

Science and Innovation Action Plan

Turning great ideas into great opportunities

October 2013



www.qld.gov.au/science



www.facebook.com/qldscience



www.twitter.com/qldscience

Science and Innovation Action Plan

Front and back cover: The Nanopatch, en masse. Visit www.vaxxas.com/nanopatch-technology or www.aibn.uq.edu.au/mark-kendall.

Copyright Australian Institute for Bioengineering & Nanotechnology, The University of Queensland

Published by the State of Queensland (Department of Science, Information Technology, Innovation and the Arts) October 2013.

This document is licensed under a Creative Commons Attribution 3.0 Australia licence. To view a copy of this licence, visit creativecommons.org/licenses/by/3.0/au.

© State of Queensland (Department of Science, Information Technology, Innovation and the Arts) 2013.

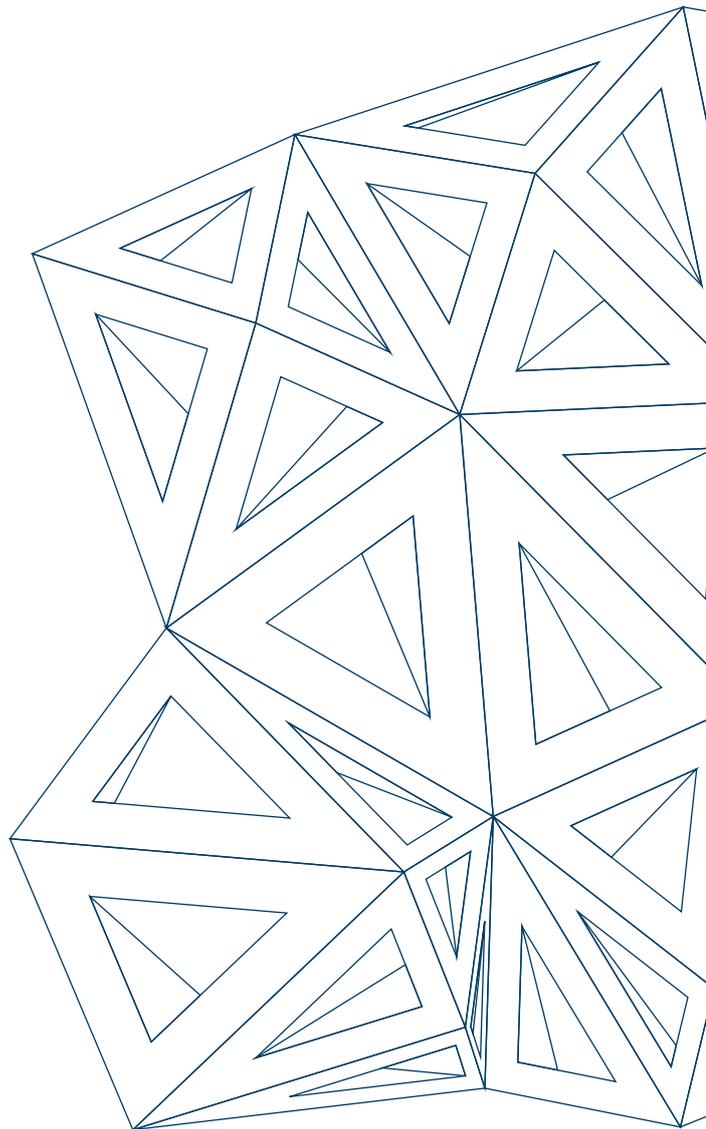
You are free to copy, communicate and adapt the work, as long as you attribute the State of Queensland (Department of Science, Information Technology, Innovation and the Arts).

Email us at qldscience@qld.gov.au

An electronic version of this document is available at www.qld.gov.au/dsitia.

Table of contents

Minister’s message	2
Queensland’s challenges and opportunities	4
Our priorities, leadership and investment principles	8
The Action Plan	11
Maintain momentum	12
Collaborate and share knowledge	17
Help businesses grow	20
Deliver innovative government	24
How will the impact and success of the Action Plan be measured?	28



Minister's message



The Newman Government is using science, research and innovation to promote economic growth and opportunity in Queensland.

The importance of science and innovation for our state's future is undeniable. It allows us to build on the strong foundations we have in the four pillars of agriculture, construction, resources and tourism.

Our foundations are complemented by our growing knowledge-intensive industries including aviation, aerospace, biofuels, defence, life sciences, ICT and health.

We need to maintain the momentum that has been built up over many years. Queensland houses a strong base of research infrastructure and world class institutions. We are attracting some of the best and the brightest researchers in the world.

Our plan is to build our collaborative efforts, foster creativity and better share knowledge to be competitive and maximise the outcomes and impact of our investments.

We will help our businesses to grow and create conditions where businesses can innovate and use it to their competitive advantage. We will support our start-ups and work to clear the roadblocks for businesses to get on with the job.

Another key focus is lifting the productivity of the public sector as identified by the Commission of Audit. Increasing the levels of innovation in the public sector is one of the keys to driving productivity growth in this state.

It's for all of these reasons we need the *Science and Innovation Action Plan* to drive economic success and enable a creative, connected and clever Queensland.

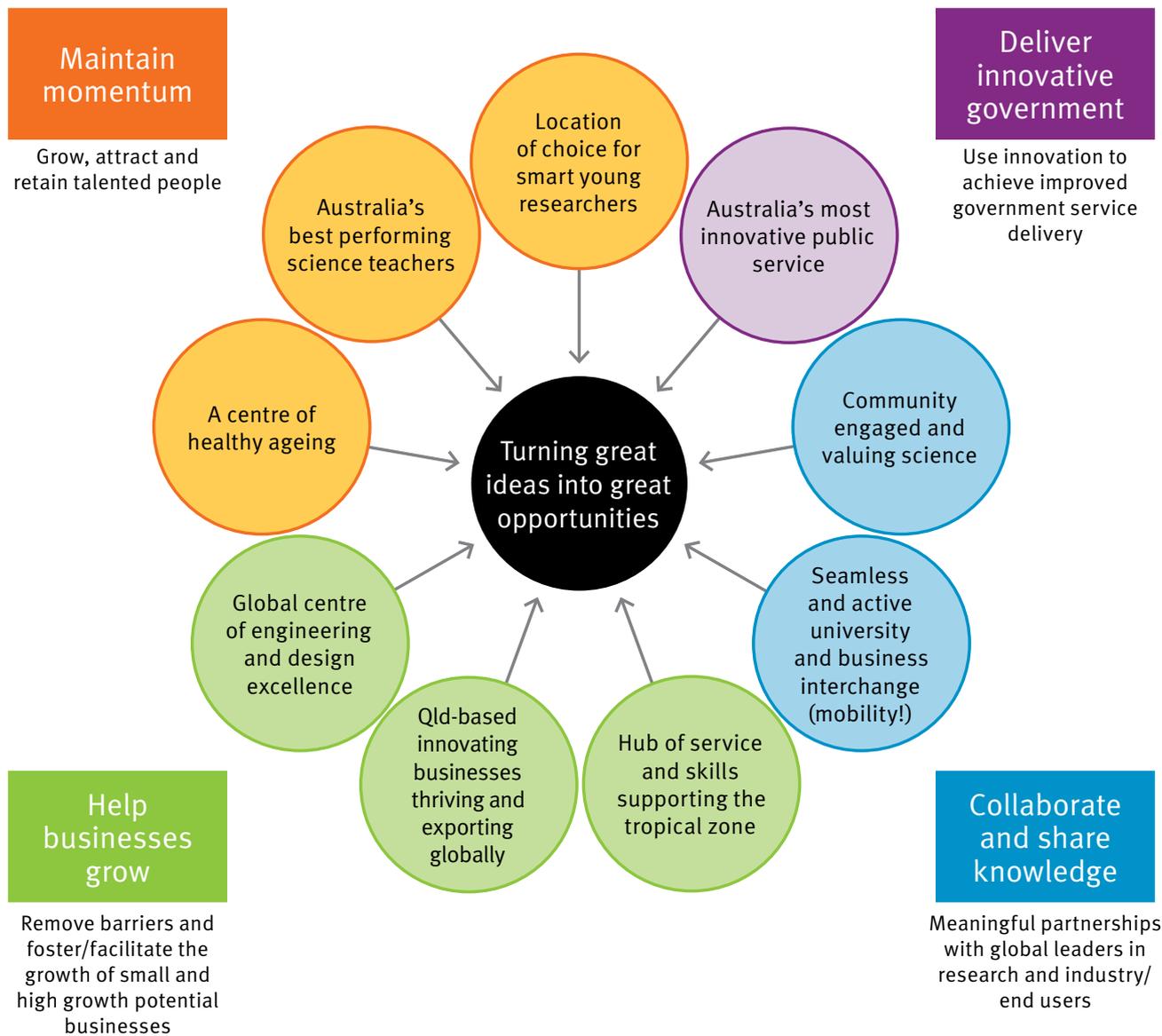
The vision of the Newman Government is to use applied science, technology and innovation to turn great ideas into great opportunities which will see our state transformed into a world leading centre of creativity, productivity and knowledge.

The Honourable Ian Walker MP

Minister for Science, Information Technology, Innovation and the Arts

Science and Innovation Action Plan

Vision, goals and key action areas



Queensland's challenges and opportunities

Globally, governments are confronted with significant immediate and future challenges and opportunities including food and resource supply, ecological conservation, economic shift, ageing populations, virtual communication and community relationships. Locally, we face the challenges of building our economic relationships with Asia and general economic stability, protecting our natural resources and biodiversity, minimising the tyranny of distance and accommodating our ageing population.

Queensland's long run of economic growth has been underpinned by our four pillar industries of agriculture, construction, resources and tourism. While these pillars form the backbone of the state's economy, there are many other competitive and innovative sectors that are critical to the state's future growth and are contributors to the state's strong economy.

Our economy is reinforced by world class research infrastructure and a highly skilled workforce. Queensland is well positioned to innovate into the future with the state's population estimated to double to approximately 9.1 million by 2056, which means more talent and skills for the state. We also have the lowest rate of payroll tax in Australia making it easy to start a business in Queensland – ensuring the state will continue to be a hub for investment and innovation.

Further information on Queensland's economic strengths and opportunities can be found at: <http://www.dsdp.qld.gov.au/resources/brochure/invest-qld-opportunities.pdf>

The government's action framework for supporting a stronger Queensland economy can be found at: <http://www.edq.qld.gov.au/resources/policy/governing-for-growth-economic-framework-statement.pdf>

Science and innovation enable us to capitalise on great opportunities and address grand challenges. Science and research is a rich source of new ideas and together with technology and innovation become key enablers of other government strategies and aid in problem solving. There are clear links between innovation and productivity. The Organisation for Economic Co-operation and Development has estimated that innovation accounts for at least 60 per cent of Australia's productivity growth over the longer term.

A strong science and research sector is an essential platform for growing a knowledge economy based on new ideas and is critical to support evidence-based decision making by government. To remain competitive, businesses need to drive innovation to create a competitive edge.

The government is committed to rebuilding the state's practical and applied scientific and technological capability. It has already taken proactive steps by putting the Queensland Chief Scientist properly in charge of science policy and making significant investment into regional Queensland through its support for the construction of the Australian Institute of Tropical Health and Medicine.

FAST FACT

In 2011–12, more than 245,000 Queenslanders were directly employed in science, technology, engineering or mathematics-related occupations. This represents approximately 10.5 per cent of the total Queensland workforce – up from 8.5 per cent in 2001–02.



This *Science and Innovation Action Plan* outlines the contribution science, technology and innovation will make to:

- capitalise on our comparative and competitive advantages and progress the four pillars of the Queensland economy
- maintain momentum by building on opportunities provided by significant new research infrastructure
- stimulate economic growth and diversify economic opportunities
- reduce unemployment and create sustainable jobs through improved productivity
- accelerate growth of a knowledge-intensive economy where businesses drive innovation as their competitive edge
- maintain and grow Queensland's science, technology, engineering and mathematics (STEM) and entrepreneurial skills base
- leverage from past investments in science and innovation capability by focusing on translation and impact
- improve resilience and preparedness for emerging economic, social and environmental issues
- revitalise delivery and coordination of government services.

FAST FACT

In 2011, Queensland was home to 252 life sciences companies and 49 life sciences research organisations.

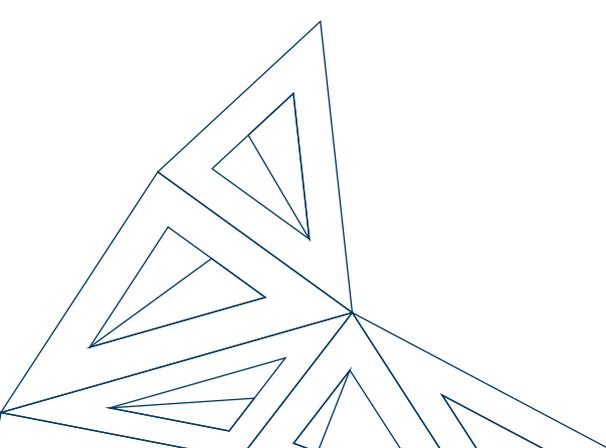
Opportunities and risks for Queensland

Government policy is informed by the identification of five signposts for Queensland's future or areas where future trends, risks and opportunities converge. These signposts will help to inform current decisions affecting the future of the state:

- Accelerating Asia – capitalising on emerging markets and Queensland strengths including export markets, foreign direct investment and tourism.
- Natural advantage – protecting and using natural resources and biodiversity to Queensland's advantage including mineral resources, agriculture, energy, tourism and tropical innovation.
- Hidden treasure – ageing, education and life-long learning for the 21st century including labour force participation, educational attainment, exporting education and growing knowledge-intensive services.
- Room to move – clever infrastructure and planning for urban, regional and rural connection. Challenges faced by Queensland include growing population, urbanisation, population density and mobility and infrastructure.
- Diligent diversification – exploring new, knowledge-intensive industries to sustain and diversify Queensland's prosperity including in infrastructure and resources services, urban services (design, planning, construction, engineering and architecture), environmental services, and ICT services.

FAST FACT

Together, the sectors of Queensland's four-pillar economy accounted for nearly half the research and development spend of Queensland businesses in 2010–11.



Identifying our current position

The Queensland Government is examining the state's position in science and research through:

- The Health of Queensland Science report which gives a snapshot of the science sector in Queensland www.chiefscientist.qld.gov.au/publications.aspx
- a program of audits of science capability within government
- an audit and strategic analysis of the science investment and funding programs over the past 10 years.

These activities are contributing to our understanding of the impact of past actions and have provided indications of where the focus should be for the future.

FAST FACT

Queensland's share of the global population is 0.06 per cent but our share of global research and development is approximately 0.18 per cent. In 2012, Queensland-based authors contributed to 0.6 per cent of global scientific publication output.

Agricultural research and development

The Queensland Government is working to double Queensland's agricultural production by 2040 through research, development and extension. Innovative methods of increasing productivity are being researched and explored with the intent of developing this important pillar of our economy. One such initiative is the Queensland University of Technology's (QUT) farm robotics.

Farm robotics

The Queensland Government is providing \$3 million over three years to QUT for research to develop autonomous farm robotics, with the aim to develop light weight farming machinery capable of autonomous crop planting, maintenance and harvesting. This technology is intended to increase Queensland's agricultural productivity and reduce farm input costs – addressing a critical long-term challenge around food security.



Prototype of QUT's light weight, autonomous farming vehicle.

Innovation clinics explore new opportunities

Sorghum is a major crop well suited to growing in Queensland, has good health attributes and is consumed by 500 million people in 30 countries. Yet in Australia sorghum is still almost exclusively used as stock feed. A recent innovation clinic explored how locally-grown sorghum could also be used as an ingredient in the food industry.

The innovation clinic successfully stimulated new discussions and networking between stakeholders while showcasing new and innovative food industry products, and exploring potential new markets and collaboration opportunities. Industry opportunities were identified, connections were made across a diverse group of stakeholders, including the research sector, and a commitment to action was achieved.



Sorghum: Photo courtesy of the Department of Agriculture, Fisheries and Forestry.

Our priorities, leadership and investment principles

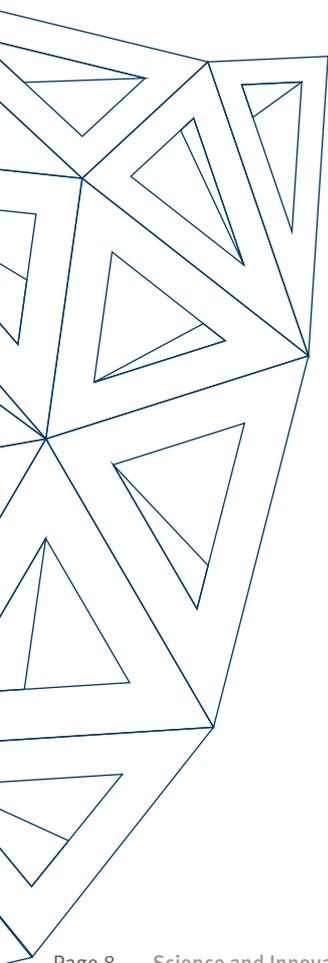
Our priorities

To ensure any future investments are well aligned with Queensland Government priorities and provide value for money, the Queensland Chief Scientist has reviewed Queensland's science and research priorities to ensure they are focused on well-defined areas and reflect identified needs.

These priorities provide the focus of activity that the Queensland Government views as important, developed through consultation across government, with the university and research sector, and with industry. However, recognising fiscal constraints it will obviously not be possible for government to provide additional funding for all these areas. Thus alignment of an activity or project within the scope of a priority does not assume or imply that the activity or project might obtain funding. Choices by government will have to be made in the near term, informed by the investment principles and through independent advice to the Minister from the Science and Innovation Advisory Council.

Queensland science and research priorities

- Developing and delivering enhanced production technologies, tools and practices to help grow productivity, reduce waste and add value to our four pillar sectors: resources (including energy and mining), construction, tourism and agriculture (including food).
- Remain internationally competitive by attracting and retaining science and research talent. This will be done through early-career researcher support programs in priority areas and by encouraging research-focussed mobility and effective translation between industry, academia and government.
- Protecting our biodiversity and heritage: marine and terrestrial.
- Natural advantage with clean(er) – and renewable – energy technologies development (e.g. gas, solar and biofuels).
- Ensuring the sustainability of our physical and especially our digital infrastructure critical for research and – correspondingly – strategically leveraging national programs (including making use of 'big data').
- Building resilience and managing climate risk, through the design and development of construction technologies for extreme weather event resistance (floods, cyclones, droughts), particularly in tropical environments.
- Early detection, treatment and (ultimately) prevention of age-related and Queensland dominant diseases (e.g. skin, tropical).
- Improving health data management and services delivery (including telemedicine).
- Ensuring sustainable water use and delivering quality/water security in a variable climate and in a resources-intensive economy.
- Digitally-enabled technologies, e.g. the development and application of advanced modelling, visualisation, sensing and simulation technologies, tools and practices, including robotics.



Taking leadership

A Science and Innovation Advisory Council (Advisory Council) will be created and chaired by the Queensland Chief Scientist. The Advisory Council will provide independent guidance, investment advice and review progress against priorities. As an Advisory Council, comprising a cross-section of members experienced in a range of sectors linked to science and innovation, the group will be a valuable resource of independent advice to the Queensland Government.

The specific roles of the Advisory Council will be to:

- identify and propose appropriate recommendations on emerging trends and issues that could potentially impact on Queensland's science and innovation system
- provide advice on mechanisms for improving research and development (R&D) coordination, planning and innovation across sectors involving government agencies, universities and industry including international collaborations
- provide advice to the Minister for Science, Information Technology, Innovation and the Arts on future science and innovation investments
- keep the government's science and research priorities under review and make recommendations to the Minister for Science, Information Technology, Innovation and the Arts on future priorities and progress against them.

The Advisory Council will consist of up to 10 members selected for their expertise and knowledge in the science and innovation fields. This will bring together a diverse range of experiences which can provide broad-based expert and independent advice.

Making investments

The Queensland Government must also make hard decisions about what it spends its limited resources on as we recognise the need to be fiscally responsible. Funding should be highly targeted to maximise the benefits to Queensland. A refocusing of investment in science and innovation in the state will ensure Queensland businesses and universities not only remain competitive, but expand their global reach to promote Queensland as the place of choice for excellence in science.

To help inform government decisions about what it will fund in the future, the government has developed the *Science and Innovation Investment Framework* and is investing in the Accelerate Queensland Science and Innovation Program. Key to the Framework is a series of investment principles which the Advisory Council will consider when making recommendations to the Minister about what external funding investments should be made. The investment principles are:

- **Target government priorities:** Target government investment in programs and initiatives to support government priorities.
- **Balanced portfolio:** Balance government investment to support a diversity of capability from different scientific disciplines, geographic regions, universities, industry, independent research organisations and government agencies.
- **Deliver value for money:** Deliver a clear return on government investment, demonstrated through economic, social or environmental outcomes. Those that are successful in receiving funding will partner and co-invest with government, match government investment with funding from other sources and generate in-kind support from other partners.

- **Science and research investment decision rules (The R.E.D.S):** To support better assessment and targeted investment in science and research, the following rules will be considered in making decisions:
 - **Real future impact:** will the proposed science and research investment increase tangible positive net benefit/impact for the state?
 - **External commitment:** are the necessary collaborative research partners engaged (locally and internationally)? And in seeking much better translation, are the end users of the research engaged, with appropriate skin in the game?
 - **Distinctive angle:** in this arena is it clear what is in it for Queensland and/or why are we doing it here?
 - **Scaling towards critical mass:** do we have, or are we able to, assemble the necessary critical mass, collaboratively and of competitive excellence, to make a real and effective contribution? Both, to the R&D, but also the absorptive capacity, e.g. in industry, and do we have a 'Team Queensland' approach in place?

Australian Institute of Tropical Health and Medicine

Queensland is acting decisively to deal with existing and newly emerging infectious diseases such as Dengue Fever and Tuberculosis, before they become established public health emergencies.

The Queensland Government has committed \$42 million towards establishing the Australian Institute of Tropical Health and Medicine with James Cook University in Townsville, Cairns and the Torres Strait. The Institute will focus on strengthening Queensland's tropical health defences, biosecurity, training health workers, building an integrated health security network, protecting Queenslanders from infectious disease transmission and undertaking research into infectious diseases.



Photo courtesy of James Cook University.

The Action Plan

The Vision

The Queensland Government’s vision is to use applied science, technology and innovation in ‘turning great ideas into great opportunities’.

In order to meet this vision, the Queensland Government has a series of ambitious goals. There is no single goal that can anchor the breadth and diversity of our scientific and innovation endeavours. As such, the government has set a series of broad ranging goals which, collectively, will help us achieve our vision.

The Goals

To realise these goals, the Queensland Government has identified a suite of departmental actions, which are outlined in this plan under four key action areas:

- maintain momentum
- collaborate and share knowledge
- help businesses grow
- deliver innovative government.

Action Plan and key action areas

Each action has been designed to deliver specific benefits for our customers – whether they are individual citizens, communities, organisations or internal to government customers.



Action area: **Maintain momentum**

Queensland has invested significantly to construct world-class research facilities, develop our science and research capability, support cutting edge collaborative research projects, and attract and retain skilled researchers. We have begun to support knowledge-intensive industries to diversify the state's economic base and drive innovation, as well as support government decision-making with high quality science.

To maintain this momentum, the Queensland Government will continue to focus on investing in skills and research to leverage our past investments and our scientific excellence in priority areas to deliver outcomes for Queensland. Maintaining momentum will support Queensland's goals to:

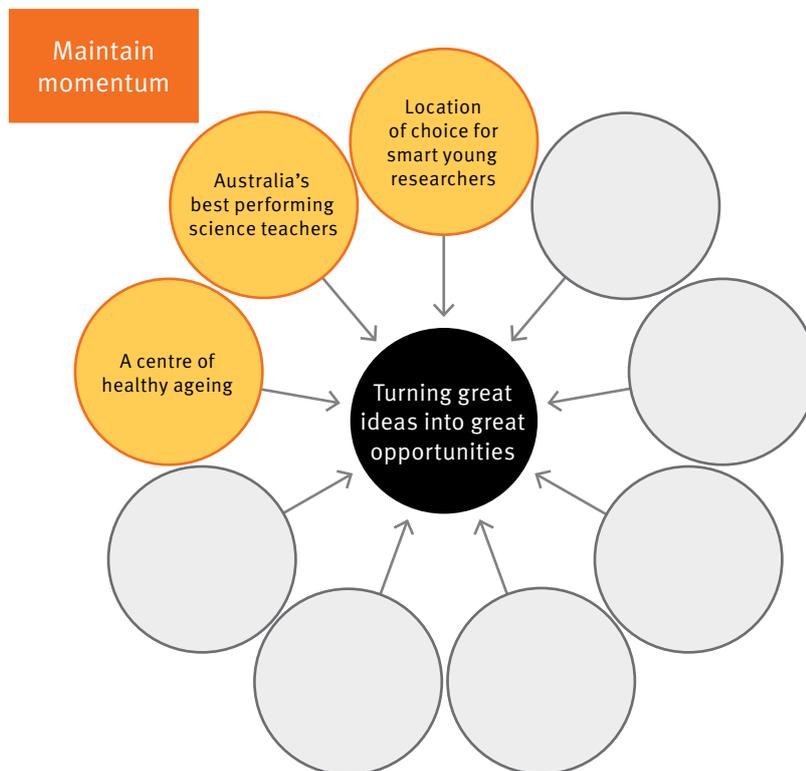
- be the location of choice for smart young researchers
- have Australia's best performing science teachers
- be a centre of healthy ageing with investment in health research.

To work towards these goals, the Queensland Government will support actions in the following three areas:

- targeted early and mid-career fellowships and scholarships
- focus investment in accordance with government and science and research priorities, such as resources, construction, tourism and agriculture
- increase STEM participation in schools and improve teaching skills.

Our new investments will be directed at nurturing the skills pipeline by providing targeted early to mid-career research fellowships as well as developing and implementing a STEM education strategy.

The government will also maintain momentum by focusing its R&D investment in priority areas.



New and continuing actions by the Queensland Government

Actions	Agency
<i>Targeted early and mid-career fellowships and scholarships</i>	
<p>Accelerate Fellowships: a new early and mid-career fellowship program (\$3 million) This program will focus on the development of skills and establishment of the professional reputation of high-calibre early to mid-career researchers to undertake practical and applied research in Queensland.</p>	Department of Science, Information Technology, Innovation and the Arts
<p>Award 500 Supporting Women Scholarships (\$10 million) The Supporting Women Scholarships will help with meeting industry skilling needs and provide women with financial support to take up opportunities in male-dominated fields of study and employment. www.supportingwomen.qld.gov.au</p>	Department of Education, Training and Employment
<p>Health and Medical Research Fellowship Program The fellowships provide funding of up to \$150,000 per annum for three years as salary support to enable practicing clinicians or other health professionals to undertake clinical or health service research. Further information on the government's health and medical research funding programs can be found at: www.health.qld.gov.au/ohmr/html/funding/funding.asp</p>	Department of Health
<i>Focus investment in priority areas</i>	
<p>Accelerate Partnerships: a new R&D projects program (\$4.25 million) This program will focus on priority science and research projects with an emphasis on translating research into outcomes for Queensland.</p>	Department of Science, Information Technology, Innovation and the Arts
<p>Australian Institute of Tropical Health and Medicine (\$42 million) Continue to work with James Cook University to establish the institute across sites in North Queensland (Townsville, Cairns and the Torres Strait) to strengthen Queensland's tropical health defences.</p>	
<p>Centre for Ageing Dementia Research (\$9 million) Funding research and development for the early detection of dementia and new therapies to achieve better outcomes for our ageing population.</p>	
<p>Informing Natural Resource and Environmental Management Provide innovative science solutions to support environmental and natural resource policy and decision making by government.</p>	
<p>Water quality initiatives Working in partnership with key stakeholders to improve our water quality, using available science and research, and support sustainable development. Initiatives include the Gladstone Healthy Harbour Partnership and the South East Queensland Healthy Waterways Program.</p>	Whole-of-government

Actions	Agency
<p>Reef Water Quality Protection Plan 2013 Maintain the Queensland and Australian Government’s collaborative efforts to improve Great Barrier Reef water quality through a renewed focus on industry-led best practice, coordinated capacity building and close partnerships with industry and landholders.</p>	Whole-of-government
<p>Applied sport science research Develop highly innovative research that addresses significant challenges and opportunities in Queensland sport.</p>	Department of National Parks, Recreation, Sport and Racing
<p>Increase agricultural production through research, development and extension Increase the productivity and profitability of Queensland agricultural, fisheries and forestry industries through research, development and extension initiatives in animal, horticulture, forestry, crop and food science. Initiatives include \$3.95 million for Sugar Research Australia; \$4.8 million to QUT for tropical pulses research; and R&D in the important fields of genomics, control of animal diseases and advanced systems modelling – disciplines vital to the innovative capacity of Queensland’s agricultural sectors through The University of Queensland’s Queensland Alliance for Agriculture and Food Innovation Institute. For more information visit: www.daff.qld.gov.au/research/strategy-and-direction.</p>	Department of Agriculture, Fisheries and Forestry
<p>Future Resources Program (\$30 million) Attract mineral and energy exploration to Queensland by capturing new geoscience and resource potential data, and providing access to data generated by industry. The program includes an initiative for Geological Survey of Queensland projects based on industry priorities, as well as providing grants to industry to contribute towards the costs of drilling in under-explored areas or to test innovative exploration ideas.</p>	Department of Natural Resources and Mines
<p>Australian Centre for Health Services Innovation Continue to work with QUT and the Royal Brisbane and Women’s Hospital to address health system challenges with multidisciplinary research teams.</p>	Department of Health
<p>Future transport challenges Work with industry and universities to build capability to address transport challenges in Queensland, through programs and agreements such as the Academic Strategic Transport Research Alliance. Work with the Australian Roads Research Board on a program of research projects to deliver improved and innovative pavements, structures and asset management solutions which deliver infrastructure with improvements to quality, safety and reduced costs.</p>	Department of Transport and Main Roads

Actions	Agency
<p>Science audits Progress audits of government agency science and research capability to deliver a comprehensive assessment of current capability, future needs and possible business models ensuring informed government investment in science.</p>	Office of the Queensland Chief Scientist
<p>Government R&D priority setting and expenditure reporting Implement priorities to strategically direct government investment. Continue to report on government R&D expenditure to ensure value for money of our investments.</p>	
<i>Increase STEM in schools and improve teaching skills</i>	
<p>STEM education strategy Participate in a state STEM Strategic Review Workshop and consider the outcomes of other relevant reviews and initiatives to inform the development of a new STEM strategy for state school education in Queensland. The government's <i>Great teachers = Great results</i> action plan aimed at lifting standards of teaching and giving schools more flexibility can be found at: http://deta.qld.gov.au/about/government-responses/great-teachers.html</p>	Department of Education, Training and Employment supported by Office of the Queensland Chief Scientist
<p>Review of Senior Assessment Consider the findings of the <i>Review of Senior Assessment and Reporting and Tertiary Entrance</i> to boost the uptake of STEM courses in state schools, particularly to encourage greater proportions of state secondary school students to enrol in advanced STEM courses in schools and in post-school higher education and training.</p>	Department of Education, Training and Employment
<p>Deliver iChoose Technology activities Continue to work with the Group X consortium to promote ICT tertiary studies and careers to school students through high school visits, careers expos and the www.ichoosetechnology.com.au online web portal.</p>	Department of Science, Information Technology, Innovation and the Arts

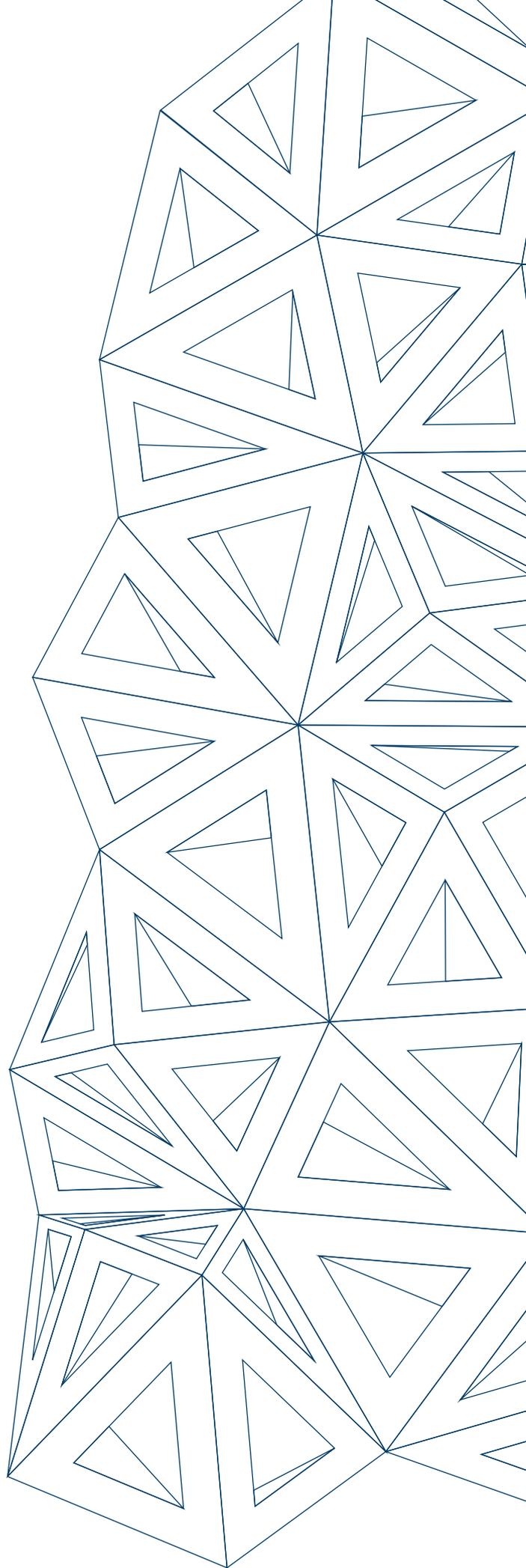
Translational hub for medical research

The new Translational Research Institute (TRI) and co-located BioPharmaceuticals Australia manufacturing facility, now operated by DSM Biologics, represent the future of biomedical research in Australia. These facilities, located on the Princess Alexandra Hospital campus, are a complete turnkey approach to accelerating novel therapies into clinical applications for treating common and serious illnesses and diseases, including a range of cancers, diabetes, inflammatory diseases, HIV, malaria, bone and joint diseases, and children's health research.

TRI contributes to the state's research excellence by translating clinical research into new therapies and treatments for Queenslanders. The institute is supported by locally produced clinical and commercial grade biopharmaceuticals by DSM Biologics. In the longer term, the social and economic benefits derived from the application of translational research are improvements to prevention and treatment of diseases and potential reduction in health care costs.



Translational Research Institute. Photographer: Christopher Frederick Jones



Action Area: Collaborate and share knowledge

Collaboration between industry, research, government and education is central to innovation especially to maximise outcomes and the impact of our investments. More effort is also required to demonstrate the benefits of science and innovation to the community.

Collaborating and sharing knowledge will support Queensland's goals to:

- have seamless and active interchange of people between universities and business
- have the community engaged in and valuing science and innovation.

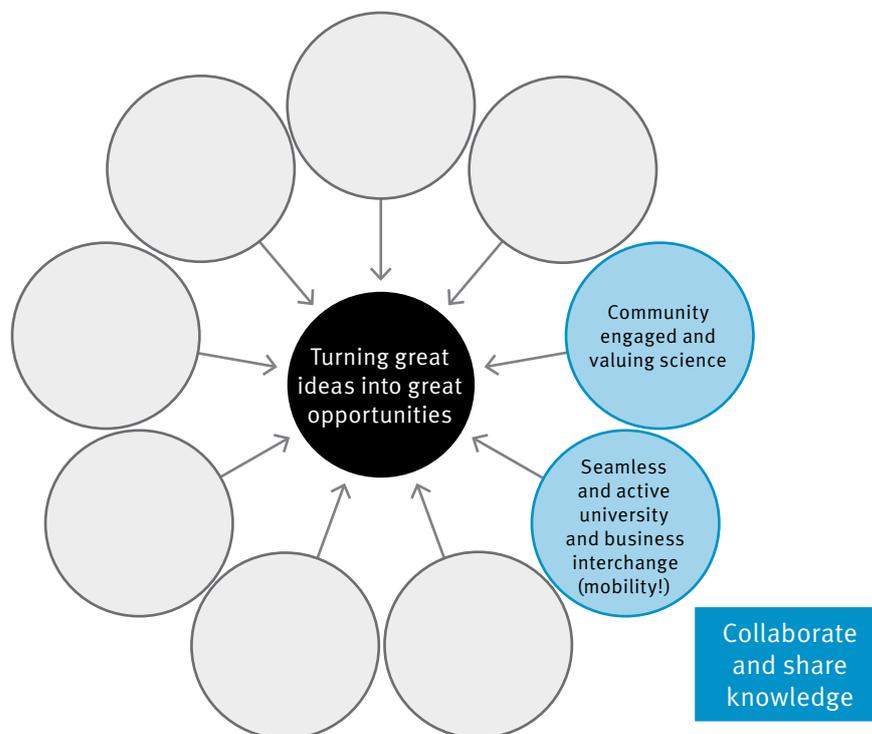
Going forward the government will support actions in these three areas:

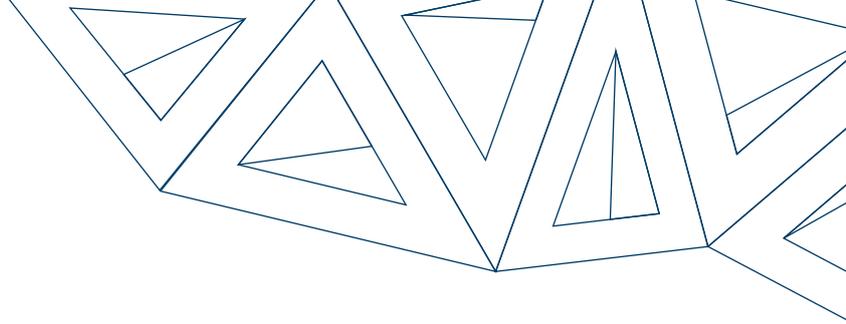
- promote our knowledge industries, trade and investment opportunities
- 'communication cubed' – enhance awareness of Queensland's science and research capabilities
- help connect research, industry and businesses.

The Queensland Government will promote our knowledge industries and create investment opportunities by hosting the AusBiotech 2013 and 2014 national conferences in Brisbane and the Gold Coast respectively. We will also develop and implement a science communication strategy.

Connecting research and industry is of critical importance to creating value in both using our science and meeting the challenges facing industry.

We will help to connect research and industry by providing innovation clinics and establishing the Accelerate Ideas program so that researchers and industry work together to test the commercial viability of an idea.





New and continuing actions by the Queensland Government

Actions	Agency
<i>Promote our knowledge industries, trade and investment opportunities</i>	
<p>Queensland Science Capability Directory Develop an online directory to provide information on science expertise across the state, including our research precincts, to help increase investment and collaboration.</p>	Department of Science, Information Technology, Innovation and the Arts
<p>Support and grow the life sciences sector in Queensland Work with the life sciences sector: to support early stage innovations by facilitating access to venture capital funding; better coordinate and profile the sector’s capability at key national and international events; build better statewide connections and track ongoing development of the sector.</p>	Department of Science, Information Technology, Innovation and the Arts
<p>Continue to cement key strategic international alliances Undertake activities through our international agreements and alliances that grow Queensland science, including agreements with China, India and North America.</p>	Department of Science, Information Technology, Innovation and the Arts and Queensland Treasury and Trade
<p>Support foreign direct investment in science and innovation projects Attract international investment and businesses that grow the sector and create more jobs.</p>	Queensland Treasury and Trade
<p>Support clinical trials Work with industry and the public and private health care systems to improve awareness and access to Queensland’s clinical trial capability, including via the Database of Research Activity.</p>	Department of Health
<p>Promote construction innovation Promote innovations (including Smart Energy Dwellings) in projects across the broader building industry.</p>	Department of State Development, Infrastructure and Planning
<i>‘Communication cubed’ – enhance awareness of Queensland’s science and research capabilities</i>	
<p>Construct a Queensland science and innovation case study library Construct an online case study library to showcase local science and innovation success stories to inform and inspire Queensland school and university students, industry and the world.</p>	Department of Science, Information Technology, Innovation and the Arts
<p>Communicate science Develop and implement a comprehensive science communication strategy that maximises the connections across Queensland’s numerous science communication and outreach activities.</p>	Department of Science, Information Technology, Innovation and the Arts and Office of the Queensland Chief Scientist



Actions	Agency
<p>Supporting Natural Resource Management Engaging with communities, industry and government scientists to monitor and better manage our natural resources.</p>	Department of Environment and Heritage Protection and Department of National Parks, Recreation, Sport and Racing
<i>Help connect research, industry and businesses</i>	
<p>Accelerate Ideas This program will focus on collaborations between researchers and industry to demonstrate the potential commercial viability of a new idea.</p>	Department of Science, Information Technology, Innovation and the Arts
<p>Connect business and researchers Deliver forums, innovation clinics and events which connect businesses with potential opportunities, collaborators and problem solvers. Work with tertiary institutions to broker industry and government placements for PhD students to produce work ready postgraduates.</p>	
<p>Manage the Asia Pacific Design Library Continue to provide a shared space for industry, academia and the public to generate and share new knowledge around design in the Asia Pacific.</p>	
<p>Queensland development innovation network Investigate the establishment of a tripartite Queensland development innovation network between government, industry and academia to facilitate the adoption of innovative building and development solutions.</p>	Department of State Development, Infrastructure and Planning



Photo courtesy of The University of Queensland

Action Area: Help businesses grow

Productivity improvements and economic value from innovation primarily occur as a result of decisions made by and implemented in business.

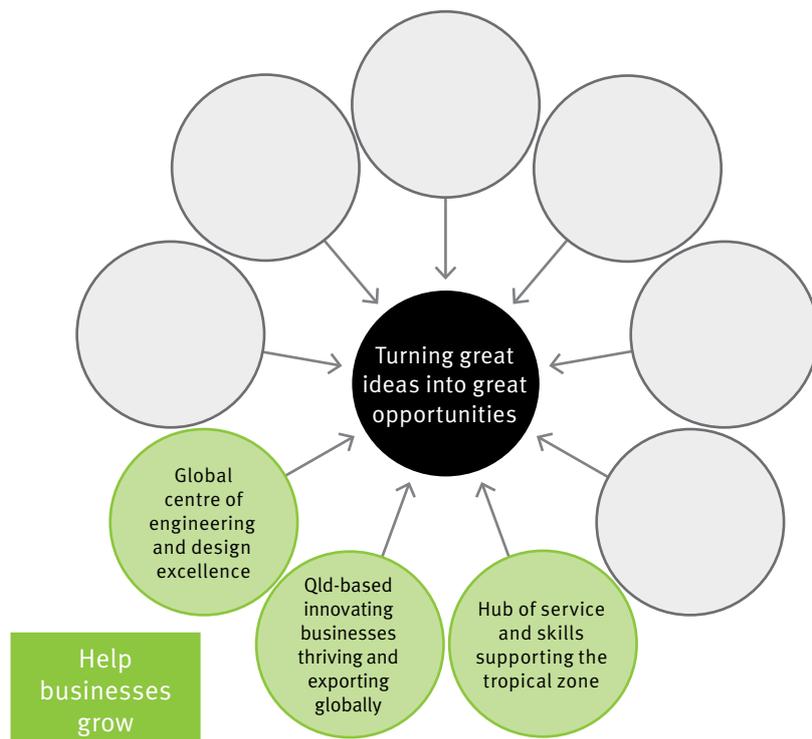
Helping small and high growth potential businesses to grow will support Queensland's goals to:

- be a global centre of engineering and design excellence
- have thriving businesses that are innovating and exporting globally
- be a hub of service and skills supporting the tropical zone.

To achieve these goals, the Queensland Government is supporting actions in these three areas:

- reduce red tape
- foster start-ups and commercialisation
- provide information and skills for business.

The Queensland Government will reduce barriers and stimulate growth through a regulatory reform program to cut red tape for business, helping to foster start-ups and commercialisation activity. The government will also provide specialised information services to support businesses and increase digital technology awareness.



New and continuing actions by the Queensland Government

Actions	Agency
<i>Reduce red tape</i>	
<p>Identify and remove red tape that impedes innovation in business Engage with industry and work with other Queensland Government agencies to identify and systematically remove regulatory barriers to business innovation.</p>	Department of Science, Information Technology, Innovation and the Arts
<p>Single state planning policy Adopt a new single state planning policy which expresses the state's interests in planning and development in a complete and concise format and encourages flexible, innovative and locally appropriate approaches to development.</p>	Department of State Development, Infrastructure and Planning
<i>Foster start-ups and commercialisation</i>	
<p>Provide early stage high growth potential businesses with access to incubator services Support the incubator program to improve the success rates of high growth potential start-ups and entrepreneurial ventures by facilitating connections and providing access to affordable and flexible work spaces, commercialisation guidance and mentoring, and assistance in obtaining early stage funding.</p>	Department of Science, Information Technology, Innovation and the Arts
<p>Implement a suite of activities to support commercialisation Implement practical activities in collaboration with industry and research sectors to remove barriers, foster innovation and coordinate activity that supports Queensland's early stage entrepreneurs.</p>	
<i>Provide information and skills for business</i>	
<p>Partners in Technology (PiT) Program Continue to raise the digital maturity and productivity of Queensland industry by forging stronger links through renewed engagement between industry and the local ICT sector, in particular in regional Queensland.</p>	Department of Science, Information Technology, Innovation and the Arts
<p>Provide online innovation information for business Work with partner organisations to deliver business innovation information that helps business to take ideas to market.</p>	
<p>Engineering and design Develop with industry a plan to build an innovative and stronger engineering sector in Queensland.</p>	Office of the Queensland Chief Scientist

Actions	Agency
<p>Continue to deliver Tourism Pathways Continue to provide specialised information and services for tourism operators through the Tourism Pathways initiative.</p>	<p>Department of Tourism, Major Events, Small Business and the Commonwealth Games</p>
<p>Continue to mentor businesses for growth Continue to provide established businesses that exhibit high growth potential access to expert advice and assistance through the Mentoring for Growth suite of programs.</p>	
<p>Attract skilled migrants Continue to inform international student alumni with science, biotechnology, health and medical postgraduate qualifications of Queensland opportunities through the Queensland Skilled Occupation List.</p>	<p>Queensland Treasury and Trade</p>
<p>Preparation of a Roadmap for Queensland's Defence Industries Create the environment for sustained growth of Queensland's defence industries, and foster local capability and capacity to take advantage of emerging opportunities.</p>	<p>Department of State Development, Infrastructure and Planning</p>

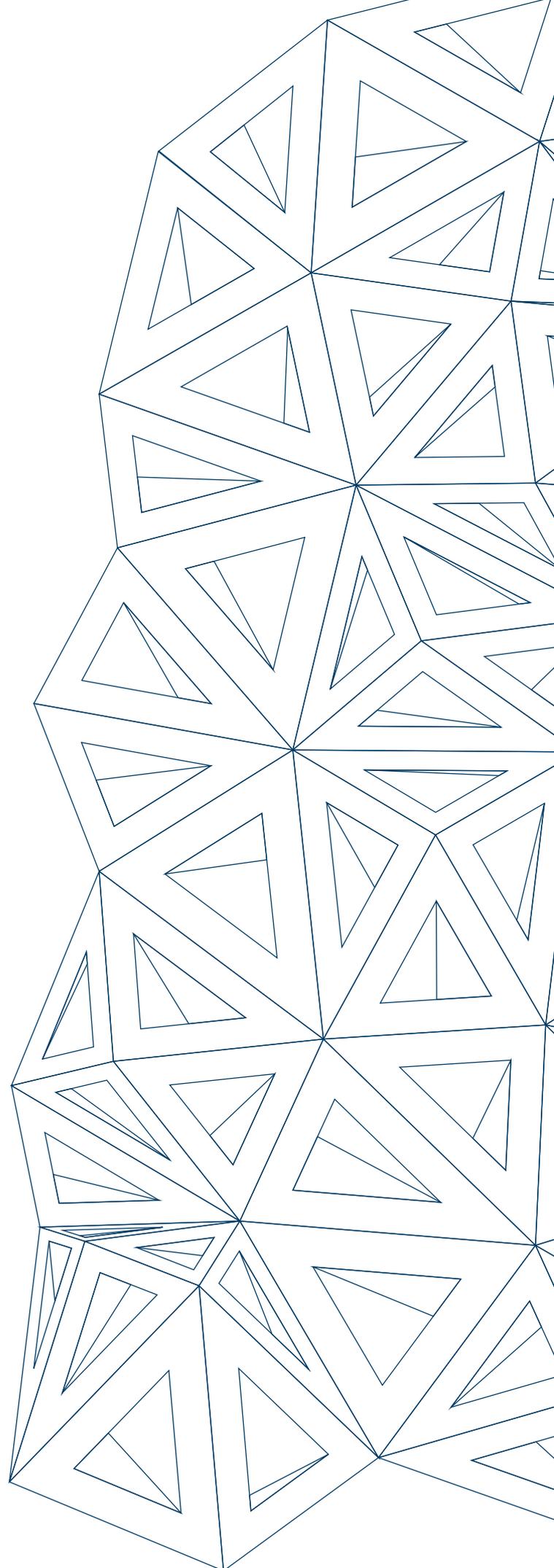
Business Incubator Program

The Queensland Government is committed to supporting innovation in small business. The *Queensland small business strategy and action plan 2013–2015* can be downloaded from:

www.dtesb.qld.gov.au/small-business/queensland-small-business-strategy-and-action-plan-2013-2015

Innovation Centre Sunshine Coast (ICSC)

Business incubation programs accelerate the commercial success of high growth potential innovation start-ups by providing them access to affordable and flexible work space, shared equipment, business support and access to early stage funding. Further information is available on the ICSC website: www.innovationcentre.com.au



Action Area: Deliver innovative government

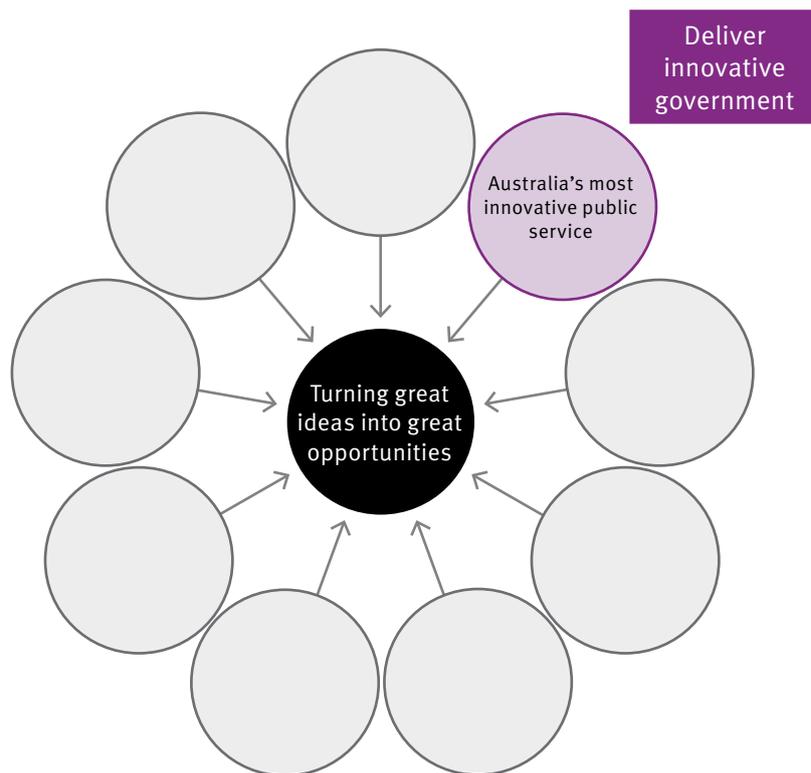
Innovation in government is critical in bringing about improvements in the quality and efficiency of public services and for responding to changing economic, environmental and social challenges.

Delivering innovative government services will support Queensland's goal to have Australia's most innovative public service.

To achieve this goal the Queensland Government is supporting actions in:

- innovative government service delivery
- innovative government systems and processes.

The Queensland Government will deliver innovative government by embedding innovation as a core value and way of working for the public service. Innovative government service delivery models will be implemented through a renewed focus on customers and a greater use of digital technologies. The government will drive innovation through the One-Stop Shop for customers and by making information more accessible through the Open Data initiative.



New and continuing actions by the Queensland Government

Actions	Agency
<i>Innovative government service delivery</i>	
<p>Innovation tools for government Coordinate a suite of innovation in government tools to help improve the quality and efficiency of government service delivery.</p>	<p>Department of Science, Information Technology, Innovation and the Arts</p>
<p>Establish an innovative solutions program Develop and pilot a program that links those in government with a specific need or challenge with innovative Queensland businesses and researchers that can develop solutions.</p>	
<p>Implementing the One-Stop Shop initiative Implement the One-Stop Shop for Queensland to improve ease of access and meet customers' service delivery expectations through single distribution points (one number, one website, one service counter).</p>	
<p>Delivery of high quality, innovative scientific and technical services and advice to government Use scientific evidence to underpin Queensland Government policy and planning related to relevant legislation, ensuring that government decision making is founded on sound, practical science.</p>	
<p>Waste Management Research and development supporting an industry-led waste strategy that encourages waste avoidance, maximises resource recovery (such as energy recovery) including for regional Queensland, and manages high hazard wastes.</p>	<p>Department of Environment and Heritage Protection</p>
<p>Open Data initiative Open Data will deliver the release of public data to encourage economic growth, innovation in government service delivery and improved transparency in government.</p>	<p>Department of the Premier and Cabinet</p>
<i>Innovative government systems and processes</i>	
<p>Queensland Government intellectual property management In conjunction with the private sector, provide online resources and deliver training workshops to government staff to improve the management and commercialisation of Queensland Government intellectual property.</p>	<p>Department of Science, Information Technology, Innovation and the Arts</p>
<p>ICT government innovation improvement portal Create and implement an innovation portal to engage industry and the community in developing innovative solutions to service delivery challenges. The Queensland Government's ICT strategy 2013–2017 can be downloaded from: http://www.qld.gov.au/dsitia/initiatives/ict-strategy/</p>	

Actions	Agency
<p>Emergency vehicle priority technology Continue to roll out a dynamic intelligent transport system which automatically interrupts normal traffic signals to provide green lights, when safe to do so, in order to assist emergency vehicles to reach destinations promptly and safely.</p>	<p>Department of Community Safety and Department of Transport and Main Roads</p>
<p>Planning reform through the State Assessment Referral Agency (SARA) SARA revolutionises the way in which applications are referred to the state and ensures the process is streamlined and coordinated to enable the development assessment process to operate as efficiently and effectively as possible.</p>	<p>Department of State Development, Infrastructure and Planning</p>
<p>Whole-of-government approach to drive the better use of government real property assets Develop and drive delivery of a coordinated, strategic approach to managing the state’s real property portfolio to its full potential and optimising use of land assets in line with government priorities. Opportunities for the private and not-for-profit sectors will become available as the government looks to use land holdings to deliver innovative economic and community development outcomes.</p>	

Science informing natural resource management

In a state as large as Queensland, analysing satellite imagery is an innovative and cost effective way to accurately assess and monitor natural resources. Changes in woodlands and forests, ground cover, water bodies, fire scars and land use are all mapped and monitored by the scientists at the Remote Sensing Centre, within the Department of Science, Information Technology, Innovation and the Arts.

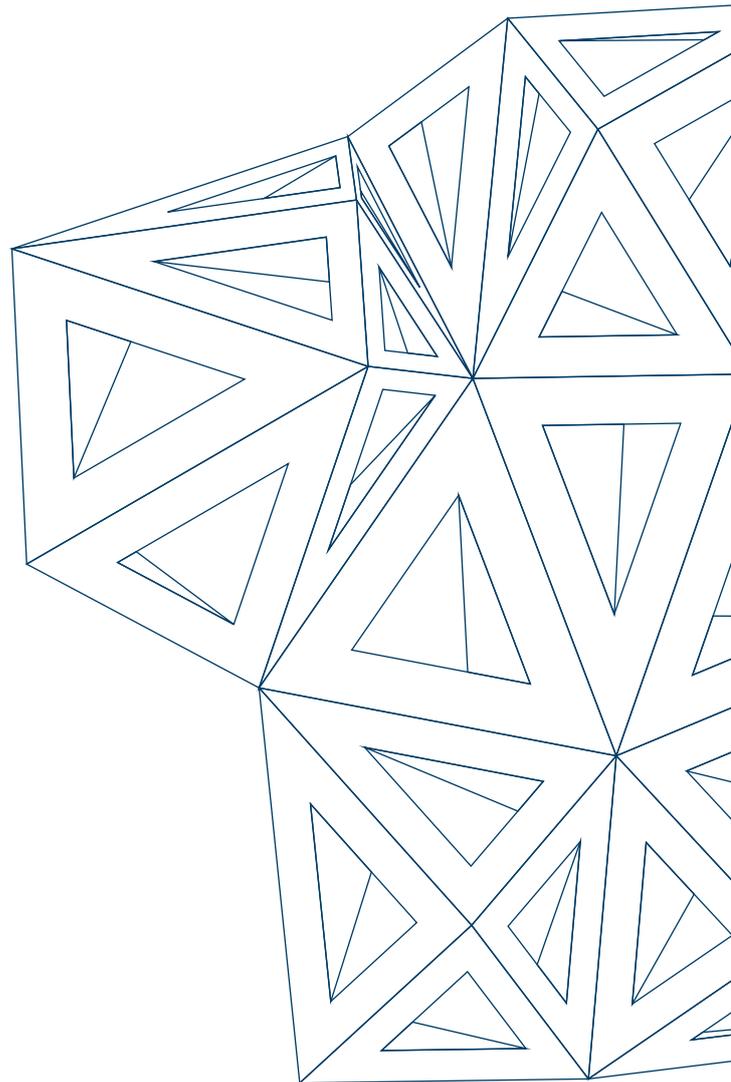
Monitoring Queensland's natural environment from space

Innovative and world-leading products have been developed by government scientists using Queensland's unique archive of satellite imagery to inform the development of government policy and legislation (including vegetation management planning, agricultural production programs and the Great Barrier Reef Water Quality Protection Plan). They also provide cost effective tools for government and industry to support compliance activities and to meet regulatory requirements, assisting in reducing red and green tape.

Provision of these free remote sensing products on the government website allows access to this information by regional natural resource management groups, peak industry bodies, consultants, research agencies, community groups and land managers. For more information visit: www.qld.gov.au/environment/land/vegetation/



We will ensure sustainable water use and deliver water security for Queenslanders. Photo courtesy of Tourism and Events Queensland



How will the impact and success of the Action Plan be measured?

The government is ambitious in its aspirations for Queensland's future through science and innovation. In this plan, the government has nominated the areas where science and innovation initiatives and policies will impact on Queensland.

The Department of Science, Information Technology, Innovation and the Arts will report on the overall effectiveness of this Action Plan, while individual program managers in the respective departments will be responsible for monitoring and evaluating their programs. If necessary, changes will be made to improve efficiency and effectiveness.

The *Science and Innovation Action Plan* will be reviewed after 12 months of operation to ensure that the goals remain the right ones and actions remain current. This review will also enable outcomes of the Queensland Plan to be considered and incorporated where appropriate.

FAST FACT

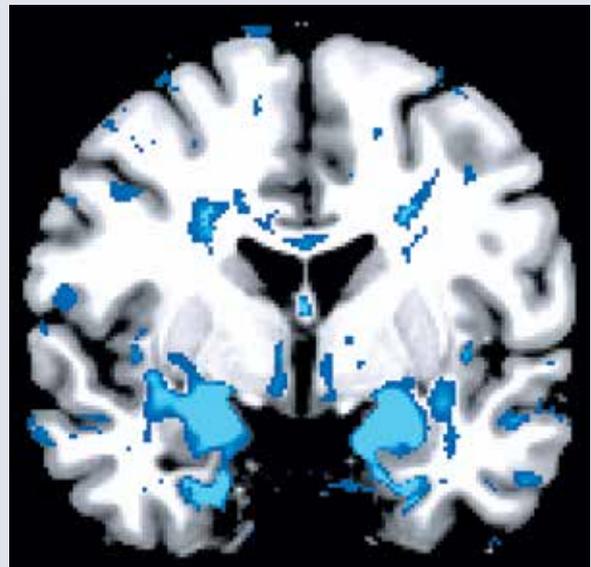
56 per cent of Queensland firms reported innovation activity between 2010 and 2012.

Clem Jones Centre for Ageing Dementia Research

The number of Queenslanders affected by dementia is projected to increase markedly as the population ages – potentially to more than 200,000 people by 2050.

The Queensland Government has committed \$9 million over five years towards the Clem Jones Centre for Ageing Dementia Research. The new funding is aimed at research underpinning the early detection of dementia and new therapies to halt brain degeneration and promote cognitive restoration. Funding will also be used to recruit early career researchers ensuring Queensland will have the best minds working on these projects.

The centre will partner closely with Queensland Health to ensure that the centre's research aligns with clinical demand relevant to Queenslanders.



MRI image of a coronal section of a human brain. The areas in blue are those that degenerate early in Alzheimer's disease and include the hippocampus and the basal forebrain. Photo courtesy of the Queensland Brain Institute.



