

Where is Australia's key Research Infrastructure located?

A mapping of currently-funded Research Infrastructure

As part of its National Innovation and Science Agenda (NISA), Australia's Chief Scientist Dr Alan Finkel is currently leading consultations into the [2016 National Research Infrastructure Roadmap](#). The 2016 Roadmap aims to provide advice to the Australian Government on "future priorities for strategic investment in key national research infrastructure capabilities that would support and develop Australia's research capacity and underpin research and innovation outcomes over the next five to ten years."

To guide its response to this process and in conjunction with the release of its third research policy statement *Building Regional Research Systems*, Innovative Research Universities (IRU) has mapped the spread of Australia's currently-funded research infrastructure through the National Collaborative Research Infrastructure Strategy (NCRIS).

One key aim is to determine the extent to which research infrastructure is spread across Australia, whether it is located primarily in Australia's major or regional cities and whether it is reaching parts of remote Australia.

The NCRIS network

[The National Collaborative Research Infrastructure Strategy \(NCRIS\)](#) network currently supports national research capability through 27 active projects and is comprised of 222 institutions employing well over 1700 highly skilled technical experts, researchers and facility managers. NCRIS facilities are used by over 35,000 researchers, both domestically and internationally.

This analysis is based on the list of [currently-funded projects](#) as listed on the website of the Department of Education and Training. This database identifies where each of the project nodes and sub nodes within the 27 projects are located.

Mapping Australia's Research Infrastructure

In order to gain an overview of the spread of NCRIS infrastructure across Australia, we identified four different types of locations namely *Cities and Inner Cities*, *Outer Metro*, *Regional Cities* and *Remote and Rural*.

The majority of the projects have a number of nodes spread across Australia and a location was assigned to each node that could be identified through the project's website. Nodes are listed according to where they are located. Universities and other institutions have access constant with the national access requirement.

Of the 27 evaluated projects, 107 locations have been identified via each project's website. At times, the location of the nodes and sub-nodes was not clearly identified on the project's website.

Australia's Research Infrastructure is predominantly city-centric

Judging by the results of this mapping, it is evident that the majority of Australia's research infrastructure (81 locations or around 76%) is located in Australia's major cities or inner cities namely Sydney, Melbourne, Canberra, Perth, Adelaide and Brisbane.

Only around 12% (13 locations around Australia) of research infrastructure is located in remote and rural parts of Australia. 7% are located in outer metro areas though the outer metro and inner city

dividing line is hard to define. Only 6% of Australia's research infrastructure is located in Australia's regional cities.

The [NCRIS Groundwater Database](#) is responsible for 12 out of the 13 nodes located in Remote and Rural locations. The other one belongs to Astronomy Australia Ltd.

Of the 107 project locations identified, around 50% are located in Australia's universities with the Group of 8 Universities hosting more than half of university-based Research Infrastructure. Very few nodes are placed in Australia's outer metro or regional universities.

Most projects have nodes located in at least two or more states in the country leading to a fairly even spread of states involved in different NCRIS projects.

Balancing spread, access and the national interest

Some resources have a natural home. For instance bio-security capability ought to be present where the major challenges are likely to arise, which is Northern Australia. Antarctic research capability is sensibly based along the southern ocean.

However, most resources have no intrinsic locational logic. **These resources can be used to stimulate the whole Australian research system through a distributive intent, with resulting benefits for regions and potential reduction of pressure on major population centres.**

The requirement for national access is usually interpreted as ensuring that researchers outside the main cities can access resources, but equally it means that a resource could be located anywhere capable of supporting it, with those in major cities as able to access remotely as anyone else. As long as national access requirements can be met, and the resources are suitably supported and operated, then Research Infrastructure can and should be broadly distributed across Australia.

Since the large majority of resources are based in the larger cities, particularly Sydney, Melbourne and Canberra, researchers from many institutions (and in the majority of cases that means researchers from younger, outer-metropolitan and non-metropolitan universities) are permanently the 'outsiders'.

It also means that the spillover value of hosting major resources is concentrated rather than distributed. The spillover is the support for strong research clusters such as the Parkville precinct.

The challenge is to replicate strong research clusters across Australia such as on the Gold Coast or in Western Australia.

Geographical spread should be a key factor in determining the priorities in the 2016 National Research Infrastructure Roadmap.

Read IRU's submission to the 2016 National Research Infrastructure Roadmap.

9 September 2016

Figure 1: Location of NCRIS infrastructure by type of location

Cities and Inner city	Outer Metro	Regional Cities	Remote and Rural
81	7	6	13
76%	7%	6%	12%

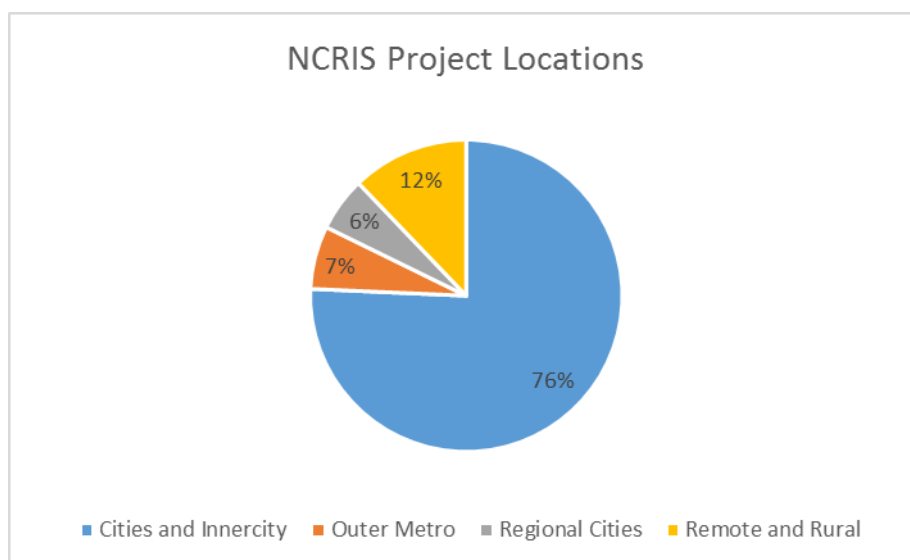


Figure 2: Location of NCRIS infrastructure by State

State	Number of locations
ACT	14
NSW	24
NT	3
QLD	16
SA	8
TAS	1
VIC	29
WA	12

Figure 3: Location of NCRIS infrastructure by Institution

State	Number of locations
Group of 8	44
IRU	7
ATN	2
Other Universities	8
Other	46