Australian Research Council

Excellence in Research for Australia

Australian National University

27 July 2009
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 Documents

- ERA Submission Guidelines
- ERA Evaluation Guidelines
- ERA Indicator Principles
- ERA Indicator Benchmark Methodology
- ERA Indicator Descriptors
### ERA Clusters

<table>
<thead>
<tr>
<th>Cluster 1</th>
<th>Physical, Chemical and 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 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>
Research Codes

- RFCDS codes revised by Australian Bureau of Statistics
- Now ANZSRC codes – reporting for both grants and ERA
  
  Two digit codes
  - Eg., 03 Chemistry
  
  Four digit codes
  - eg., 0302 Inorganic Chemistry
  
  Six digit codes
  - Eg., 030205 Non metal chemistry
ERA timeframe

- Trials in 2009 for two Clusters only
  - PCE submissions opened June and closed July 2009
  - Outcomes in November 2009
  - HCA submissions open and closes August 2009
  - Outcomes in December 2009

- Full ERA process expected in 2010 (will include PCE and HCA again)
ERA Update - consultation

What happened in 2008

- ERA Consultation Paper
- Indicators Development Group
- Humanities and Creative Arts Sub Groups
- PCE Working Group
2009 - Latest focus points for ERA

- Workshops on other six clusters and indigenous research.
- Development of esteem indicators
- Ranked refereed conference publications (tiered)
- Finalising the journal rankings lists for other Clusters – expert consultation
- Research Evaluation Committees for PCE and HCA being established
- Draft matrices
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

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

Outputs

Ranked Journals

Citation Analysis or Peer Review

Supporting Information

Volume and Activity – outputs and people

HERDC Research Income

Applied Indicators – Patents and Commercialisation income

2-digit background statement
Evaluation guidelines

- ERA Evaluation Guidelines – working document for the trial in 2009
- Contents focus on: role and responsibilities of RECS and Peer Reviewers, outline of evaluation processes, and the rating scale
- **Rating scale**: 1 to 5 (5 the highest)
- In order to achieve a rating at a particular point on the scale, the majority of output from the Unit of Evaluation will normally be expected to meet the standard for that rating point.
Low volume thresholds

- It is recognised that for some disciplines there may not be sufficient research volume to undertake a valid analysis at the four-digit level.

- In these instances, the ARC will undertake quantitative analysis at the two-digit level.

- All outputs will contribute to the national analysis and benchmarks.
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.
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
• Initial lists – Learned Academies and peak bodies
• Consolidation of initial lists
• Sector consultation in June 2008
• Consolidation of sector feedback
• Expert and ARC review
• Finalisation workshop(s)
• Release list for comment
• Review and release

http://www.arc.gov.au/era/finalising_ranking.htm
Esteem

- In 2008 we received advice on a number of proposed esteem measures for PCE and HCA
- In 2009 the ARC received advice on esteem measures for the other six clusters
- The Minister determined that esteem measures would not be included in 2009 but asked the ARC to conduct further work on esteem measures for 2010
- The ARC has undertaken further work and the proposed esteem measures will be included in the draft matrices for 2010 for sector comment
Peer Review

- Peer review will be used as an indicator for disciplines that do not have a sufficiently robust range of other indicators, e.g., 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.
- REC Members will undertake expert review of Dashboard including peer review of a sufficient sample of research outputs.
- Peer Reviewers only evaluate research quality based sample of outputs and their reports go back to REC Members.
Peer Review

• Sensitivities in evaluation, eg commercial, cultural
• Repository or hard copy outputs - access

• Article XXX – Repository Link
• Book XXX – Repository
• Book XXX – Hard copy to ARC
• Design - Repository
• Computer program - Repository
Interdisciplinary Research

• ERA is a discipline-based evaluation
• Re-assignment of Two-digit and multi-disciplinary outputs
• Discipline Profile and its use
• Institutional tools (not part of evaluation)
### Field of Research Re-Assignment

<table>
<thead>
<tr>
<th>Field of Research</th>
<th>Primary</th>
<th>Secondary</th>
<th>Tertiary</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>02  - Physical Sciences</td>
<td>113</td>
<td>65</td>
<td></td>
<td>178</td>
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<tr>
<td>0201 - Astronomical and Space Sciences</td>
<td>71</td>
<td>16</td>
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<td>0202 - Atomic, Molecular, Nuclear, Particle and Plasma Physics</td>
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<tr>
<td>0203 - Classical Physics</td>
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<td>28</td>
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<td>8.5%</td>
</tr>
<tr>
<td>0204 - Condensed Matter Physics</td>
<td>25</td>
<td>4</td>
<td></td>
<td>29</td>
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<tr>
<td>0205 - Optical Physics</td>
<td>13</td>
<td>1</td>
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<td>14</td>
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<tr>
<td>0206 - Quantum Physics</td>
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<td>80</td>
<td>7</td>
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<tr>
<td>0299 - Other Physical Sciences</td>
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<td>11</td>
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<td>1</td>
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<tr>
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<tr>
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<td><strong>Grand Total</strong></td>
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<td>239</td>
<td>13</td>
<td>674</td>
<td>100.0%</td>
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</table>

n = 674 PCE only assigned articles
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<td>143</td>
<td>21.1%</td>
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</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>678</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

n = 678 articles (incl 4 multidisc)
Example Discipline Profile – Four-digit

![Bar chart showing Discipline FoR 0305 categories]

0305 - Organic Chemistry
0304 - Medicinal Chemistry
0607 - Plant Biology
1007 - Nanotechnology
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?

- 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
ARC – outcomes of trial

• Trial for PCE and HCA – review of process and outcomes
• Data back to institutions, plus a national outcomes report
• Lessons learned will inform the full evaluation
Creative Arts issues

- Submission of creative works
- Considerations of research component of research outputs – the statement
- The ANZSRC codings – eg., 1904
- Selecting a variety of outputs for the 20%
- Practice-led research (eg., design)
- Trial – Banded Publishers – Curated Events
- Evaluation – peer review of creative works, and research income