



# Australian Research Council

## Excellence in Research for Australia

Australian National University

27 July 2009





# Objectives of ERA

1. establish an evaluation framework that gives government, industry, business and the wider community assurance of the excellence of research conducted in Australia's institutions;
2. 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;
3. identify excellence across the full spectrum of research performance;
4. identify emerging research areas and opportunities for further development; and
5. allow for comparisons of Australia's research nationally and internationally for all discipline areas.





# ERA Documents

- ERA Submission Guidelines
- ERA Evaluation Guidelines
- ERA Indicator Principles
- ERA Indicator Benchmark Methodology
- ERA Indicator Descriptors





# ERA Clusters

Cluster 1	Physical, Chemical and Earth Sciences
Cluster 2	Humanities and Creative Arts
Cluster 3	Engineering and Environmental Sciences
Cluster 4	Social, Behavioural and Economic Sciences
Cluster 5	Mathematics, Information and Computing Sciences
Cluster 6	Biological and Biotechnological Sciences
Cluster 7	Biomedical and Clinical Health Research
Cluster 8	Public and Allied Health Sciences



# Research Codes



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- RFCDs codes revised by Australian Bureau of Statistics
- Now ANZSRC codes – reporting for both grants and ERA

## Two digit codes

- Eg., 03 Chemistry

## Four digit codes

- eg., 0302 Inorganic Chemistry

## Six digit codes

- Eg., 030205 Non metal chemistry



# ERA timeframe



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- Trials in 2009 for two Clusters only
  - PCE submissions opened June and closed July 2009
  - Outcomes in November 2009
  - HCA submissions open and closes August 2009
  - Outcomes in December 2009
- Full ERA process expected in 2010 (will include PCE and HCA again)





# ERA Update - consultation

## What happened in 2008

- ERA Consultation Paper
- Indicators Development Group
- Humanities and Creative Arts Sub Groups
- PCE Working Group





## 2009 - Latest focus points for ERA

- Workshops on other six clusters and indigenous research.
- Development of esteem indicators
- Ranked refereed conference publications (tiered)
- Finalising the journal rankings lists for other Clusters – expert consultation
- Research Evaluation Committees for PCE and HCA being established
- Draft matrices





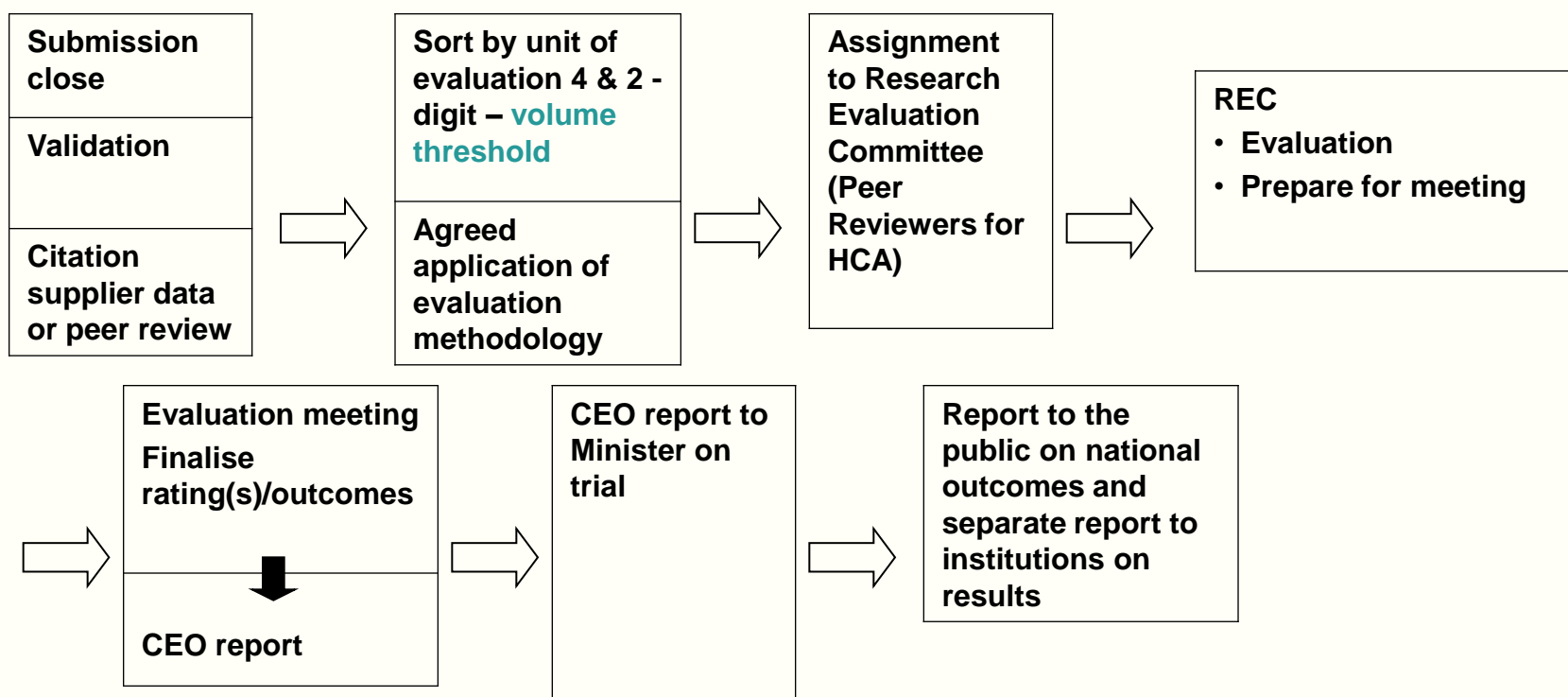
# Overview of ERA Evaluation

## Key Documents

## Submission Guidelines

## Indicator Benchmark Methodology

## Evaluation Guidelines



# Evaluation



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## Outputs

Ranked Journals

Citation Analysis **or** Peer Review

## Supporting Information

Volume and Activity – outputs  
and people

HERDC Research Income

Applied Indicators – Patents and  
Commercialisation income

2- digit background statement





# Evaluation guidelines

- ERA Evaluation Guidelines – working document for the trial in 2009
- Contents focus on: role and responsibilities of RECS and Peer Reviewers, outline of evaluation processes, and the rating scale
- **Rating scale:** 1 to 5 (5 the highest)
- In order to achieve a rating at a particular point on the scale, the majority of **output** from the Unit of Evaluation will normally be expected to meet the standard for that rating point.





# Low volume thresholds

- It is recognised that for some disciplines there may not be sufficient research volume to undertake a valid analysis at the four-digit level
- In these instances, the ARC will undertake quantitative analysis at the two-digit level
- All outputs will contribute to the national analysis and benchmarks





# The ERA “Dashboard”

- A series of quantitative profiles presented to a Research Evaluation Committee as proxies of quality for a Unit of Evaluation.
- 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.





# Ranked Journals

- The **portal** used to enter the domain of journal articles
- 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**





- Initial lists – Learned Academies and peak bodies
- Consolidation of initial lists
- Sector consultation in June 2008
- Consolidation of sector feedback
- Expert and ARC review
- Finalisation workshop(s)
- Release list for comment
- Review and release

[http://www.arc.gov.au/era/finalising\\_ranking.htm](http://www.arc.gov.au/era/finalising_ranking.htm)



# Esteem



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- In 2008 we received advice on a number of proposed esteem measures for PCE and HCA
- In 2009 the ARC received advice on esteem measures for the other six clusters
- The Minister determined that esteem measures would not be included in 2009 but asked the ARC to conduct further work on esteem measures for 2010
- The ARC has undertaken further work and the proposed esteem measures will be included in the draft matrices for 2010 for sector comment



# Peer Review



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- Peer review will be used as an indicator for disciplines that do not have a sufficiently robust range of other indicators, eg HCA.
- Peer review is one “indicator” on the Dashboard
- Institutions select up to 20% of outputs from Units of Evaluation – Four and Two-digit Units
- REC Members will undertake expert review of Dashboard **including** peer review of a sufficient sample of research outputs.
- Peer Reviewers **only** evaluate research quality based sample of outputs and their reports go back to REC Members



# Peer Review



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- Sensitivities in evaluation, eg commercial, cultural
- Repository or hard copy outputs - access
- Article XXX – Repository Link
- Book XXX – Repository
- Book XXX – Hard copy to ARC
- Design - Repository
- Computer program - Repository





# Interdisciplinary Research

- ERA is a discipline-based evaluation
- Re-assignment of Two-digit and multi-disciplinary outputs
- Discipline Profile and its use
- Institutional tools (not part of evaluation)





# Field of Research Re-Assignment

Field of Research	Primary	Secondary	Tertiary	Total	%
02 - Physical Sciences	113	65		178	26.4%
0201 - Astronomical and Space Sciences	71	16		87	12.9%
0202 - Atomic, Molecular, Nuclear, Particle and Plasma Physics	67	29	5	101	15.0%
0203 - Classical Physics	28	28	1	57	8.5%
0204 - Condensed Matter Physics	25	4		29	4.3%
0205 - Optical Physics	13	1		14	2.1%
0206 - Quantum Physics	83	80	7	170	25.2%
0299 - Other Physical Sciences	14	11		25	3.7%
0302 - Inorganic Chemistry	1	1		2	0.3%
0303 - Macromolecular and Materials Chemistry	2	1		3	0.4%
0306 - Physical Chemistry (Incl. Structural)	4	2		6	0.9%
0307 - Theoretical and Computational Chemistry	1	1		2	0.3%
<b>Grand Total</b>	<b>422</b>	<b>239</b>	<b>13</b>	<b>674</b>	<b>100.0%</b>

n = 674 PCE only assigned articles





# Field of Research Re-Assignment

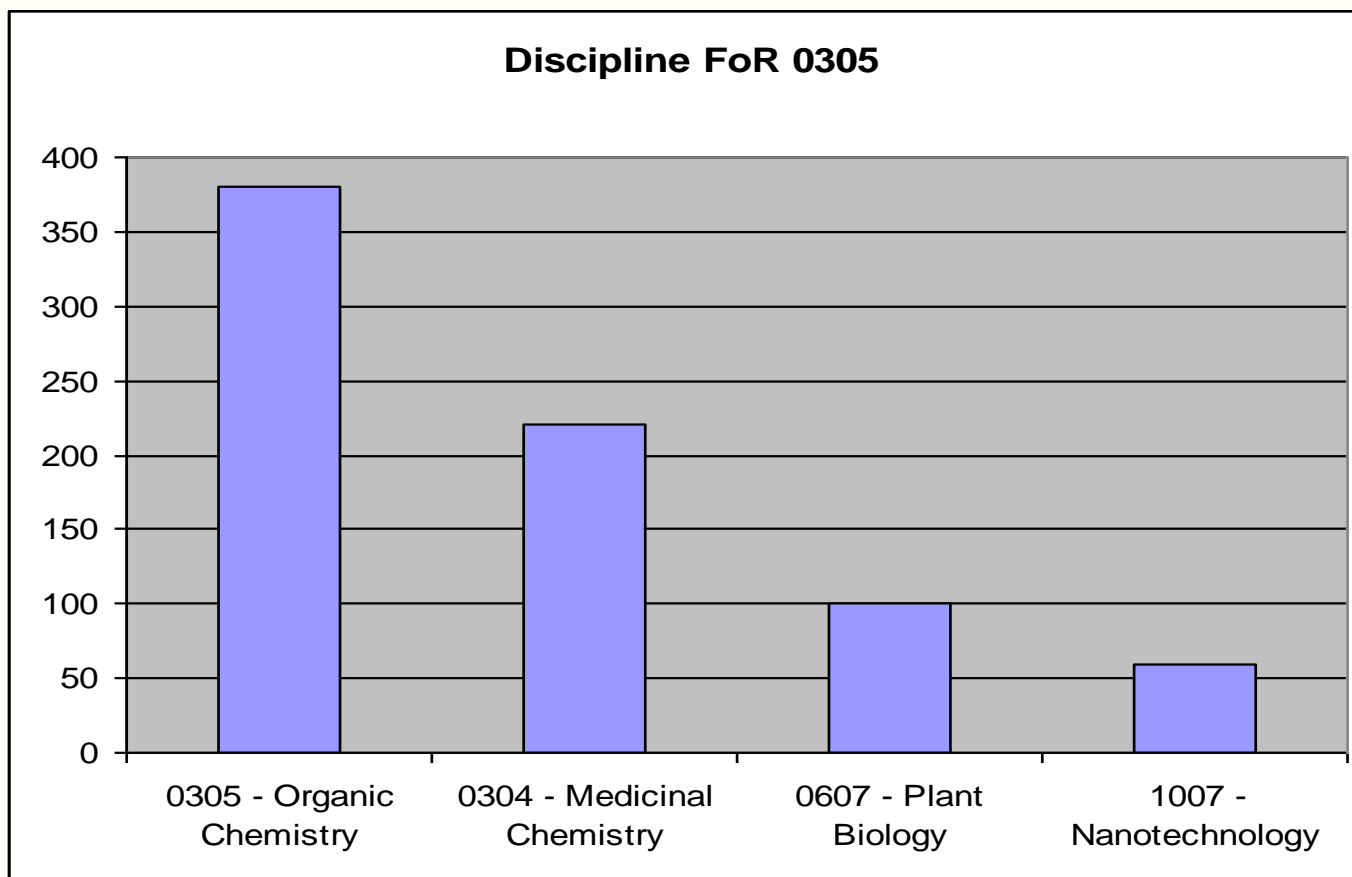
Field of Research	Total	%
0201 - Astronomical and Space Sciences	110	16.2%
0202 - Atomic, Molecular, Nuclear, Particle and Plasma Physics	143	21.1%
0203 - Classical Physics	75	11.1%
0204 - Condensed Matter Physics	57	8.4%
0205 - Optical Physics	19	2.8%
0206 - Quantum Physics	224	33.0%
0299 - Other Physical Sciences	37	5.5%
0302 - Inorganic Chemistry	2	0.3%
0303 - Macromolecular and Materials Chemistry	3	0.4%
0306 - Physical Chemistry (Incl. Structural)	6	0.9%
0307 - Theoretical and Computational Chemistry	2	0.3%
<b>Grand Total</b>	<b>678</b>	<b>100.0%</b>

n = 678 articles (incl 4 multidisc)





## Example Discipline Profile – Four-digit





# Institutional Tools

- Institutions may tag research outputs with two institutional codes and two research theme codes
- This will assist in recompiling data
- The tagging will not be used for ERA evaluation purposes





# What data will the ARC return to Universities?

- 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





# ARC – outcomes of trial

- Trial for PCE and HCA – review of process and outcomes
- Data back to institutions, plus a national outcomes report
- Lessons learned will inform the full evaluation





# Creative Arts issues

- Submission of creative works
- Considerations of research component of research outputs – the statement
- The ANZSRC codings – eg., 1904
- Selecting a variety of outputs for the 20%
- Practice-led research (eg., design)
- Trial – Banded Publishers – Curated Events
- Evaluation – peer review of creative works, and research income

