Excellence in Research for Australia

28 August 2009
University of Wollongong
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; and

5. allow for comparisons of Australia’s research nationally and internationally for all discipline areas.
## ERA Clusters

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster 1</td>
<td>Physical, Chemical and 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 Research</td>
</tr>
<tr>
<td>Cluster 8</td>
<td>Public and Allied Health Sciences</td>
</tr>
</tbody>
</table>
ERA timeframe

• Trials in 2009 for two Clusters only

  – PCE submissions opened June and closed July 2009
  – Outcomes in November 2009
  – HCA submissions opened and closed August 2009
  – Outcomes in December 2009

• Full ERA process expected in next round (will include PCE and HCA again)
2009 - Latest focus points for ERA

• 2009 Research Evaluation Committees for PCE and HCA established and announced
• Consultation on indicator matrices for eight clusters including proposed esteem indicators for next round
• Development of ranked refereed conference publications (tiered)
• Continue finalising the journal rankings lists for other Clusters – expert consultation
Next Round!

BIG    BANG
Research Codes

- RFCDs codes revised by Australian Bureau of Statistics
- Now ANZSRC codes – both grants and ERA

Two digit codes
- Eg., 21 history and archaeology

Four digit codes
- eg., 2103 Historical studies

Six digit codes
- Eg., 210302 Asian History
# The Discipline Matrix

<table>
<thead>
<tr>
<th>02: Physical Sciences</th>
<th>03: Chemical Sciences</th>
<th>04: Earth Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>021: Astronomical and Space Sciences</strong></td>
<td><strong>031: Analytical Chemistry</strong></td>
<td><strong>041: Atmospheric Sciences</strong></td>
</tr>
<tr>
<td><strong>022: Atomic, Molecular, Nuclear, Particle and Plasma Physics</strong></td>
<td><strong>032: Inorganic Chemistry</strong></td>
<td><strong>042: Oceanography</strong></td>
</tr>
<tr>
<td><strong>023: Chemical Physics</strong></td>
<td><strong>033: Macromolecular and Materials Chemistry</strong></td>
<td><strong>043: Geology</strong></td>
</tr>
<tr>
<td><strong>024: Condensed Matter Physics</strong></td>
<td><strong>034: Medicinal and Pharmaceutical Chemistry</strong></td>
<td><strong>044: Geophysics</strong></td>
</tr>
<tr>
<td><strong>025: Optical Physics</strong></td>
<td><strong>035: Organic Chemistry</strong></td>
<td><strong>045: Oceanography and Environmental Geoscience</strong></td>
</tr>
<tr>
<td><strong>026: Other Physical Sciences</strong></td>
<td><strong>036: Physical Chemistry (incl. Structural)</strong></td>
<td><strong>046: Other Earth Sciences</strong></td>
</tr>
</tbody>
</table>

### Volume and Activity Analysis
- Bipole researchers involved by Academic unit
- Research publication output by type
- Proportion of total publication activity

### Ranked outlets
- Proportion of indexed journal articles with international co-authors

### Citation Analysis
- Citation per paper against Australian and world benchmarks
- Citation impact against world citation impact

### Income
- Category 1
- Category 2 (including sub-categories)
- Category 4

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Web: arc.gov.au | Email: info@arc.gov.au
Overview of ERA Evaluation

**Key Documents**
- Submission close
- Validation
- Citation supplier data or peer review

**Submission Guidelines**
- Sort by unit of evaluation 4 & 2 - digit – volume threshold
- Agreed application of evaluation methodology

**Indicator Benchmark Methodology**
- Assignment to Research Evaluation Committee (Peer Reviewers for HCA)

**Evaluation Guidelines**
- REC
  - Evaluation
  - Prepare for meeting

**Overview**
- Evaluation meeting
  - Finalise rating(s)/outcomes
  - CEO report
- CEO report to Minister on trial
- Report to the public on national outcomes and separate report to institutions on results
## Evaluation 2009

<table>
<thead>
<tr>
<th>Outputs</th>
<th>Next round – <em>may</em> include:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranked Journals</td>
<td>New ranked outlets, esteem measures, applied measures, a potential mix of citation <em>and</em> peer review for some disciplines – the consultation documents will be on the ARC website soon</td>
</tr>
<tr>
<td>Citation Analysis or Peer Review</td>
<td></td>
</tr>
<tr>
<td>Supporting Information</td>
<td></td>
</tr>
<tr>
<td>Volume and Activity – outputs and people</td>
<td></td>
</tr>
<tr>
<td>HERDC Research Income</td>
<td></td>
</tr>
<tr>
<td>Applied Indicators – Patents and Commercialisation income</td>
<td></td>
</tr>
<tr>
<td>2-digit background statement</td>
<td></td>
</tr>
</tbody>
</table>
The ERA “Dashboard”

• A series of quantitative profiles presented to a Research Evaluation Committee as proxies of quality for a Unit of Evaluation.
• Examples of the quantitative profiles are in the Evaluation Guidelines.
• Where relevant – Peer Review – access to outputs via repositories or provided by institution to the ARC for the reviewer.
### Example Dashboard

#### Ranked Journals

<table>
<thead>
<tr>
<th>Journal</th>
<th>No. of Journal</th>
<th>Total</th>
<th>Cited</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>22</td>
<td>1501</td>
<td>1501</td>
<td>1501</td>
<td>100%</td>
</tr>
<tr>
<td>B</td>
<td>37</td>
<td>1604</td>
<td>1604</td>
<td>1604</td>
<td>100%</td>
</tr>
<tr>
<td>C</td>
<td>10</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>1795</td>
<td>1795</td>
<td>1795</td>
<td>100%</td>
</tr>
</tbody>
</table>

#### Citation Analysis

<table>
<thead>
<tr>
<th>Journal</th>
<th>Total</th>
<th>Cited</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1501</td>
<td>1501</td>
<td>1501</td>
<td>100%</td>
</tr>
<tr>
<td>B</td>
<td>1604</td>
<td>1604</td>
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<td>100%</td>
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<tr>
<td>C</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>1795</td>
<td>1795</td>
<td>1795</td>
<td>100%</td>
</tr>
</tbody>
</table>

#### Volume and Activity

<table>
<thead>
<tr>
<th>Volume</th>
<th>Total</th>
<th>Cited</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>100%</td>
</tr>
<tr>
<td>2016</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>100%</td>
</tr>
<tr>
<td>2017</td>
<td>140</td>
<td>140</td>
<td>140</td>
<td>100%</td>
</tr>
<tr>
<td>Total</td>
<td>390</td>
<td>390</td>
<td>390</td>
<td>100%</td>
</tr>
</tbody>
</table>
Example Dashboard

HERDC Income

Applied indicators

Background Statement

RHCs will be expected to develop and document evaluation for the FCE and RCA clusters and T RHCs may be, including a ‘self-evaluation’ text and a ‘risk evaluation’ text expected to support the working methods for the purpose of emphasis. Inform the development of working methods for policy, or thematic analysis provided by the ARC process.

Applied: F03 Registered designs
Institution: University X
Discipline Cluster: X
FoR Level: two-digit
FoR Number: 1904
FoR Name: Studies in Creative Arts and Writing

Web: arc.gov.au  |  Email: info@arc.gov.au
ERA Indicators

• History of development and selection
• Proxies for quality
• Discipline specific-practices in interpretation
• 2009 trial of current indicators
• Next round - consultation on indicators for eight clusters
• Mythbusters! – indicator weightings, formulas, outputs divided by FTE
Ranked Journals

• The portal used to enter the domain of journal articles
• Only one of a number of indicators on the “Dashboard”
• It assists with the assignment of a research output to the appropriate discipline(s) and cluster
• Required for development of discipline-specific benchmarks for citation analysis
• Note discipline-specific practices eg., nursing
Ranked Journals for next round

- What is happening with the journal ranking process for next round?
- What do the next steps involve?
- Who can be involved?
- lauren.johnston@arc.gov.au
- How much work is involved?
- What about international reviewers?
Peer Review - summary

• Peer review will be used as an indicator for disciplines that do not have a sufficiently robust range of other indicators, eg HCA.

• Peer review is one “indicator” on the Dashboard

• Institutions select up to 20% of outputs from Units of Evaluation – four and two-Digit Units of Evaluation

• The Research Evaluation Committee will select a representative sample of outputs to review to inform their assessments, and also have access to reports from external peer reviewers.
Interdisciplinary Research

- ERA is a discipline-based evaluation
- Re-assignment of two-digit and multidisciplinary outputs
- Discipline Profile and its use
- Institutional tools (not part of evaluation)
Field of Research Re-Assignment

DIVISION 20 LANGUAGE, COMMUNICATION AND CULTURE

- 2001 Communication and Media Studies: 34
- 2002 Cultural Studies: 47
- 2003 Language Studies: 16
- 2004 Linguistics: 83
- 2005 Literary Studies: 46
- 2099 Other Language, Communication and Culture: 38

63 General Language, Communication and Culture articles to be re-assigned by the ARC
Discipline Profile and its use – 4-digit

![Bar Chart]

**Discipline FoR 2101**

- 2101 - Archaeology
- 0607 - Plant Biology
- 1901 - Art History
- 0305 - Organic Chemistry
Institutional Tools

• Institutions may tag research outputs with two institutional codes and two research theme codes
• This will assist in recompiling data
• The tagging will not be used for ERA evaluation purposes
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
Key consultation issues for next round

• Selecting best suite of indicators for each discipline in the eight Clusters
• Feasibility of collection of possible esteem data
• Creative Arts research outputs and new supporting information for those items earmarked for peer review
Further information?

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