Research capability to be boosted by improved collaboration

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The Minister for Education, Science and Training, the Hon Julie Bishop MP, announced today six new initiatives that will support greater collaboration between researchers, both domestically and internationally.

The Australian Government has allocated $15 million under the Systemic Infrastructure Initiative for six highly collaborative proposals as part of its ongoing commitment to strengthen innovation and improve research outcomes.

The proposals will provide Australian scientists with access to research infrastructure that will enhance Australia’s research capabilities and will:

- deliver improvements in access to distributed information, data resources, and research facilities;
- develop and implement innovative models of collecting, analysing and linking research results; and
- will fill significant gaps in the tools and resources available to researchers.

Research today increasingly involves the capture and processing of vast quantities of complex data, in many cases beyond the means of individual researchers to manage and analyse in isolation. Frequently, researchers must work collaboratively across time and distance utilising diverse sources of data to reach new breakthroughs in understanding.

In making the announcement today, Minister Bishop said the new initiatives will provide Australian researchers with a world-class information infrastructure enabling both national and international research collaboration.

"Underpinning Australian research with these technologies will lead to many new research endeavours and secure our research effectiveness into the future," Minister Bishop said. "And beyond this, greater access to Australian research output has the potential to significantly increase knowledge transfer to educators, business, and the general community."

These projects add to the suite of strategic infrastructure investments under the Australian Government’s $8.3 billion Backing Australia’s Ability initiative.

Information on the Backing Australia’s Ability initiative can be found at http://backingaus.innovation.gov.au/
1. Australian Research Enabling Environment (ARCHER)

Lead institution: Monash University  
Partners: James Cook University, The University of Queensland  
Funding recommended: $4,545,000

This project will build on the architecture and prototype software developed by the Dataset Acquisition Accessibility & Annotation e-Research Technologies (DART) project to adopt a common information management architecture and infrastructure across the many data intensive research areas represented in the 9 high priority capability areas under NCRIS (Evolving biomolecular platforms and informatics; Integrated biological systems; Characterisation; Fabrication; Biotechnology products; Networked biosecurity framework; Optical and radio astronomy; Integrated marine observing system; and Structure and evolution of the Australian continent). It will similarly address the information management needs of capability areas in the Social, Behavioural and Economic Sciences and in the Humanities and Creative Arts.

Researchers in the NCRIS capability areas will be able to exploit the experience built up by the DART and ARCHER project teams, including knowledge transfer of research capability specific data management practices. Sharing a common underlying research information infrastructure enables research collaboration and cooperation across all areas of research endeavour. It facilitates the building of research capacity within Australia through the provision of seamless access to data and information that may potentially be in geographically disparate locations.

2. Research Activityflow and Middleware Priorities (RAMP)

Lead institution: Macquarie University  
Partners: University of Melbourne, The Australian National University, Charles Sturt University, University of Southern Queensland, Macquarie University Library, ADL Australia  
Funding recommended: $2,900,000

The RAMP project will improve national research effectiveness by addressing two challenging components of the national research information infrastructure: the development and implementation of open standards authorisation for protected repositories; and research into and demonstration of people-oriented research workflows (often referred to as research activityflows).

The first component of the RAMP project on open standards authorisation is recognised nationally and internationally to be of critical importance to the effective inter-operation of digital repositories. There is an increasing need for management of protected content as part of repositories such as Institutional Repositories, e-Reserves, etc, but most approaches to protected content rely on hardwired or proprietary authorisation mechanisms that are inefficient, costly and promote system lock-in. Earlier work of the Meta Access Management System (MAMS) project has demonstrated the feasibility of an open standards approach to authorisation. The RAMP project will take this work to the next stage and develop robust technology solutions that can be adopted by a wide range of digital repository systems.

The second component of the project will examine and model the range of processes involved in conducting research, and develop a generic architecture and software solution to research activityflows that can be shared, re-used and adapted. This approach draws on the success of "Learning Design" (e.g. LAMS) within e-learning, and applies it to the challenges of people-based workflow in e-Research.
3. Australian Research Repositories Online to the World (ARROW) – Stage 2

Lead institution: Monash University
Partners: National Library of Australia, The University of New South Wales, Swinburne University of Technology
Funding recommended: $4,355,000

The Australian Research Repositories Online to the World (ARROW) project has been very successful in providing tools to enable accessibility and discoverability of research from institutional repositories. ARROW Stage-2 will build upon this success to support the building of institutional repositories for project partners and advise new members on how to proceed and what to expect. An important aspect of the ARROW Stage 2 project will be the establishment of sustainable pathways for institutional repositories beyond the term of the project.

The experiences of current trials in using repositories for the RQF will inform institutions on how they can prepare for RQF-repository integration. The project will develop software to support a more comprehensive set of digital objects and hence enable more creative uses of repositories and more flexible ways in which repositories integrate with other knowledge management tools. The project will also address the pressing need for a universally usable architecture and solution to the issue of persistent identifiers for digital objects and will implement a sustainable shared identifier infrastructure based on the Corporation for National Research Initiatives (CNRI) Handle System.

4. Legal Frameworks for e-Research

Lead institution: The Queensland University of Technology
Funding recommended: $1,050,000

This project will extend and reinforce the work already being undertaken by the Legal Protocols for Copyright Management for Open Access project. It will create an online intellectual property and licensing database that will augment and interoperate with the JISC funded Securing a Hybrid Environment for Research Preservation and Access (SHERPA) project.

The first component of the project will examine and categorise existing publishing agreements of key Australian and other relevant publishers and present these results via a web interface. This information will assist repository managers, funding organisations, universities, authors and members of the public to better understand the operation of current publication agreements. It will act as a platform on which to advocate and build new models of funding and publication agreements attuned to knowledge access and e-Research. The project will also examine the key copyright issues facing Universities in the RQF assessment process.

The second component of the project will map out a sophisticated legal framework for e-Research and collaborative innovation. As the transition to NCRIS progresses it will become vitally important that the social and legal aspects of the e-Research framework develop in step with the rapid advances in technology. Particular focus will be given to open innovation within secure knowledge communities.

5. Australian Partnership for Sustainable Repositories (APSR) – Stage 2

Lead institution: The Australian National University
Partners: University of Queensland, The University of Sydney
Funding recommended: $1,870,000

APSR is an open partnership of research and higher education institutions, funded under SII, committed to strengthening the national research infrastructure through the development of digital repositories and the provision of associated research-linked discovery, access and
management services. This extension to APSR will build on the existing strengths and success of the partnership and continue its role as a key organisation for promoting best practice and expertise in managing digital collections.

The extension of APSR will extend the scope and depth of its services to the Australian higher education and research sectors. Specifically, APSR-2 will extend the programs on digital sustainability, core development, national outreach, and international linkages. The digital sustainability program will address the operational integration of key APSR projects with the two major digital repository systems in use in the sector. The core development program will continue the development of tools and techniques for integrating repositories with the processes of authoring, archiving, publication, and reporting. The national outreach program performs a crucial role for the higher education sector and for government more generally, by providing opportunities for knowledge sharing and networking for Australian researchers and information professionals and by developing skills.

6. Integrated Content Environment for Research and Scholarship (ICE-RS)

**Lead institution: University of Southern Queensland**
**Funding recommended: $196,000**

ICE-RS will create open standards based technical solutions to facilitate and encourage the efficient creation of flexible documents in the process of conducting and reporting on research. ICE-RS will deliver a research authoring environment that assists researchers to systematically create, structure, and manage their publications and reports, and aids the automation of research workflows. The project will build on existing work undertaken at the University of South Queensland, and The Australian National University along with contributions from the Regional Universities Building Research Infrastructure Collaboratively (RUBRIC) project.