Excellence in Research for Australia

University of South Australia
8 February 2010
1. ERA Overview
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 as well
2. Evaluation by Research Evaluation Committees in discipline clusters; eight clusters in total
3. There is a minimum level of output for a discipline 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 clusters
# The ERA Clusters

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Description</th>
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</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>
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<tr>
<td>Cluster 3</td>
<td>Engineering and Environmental Sciences</td>
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<tr>
<td>Cluster 4</td>
<td>Social, Behavioural and Economic Sciences</td>
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<tr>
<td>Cluster 5</td>
<td>Mathematics, Information and Communication Sciences</td>
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<tr>
<td>Cluster 6</td>
<td>Biological Sciences and Biotechnology</td>
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<tr>
<td>Cluster 7</td>
<td>Biomedical and Clinical Research</td>
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<tr>
<td>Cluster 8</td>
<td>Public and Allied Health, and Health Sciences</td>
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</table>
The ERA Unit of Evaluation

• The **baseline** - the Discipline in an institution = Four-digit Field of Research Code (ANZSRC) eg.,
  2002  Cultural Studies
• The **higher perspective** – the division in an institution =
  Two-digit Field of Research Code (ANZSRC) eg.,
  20  Language, Communication and Culture
• The ERA Unit is **not** the department nor the individual researcher
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

Note - There are no weightings!

Research Evaluation Committee

Final report

Web: arc.gov.au   |   Email: info@arc.gov.au
Consultation – 2008 -2010

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

- Testing the methodologies
- Two clusters were selected for trial
  - PCE - metrics based
  - HCA - combination of metrics and peer review
- Trial RECs formed
  - HCA chaired by Professor Graeme Turner from the University of Queensland (22 members)
  - PCE chaired by Professor Mark von Itzstein from Griffith University (17 members)
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
Indicators for 2009 Trial

• Volume and Activity
  – Profiles showing research outputs and staffing
• Citation Analysis (PCE)
  – Relative Citation Impact (RCI) against world and Australian institution benchmarks.
• Peer Review (HCA)
• Ranked Journals
• Research Income
  – Broken down into categories and profiled against field average benchmarks using full-time equivalent (FTE) staff numbers
• Applied
  – Patents sealed & Commercialisation income
Viewing profiles - Trial Dashboard

Indicators for discipline
### Trial Drilldown

<table>
<thead>
<tr>
<th>Authors</th>
<th>Title</th>
<th>Outlet</th>
<th>Issue</th>
<th>Volume</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>electron-molecule scattering cross-sections, l</td>
<td>Experimental techniques and data for diatomic molecules</td>
<td>Physics Reports</td>
<td>3-5</td>
<td>357</td>
<td>2002</td>
</tr>
<tr>
<td>photoinduced electron transfer in biporphyrin-dimide complexes</td>
<td>Chemistry: A</td>
<td>Chemistry</td>
<td>17</td>
<td>8</td>
<td>2002</td>
</tr>
<tr>
<td>new magnetic dipole transition of the oxygen molecule: B'37g73S-0(0,0)</td>
<td>Journal of the Chemical Society of London</td>
<td>Journal of the Chemical Society of London</td>
<td>13</td>
<td>116</td>
<td>2002</td>
</tr>
<tr>
<td>the partitioning of energy amongst vibration, rotation and translation during the dissociation of p-difluorobenzene-ar neutral and cation complexes</td>
<td>Journal of the Chemical Society of London</td>
<td>Journal of the Chemical Society of London</td>
<td>6</td>
<td>110</td>
<td>2003</td>
</tr>
<tr>
<td>ab initio calculations of stationary points on the benzene-ar and p-difluorobenzene-ar potential energy surfaces: barriers to bound orbiting states</td>
<td>Journal of the Chemical Society of London</td>
<td>Journal of the Chemical Society of London</td>
<td>10</td>
<td>121</td>
<td>2004</td>
</tr>
<tr>
<td>functionalization of carbon nanotubes using phenosilafin</td>
<td>Journal of the Chemical Society of London</td>
<td>Journal of the Chemical Society of London</td>
<td>10</td>
<td>120</td>
<td>2004</td>
</tr>
<tr>
<td>the role of angular momentum in collision-induced vibration-rotation relaxation in polyatomics</td>
<td>Journal of the Chemical Society of London</td>
<td>Journal of the Chemical Society of London</td>
<td>1</td>
<td>121</td>
<td>2004</td>
</tr>
<tr>
<td>recoil energy distributions for dissociation of the van der waals molecule p-difluorobenzene-ar with 450-3000 cm(-1) excess energy</td>
<td>Journal of the Chemical Society of London</td>
<td>Journal of the Chemical Society of London</td>
<td>10</td>
<td>122</td>
<td>2005</td>
</tr>
<tr>
<td>rotational distributions following van der waals molecule dissociation: comparison between experiment and theory for benzene-ar</td>
<td>Journal of the Chemical Society of London</td>
<td>Journal of the Chemical Society of London</td>
<td>7</td>
<td>122</td>
<td>2005</td>
</tr>
<tr>
<td>coexistence of 1,3-butadiene conformers in ionization energies and Dyson orbitals</td>
<td>Journal of the Chemical Society of London</td>
<td>Journal of the Chemical Society of London</td>
<td>12</td>
<td>123</td>
<td>2005</td>
</tr>
</tbody>
</table>
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
Some issues from the Trial

- Data integrity and validation
  - No FTE data
  - No information about authors, or partial author lists
  - No Background Statement or incomplete
  - Incomplete Research Statements
  - Duplication of some output data
  - Incorrect EID tagging of outputs

- Does the output really meet the ERA definition of research?

- Repository access and access to non-repository items for peer review
Some issues from the Trial – for the Creative Arts

- Considerations of research component of research outputs – the statement
- Incomplete ‘bibliographic’ information for creative works
- Selecting a variety of outputs for the 20%
- Trial – Banded Publishers – Curated Events
Addressing the issues from the Trial

- ‘Soft close’ for submission to allow time to correct errors in 2010
- Sneak peek – plans for an early Dashboard
- Portfolios – eg non-traditional outputs, with attached research statement
- Apportionment – outputs apportioned by institutions into FoR codes up to 100%
- Peer review – institutions able to nominate preferred FoR in which output is to be reviewed
- Research statements will remain at 250 words
3. ERA 2010
What’s ahead?

• Submission Guidelines and Technical Specifications were released in December 2009
• ERA Submissions open 1 June 2010
• Full ERA process commencing in 2010 – all eight clusters evaluated simultaneously
• ARC has to:
  ➢ Finalise journal lists
  ➢ Work with institutions on repositories
  ➢ Setting up eight committees and peer reviewers
  ➢ Further system development (SEER)
ERA 2010 Submission Guidelines – frequently asked questions

• Background statements – more detail on requirements in 2010 guidelines
• Research themes not mandatory
• Portfolios – example included in sample xml files released in December 2009
FAQ - Low 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 (equivalent) or more outputs
  – ERA 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
FAQ - Peer Review

- Peer review is an example of an indicator used for specific disciplines
- Peer review is identified as an indicator for HCA, SBE, parts of EE and MIC
- Peer review is one “indicator” on the Dashboard
- Institutions identify 20% of outputs for the peer review pool
- REC Members undertake expert review of the Dashboard including peer review of research outputs.
- Peer Reviewers only evaluate research quality based on peer review outputs, and their reports go back to REC Members
FAQ - Ranked Outlets

• What is happening with the journal ranking process for 2010?

• What do the next steps involve?

• What’s happening with ranked conferences?
Mythbusting - Ranked Journals

• Only one of a number of indicators on the “Dashboard”
• Indicators are not weighted in ERA
• Required for development of discipline-specific benchmarks for citation analysis
• Note discipline-specific practices CMP/Nursing
FAQ - Esteem Indicators

• Consultation undertaken
• There is a limited list of Esteem indicators addressed in Submission Guidelines for full ERA process in 2010
• Shown as a metric profile – no information on individuals
2010 - Repositories

• Peer Review requires access to range of research outputs via Institutional Repositories or non-repository items
• For Creative Works, you need a Research Statement
• Portfolios – the sum of creative works, you also need a Research Statement
• Multiple copies of research outputs if a non-repository item
• Trial was very useful to identify key issues and the ARC is working with institutions to improve repository access for 2010.
What’s next?

ARC
• The Research Evaluation Committees
• Peer Reviewers
• Evaluation commencing in 2010

Institutions
• Tagging research outputs – EIDs with Scopus service
• Preparing submission data and repository material for 1 June deadline
• Supporting peer review process – preparing for access to non-repository outputs as part of evaluation
Further information?

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