

RESEARCH in the national interest – enabling the future



Australian Government  
Australian Research Council

## The Australian Research Council

Its role in Advancing Australian Research and Innovation

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Directors, Outreach Team

*Research*

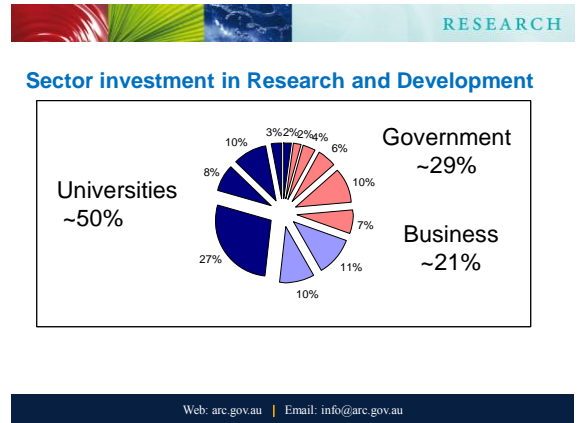
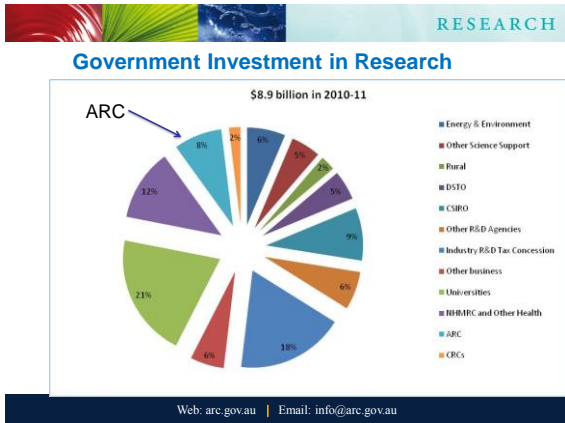
RESEARCH



Minister for Innovation, Industry, Science & Research

Department of Innovation, Industry, Science & Research	Australian Research Council Act 2001	CSIRO AIMS ANSTO AAO Chief Scientist
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RESEARCH

### Currently Australia has a dual funding system

- nationally competitive project funds from peer-reviewed national agencies (for example, Australian Research Council, National Health and Medical Research Council)
- infrastructure (block) funds on formula basis from the Australian Government, currently linked to competitive project income

There is an intention to use research quality to inform block funding in the future

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RESEARCH

**Mission**

- To deliver policy and programs that advance Australian research and innovation globally and benefit the community

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## Strategic Objectives

- To support excellence in *research*
- To build Australia's research *capacity*
- To provide informed high quality *policy* advice to government
- To enhance research outcomes through effective *evaluation*
- To raise the *profile* of Australia's research effort and be an effective advocate for its benefits

## The ARC Programs



- Statutory Agency established in 2001
- Fund direct costs to Universities and partners
- Projects, Fellows and infrastructure (\$<5 M)
- All disciplines except clinical medicine & dentistry (except for *Future Fellowships*)
- Research training and capacity building

## Major ARC Research grants schemes

- **Discovery Projects** – excellent fundamental research by individuals and teams
- **Discovery Indigenous Researcher Development** – Develop research expertise of Indigenous Australians
- **Australian Laureate Fellowships** – Outstanding researchers to stay in or return to Australia
- **Future Fellowships** – reward best mid-career researchers and outstanding international researchers

## Major ARC Research grants schemes

- **Linkage Projects** – Collaborative research between universities and industry/government/community
- **Centres of Excellence** – Large outstanding research teams conducting focussed, sustained investigations on important challenging problems
- **Linkage Infrastructure, Equipment and Facilities** – collaboration across universities and partner organisations to fund major infrastructure (\$<5 M)

## How to apply for ARC funding

- On-line grant system - RMS
- Eligible institutions – primarily Australian universities
- Evaluation undertaken by Selection Advisory Committees
- Peer review by external specialists – in Australia and overseas
- Funding arrangements and contributions from other partner organisations

## Evaluation and Policy in the ARC

- Collaboration and internationalisation
- Evaluating the quality of research – the international scene and the implementation of *Excellence in Research for Australia* in 2010
- Policy advice regarding research in higher education sector

## ARC focus on collaboration and internationalisation

- Removing any impediments to internationalisation in all ARC schemes
- Provisions for international collaboration within all our programs
- All fellowships will be open to international applicants to work in Australia

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## International collaboration

- ARC Schemes are open to international applicants
  - If they apply through one of the eligible organisations
  - If successful, must reside predominantly in Australia
- *Discovery Projects*
  - Partner investigators can be working overseas
  - International Collaboration Awards available for Australian Chief Investigators, Fellows, and overseas Partner Investigators to work together on the project overseas or in Australia
  - Travel support for overseas Partner or other research personnel to travel to Australia if justified in relation to the project
  - PhD stipends and Fellowships open to international candidates

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## International collaboration

- *Linkage Projects*
  - Overseas organisations can be partners
  - Overseas high education institutions are eligible to be Partner Organisations if the application has at least one Australian Partner Organisations
  - PhD scholarships can be given to international candidates
  - All research personnel can apply for funds for domestic and international travel if directly related to the project

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## Evaluating the Quality of Research

- The international trends
- *Excellence in Research for Australia*
- Assessing quality of ARC-funded research

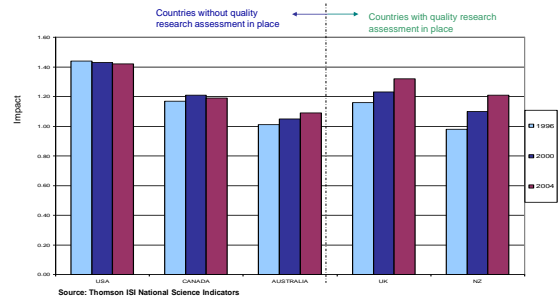
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## Who else is using quality assessments to drive performance improvements in their research?

1986—The United Kingdom  
 1993—Hong Kong  
 1997—Germany  
 1998—Ireland  
 2002—The Netherlands  
 2003—New Zealand  
 2005—France

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## Research assessment improves research quality



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### Research Quality - the Unit of Assessment

- The UK is the **Department** and hand picked researchers and outputs.
- The New Zealand Performance Based Research Framework is the **individual** researcher
- The Australian *Excellence in Research for Australia* is a **discipline** in an institution based on the Australian & New Zealand Standard Research Codes. All research activity is captured. More on this later.

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### What has the United Kingdom Research Assessment Exercise (RAE) achieved?

- Improved international recognition of the strength of UK research.
- Provided an evidence base for Government and increased research funding.
- Provided a single assessment system which operated across all disciplines.
- Provided feedback to university leaders.
- Driven a sustained improvement in research activities in terms of both quality and quantity of output.
- Boost to quality through improved ratings and improved performance of the UK research base.
- Extra funding attracted from Treasury.

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### Research Excellence Framework (REF)

- The UK is seeking to develop a single unified framework for the funding and assessment of research across all subjects.
- A consultation process was held early 2008, a pilot conducted in late 2008/early 2009.
- There was a change of Government in the UK, and REF was deferred by Government for two years. REF will now occur in **2014**. Before then, the UK will review the use of impact with a pilot process scheduled for 2010.
- There is some increased use of quantitative indicators planned, while still taking account of key differences between the different disciplines.
- While they may use bibliometric indicators wherever these are appropriate – metrics will not be used in a formulaic way, the metrics will only inform expert review.

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### New Zealand - Performance Based Research Fund

- PBRF completed its second round of Quality Evaluation in 2007.
- Signs of having a positive impact on tertiary education-based research:
  - 41% increase in the number of researchers whose Evidence Portfolios were assigned a Quality score of 'A'.
  - 24% increase in the number of researchers whose Evidence Portfolios were assigned Quality scores of 'A' or 'B'.
- Since the introduction of the NZ PBRF, research resources have been directed more selectively to institutions judged by the PBRF process to have delivered better research.

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### New Zealand PBRF (cont.)

- Research has had a higher profile and focus than pre-PBRF.
- The PBRF has provided better information about relative research quality at institutional and subject level. It has sharpened consciousness of the place of 'excellence' across academic activity.
- The PBRF has contributed to significant changes in the management of research in research culture and awareness and in the priority given to research activity.

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### Excellence in Research for Australia (ERA) initiative



*Defining our strengths,  
identifying opportunities...*

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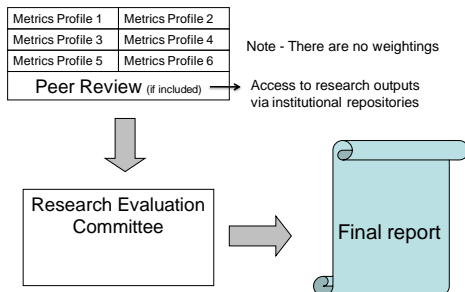
## Objectives of ERA

- Establish an **evaluation framework** that gives government, industry, business and the wider community assurance of the excellence of research conducted in Australia's institutions;
- Provide a **national stocktake** of discipline-level areas of research strength and areas where there is opportunity for development in Australia's higher education institutions;
- Identify **excellence** across the full spectrum of research performance;
- Identify **emerging research areas** and opportunities for further development;
- Allow for **comparison** of Australia's research nationally and **internationally** for all discipline areas.

## The ERA Clusters

Cluster 1	Physical, Chemical & Earth Sciences
Cluster 2	Humanities and Creative Arts
Cluster 3	Engineering and Environmental Sciences
Cluster 4	Social, Behavioural and Economic Sciences
Cluster 5	Mathematics, Information and Computing Sciences
Cluster 6	Biological and Biotechnological Sciences
Cluster 7	Biomedical and Clinical Health Sciences
Cluster 8	Public and Allied Health Sciences

## ERA Process Overview

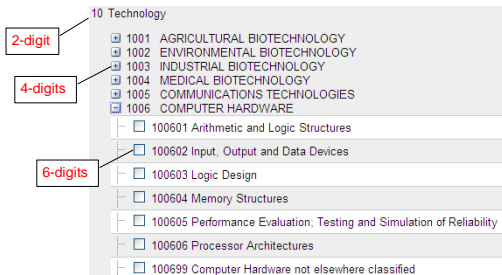


## Data Types

- Traditional Research Outputs
- Non-Traditional Outputs
- Research Staff
- Research Income (Categories)
- Esteem
- Applied
- Supporting information – statements

The references periods differ for data – six years for publications, three years for other data, and census data for staff.

## ERA Unit of Evaluation – the Field of Research Codes (FoRs)



The ERA Unit is not the department nor the individual researcher

## Research Active - Volume Thresholds

- For disciplines where citation analysis is used:
  - 50 or more indexed journal articles
- For disciplines where peer review is used:
  - 30 outputs
- In cases of low volume at the four-digit level, analysis can still occur at the two-digit level if it reaches the threshold.
- Note books weighted 5:1 for threshold calculation, not for evaluation

## The ERA process to date

- Extensive consultation and a Trial conducted in 2009
- Received submission data from 41 eligible institutions
- Obtained citation data from Provider – Scopus
- Enabling access to research outputs via institutional repositories
- Appointment and training of eight research evaluation committees (149 distinguished researchers)
- Appointment of external peer reviewers (peer review disciplines only)
- Built a computer system to collect and present the data for evaluation purposes and for reporting

## Development of methodology for ERA

- Development of metrics methodology – a first in the world. Trial of two clusters to test the extent of disciplinary approaches.
- Ranked outlets – journals and conferences
- Bibliometrics – world and Australian institution benchmarks
- Evaluation of all disciplines through use of metrics.
- Includes peer review for Humanities, Creative Arts & Social, Behavioural and Economic Sciences. Helping the sector identify the research component of creative works.
- Development of institutional repositories to give electronic access to research outputs

## ERA Outlook

- The ERA outcomes are to be released publicly in 2011. So.....
  - A national stocktake - what disciplines are achieving excellence? Where is this excellent research being done?
  - is this emerging research?
  - is this poor performance?
  - how does the discipline compare internationally?
  - How does ERA fit within the Government's overall policy landscape?

### Powering Ideas

<http://www.innovation.gov.au/Section/Innovation/Pages/PoweringIdeasAnInnovationAgendaforthe21stCentury.aspx>. This report covers the government's research and innovation agenda, including the role of ERA within the overall policy framework.

### TEQSA

The overall thrust of the TEQSA initiative is available in a factsheet at [http://www.deewr.gov.au/HigherEducation/Documents/RTF/09\\_FactSheet\\_A%20national%20quality%20and%20standards%20agency.rtf](http://www.deewr.gov.au/HigherEducation/Documents/RTF/09_FactSheet_A%20national%20quality%20and%20standards%20agency.rtf).

### SRE

- <http://www.innovation.gov.au/Section/Research/Pages/SustainableResearchExcellence%20SRE%29.aspx>. Contains all recent information and consultations about the SRE. Note that only institutions who participate in ERA are eligible for the higher threshold SRE funding components.
- Finally, the Minister's speech to the ATN conference contained some insights into current policy direction and the integration of these strands, including the relationship between ERA and funding. The speech is available at <http://minister.innovation.gov.au/Carr/Pages/AustralianTechnologyNetworkofUniversities.aspx>.

## Policy advice regarding research in higher education sector

- The ARC provides advice to the Australian Government on key issues in the higher education research sector
- Senior executive are members of high level committees, nationally and internationally
- The ARC works closely with Australian and international research agencies

## Assessing quality of ARC funded research

- Reporting requirements for ARC funded projects
- Impact of ARC funded research
- Undertaking reviews of its schemes

## Reporting requirements for ARC funded projects

Requirements are in ARC Funding Agreements to ensure accountability and good management of public funding for research.

- Progress Reports
- Final Reports
- End of Year Reports
- Audited Financial Statements
- Annual Reports
- Industry Partner/Collaborating Organisation Agreed Contribution Report

ARC gives statistics on project outcomes in its annual report and the ARC *Discovery* newsletter outlines the latest news and projects being funded.

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## Impact of ARC-funded research

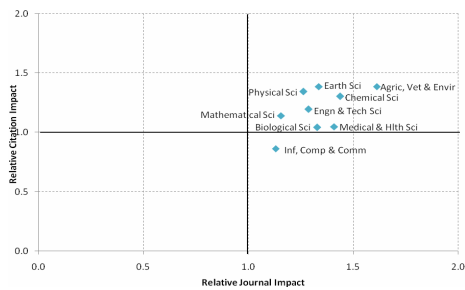
Preliminary study findings: 2001–05 ARC-funded research publications

Relative to world benchmarks, ARC-funded publications appear in high-impact journals and are highly cited:

- In the sciences, the impact of ARC-funded publications was above the world average in all fields except information, computing and communication sciences.
- In the social sciences and humanities, the impact of ARC-funded publications was well above world averages in all disciplines that had sufficient numbers for analysis.
- In all fields except the mathematical sciences, the proportion of ARC-funded publications appearing among the most highly cited for their discipline is higher than the norm of one per cent.

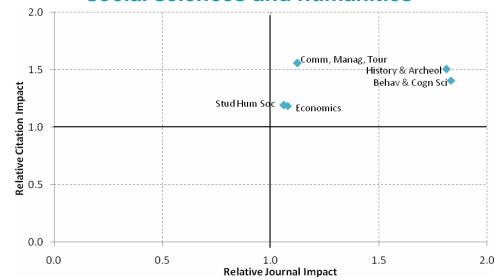
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## Impact of ARC-funded research - sciences



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## Impact of ARC-funded research social sciences and humanities



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## ARC and comparator Australian sectors

Number of publications and relative impact — all publications, 2001-2005

Scheme/Sector	Number of Publications	Citations	Relative Citation Impact
ARC - Australian Postdoctoral Fellowships	1621	7001	1.36
ARC - Australian Professorial Fellowships	2178	11085	1.31
ARC - Australian Research Fellowships	1028	5599	1.27
ARC - Centres Excellence	574	678	1.35
ARC - Discovery Projects	10528	57064	1.17
ARC - Federation Fellowships	977	2694	1.59
ARC - Key Centres	402	2284	1.13
ARC - Linkage Projects	1604	5761	0.92
ARC - QEH Fellowships	1159	5473	1.12
ARC - Special research Centres	1863	12902	1.53
<b>ARC Total</b>	<b>17246</b>	<b>88912</b>	<b>1.19</b>
Cooperative Research Centres	3245	15728	0.99
Other Government	8247	31913	0.81
Other Hospital	11967	74046	1.30
Other University	58874	253521	0.91
Research Institutes	14199	116314	1.73
<b>Australia</b>	<b>104319</b>	<b>541243</b>	<b>1.11</b>
<b>World</b>	<b>3782695</b>	<b>17649566</b>	<b>1.00</b>

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## ARC Reviews of Schemes

- The latest to be reviewed is the *Linkage Projects* scheme
- Australian Government recommends reviews of its programs every three years
- Consider the original policy framework, stakeholder consultation, annual feedback mechanisms
- Australian National Audit Office – Better practice guide for grants administration – <http://www.anao.gov.au/director/publications/betterpracguides>

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## Further information?

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