Measuring and enabling university research and innovation capacity
26 July 2011

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Government Investment in R&D 2011-12

- Business & Innovation: 24%
- ARC: 9%
- NHMRC: 8%
- CRCs: 2%
- Universities: 21%
- Other Science: 4%
- Energy and the Environment: 5%
- Other Health: 6%
- Rural: 2%
- Other Government: 11%
- Investigator Driven: 4.5%
What problem were we trying to solve?

• Demonstrate quality/value of investment in university research to government

• Raise the quality of Australian research effort
Excellence in Research for Australia

- 2007 New Government elected with a commitment to replaces RQF with a metrics based approach
- 2008 ARC given responsibility for quality framework
- 2008 Develop policy and case for funding and vice versa
- 2009 ERA Trial in physical sciences and humanities and creative arts
- 2010 ERA Full Evaluation
- 2011 Refinements to framework
- 2012 Next ERA round

ERA Process Overview

- Volume and Activity
- Journal Quality
- Citation analysis or peer review
- Research Income
- Applied Measures
- Esteem

Please note – no weightings
### Strengths in Australian universities

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

- 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

### Strong Applied Research

- Electrical and Electronic Engineering
- Crop and Pasture Protection
- Resources Engineering
- Materials Engineering
- Extractive Metallurgy
- Nursing

### Pockets

- Classical Physics
- Aerospace Engineering
- Transportation and Freight
ERA 2010 myths

✗ Averages and Rankings
✗ Sciences v. Social Sciences & Humanities
✓ ERA does *not* evaluate individuals
✓ ERA does *not* evaluate individual outputs
✓ Ranked Journals did *not* drive ERA ratings
✓ ERA evaluations utilised metrics and peer review moderated by expert judgement
Changes for 2012

- Changes to the ranked journals and conferences
- Interdisciplinary Research
- Raising the Threshold
- Capturing Applied Research
- Eligibility for fractional staff
Unintended consequences-journal rankings

- Journals only easily accessible information
- Rapid response time
- Codified existing behaviour/practice
- Simplified application

### The refined journal indicator

<table>
<thead>
<tr>
<th>University of Y</th>
<th>FoR0201</th>
<th>Astronomical and Space Sciences</th>
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<tbody>
<tr>
<td>Journal Title</td>
<td>Papers</td>
<td>Contribution</td>
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<tr>
<td>Advances in Space Research</td>
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<tr>
<td>Applied Physics Letters</td>
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<tr>
<td>Nature</td>
<td>72</td>
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<tr>
<td>Astronomy and Astrophysics: a European journal</td>
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<tr>
<td>Geophysical Research Letters</td>
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<tr>
<td>Mathematics and Computers in Simulation</td>
<td>27</td>
<td>4%</td>
</tr>
</tbody>
</table>

Please note that this is not based on any university's submission to ERA 2010
ERA 2012 – still to do

- Draft Submission Guidelines have been issued to the sector in July 2011 for comment by Monday 1 August 2011
- Expanding peer reviewer pool
- Making peer review more robust (selection of outputs, reviewers)
- Scrutiny of processes and outcomes
- System development and testing

ERA outcomes - implications for institutions, government and other key stakeholders

- Changes in research culture (focus on excellence)
- Sustainable Research Excellence (from 2012)
- Compacts and Institutional Planning
- Tertiary Education Quality and Standards Agency ??
- Research Training Scheme (from 2013)
Research Block Funding

- Research Income
- Research Student Completions and Load
- Publications
- ERA
- APAs
- IPRS
- Research Training Scheme
- Joint Research Engagement
- Sustainable Research Excellence
- CTS

ARC Strategic Objectives

- To support excellence in research
- To build Australia’s research capacity
- To provide informed high quality policy advice to government
- To enhance research outcomes through effective evaluation
- To raise the profile of Australia’s research effort and be an effective advocate for its benefits
The ARC

- National Competitive Grants Program $810M in 11-12
- Evaluation and Policy
- Discovery & Fellowships $502 M
- Linkage & Centres $308 M
- Excellence in Research for Australia

- Statutory Agency established 2001
- Mission: to deliver policy and programs that advance Australian research and innovation globally and benefit the community
- Fund direct costs to Universities and partners
- All disciplines except clinical medicine & dentistry

The ARC aims to:

- Foster a range of different cohorts
- Create the right incentives for collaboration
  - Research(ers) in industry
  - Women
  - Indigenous
  - Research-only
  - Teaching and research
Encouraging Opportunity

**Australian Laureate Fellowships**
- 2x PhD
- 2x Post-Doc
- 17 5-year awards

**Discovery Early Career Researcher Award (DECRA)**
- $125,000
- 200 p.a. 3-year awards

**Researchers in Industry Training Awards**
- $30,000
- 100 3-year awards (bi-annual)

**Future Fellowships**
- Up to $143,000
- 200 p.a. 4-year fellowships

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**Discovery Early Career Researcher Award (DECRA)**

- Provide career opportunities for early-career researchers who have been awarded a PhD within five years or, commensurate with significant career interruption, within eight years
- Up to 200, three year Awards will be available each year, commencing in 2012.
- Funding of up to $125,000 will be provided to support a fixed salary ($85,000) and project costs.
Researchers in Industry Training Awards (RITA)

• Up to 200 Awards will be available initially, 100 each in 2012 and 2014;
• Each Award will include a minimum research student stipend of $30,000 per year; to be supplemented by funding from institutions and the industry partner to attract the best researchers.
• The individual Award recipients must spend a substantial period of their candidature working directly with the industry partner(s).

Research Opportunity and Performance Evidence (ROPE)

• Changing how we measure excellence
  Track record v. Performance evidence
• Assessors take into account any career interruptions, such as:
  – Childbirth
  – Carer’s responsibility
  – Misadventure
  – Debilitating illness
The ARC does not:

• Employ researchers directly

• Aim to provide a complete externally funded career structure

• Fund all the excellent research proposals it receives

NCGP – the latest developments

- Evaluation of Linkage Projects
- Improvements to Peer Review (first stage)
- Changes to Discovery Projects and Discovery Indigenous
- New schemes (DECRA and RITA)
- Two additional Laureate Fellowships
- Removing Duplication
- Simplified NCGP Funding Rules
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