Excellence in Research for Australia

ERA 2010 Outcomes
Business Academic Research Directors Network
15 April 2011
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.
General ERA Principles

1. 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

2. Evaluation by Research Evaluation Committees in discipline clusters; eight clusters in total

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 accessed through institutional repositories in some disciplines
## The ERA Clusters

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Field</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 Development 2008-2010

- Several major rounds of consultation
- Indicator Development Group (specialist sub-groups)
- Ranked journals and conferences consultation
- Discipline specific indicators
- Full trial in 2009 of PCE and HCA
  - test of systems, processes
  - feedback from sector, RECs, peer reviewers
- Esteem indicators
The ERA Unit of Evaluation

• The **baseline** - the Discipline in an institution = Four-digit Field of Research Code (ANZSRC) eg., 2101 Archaeology

• The **higher perspective** – the division in an institution = Two-digit Field of Research Code (ANZSRC) eg., 21 History and Archaeology

• The ERA Unit is **not** about the department nor the individual researcher
ERA Process Overview

<table>
<thead>
<tr>
<th>Volume &amp; Activity</th>
<th>Ranked Outlets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citation Analysis</td>
<td>Esteem</td>
</tr>
<tr>
<td>Research Income</td>
<td>Applied Measures</td>
</tr>
</tbody>
</table>

Peer Review

International Benchmarks

Research Evaluation Committees
Why a matrix approach to indicators?

• Not all indicators are suitable for all disciplines

• Pick and choose what is right for each discipline

• The indicator suite must ensure comparable quality across a range of indicator types

• Journal Rankings are not THE indicator
ERA 2010 Reviewers

• Expert review and specialist disciplinary knowledge were essential – not a mechanical process

• 8 Research Evaluation Committees

• 149 Australian and international REC members

• 500+ Peer Reviewers from Australia and overseas

• REC members also conducted peer review
Stages of evaluation

• Every UoE evaluated by at least three REC members (plus peer reviewers)

• Independent evaluation in the first instance followed by exchange of views

• All evaluations were advice to the full Committee

• All UoEs discussed at the final evaluation meeting

• All final ratings decisions of the Committee as a whole
# The ERA 2010 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>
</tbody>
</table>
ERA

Background Statement

Volume and Activity
Ranked Outlets
Peer Review
Citation Analysis
Esteem Measures
Research Income
Applied Measures
ERA 2010 at a glance

- All 41 eligible institutions participated
- 2435 units of evaluation assessed at the two- and four-digit level
- Over 330,000 research outputs and 55,000 researchers represented
Research outputs by 2-digit code
UoEs by 2-digit code
ERA 2010 – the results....
ERA 2010 outcomes: context

• ERA is a retrospective evaluation of research performance: 2003-2008 for research outputs, 2006-2008 for other data

• The ERA unit of evaluation is the discipline within the institution, not individual researchers or institutional units

• ERA does not rank institutions or units; each UoE is evaluated on its merits against the rating scale
The National Report


- National profile of research activity
- Evaluation outcomes by FoR and institution
- Searchable results on-line by institution and by FoR
Reading the national results

86% of assessed UoEs received a rating at or above world standard (i.e. rating of 3 or above).

Of all assessed UoEs at the four-digit FoR code level (58 UoEs), the average rating is 3.4. See Section 1 for two-digit FoR code average rating.

### Mathematical, Information and Computing Sciences

<table>
<thead>
<tr>
<th>01 Mathematical Sciences</th>
<th>FTEs</th>
<th>Esteem count(s)</th>
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</thead>
<tbody>
<tr>
<td>880</td>
<td></td>
<td>106</td>
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</table>

<table>
<thead>
<tr>
<th>Research outputs</th>
<th>8,659</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research income $</td>
<td>104,624,740</td>
</tr>
<tr>
<td>UoEs assessed</td>
<td>58</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patent(s)</th>
<th>Research commer. income $</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>22,368,469</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Average National Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4</td>
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</table>

<table>
<thead>
<tr>
<th>Rating:</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Total</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>58</td>
</tr>
</tbody>
</table>

| Distribution: | 1 | 7 | 25 | 16 | 9 | 58 |

There were seven UoEs which received a rating of 2.

A total of 58 UoEs were assessed for Mathematical Sciences at the four-digit FoR code level.
2010 results – where to from here?

• Great deal of information in the National Report
• Citation and benchmark information provided in confidence to institutions
• Extra SRE funding was contingent upon ERA 2010 participation
• ERA is informing mission-based compact negotiations between the Government and institutions
ERA 2012

- A new ERA 2012 section has been added to the ARC website – developments will be posted there

- Ranked journal and conference lists public consultation undertaken – see ARC website – includes tender process to involve peak bodies in Stage 2

- Public consultation in March-April on indicators and other issues
Some issues under consideration

• Low volume threshold – including both number and type of outputs
• Eligibility of fractional staff
• Reference period for income, applied, esteem
• Discipline matrix and cluster structure
• Reporting of outcomes
• Expanding peer reviewer pool
• Other issues raised by sector during consultation
Further information?

- www.arc.gov.au/era
- Email: era@arc.gov.au
- Hotline: 02 6287 6755