a proud history of producing and attracting researchers who anchor significant bodies of work in Queensland, creating jobs and enhancing the national and global reputation of research institutes thereby attracting students to our state. Education and training institutions have a crucial role to play in designing and delivering programs to produce a workforce ready for a future economy.



Professor Halina Rubinsztein-Dunlop, AO, FAA, FRSB at the Australian Research Council Centre of Excellence for Engineered Quantum Systems (EQUS) at The University of Queensland, is a pioneer of the field of optical micromanipulation.

Focus

- Increase the diversity and inclusiveness of the science workforce in Queensland, including First Nations talent.
- Attract and retain the best talent by encouraging large-scale research collaborations to support high value jobs.
- Recognise and reward outstanding talent and support researcher pathways to industry and entrepreneurship.

Case studies

Queensland Health's support for research careers

Propelled by the HEALTHQ32 vision, the Research Strategy 2032 will build upon Queensland Health's research strengths to address complex challenges and empower the health workforce for the next decade. The Research Strategy recognises and builds upon previous investment by Queensland Health in research and innovation and the achievements of Queensland Health clinicians, other health professionals and partners, in growing a research and innovation culture that changes practices and ultimately improves health outcomes for Queenslanders.

The Queensland Advancing Clinical Research Fellowships Program supports Queensland Health clinician researchers to undertake research linked to their practice. The program recognises that clinician researchers (e.g. doctors, nurses and allied health practitioners) are uniquely placed to identify clinical issues which can benefit from further research, lead patient-focused research discoveries and facilitate improved patient care through research translation. By early 2024, the program had supported 42 clinician researchers and provided some $10.6 million in additional research funding.

Advance Queensland Industry Research Projects and Fellowships

Advance Queensland Industry Research Projects support collaboration between Queensland-based researchers and industry to address industry issues, translate research outcomes into commercialisation opportunities, and grow Queensland industries. The Industry Research Fellowships support researchers partnering with industry to complete original research that will have a positive impact on Queensland. The program is focused on establishing and/or maintaining meaningful collaboration between researchers and industry.

Dr Qing Wu, Principal Research Fellow, Centre for Railway Engineering at CQUniversity was awarded $360,000 from the Advance Queensland Industry Research Fellowships program to lead research in freight trains. Dr Wu's project tackles a crucial challenge: reducing the energy consumption of Queensland's railways. Railway operators are major energy users, and this initiative aims to make significant strides towards decarbonisation. By working directly with Aurizon, the largest freight rail operator, Dr Wu's research is grounded in practical applications. Aurizon provides access to working trains, design data, and operational information, ensuring the solutions developed are effective in the real world. The outcomes have great potential to benefit the whole industry, nationally and internationally.

PILLAR 2: INFRASTRUCTURE

Grow Queensland's science infrastructure and capabilities

Queensland's world class science infrastructure and precincts enable us to be at the forefront of scientific discovery. Through a 'Team Queensland' approach where universities, government and industry share infrastructure, we ensure high rates of collaborative use, which aids the translation of knowledge into practical industry and community applications and drives innovation. Investing in existing and new facilities of national significance will support a growing number of Queensland scientists to perform cutting-edge research and translation.

This strategy aims to leverage Australian Government funding, accelerate research development, support the growth of science precincts, and promote the global reputation of Queensland's science capability.

Focus

- Expand and sustain world-class scientific infrastructure that aligns with Queensland's priorities.
- Support strategic use and sharing of research infrastructure.
- Advance opportunities for existing and new knowledge driven precincts, including regional precincts.

Case studies

Research Infrastructure Co-investment Fund

The Research Infrastructure Co-investment Fund (RICF) co-invests with universities, research facilities and industry to support existing or establish new Queensland research facilities of national significance, and advance key research infrastructure initiatives that align with state priorities and global challenges. More than $41 million has been invested over three rounds, resulting in more than $164 million co-investment from the Australian Government, universities and industry. The projects are delivering cutting-edge facilities to support critical areas of scientific exploration such as cancer research and human imaging, environmental studies and cyber infrastructure.

The Queensland node of Microscopy Australia was awarded $2.2 million in RICF funding over four years. Microscopy Australia's instruments and expertise were relied upon throughout the development of the breakthrough vaccine Nanopatch technology, which was developed at the University of Queensland and scaled up by biotech company Vaxxas with a new manufacturing plant at Hamilton. The facility also set the world record for the conversion of solar energy to electricity using what is known as 'quantum dots'.

The Terrestrial Ecosystem Research Network project involving the Queensland University of Technology, James Cook University, Queensland Trust For Nature, Meat and Livestock Australia and other industry partners, received $2 million in funding from RICF. The project is deploying sensors and machine-to-machine data access to meet industry demand for real-time insights on the state's agricultural ecosystem and service provision.

Researchers at the UQ Centre for Advanced Imaging use quantum-enabled Magnetic Resonance Imaging (MRI) for their leading research. The Centre for Advanced Imaging hosts the Queensland node of the National Imaging Facility which is partially funded through the RICF.

Translational Science Hub

The Translational Science Hub is a $280 million partnership involving Sanofi, the Queensland Government, Griffith University and The University of Queensland. The Hub will focus on developing a new generation of mRNA vaccines and a world first chlamydia vaccine, while also nurturing the research ecosystem in Queensland. Linking Queensland's world-class researchers with Sanofi scientists in France and the United States, this partnership places Queensland at the forefront of mRNA technology and vaccine development.

PILLAR 3: PARTNERSHIPS

Maintain Queensland's leadership position in science

A key factor of Queensland's scientific excellence is its strong collaborative approach across sectors and disciplines to solve complex challenges. To optimise benefits from our research excellence, partnerships between research, industry, government, entrepreneurs, the not-for-profit sector and the community need to be built and maintained.

The state's leadership position in science will strengthen research excellence through relationships with key countries, joint funding programs to help grow the global reputation of Queensland's research and development (R&D) sector, facilitating the sharing and development of complementary expertise, promoting Queensland R&D capabilities on the world stage, and leveraging research funding in areas that align with Queensland's priorities.

Queensland has long-standing partnerships with key research organisations in China. A delegation from Zhejiang University Hangzhou Innovation Centre visiting the Chemistry Centre at the Ecosciences Precinct (December 2023).

Focus

- Support collaborative projects involving research, industry, government and entrepreneurs.
- Increase opportunities for business and industry investment in science.
- Leverage precinct capabilities to develop and support collaborations.
- Enhance Queensland science's connections to the rest of the Australia and the world.
- Partner with First Nations peoples and communities to deliver Indigenous led scientific solutions, embedding, valuing and acknowledging cultural knowledge and its connections to western science.

Case studies

Quantum and Advanced Technologies Co-Investment Program (QATCIP)

The QATCIP ($15 million), launched in June 2024, seeks to accelerate the development of Queensland's quantum and advanced technologies ecosystem by attracting external co-investment into relevant science and translation initiatives across quantum as well as advanced technologies such as photonics and compound semiconductors. Funding of between $250,000 and $5 million was available for projects that include strategic partnerships with overseas research and development entities and attracting new organisations to Queensland that bring valuable skills and investment.

German Federal Ministry of Education and Research

The first round of a new research partnership program ($3 million over three years provided by Trade and Investment Queensland) between Germany and Queensland to develop joint projects that improve the bioeconomy of both jurisdictions was launched in mid-2023. The joint program is an initiative under the Joint Declaration of Intent between Queensland and the German Federal Ministry of Education and Research. Areas of interest in round one included developing new value-added products from sustainable biomass, and innovations that support the reduction/reuse of food waste.

Fresh and Secure Trade Alliance

The Fresh and Secure Trade Alliance (FASTA) is a $130 million collaborative research initiative designed to protect and grow Australia's horticultural exports. The alliance is a new eight-year partnership between the Queensland Government, five other state and territory governments, three leading universities and Hort Innovation. FASTA combines national research expertise in technical market access and insect pest management research, with a focus on addressing evolving trade challenges. Smart technology research supports trade efforts through new tools to rapidly identify and detect pests, track pest dispersion, and demonstrate clean produce is moving through the supply chain. FASTA will also provide Australian fruit and vegetable growers with new tools to manage horticulture pests in a cleaner and greener way that reduces reliance on chemical pesticides.

Queensland horticultural exports have grown to 16% of total Australian exports (2023) through access to new markets for key Queensland products including mango and avocado, and future growth for Queensland Australia will be supported through FASTA. Previous Department of Agriculture and Fisheries market access research has been independently assessed as providing a benefit-cost ratio of 7.1:1.

PILLAR 4: TRANSLATION

Support initiatives and attract investments to facilitate translation of science

The application and commercialisation of scientific research is improving Queensland's competitiveness in the global science sector. Translation of science includes non-commercial applications. For example, initiatives that address market failure, facilitate community good and improved adoption and practice change. Commercialisation units within universities and research institutions play an important role in delivering science translation outcomes. Industry collaboration and the creation of start-ups and spinouts through commercialisation units provide jobs for scientists outside of traditional academic roles. Universities are increasingly supporting joint research projects with industry partners through improved mechanisms for engagement and sharing of intellectual property.

Opportunities to partner with First Nations peoples, researchers, communities and institutes to support Indigenous led science solutions, including opportunities to commercialise traditional scientific knowledge and practices while protecting Indigenous Cultural and Intellectual Property, will build the scientific evidence base.

Initiatives under this pillar will continue to build entrepreneurial culture and capability, equipping researchers with the practical skills needed to bring new ideas to market and help industry access expertise. These initiatives will assist Queensland researchers to accelerate their research and improve access to investment and commercialisation opportunities in priority areas for Queensland.

Focus

- Maximise impact by supporting projects that have a translational component, including enhancing Queensland's economy and protecting its environment and lifestyle.
- Encourage and support the clear link between science, policy and innovative solutions.
- Support, grow and amplify partnerships and intellectual property models, which include protections for Indigenous Cultural and Intellectual Property.

Case studies

Decarbonisation Hub

The Queensland Decarbonisation Hub is a partnership between the Queensland Government and seven leading Queensland universities: The University of Queensland, Central Queensland University, Griffith University, James Cook University, Queensland University of Technology, University of Southern Queensland and Sunshine Coast University. The Hub's vision is for Queensland to become a leading decarbonised economy in which communities, industry and the environment thrive. Its purpose is to enable knowledge exchange and build capability and capacity in the state.

The Hub received $3 million from the Queensland Government as part of its commitment to take strong climate action through the Queensland Climate Action Plan. The Hub's goal is to provide a central forum that brings together Queensland's industrial, research and policy strengths into a coordinated network to tackle the challenges and seize the opportunities of decarbonisation, while supporting the Queensland Government to lead a state-wide transition.

The focus is on translation of the independent and timely research and evidence from Queensland's universities to help industries decarbonise, work with communities to identify acceptable transition pathways and sectoral decarbonisation plans, and to inform social and public policy and programs and technology solutions aimed at decarbonising the Queensland economy. The Hub also informs Queensland's research agenda, supporting alignment to industry, community and government needs.

> *"We need stable, scalable, long-term initiatives to support the development of critical technology and industries. This will ensure the best available scientific evidence informs decisions around the challenges facing our state."*
>
> *— Professor Kerrie Wilson, Queensland Chief Scientist*

Regional University Industry Collaboration Program

To accelerate commercialisation in regional areas, the Queensland Government's $7 million Regional University Industry Collaboration Program was announced in June 2024 to address the limited access regional universities have to investors and networks, compared with universities based in major centres.

The program, delivered by the CSIRO SME Connect team, is available to James Cook University, Central Queensland University, University of the Sunshine Coast and the University of Southern Queensland.

Over three years, a team of regional research facilitators will employ three complementary program components to set up and progress research collaborations within regions, leading to a sustainable pathway for future university-industry collaborations. This program includes masterclasses to improve knowledge and understanding of research commercialisation, regional research/industry events to showcase and improve visibility of capabilities to potential collaborators, and collaboration vouchers to fund research activities.

PILLAR 5: COMMUNITY

Empower community awareness and engagement in science

Every Queenslander has a role to play in science. Community participation and collaboration in scientific research will increase scientific knowledge. Furthermore, the involvement of all groups will encourage broad participation in public discussions about policies and decisions that impact the community.

Science, technology, engineering and maths (STEM) education activities are designed to engage students, spark their interest in science and subsequently encourage higher uptake of STEM subjects in school, leading to further tertiary study to instill skills valuable for Queensland's employers and research institutes.

Reef Ecologic received an Engaging Science Grant to run a mentor program for Aboriginal and Torres Strait Islanders in Marine Science program graduates.
Credit: Reef Ecologic.

Butchulla Land and Sea Rangers working with Department of Environment, Science and Innovation staff on K'gari.
Credit: Alana Hazel © Butchulla Land and Sea Rangers

Focus

- Increase public awareness and appreciation of science and innovation, including acknowledgement of First Nations cultural knowledge in local communities and its connections to western science.
- Promote the importance of science literacy and critical thinking skills.
- Grow opportunities for scientists to engage with the community.
- Promote STEM careers to increase the pipeline for the jobs of the future.

Case studies

Queensland Women in STEM Prize

The Queensland Women in STEM Prize celebrates the remarkable achievements of women across Queensland who have demonstrated exceptional leadership, innovation and impact in the fields of science, technology, engineering, and mathematics (STEM). Through the power of recognition and inspiration, the prize aims to ignite passion and drive among women and girls, encouraging their active participation and leadership in STEM disciplines.

By shining a spotlight on their achievements, the prize not only celebrates their contributions but also promotes gender equity, diversity, and inclusion in STEM, driving positive change and transformation within Queensland's scientific and technological landscape.

Dr Sue-Ann Watson, Senior Lecturer at James Cook University and Senior Scientist and Curator of Marine Invertebrates at Queensland Museum Tropics received the 2023 Judges' Award for her pivotal role in advancing research on Queensland's marine life during environmental changes.

Dr Watson's research helps to both predict the impacts of environmental change on marine ecosystems and inform the effective protection and management of marine resources to help safeguard a healthy and resilient ocean environment.

World Science Festival Brisbane

Each March in Brisbane, Queensland Museum brings together great minds in science and the arts to present a festival of science education and engagement for the whole community. Featuring a fascinating program of hands-on science experiences, exhibitions, thought-provoking discussions and events, World Science Festival Brisbane welcomes audiences of all ages to discover the wonders of scientific discovery. The festival is the only event of its kind outside of New York, where it was first founded by renowned Physicist Professor Brian Greene and Emmy award-winning journalist Tracy Day. Since its Australian launch in 2016, World Science Festival Brisbane has attracted more than 1.85 million attendances.

The festival is delivered to regional Queensland throughout the year under the banner of World Science Festival Queensland, delighting audiences with the wonders of science in towns including Toowoomba, Chinchilla, Ipswich, Townsville and Gladstone. As well as dedicated STEM sessions to inspire school students, the festival also explores a range of contemporary topics for audiences of all ages such as sustainable food production and agriculture, habitat conservation, artificial intelligence and space exploration.

DELIVERING THE STRATEGY

Science Advisory Council Queensland

To inform the delivery of the strategy, the Science Advisory Council Queensland, chaired by the Queensland Chief Scientist, will be established.

The Council will:

- provide high level advice on policy, priorities, initiatives and partnerships to inform the implementation of the strategy
- provide high-level advice on design principles, performance and monitoring frameworks for initiatives relevant to the strategy
- advise on national and international opportunities for scientific research, funding, development and translation opportunities to advance the quality of science in Queensland
- energise engagements across the ecosystem to showcase and communicate Queensland's unique capacities and capabilities to inspire, connect people, and build Queensland's domestic and international reputation as the place for scientific excellence
- include representation from relevant research organisations, industry, peak bodies, advocacy organisations and communities, with expertise spanning relevant science disciplines and reflecting diversity and inclusiveness.

Monitoring and evaluation

Queensland Government funding of science initiatives is a significant public investment which aims to generate impact in the short and long term. A high-level monitoring and evaluation framework will be developed to support agencies with:

- demonstrating program outcomes contributing to the strategy pillars, including improvements in data collection to capture diversity and inclusion
- embedding an outcomes lens in program design to demonstrate tangible and measurable benefits delivered by investments on Queensland Government priorities
- improving evidence of investment impact to leverage and attract funding for science in Queensland
- improving insights about the state's performance in relation to other jurisdictions and the impact of investment in terms of economic and social outcomes.

"This strategy will help Queensland identify and set our science priorities, direct funding to initiatives and infrastructure aligned with those priorities, engage the right stakeholders to find solutions that require coordinated and concerted effort, and foster a science literate community that values science."

—Professor Kerrie Wilson, Queensland Chief Scientist

Design principles to inform delivery of current initiatives and future investments in science and research

The strategy will be implemented with five principles to guide the whole-of-government and 'Team Queensland' approach to enable a coordinated and collaborative approach between ecosystem actors.

FOSTERING COLLABORATION

Meaningful collaboration, including with government, other universities and research institutions (domestic and overseas) and industry, will be encouraged to foster impactful science outcomes. Particular attention will be given to incentivising and attracting Australian Government funding, private sector investments to Queensland, and growing Queensland-based enterprises.

ACCELERATING REGIONAL DEVELOPMENT

Catalysing development in the regions, including knowledge intensive industries and skills, will be prioritised. Building leadership skills and capabilities will be a focus and regional universities will be encouraged and supported to lead projects and initiatives.

GROWING AND NURTURING PRECINCTS

Government, industry, and the community will work together to grow and nurture Queensland's precincts, including in regional areas. Such locations can act as engines of economic growth and job creation, where research and business come together to discover innovative solutions to economic, environmental, and social challenges.

BEST POSSIBLE USE OF QUEENSLAND RESEARCH INFRASTRUCTURE

Consistent with the approach taken by the Research Infrastructure Queensland Alliance to coordinate major research infrastructure bids, infrastructure sharing and growth opportunities should build on the comprehensive state-wide research infrastructure available in universities and across State Government agencies with the goal to maximise the effective use of all Queensland's research infrastructure. Fostering this 'Team Queensland' approach will enhance the impact of research infrastructure and encourage a collaborative approach to future investments.

PRIORITISATION AND SUPPORT

Priority areas for investment will seek to deliver secure jobs in traditional and emerging industries, invest in growing capability and skills in key knowledge intensive sectors, protect the environment and our natural resources, and drive sustainable economic prosperity for Queensland. To achieve alignment, two-way sharing between government and the research sector is critical for achieving priorities, activating opportunities to further build and nurture the Queensland science ecosystem.

The Queensland Government will facilitate a streamlined approach to access the support mechanisms and expertise available across the government. The 'Team Queensland' and streamlined approach will be further enabled by the Queensland Science Collaboration Gateway, which will seek to connect proponents of major research proposals with the most appropriate staff within interested Queensland Government agencies.

APPENDIX 1 QUEENSLAND GOVERNMENT INITIATIVES AS AT JUNE 2024

Lead agencies and key initiatives	Strategic Priority Pillars				
	1 Talent Train, attract and retain the skilled people needed for a vibrant science ecosystem	2 Infrastructure Grow Queensland's science infrastructure and capabilities	3 Partnerships Maintain Queensland's leadership position in science	4 Translation Support initiatives and attract investments to facilitate translation of science	5 Community Empower community awareness and engagement in science
Department of Agriculture and Fisheries					
Advancing plant and animal genetics					
Agricultural practice change for reef water quality					
Carbon outreach extension					
Drought and Climate Adaptation Program					
Enhanced management of weeds, pest animals and diseases					
Farm Business Resilience Program					
Fast and Secure Trade Alliance					
Fisheries and aquaculture research and facilities					
Food value adding and supply chain management					
Forestry and timber production research and development					
Production systems innovation					
Queensland Aquaculture Strategy (in development)					
Queensland AgTech Roadmap 2023–2028					
Queensland Biosecurity Strategy 2024–2029					
Queensland Invasive Plants and Animals Strategy 2019–2024					
Queensland Low Emissions Agriculture Roadmap 2022–2032					
Queensland Sustainable Fisheries Strategy					
Supporting First Nations Enterprise Development					
Supporting sustainable agribusiness enterprise and system development					
Zero Net Emissions Agriculture Cooperative Research Centre					

Strategic Priority Pillars

Lead agencies and key initiatives	1 Talent Train, attract and retain the skilled people needed for a vibrant science ecosystem	2 Infrastructure Grow Queensland's science infrastructure and capabilities	3 Partnerships Maintain Queensland's leadership position in science	4 Translation Support initiatives and attract investments to facilitate translation of science	5 Community Empower community awareness and engagement in science
Department of Education					
Solid Pathways—STEM					
Queensland Virtual STEM Academy (QVSA)					
Peter Doherty Awards					
Premier's Coding Challenge					
STEM Girl Power Program					
Regional School Industry Partnerships program					
Australian Curriculum Implementation Support					
Queensland Quantum Academy supporting resources					
Department of Employment, Small Business and Training					
Equipping TAFE for Our Future Eagle Farm Robotics and Advanced Manufacturing Centre project					
Gateway to Industry Schools Program					
Good people. Good jobs. Queensland Workforce Strategy 2022–2032					
Quantum Workforce Roadmap (in development)					
Quantum Jobs Guide (in development)					
TAFE Technology Fund projects					

Lead agencies and key initiatives	Strategic Priority Pillars 1 Talent Train, attract and retain the skilled people needed for a vibrant science ecosystem	2 Infrastructure Grow Queensland's science infrastructure and capabilities	3 Partnerships Maintain Queensland's leadership position in science	4 Translation Support initiatives and attract investments to facilitate translation of science	5 Community Empower community awareness and engagement in science
Department of Energy and Climate					
Queensland Future Climate Science Program					
Emissions Analysis and Modelling					
Department of Environment, Science and Innovation (DESI)					
Advance Queensland Emerging Technologies Acceleration					
Advance Queensland Industry—Research Collaborations (Fellowships and Projects)					
Deadly Innovation Strategy					
Engaging Queenslanders in Science					
Industry Research Foundations					
International Science Engagements (international partnerships)					
Queensland Circular Economy (Industry-Research) program					
Queensland Innovation Places and Precincts Fund					
Queensland Quantum and Advanced Technologies Strategy and Queensland Quantum Academy					
Queensland Defence Science Alliance					
Research Infrastructure Co-investment Fund					
Science into Industry Initiative					

Lead agencies and key initiatives	Strategic Priority Pillars				
	1 Talent Train, attract and retain the skilled people needed for a vibrant science ecosystem	**2 Infrastructure** Grow Queensland's science infrastructure and capabilities	**3 Partnerships** Maintain Queensland's leadership position in science	**4 Translation** Support initiatives and attract investments to facilitate translation of science	**5 Community** Empower community awareness and engagement in science
Department of Housing, Local Government, Planning and Public Works					
Indigenous Data Sovereignty (Our Place: A First Nations Housing and Homelessness Roadmap to 2031)					
Department of Regional Development, Manufacturing and Water					
2020–2030 Water Planning Science Plan					
Advanced Robotics in Manufacturing Hub					
Queensland Water Strategy					
Department of Resources					
Queensland Critical Minerals Strategy					
Queensland Resources Industry Development Plan					
Vegetation Management Framework					

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Department of State Development and Infrastructure					
AIMS ReefWorks tropical marine technology test range					
Batteries Queensland					
Queensland Earth Observation Hub					
Queensland University of Technology's Phase 2 upgrade of Mackay renewable biocommodities pilot plant					
QUEST Hub					
Sanofi Translational Science Hub					
SEQ City Deals—Innovation Economy Fund					
The Australian Battery Industrialisation Centre					
Translational Research Institute's TM@TRI					
University of the Sunshine Coast's Clinical Trials Centre					
University of Queensland's Queensland Emory Vaccine Centre (QEVC)					
Economic Development Queensland					
Lumina life sciences hub, Gold Coast Health and Knowledge Precinct					
Cohort Innovation Space, Lumina, Gold Coast Health and Knowledge Precinct					
Vaxxas research, development and manufacturing facility, Northshore Brisbane					

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Queensland Fire Department					
Australian Fire Danger Rating System Queensland Bushfire Science Research Program					
Queensland Health					
Australian Teletrial Program					
HealthQ32's First Nation's First Strategy					
HEALTHQ32: Research Strategy 2032					
Indigenous Data Sovereignty					
Industrial Transformation Training Centre (ITTC) for Radiation Innovation partnership					
Organic Chemistry laboratory joint research agreement with HyTECH and industry partnership with UQ					
Public Health Intelligence Digital Plan 2024–2034					
Public and Environmental Health Reference Laboratories					
Queensland Cancer Strategy					
Queensland Health Clinical Research Fellowships					
Queensland is committed to a national One Stop Shop for research approvals					
Queensland Alliance for Environmental Health Sciences					
Queensland Women's Strategy 2022–27					
WHO Research Collaborating Centre for Leptospirosis a partnership with international laboratories					

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