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
• Statutory Agency established 2001
• Mission: to deliver policy and programs that advance Australian research and innovation globally and benefit the community
• Fund direct costs to Universities and partners
• All disciplines except clinical medicine & dentistry
Government Investment in R&D
2009-2010
ARC Funding 2002-2012

Web: arc.gov.au  |  Email: info@arc.gov.au
• 2008 Initiatives
  – Australian Laureate Fellows
  – Internationalisation
  – Future Fellows
  – ERA planning

• 2009 Budget measures
  – Continued funding for ERA ($35.8m)
  – New Super Science Fellowships ($27.2m)
  – Funding to develop bionic eye ($50m)
  – Continued funding for NICTA ($92.75m)

• 2010 Centres of Excellence initiated
National Competitive Grants 2010

- Fewer, larger schemes
- Consultation on Linkage Projects
- Changes to Peer Review processes
- Working Smarter
- Early Career researchers and women in research
- Trial of priorities
Linkage Projects 2011

• Ahead for 2011
  Maintain two rounds
  Simplify student administration
  Minimum ARC $30K

• Comprehensive Linkage Evaluation
  External evaluation with a major consulting company
Purpose – to enhance peer review process

• The current structure incorporates:
  - College of Experts (100+)
  - detailed (Ozreaders) (~20)
  - specialised assessors (Intreaders) (<5)

• Issues
  - weighting of different levels
  - review fatigue and response
  - expertise matching
Elements of a better system

• Ease the workload of assessors
• Facilitate the assignment of proposals to the most appropriate assessors
• Provide better support for multidisciplinary applications and applications involving research in emerging areas
• Improve the quality of the process with assessments from specialised reviewers receiving the highest weighting
• Better feedback for unsuccessful applicants
New structure:

Level 3

Interdisciplinary Selection Advisory Committees
composed of ‘Interdisciplinary Leaders’ who are Chairs and co-Chairs of PRCs

Level 2

Panel Review Committee 1
Panel Review Committee 2
Panel Review Committee 3
Panel Review Committee 4 ~ Panel Review Committee N

Level 1

Peer Reviewers

2-digit FOR

4-digit FOR

6-digit FOR

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Process

• Internal Working Group
• External Working Group
• Formal consultation process
• Research on processes used by overseas agencies
• Feedback from College this week
Outcome so far

• Major refresh of the database
  (continue to help by identifying biased or unhelpful reviewers and truly excellent ones)
• Some outcomes introduced already
  (eg ROPE)
• Elements this year in Future Fellows
• Major changes planned for next year
Working Smarter project

- Review scheme design (better coordination)
- Review allowable expenditure
- Centres overlap simplified
- Definition of medical and dental research
- Eligibility processes
- Post-award administration
- Outcome reporting and evaluation
- Organisational changes (later0
Excellence in Research for Australia
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.
Some General ERA Principles

1. Evaluation by Research Evaluation Committees in discipline clusters; Eight Clusters in total
2. Unit of Evaluation is the four-digit ANZSRC Field of Research code (ie. 157 possible Units of Evaluation); evaluation occurs at the two-digit level too
3. There is a minimum level of output to be considered ‘research active’ for evaluation in ERA
4. Evaluations informed by a ‘dashboard’ of discipline-specific indicators
5. Some peer review of outputs to be accessed through institutional repositories in some Clusters
# The ERA Clusters

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Subject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>Physical, Chemical &amp; Earth Sciences</td>
</tr>
<tr>
<td>Cluster 2</td>
<td>Humanities and Creative Arts</td>
</tr>
<tr>
<td>Cluster 3</td>
<td>Engineering and Environmental Sciences</td>
</tr>
<tr>
<td>Cluster 4</td>
<td>Social, Behavioural and Economic Sciences</td>
</tr>
<tr>
<td>Cluster 5</td>
<td>Mathematics, Information and Computing Sciences</td>
</tr>
<tr>
<td>Cluster 6</td>
<td>Biological and Biotechnological Sciences</td>
</tr>
<tr>
<td>Cluster 7</td>
<td>Biomedical and Clinical Health Sciences</td>
</tr>
<tr>
<td>Cluster 8</td>
<td>Public and Allied Health Sciences</td>
</tr>
</tbody>
</table>
ERA Unit of Evaluation – the FoRs

The ERA Unit is not the department nor the individual researcher.

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Research Active - Volume Thresholds

• For disciplines where citation analysis is used:
  – 50 or more indexed journal articles

• For disciplines where peer review is used:
  – ERA Trial: 20 or more outputs
  – ERA commencing in 2010: threshold raised to 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
ERA Process Overview

<table>
<thead>
<tr>
<th>Metrics Profile 1</th>
<th>Metrics Profile 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metrics Profile 3</td>
<td>Metrics Profile 4</td>
</tr>
<tr>
<td>Metrics Profile 5</td>
<td>Metrics Profile 6</td>
</tr>
</tbody>
</table>

Peer Review (if included)  
Access to Repositories

Note - There are no weightings

Research Evaluation Committee  
Final report
A quick history of ERA

- Consultation 2008–2010
- Trial for 2009
- ERA – the future
Consultation – 2008 -2010

• Metrics methodology – expert committees
• Discipline-specific indicators
• Ranked journals and conferences
• Esteem measures
• Advice from the Research Evaluation Committees and peer reviewers who participated in the trial
• Sector feedback
Why the ERA Trial in 2009?

- Testing the methodologies
- Two clusters were selected for trial
  - PCE - metrics based
  - HCA - combination of metrics and peer review
- An evaluation framework of research in universities – a shift from volume to quality in all disciplines
- Lessons learned has informed the Submission Guidelines and other processes for ERA commencing in 2010
Summary of the 2009 Trial Submissions

• **Cluster 1** (Physical, Chemical and Earth Sciences)
  – 39 out of 41 institutions submitted data
  – Just over 40,000 research outputs were submitted

• **Cluster 2** (Humanities and Creative Arts)
  – All 41 institutions submitted data
  – Just over 47,000 research outputs were submitted including 7,000 creative works
Trial Outcomes-Physical Sciences
Trial Chemical Sciences

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History and Archaeology

21 History and Archaeology
2101 Archaeology
2102 Curatorial Studies
2103 Historical Studies
What was reported from the Trial?

• **Institution reports** (only to each institution):
  • Ratings for each assessable Unit of Evaluation, plus Committee comments
  • Feedback to institutions about their submission, repositories, data integrity etc.

• **National report** on the ARC website
ERA – 2010

- Submission Guidelines and Technical Specifications were released in December 2009
- The full list of ranked journals and conferences is out now
- ERA Submissions open 1 June 2010
- ARC has to:
  - Work with institutions on repositories
  - Set up eight committees and pool of peer reviewers
  - Do further system development (SEER)
  - Conduct full ERA process commencing in 2010 – all eight clusters evaluated simultaneously
ERA – So how do we start?

-Ascertain eligibility of data types - outputs, researchers
-Collecting all the data for the one schema
-Tagging of journal articles with EIDs with the service provided by Scopus
-Selecting peer review items for those disciplines that have peer review as an indicator + repository preparation
-Preparing research statements
-Making the case – background statements
Data Types

• Traditional Research Outputs
• Non-Traditional Outputs
• Research Staff
• Research Income (Categories)
• Esteem
• Applied
• Supporting information - statements
ERA Definition of research

For the purposes of ERA, research is defined as the creation of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts, methodologies and understandings. This could include synthesis and analysis of previous research to the extent that it is new and creative.
## The New Rating Scale

<table>
<thead>
<tr>
<th>Rating</th>
<th>Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>The Unit of Evaluation profile is characterised by evidence of outstanding performance <strong>well above world standard</strong> presented by the suite of indicators used for evaluation.</td>
</tr>
<tr>
<td>4</td>
<td>The Unit of Evaluation profile is characterised by evidence of performance <strong>above world standard</strong> presented by the suite of indicators used for evaluation.</td>
</tr>
<tr>
<td>3</td>
<td>The Unit of Evaluation profile is characterised by evidence of average performance <strong>at world standard</strong> presented by the suite of indicators used for evaluation.</td>
</tr>
<tr>
<td>2</td>
<td>The Unit of Evaluation profile is characterised by evidence of performance <strong>below world standard</strong> presented by the suite of indicators used for evaluation.</td>
</tr>
<tr>
<td>1</td>
<td>The Unit of Evaluation profile is characterised by evidence of performance <strong>well below world standard</strong> presented by the suite of indicators used for evaluation.</td>
</tr>
<tr>
<td>NA</td>
<td>Not assessed due to low volume. The number of research outputs does not meet the volume threshold standard for evaluation in ERA.</td>
</tr>
</tbody>
</table>
Mythbusting - Ranked Outlets

- The first consultation cab off the rank – not the most important indicator on the Dashboard
- Only one of a number of indicators on the “Dashboard” – a window to articles not a flat profile
- Ranked Journals are required for development of discipline-specific benchmarks for citation analysis
- Ranked conferences essential for IT, Engineering & Built Environment
- Note discipline-specific practices
ERA Outlook

• The ERA outcomes are to be made available to Government, universities, and released publically. So.....

  ➢ National stocktake - what disciplines are achieving excellence? Where is this excellent research being done?
  ➢ is this emerging research?
  ➢ is this poor performance?
  ➢ how does this compare internationally?
  ➢ what needs more investment?
  ➢ 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

SRE
- http://www.innovation.gov.au/Section/Research/Pages/SustainableResearchExcellence%28SRE%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 recent 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.
Minding the Gap

• ERA will tell us a great deal about the strengths of different disciplines in higher education institutions.

• Ultimately it will also tell us something about the “gaps” either within or between disciplines providing us with a guide to some of the areas we need to invest in and grow for the future
Further information?

• [www.arc.gov.au/era](http://www.arc.gov.au/era)

• Email: era@arc.gov.au

• Hotline: 02 6287 6755
ECRs and Women Do we have a problem?
### Success Rates

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unfunded (no.)</td>
<td>Funded (no.)</td>
</tr>
<tr>
<td>Discovery</td>
<td>8096</td>
<td>2292</td>
</tr>
<tr>
<td>Federation Fellows</td>
<td>65</td>
<td>8</td>
</tr>
<tr>
<td>LIEF</td>
<td>668</td>
<td>735</td>
</tr>
<tr>
<td>Linkage</td>
<td>2577</td>
<td>2073</td>
</tr>
</tbody>
</table>
What are we doing?

• Replaced “track record” with “research opportunity and performance evidence”
  – Describe opportunities for research and any interruptions
• More women (dilemma re workload) and “open minded” men on committees
• Ease restrictions on fellowships (PT, longer entry periods)
• Exploring other options
Send stronger messages to potential applicants to stimulate more applications

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Happy to receive feedback and ideas