Excellence in Research for Australia (ERA) – Overview

IRU Workshop
17 November 2009
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 Units of Evaluation); also evaluation at two-digit level
2. evaluation by Research Evaluation Committees in discipline clusters; 8 Clusters in total
3. minimum level of output to be considered ‘research active’ for evaluation
4. evaluations informed by a ‘dashboard’ of discipline-specific indicators
5. some peer review of outputs accessed through institutional repositories
## 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>
</tr>
</tbody>
</table>
The ERA Unit of Evaluation

• The baseline - the Discipline in an institution = Four-digit Field of Research Code (ANZSRC) eg., 1901 Art Theory and Criticism
• The higher perspective – the division in an institution = Two-digit Field of Research Code (ANZSRC) eg., 19 Studies in Creative Arts and Writing
• The ERA Unit is not the department or the individual researcher
Interdisciplinary and Multidisciplinary Research

• ERA is a discipline-based evaluation
• Re-assignment of Two-digit and multidisciplinary outputs
• Institutional tools (not part of evaluation)
• The ‘big bang’
Discipline Profile – 4-digit level

Discipline FoR 2101

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

Note - There are no weightings!

Peer Review

Research Evaluation Committee

Final report
The ERA “Dashboard”

- Quantitative profiles presented as proxies of quality and for context.
- 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.
# Discipline Matrix

## Cluster Two: Humanities and Creative Arts Discipline Matrix

<table>
<thead>
<tr>
<th>FoR</th>
<th>DISCIPLINE</th>
<th>VOLUME AND ACTIVITY ANALYSIS</th>
<th>RANKED OUTLETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Built Environment and Design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1201</td>
<td>Architecture</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>1203</td>
<td>Design Practice and Management</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>1205</td>
<td>Urban and Regional Planning</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>1299</td>
<td>Other Built Environment and Design</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Law and Legal Studies</td>
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</tr>
<tr>
<td>1801</td>
<td>Law</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>1802</td>
<td>Mail Law</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>1899</td>
<td>Other Law and Legal Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Studies in Creative Arts and Writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1901</td>
<td>Art Theory and Criticism</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1902</td>
<td>Film, Television and Digital Media</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1905</td>
<td>Journalism and Professional Writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1904</td>
<td>Performing Arts and Creative Writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1905</td>
<td>Visual Arts and Crafts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1999</td>
<td>Other Studies in Creative Arts and Writing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Language, Communication and Culture</td>
<td></td>
<td></td>
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<tr>
<td>2001</td>
<td>Communication and Media Studies</td>
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<tr>
<td>2002</td>
<td>Cultural Studies</td>
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<td>Literary Studies</td>
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<tr>
<td>2099</td>
<td>Other Language, Communication and Culture</td>
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<tr>
<td>21</td>
<td>History and Archaeology</td>
<td></td>
<td></td>
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<tr>
<td>2101</td>
<td>Archaeology</td>
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<td></td>
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<tr>
<td>2102</td>
<td>Curatorial and Related Studies</td>
<td></td>
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<tr>
<td>2103</td>
<td>Historical Studies</td>
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<td></td>
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<tr>
<td>2199</td>
<td>Other History and Archaeology</td>
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<td></td>
</tr>
<tr>
<td>22</td>
<td>Philosophy and Religious Studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2201</td>
<td>Applied Ethics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2202</td>
<td>History and Philosophy of Specific Fields</td>
<td></td>
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<tr>
<td>2203</td>
<td>Philosophy</td>
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<tr>
<td>2294</td>
<td>Religion and Religious Studies</td>
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<td></td>
</tr>
<tr>
<td>2299</td>
<td>Other Philosophy and Religious Studies</td>
<td></td>
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</tr>
</tbody>
</table>
Overview of ERA Evaluation

Key Documents
- Submission close
- Validation
- Pool of items for 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 and Peer Reviewers

Evaluation Guidelines
- REC and Peer Reviewers
  - Evaluation
  - Prepare for meeting – (REC only)

CEO report to Minister on trial

Report to the public on national outcomes and separate report to institutions on results

Evaluation meeting
- Finalise rating(s)/outcomes
- CEO report
Stage 1 of Evaluation

Notes:
1. For disciplines where peer review is an indicator, an expert reviewer will normally also perform peer review as part of their review.
2. Assigned material may include ranked journals, citation analysis and other supporting material, for example, research income profiles.
3. If an expert reviewer also completes peer review for a unit of evaluation, there is still only one preliminary rating given for the that unit of evaluation. Peer review in this context does not get rated separately.
4. Not all units of evaluation will have a peer review component. Please refer to the Discipline Matrix for the relevant disciplines.
Stage 2 of evaluation

Stage 2 - SEER compiles evaluation reports. The REC members then use the reports to prepare for the committee meeting

ARC generates reports:
1) summarising the preliminary ratings and peer review ratings (inc. supporting text) for each unit of evaluation
2) Two digit division profiles, subject to Conflict of Interest

Expert review of reports for assigned units of evaluation and their associated two digit reports
Stage 3 of evaluation

Stage 3 – Committee Meeting. Committee members will access evaluation information and reports, and will record the final evaluation outcomes.

ARC generates reports:
1) national profiles for each two and four digit division

REC review of reports and agree the final evaluation outcomes for all units of evaluation in the cluster

REC review of national profile reports and provide commentary to the ARC
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 journal articles (or equivalent)

• In cases of low volume at the four-digit level, analysis can occur at the two-digit level
The Dashboard profiles
### Research income profiles - example

<table>
<thead>
<tr>
<th>HERDC Research Income Type</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>Total for period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian competitive grants</td>
<td>$0</td>
<td>$0</td>
<td>$3492</td>
<td>$3492</td>
</tr>
<tr>
<td>Other public sector research income</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>(i) - Australian</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>(ii) - International A</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>(iii) - International B</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total Industry and other research income</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>CRC research income</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total income - All types</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total FTEs</td>
<td>0.8</td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HERDC Research Income by FTE</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HERDC Code</td>
<td>Research Income Type</td>
<td>No. of grants</td>
<td>Total Amount</td>
<td>Average $ per gr</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>-----------------</td>
</tr>
<tr>
<td>1</td>
<td>National competitive grants</td>
<td>1</td>
<td>$3492</td>
<td>$3492</td>
</tr>
<tr>
<td>2</td>
<td>Other public sector research income</td>
<td>1</td>
<td>$3492</td>
<td>$3492</td>
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<tr>
<td>3</td>
<td>Industry and other research income</td>
<td>1</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>4</td>
<td>CRC research income</td>
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<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>Total FTEs</td>
<td>0.8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ranked Journals

• 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 CMP/Nursing
Peer Review

• Peer review is identified as an indicator for HCA
• Peer review is one “indicator” on the Dashboard
• Institutions identify up to 20% of outputs for the peer review pool
• REC Members will undertake expert review of the Dashboard including peer review of a sample of research outputs.
• Peer Reviewers only evaluate research quality based on sample of outputs and their reports go back to REC Members
ERA Trial 2009

- Two clusters selected for trial for the breadth of information the trial will provide
- PCE metrics based
- HCA combination of metrics and peer review
- RECs formed
  - HCA chaired by Professor Graeme Turner from Queensland (22 members)
  - PCE chaired by Professor Mark von Itzstein from Griffith (17 members)
2009 Trial Documents

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

- Indicator Descriptors
  - More detailed information on each indicator

- Submission Guidelines

- Benchmark Methodology

- Evaluation Guidelines
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**
  – Staffing & Research output Profile

• **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 and full-time equivalent (FTE) staff numbers

• **Applied**
  – Patents sealed & Commercialisation income
Some issues in the Trial for the Creative Arts

• Considerations of research component of research outputs – the statement
• Selecting a variety of outputs for the 20%
• Trial – Banded Publishers – Curated Events
• Evaluation – peer review of creative works, and research income
What data will be reported from the Trial?

- 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
Some issues from the Trial

• Data integrity and validation
  – No FTE data
  – No information about authors, or partial author lists
  – No Background Statement
  – Incomplete Research Statement
  – Duplication of some output data
  – Incorrect EID tagging of outputs
• Does the output meet the ERA definition of research
• Repository access and access to non-repository items for peer review
Addressing the issues from the Trial

- RECs providing advice to the ARC in light of their experience
- ARC will continue to provide support to improve the quality of institutional databases for ERA purposes
- Submission Guidelines and SEER documentation released soon for early advice to the sector
- Soft close for submission to allow time to correct errors?
Reporting of outcomes

PCE 2009 Evaluation
• Outcomes for PCE trial expected by November 2009
• Report to institutions

HCA 2009 Evaluation
• Outcomes for HCA trial expected by December 2009
• Report to institutions

ARC national report on PCE and HCA trial outcomes
Latest focus points

• PCE and HCA trial – conduct, reporting and evaluation
• Finalising the journal rankings lists for all Clusters – expert consultation
• Discipline-specific indicators - consultation
• Preparation for the full ERA process
Esteem Indicators

- Esteem Indicators Group convened in June 2009 and submitted their report to the ARC
- Limited number of potential esteem measures, including some discipline-specific
- Framework for non-publication outputs with esteem indicators embedded in data collection
- Consultation with the sector on esteem, together with draft indicator Matrices for all Clusters
Ranked Journals for 2010

• What is happening with the journal ranking process for 2010?
• What do the next steps involve?
ERA Timeframe

– 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 (will include PCE and HCA again)
– Submissions open in June 2010
What Next?

- Release of Submission Guidelines and Technical Specifications
- Setting up for ‘Big Bang’ (committees)
- Further system development (SEER)
Further information?

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- Hotline: 02 6287 6755