University of Sydney

**ERA 2010 and beyond**

March 8 2011

Professor Margaret Sheil

CEO, Australian Research Council
Information

Research Strengths

Research Gaps
ERA will inform

- Government
- Universities
- Research agencies
- Innovation system
- Business
- Postgraduate students
- International partners
Quality assessment exercises overseas

1986—The United Kingdom
1993—Hong Kong
1997—Germany
1998—Ireland
2002—The Netherlands
2003—New Zealand
2005—France
General ERA Principles

1. Unit of Evaluation is the four-digit ANZSRC Field of Research code (i.e., 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.


5. Some peer review of outputs accessed through institutional repositories in some clusters.
ERA Process Overview

<table>
<thead>
<tr>
<th>Volume &amp; Activity</th>
<th>Ranked Outlets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citation Analysis</td>
<td>Esteem</td>
</tr>
<tr>
<td>Research Income</td>
<td>Applied Measures</td>
</tr>
</tbody>
</table>

Peer Review

International Benchmarks

Research Evaluation Committees
ERA

Background Statement

Volume and Activity
Ranked Outlets
Peer Review
Citation Analysis
Esteem Measures
Research Income
Applied Measures
ERA Unit of Evaluation – the FoRs

The ERA Unit is **not** the department nor the individual researcher.

<table>
<thead>
<tr>
<th>2-digit</th>
<th>4-digits</th>
<th>6-digits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1001 AGRICULTURAL BIOTECHNOLOGY</td>
<td>100601 Arithmetic and Logic Structures</td>
<td>100609 Computer Hardware not elsewhere classified</td>
</tr>
<tr>
<td>1002 ENVIRONMENTAL BIOTECHNOLOGY</td>
<td>100602 Input, Output and Data Devices</td>
<td></td>
</tr>
<tr>
<td>1003 INDUSTRIAL BIOTECHNOLOGY</td>
<td>100603 Logic Design</td>
<td></td>
</tr>
<tr>
<td>1004 MEDICAL BIOTECHNOLOGY</td>
<td>100604 Memory Structures</td>
<td></td>
</tr>
<tr>
<td>1005 COMMUNICATIONS TECHNOLOGIES</td>
<td>100605 Performance Evaluation; Testing and Simulation of Reliability</td>
<td></td>
</tr>
<tr>
<td>1006 COMPUTER HARDWARE</td>
<td>100606 Processor Architectures</td>
<td></td>
</tr>
</tbody>
</table>
Why a matrix approach to indicators?

• 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

• Journal Rankings are not THE indicator
The ERA 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 2010 reference periods

• Publications reference period
  1 January 2003 – 31 December 2008

• Non-publication reference period (income, applied, esteem)
  1 January 2006 – 31 December 2008

• Staff census date
  31 March 2009

• Citation reference period
  1 January 2003 - 1 March 2010
ERA 2010 – the data....
The ERA 2010 Rating Scale

<table>
<thead>
<tr>
<th>Rating</th>
<th>Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>The Unit of Evaluation profile is characterised by evidence of outstanding performance <strong>well above world standard</strong> presented by the suite of indicators used for evaluation.</td>
</tr>
<tr>
<td>4</td>
<td>The Unit of Evaluation profile is characterised by evidence of performance <strong>above world standard</strong> presented by the suite of indicators used for evaluation.</td>
</tr>
<tr>
<td>3</td>
<td>The Unit of Evaluation profile is characterised by evidence of average performance <strong>at world standard</strong> presented by the suite of indicators used for evaluation.</td>
</tr>
<tr>
<td>2</td>
<td>The Unit of Evaluation profile is characterised by evidence of performance <strong>below world standard</strong> presented by the suite of indicators used for evaluation.</td>
</tr>
<tr>
<td>1</td>
<td>The Unit of Evaluation profile is characterised by evidence of performance <strong>well below world standard</strong> presented by the suite of indicators used for evaluation.</td>
</tr>
<tr>
<td>NA</td>
<td>Not assessed due to low volume. The number of research outputs does not meet the volume threshold standard for evaluation in ERA.</td>
</tr>
</tbody>
</table>
National Strengths

- Astronomical and Space Sciences
- Optical Physics
- Quantum Physics
- Macromolecular & Materials Chemistry
- Physical & Structural Chemistry
- Geology
- Ecology
- Evolutionary Biology
- Plant Biology
- Zoology

- Electrical and Electronic Engineering
- Historical Studies
- Cardiovascular Medicine and Haematology
- Human Movement and Sports Science
- Immunology
- Oncology and Carcinogenesis
- Pharmacology and Pharmaceutical Sciences
- Medical Physiology
Gaps

- Agriculture, Land and Farm Management
- Automotive Engineering
- Maritime Engineering
- Engineering Design
- Complementary and Alternative Medicine

Pockets

- Classical Physics
- Aerospace Engineering
- Transportation and Freight
<table>
<thead>
<tr>
<th>Discipline</th>
<th>FoR</th>
<th>A*</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunology</td>
<td>1107</td>
<td>7%</td>
<td>14%</td>
<td>24%</td>
<td>55%</td>
</tr>
<tr>
<td>Plant Biology</td>
<td>0607</td>
<td>3%</td>
<td>8%</td>
<td>14%</td>
<td>74%</td>
</tr>
<tr>
<td>Ecology</td>
<td>0602</td>
<td>9%</td>
<td>18%</td>
<td>36%</td>
<td>37%</td>
</tr>
<tr>
<td>Zoology</td>
<td>0608</td>
<td>1%</td>
<td>7%</td>
<td>18%</td>
<td>73%</td>
</tr>
<tr>
<td>Historical Studies</td>
<td>2103</td>
<td>6%</td>
<td>22%</td>
<td>32%</td>
<td>38%</td>
</tr>
<tr>
<td>Electrical and Electronic Engineering</td>
<td>0906</td>
<td>6%</td>
<td>16%</td>
<td>28%</td>
<td>49%</td>
</tr>
<tr>
<td>Macromolecular and Materials Chemistry</td>
<td>0303</td>
<td>14%</td>
<td>19%</td>
<td>31%</td>
<td>36%</td>
</tr>
</tbody>
</table>
ERA 2012

- Publications 1 Jan 2005- 31 December 2010
- Review of ranked journal list underway
- Other areas where we are seeking feedback
  - Low volume thresholds (plus outputs that contribute)
  - FORs allocated to clusters
  - Utility of 2-digit versus 4-digit
  - Indicator matrix for each discipline
  - 3 year reference period for income etc
  - Researcher eligibility
  - Applied research indicators