Excellence in Research for Australia (ERA)

Andrew Calder

Director – Research Performance and Analysis
Objectives of ERA

1. Establish an evaluation framework that gives government, industry, business and the wider community assurance of the excellence of research conducted in Australia’s institutions;

2. 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;

3. Identify excellence across the full spectrum of research performance;

4. Identify emerging research areas and opportunities for further development;

5. Allow for comparison of Australia’s research nationally and internationally for all discipline areas.
## Clusters

<table>
<thead>
<tr>
<th>Cluster 1</th>
<th>Physical, Chemical &amp; Earth Sciences</th>
</tr>
</thead>
<tbody>
<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 Communication Sciences</td>
</tr>
<tr>
<td>Cluster 6</td>
<td>Biological Sciences and Biotechnology</td>
</tr>
<tr>
<td>Cluster 7</td>
<td>Biomedical and Clinical Research</td>
</tr>
<tr>
<td>Cluster 8</td>
<td>Public and Allied Health, and Health Sciences</td>
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</tbody>
</table>
2009 Trial Reference Period

• Research publication outputs

• Non-publication outputs
  – 1 January 2005 – 31 December 2007

• Staff census date
  – 31 March 2008
ERA Process Overview

<table>
<thead>
<tr>
<th>Metrics Profile 1</th>
<th>Metrics Profile 2</th>
</tr>
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<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

Note - There are no weightings!

Research Evaluation Committee

Final report
Indicator suite for ERA 2010

• Volume and Activity
  – Staffing & Research output Profile

• Ranked Outlets
  – Journals; conferences

• Citation Analysis
  – Relative Citation Impact (RCI) against world and Australian institution benchmarks.
  – RCI Class & Centile Distribution

• Research Income
  – Broken down into categories and profiled against field average and full-time equivalent (FTE) staff numbers

• Esteem

• Applied
  – Patents sealed & research commercialisation income
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
Learnings

ARC

- Linked schema
- Better data validation
- Soft close for submission to allow time to correct errors
- Provision of support to improve institutional publication databases

Universities

- Improve quality of institutional databases
- Data handling
- Data linking across indicators
- Ability to analyse ERA results to identify specific strengths
What data will the ARC return to Universities?

**Institution report**

- Static citation count for each indexed article
- Australian (HEP) benchmarks for each year of the reference period (by FoR)
- World benchmarks for each year of the reference period (by FoR)
- Centile citation thresholds for each year of the reference period (by FoR)
- Ratings for Units of Evaluation, plus Committee comments
### Recompiling Institutional groups

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<tr>
<th>Field_Code</th>
<th>Field_Name</th>
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<th>RCI_Aust</th>
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2009 PCE Trial - Submissions received

Breakdown of 29,915 Journal Articles Submitted

- Indexed by Scopus, n=28,246
- Invalid EIDs submitted, n=79
- Not indexed by Scopus, n=1,590
2009 PCE Trial – Data Quality

- Incorrect ERA ID
- Staff FoR codes
- Income FoR Codes
- Incorrect metadata
  - article title
  - publication year
  - authors
- Missing EID from indexed journal article
Linking indicator data

• There are instances where income is recorded against a unit of evaluation but no FTE is recorded.

• Researcher FoR code is different to publication FoR code. An issue in fields such as Mathematics, Food Sciences.

• Income currently collected for 3 years and publications for 6 years.
Future Evaluations – Schema Design

• 2009 Trial submission schema is built around the concept of ‘Clusters’.

• For ERA 2010, institutions will submit ALL fields, regardless of Cluster.

• ARC is currently reviewing indicators and schema design, keeping in mind burden to the sector.
ERA ranked outlets

• The full development list is posted on the ARC website for review (until 2 November)
  – Please let us know additions (using the new journal form)
  – Corrections (using the Excel template provided)
  – Listed contacts for peak bodies undertaking rankings

• The final list will not be released until after the HCA REC meets in November

• Ranked conferences for Information and Computer Sciences, Built design and Design, and some Engineering disciplines
2009 Low Volume Thresholds

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

• For disciplines where peer review will be used:
  – 20 or more indexed journal articles (or equivalent)

• In cases of low volume at the four-digit level, analysis
  can occur at the two-digit level
Bibliometrics

• Scopus is the citation provider for the 2009 trial

• The ARC is currently considering proposals for the next round of ERA

• EID tagging
  – 15 working day turnaround
  – No cost to universities
  – Over 27,000 records processed
The matrix approach

• 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
Further Reading on ERA

- **Indicator Principles**
  - General requirements of indicators
  - General principles underpinning ERA

- **Indicator Descriptors**
  - More detailed information on each indicator

- **Submission Guidelines**

- **Benchmark Methodology**

- **Evaluation Guidelines**

Please visit [www.arc.gov.au](http://www.arc.gov.au) for further information and obtain copies of these documents.