



# National Collaborative Research Infrastructure Strategy (NCRIS)

Australia is an established global leader in world-class research. The Australian Government helps maintain this reputation by ensuring researchers have access to cutting edge national research infrastructure supported through the NCRIS program.

## National Research Infrastructure

National research infrastructure (NRI) means:

- Facilities, equipment and resources that are needed to perform research.
- Experts needed to operate it.

This infrastructure can be physical, like a supercomputer or microscope, or intangible, like a data collection or a software platform.

The Commonwealth Government will invest \$4 billion in NRI from 2018 to 2029. In the 2020-21 financial year, \$251 million will be spent supporting Australia's national research infrastructure through NCRIS.

## Understanding Australia's NRI Needs

NRI Roadmaps identify Australia's needs and set priorities for funding. They are prepared by expert working groups after consulting with the research community.

Roadmaps may recommend specific research infrastructure, or an activity called a "Scoping Study" to work out what infrastructure is needed to meet an identified need.

A Roadmap is created every 5 years, and the most recent was the [2016 Roadmap](#). The 2021 Roadmap is now being developed. Email [ResearchInfrastructure@dese.gov.au](mailto:ResearchInfrastructure@dese.gov.au) to be registered for updates.

A Research Infrastructure Investment Plan (RIIP) sets out specific funding for a series of projects, based on the Roadmap. A RIIP is

released every 2 years. The most recent is the [2020 RIIP](#), and the next is due in 2022.

## Impacts of the NCRIS Program

NCRIS currently supports 22 funded projects, plus pilot projects and an international membership – see [here](#) for a list.

The projects are led by organisations including universities, publicly funded research organisations and private companies.

The projects form a network involving over 200 delivery partnerships, and employing over 1900 highly skilled technical experts, researchers and facility managers.

Projects provide merit-based access for all Australian researchers to their infrastructure. As of the [2018 NRI Census](#) around 65,000 Australian and 12,000 international users are supported every year. In 2018-19, the projects overall had a 94% user satisfaction rate.

They also have high co-investment rates. As of the [2018 NRI Census](#), each \$1 Government invested in NCRIS saw \$1.29 in co-investment from universities, research agencies, state and territory governments and industry.

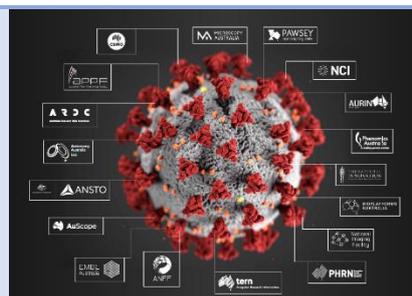
Users relying on NCRIS range from early career researchers and small businesses who would otherwise struggle to access world-class NRI, to global research leaders tapping into the unique facilities that NCRIS provides.

A few examples of research supported by NCRIS projects are on the next page.

## Examples of research enabled by NCRIS

The name of the NCRIS project is in **bold** and is a hyperlink to their website.

The connectedness of the NCRIS network ensures Australia is prepared in a crisis. In 2020, **many projects** pivoted to support Australian and international COVID-19 research in a wide variety of ways. This included growing virus samples, developing and testing vaccines, improving diagnostics and treatments, manufacturing critical supplies, and supporting the research sector through the disruption the pandemic caused. [More information can be found here.](#)



Timing is everything to Australian mango farmers. The **Australian Research Data Commons** supported researchers from Central Queensland University to develop an innovative product called FruitMaps, which translates data from sensors located in mango farms to help farmers better estimate the size of their crops and the best time for harvesting. This lets them to employ the optimal number of pickers and packers at the ideal time.

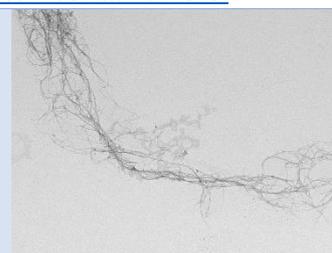
[More information can be found here.](#)

In a world first, researchers using **Phenomics Australia's** Genome Engineering services have shown that previously ignored rare genetic mutations are a major cause of lupus. Lupus is an autoimmune disease that targets the body's healthy tissue, causing significant damage, inflammation and pain. Lupus currently has no cure. The finding makes way for life-saving personalised treatment for lupus and other autoimmune diseases. [More information is here.](#)



Indigenous rangers from the Central Land Council (CLC) in the Northern Territory can now track threatened species in both English and Warlpiri using the Tracks App, a comprehensive data collection, storage and management system supported by the **Atlas of Living Australia**. It was first used during the "Bilby Blitz", a data collection which informed one of the first national threatened species plans developed using significant input from Aboriginal people. [More information can be found here.](#)

The **Australian National Fabrication Facility and Microscopy Australia** are providing ongoing support for research that uses the unique cellular properties of Australian spinifex grass to manufacture paper and high-end medical supplies. The University of Queensland and Dugalinji Aboriginal Corporation are partnering to commercialise this research into an Australian advanced manufacturing business. The image to the right is of spinifex up close. [More information here.](#)



The **National Computational Infrastructure (NCI)** supports Australia's world-leading weather and climate modelling capability, [ACCESS](#). ACCESS is used Australia-wide to support health, agriculture, bushfire and natural disaster management, and will soon become an independent NCRIS project. NCI also supports the Bureau of Meteorology's [Regional Weather Analysis for Australia](#), a ground-breaking dataset with three decades of detailed weather data from wind-speed to soil wetness.

For more information head to <http://www.dese.gov.au/national-research-infrastructure>