Research Excellence and the latest policy context
Central Queensland University
Senior Leadership Conference
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CEO, Australian Research Council
Topics for today’s presentation

- The research policy context for research in Australia
- ERA outcomes and update
- NCGP – the latest developments
- Quality research proposals
- Research leadership and the importance of mentoring
ERA Update

Research Strengths

Research Gaps
Objectives of ERA

• Establish an *evaluation framework*;

• Provide a *national stock take* of discipline-level research;

• 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.
What problem were we trying to solve?

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

• Raise the quality of Australian research effort
Australian academic publishing practices

Year that publications measure was introduced

Quartile 1 highest impact
Quartile 4 below median impact

Share of Science Publications

Source: Butler 2002
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
Scale of ERA 2010

• All 41 eligible institutions submitted data
• Over 330,000 research outputs
• 55,000 researchers represented
• 2,435 units of evaluation assessed at 2 and 4-digit level
• 149 Research Evaluation Committee (REC) members
• 500+ Peer Reviewers

All aggregated data in the *ERA 2010 National Report*. 
## The ERA 2010 Clusters

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Description</th>
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<tbody>
<tr>
<td>Cluster 1</td>
<td>Physical, Chemical &amp; Earth Sciences</td>
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<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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<td>Cluster 4</td>
<td>Social, Behavioural and Economic Sciences</td>
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<td>Cluster 5</td>
<td>Mathematics, Information and Communication Sciences</td>
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<td>Cluster 6</td>
<td>Biological Sciences and Biotechnology</td>
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<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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</tbody>
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ERA Process Overview

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

Please note – no weightings

Research Evaluation Committee
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

Pockets

• Classical Physics
• Aerospace Engineering
• Transportation and Freight

Strong Applied Research

• Electrical and Electronic Engineering
• Crop and Pasture Protection
• Resources Engineering
• Materials Engineering
• Extractive Metallurgy
• Nursing
ERA 2010 Rating by Cluster - at, above, or well above world standard (i.e. 3s, 4s, & 5s)

- Public and Allied Health Sciences
- Mathematical, Information and Computing Sciences
- Biomedical and Clinical Research
- Engineering and Environmental Sciences
- Biotechnology and Biological Sciences
- Physical Chemical and Earth Sciences
- Social, Behavioural and Economic Sciences
- Humanities and Creative Arts

Key:
- 3&4
- 5
How ARC has responded to feedback so far ready for 2012

• Changes to the ranked journals and conferences
• Interdisciplinary Research
• Raising the Threshold
• Eligibility for fractional staff
• Capturing Applied Research
ERA 2012 – still to do

• Expanding peer reviewer pool

• Making peer review more robust (selection of outputs, reviewers)

• Draft Submission Guidelines to be issued to the sector in July 2011 for comment

• System development and testing
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
Australian Research Council – Promoting Excellence

Funding & Investment

Flexibility

Linking & Developing

Information

Partnerships
Government Investment in Research
2011-12

- Business & Innovation: 24%
- Universities: 21%
- NHMRC: 8%
- ARC: 9%
- Investigator Driven: 4.5%
- Other Science: 4%
- CSIRO: 8%
- Other Government: 11%
- Energy and the Environment: 5%
- Rural: 2%
- Other Health: 6%
- CRCs: 2%

Web: arc.gov.au | Email: info@arc.gov.au
The ARC

National Competitive Grants Program
$810M in 11-12

- Support research excellence
- Funding for facilities and equipment that researchers need to be internationally competitive
- Support training and develop skills for future researchers
- Provide incentives for partnerships and collaboration nationally and internationally
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*
- Simplified NCGP Funding Rules
Avoid sense of entitlement

We need to do this because the rest of the world is doing it...

Demonstrate that your research offers a natural advantage for Australia
Tips on writing a quality research proposal

EXERCISE:

• Write down a 100-word summary of your proposal

• Show it to your neighbour and talk about it with them
TOP RANKED PROPOSALS

- Manage to balance technicality and accessibility
- Present problems and/or controversies and explain how they will solve them
- Explain how the momentum of the subject demands funding now
- Show how Australian work fits into the international picture
- Back up compelling claims with evidence and others' judgments
TOP RANKED PROPOSALS

• Carefully temper ambitious goals with plausible approaches
• Display evidence of responsible but often daring approaches to the problem
• CIs have strong international track records
• Present excellent progress reports on previous grants
LOW RANKED PROPOSALS

• Use too much technical jargon
• Make grandiose and implausible claims about outcomes
• Don't support claims of excellence or progress with evidence
• Relate to research areas without momentum
• Are weakly linked into national and international research networks
LOW RANKED PROPOSALS

- Emphasize the collection of data rather than the solution of controversies
- Set a negative or depressive tone about the state of the subject in Australia
- Contain a high rate of spelling and grammatical errors
- Are badly structured and difficult to follow
Problems of Peer Review

Matthew effect
- The accomplishments of those who have already achieved distinction are overestimated (e.g. do athletes really know about banking?)

Halo effect
- The accomplishments of those associated with successful people are overestimated
Problems of Peer Review

*Bias against novelty*

- Peer review sometimes fails to respect the value of attacks on the fashionable paradigm

*Cronyism*

- Assessors may use standards that are narrower than the overt criteria, defined by expectations in a ‘social group’
Responsibility for Research Careers

Universities

MRIs

Research Careers

NHMRC

Futures

ARC
- DECRAs
- DORAs
- ALFs
The ARC aims to:

- Provide opportunities for researchers at every career stage
- Foster a range of different cohorts

- Researchers in industry
- Research-only
- Women
- Indigenous
- Teaching and research
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 leadership and the importance of mentoring

- Don’t interpret ERA superficially
- Secure your own leadership skills
- Aim to become an excellent mentor
- Exercise care in guiding younger researchers in grant applications
Mentoring and Excellence

**Mentors and Role Models**
- Leadership
- Guidance
- Bridging gaps

**Achieving Excellence**
- Applying for grants
- Peer Review process
- Dos and Don’ts
Role Model

- An inspiration
- You in the future?
- Personal/Professional
- Examples of pathways or behaviours

Mentors

- A guide
- You in the present
- Impartial
- Career advice
Secure your own leadership skills and attributes

• #1  Don’t cater
  Avoid feeding others
  Avoid making notes, coffee & copies

• #2  Be prepared
  Don’t believe others know more than you

• #3  Learn to let go
  Don’t look back
  Don’t do the work of others
Set the example

Encouraging opportunity; not simply providing it

Reinforcing leadership

Changing the landscape and the language we use
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