RESEARCH *in the national interest – enabling the future*

Australian Government

Australian Research Council

The Australian Research Scene

Prof Richard Coleman

Executive Director, PMIS

ICT Deans, Annual Meeting, Hobart, July 26, 2011

The ARC

National Competitive Grants Program
$810M in 11-12

Evaluation and Policy

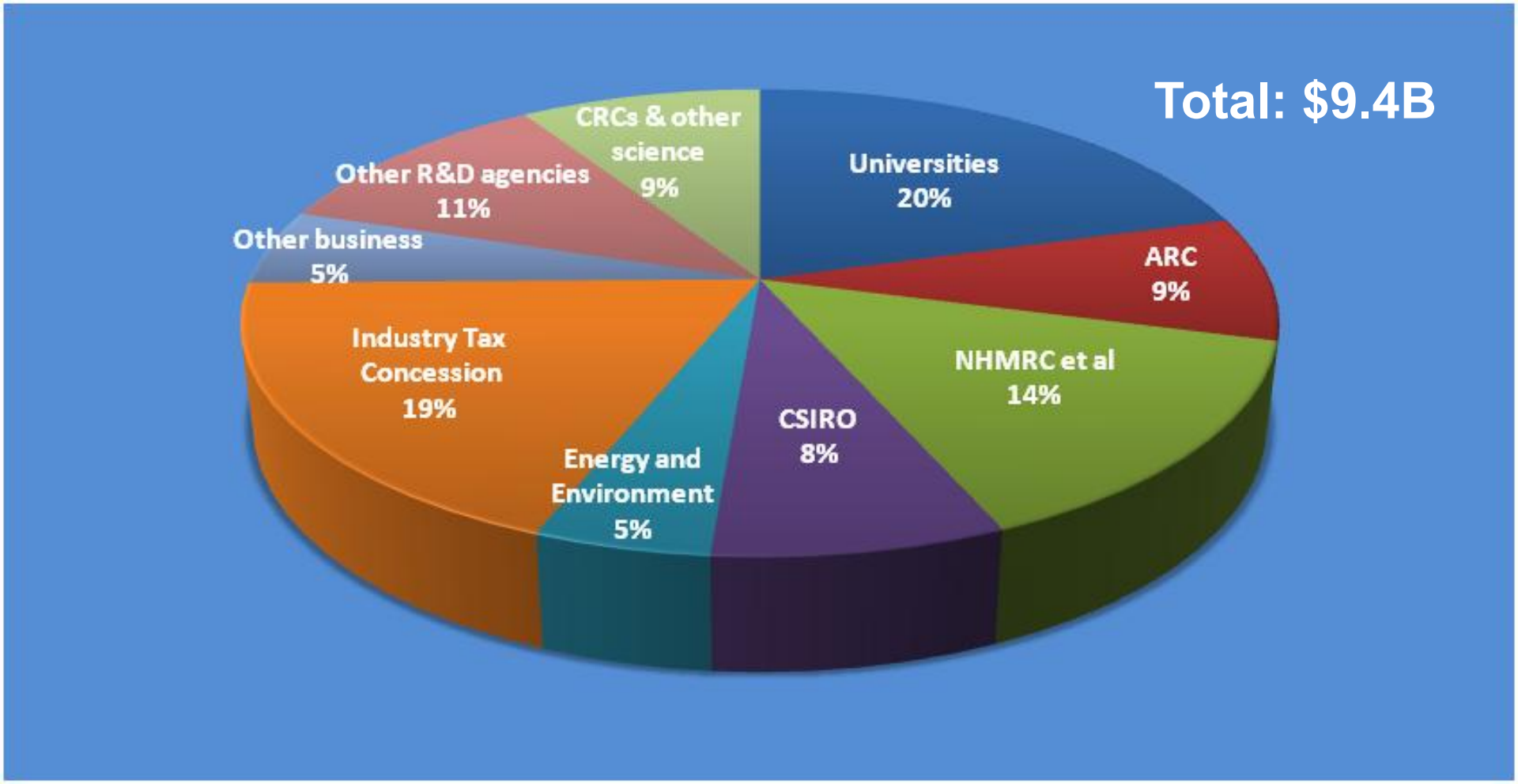
Discovery & Fellowships
$502 M

Linkage & Centres
$308 M

Excellence in Research for Australia

- Support research excellence
- Funding for facilities and equipment that researchers need to be internationally competitive
- Support future researchers
- Provide incentives for partnerships and collaboration nationally and internationally

Government Investment in Research 2011-12



ARC and Innovation

- Supporting **integrity** and **independence** of the research system
- Expanding fellowships to **attract the world's best** researchers
- **Measuring** the **quality** of Australian research (ERA)
- **Building** research **capacity** through collaboration
- Encouraging **collaboration** between **research and business internationally**

NCGP Funding

- Funding for the NCGP in 2010-11 is $708.733 million
- Announced $67.4 million in funding for Linkage Grants scheme supporting 219 innovative projects in 2011 (11 in IT areas, most (7) in 0801)
- Announced $255.9 million in 13 new *ARC Centres of Excellence* to commence in 2011
- Current rounds of DP, DECRA, FT, LP, LIEF, FL

NCGP Programs & Schemes

Discovery Program

- *Discovery Projects + DECRA*
- *Discovery Indigenous Researcher Development*
- *Future Fellowships*
- *Australian Laureate Fellowships*

Linkage Program

- *Linkage Projects*
- *Linkage Infrastructure, Equipment and Facilities*
- *Linkage Learned Academies Special Projects*

NCGP Programs & Schemes

Centres

- *ARC Centres of Excellence*
- *ARC Special Research Centres*
- *Co-funded Centres of Excellence*

Special Research Initiatives

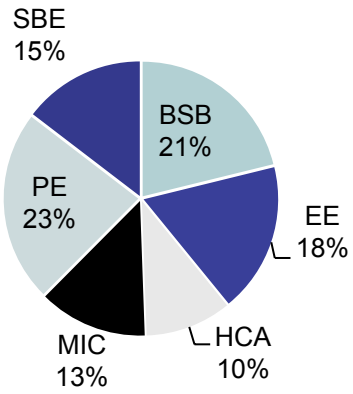
- *Research in Bionic Vision Science and Technology*
- *Stem Cell Science*
- *Thinking Systems*
- *EMBL*
- *AAO Fellowships*

ARC Changes

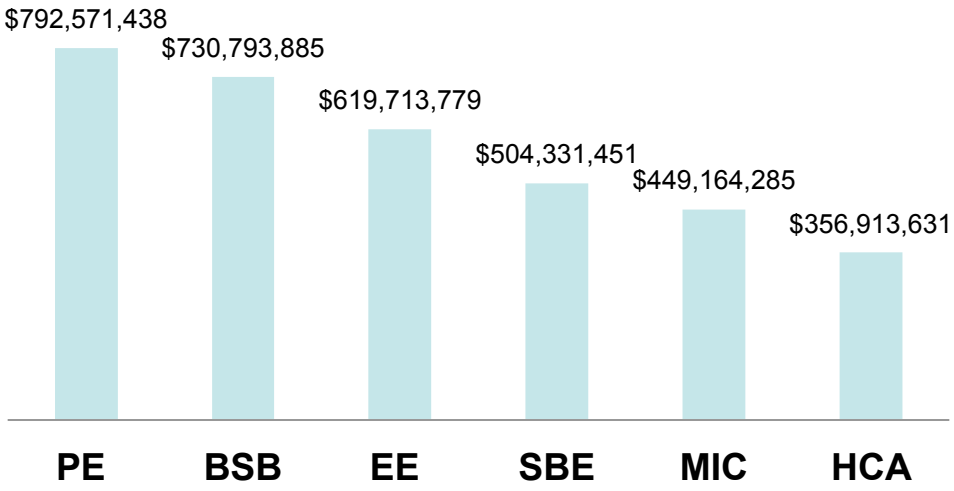
- New schemes/substantial changes:
  - Discovery Early Career Awards (DECRA)
  - Changes to Discovery – Discovery Outstanding Researcher Award (DORA)
  - To come – Research Industry Training Awards (RITA)
- Revision and simplification of Funding Rules
- Changes to Peer Review of NCGP schemes (A-E)
- Updating of assessor databases
- New coding of RMS modules

Discovery Projects

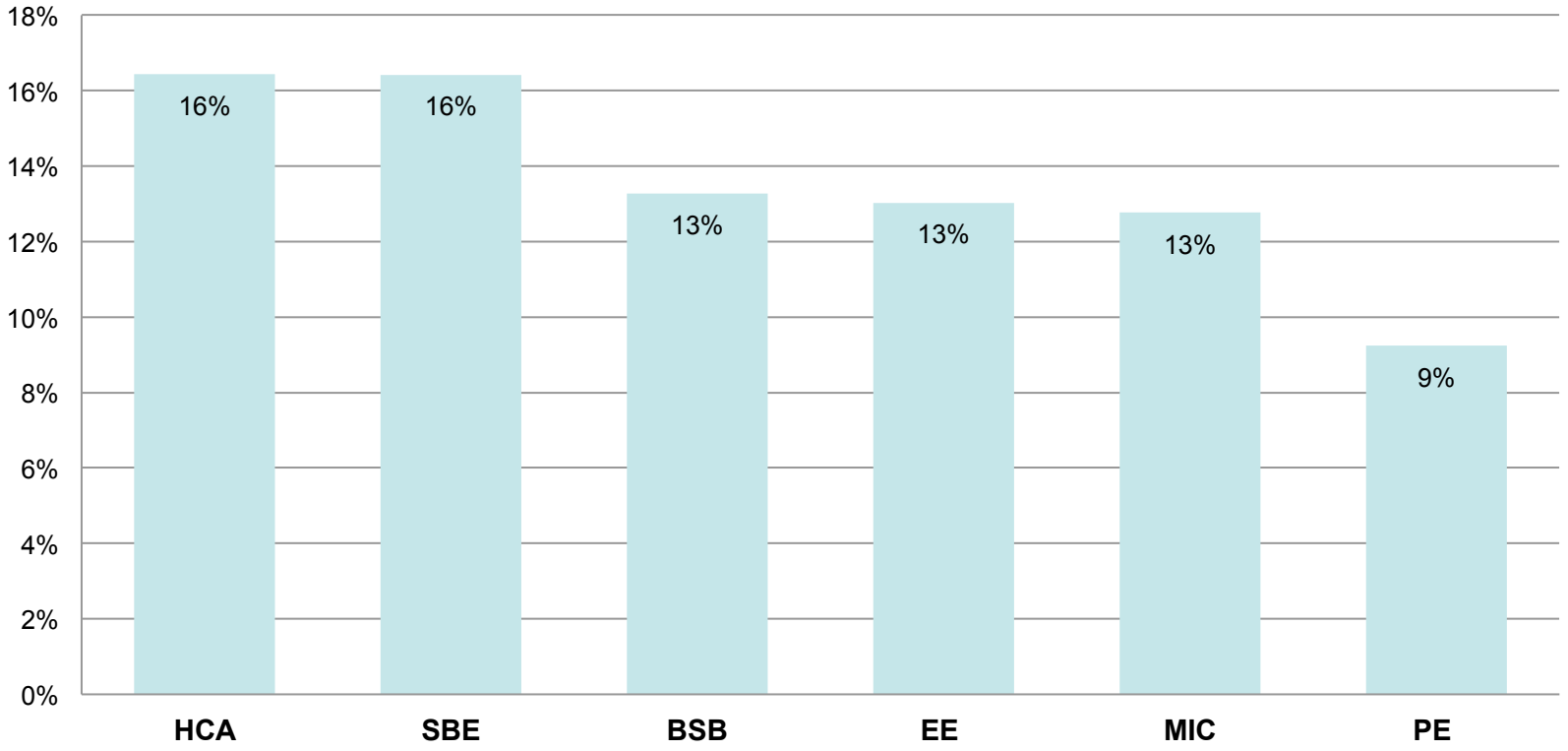
Average Annual Proportion of ARC funding for new and ongoing DP projects (2002 - 2009) by discipline



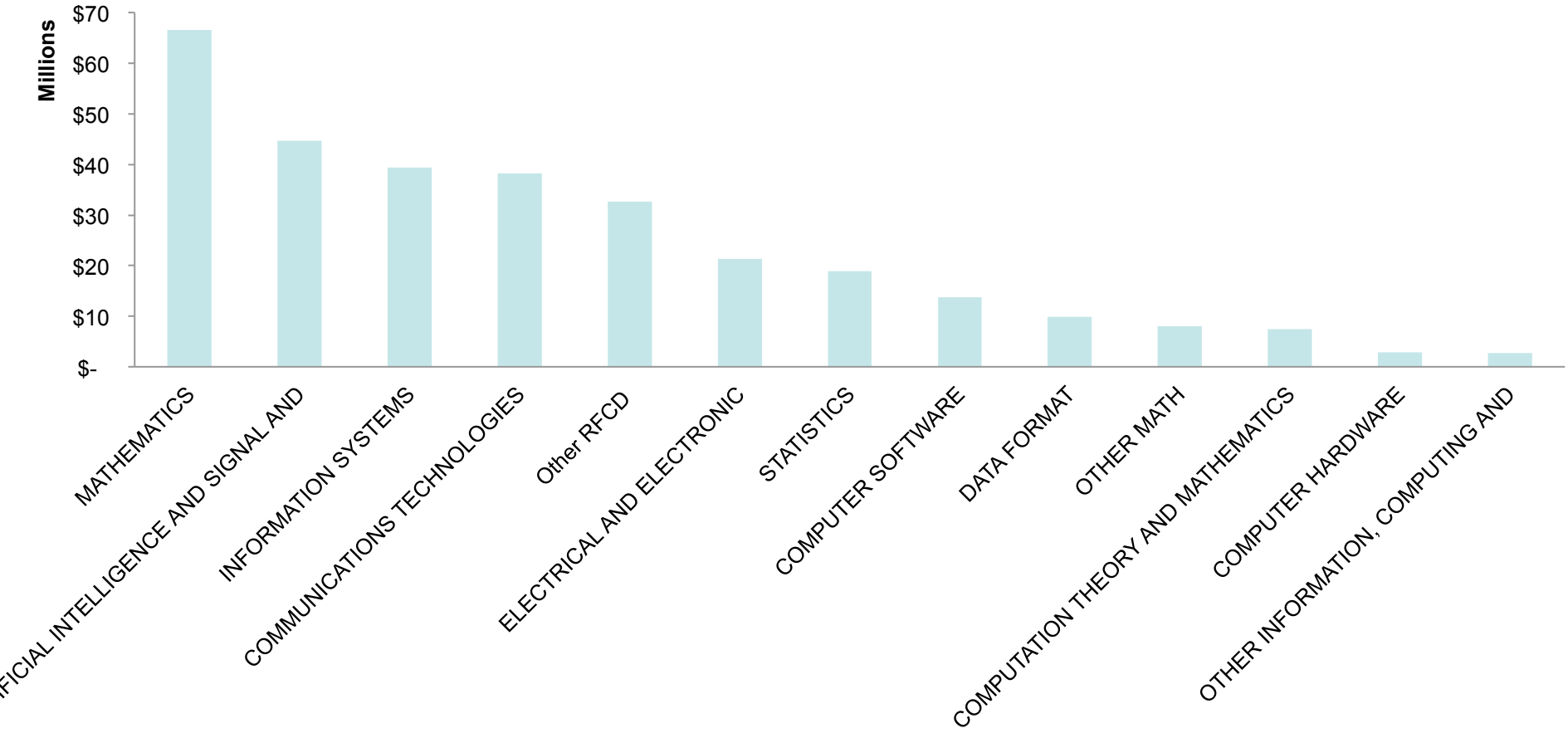
Total ARC Funding (new and ongoing) for DP (2002 to 2009)



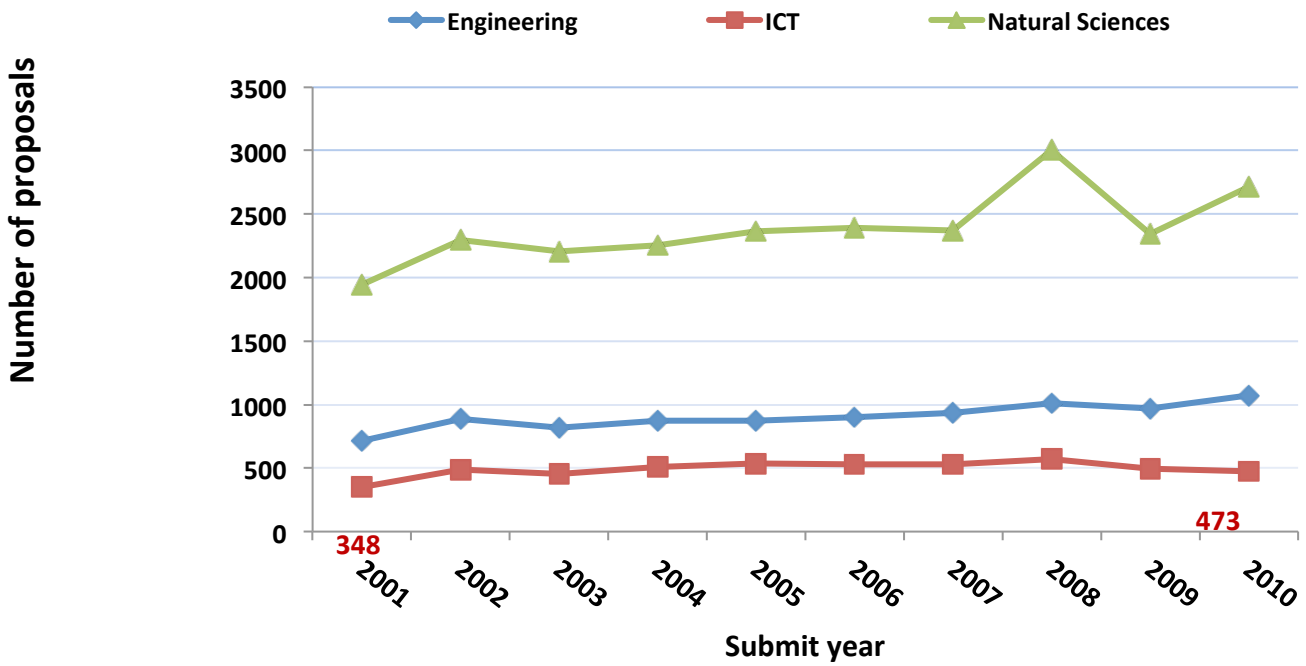
Average Annual Increase in ARC Funding (2002 - 2009)



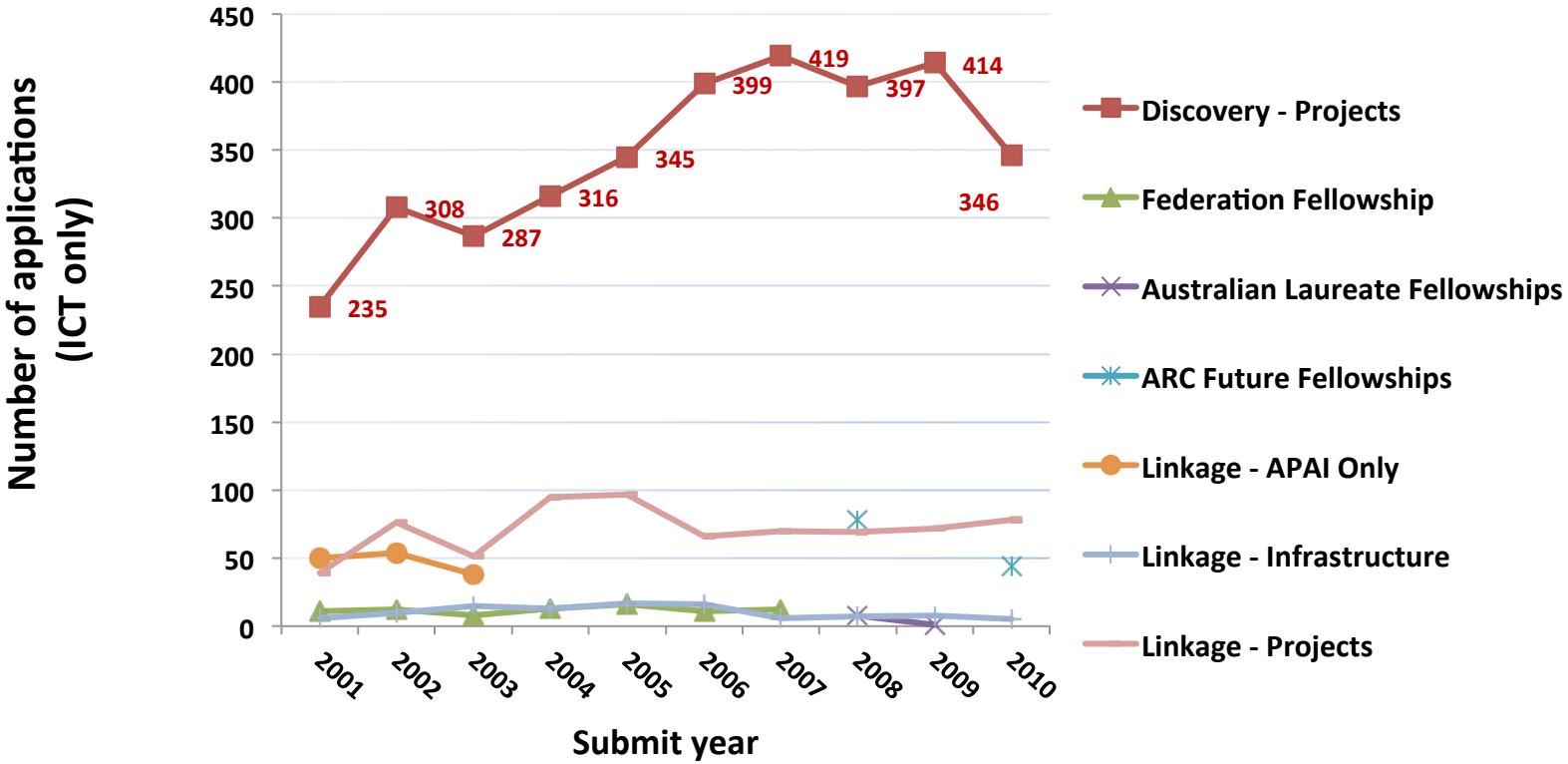
Total funding for new projects in MIC by Primary RFCD (2005 to 2009)



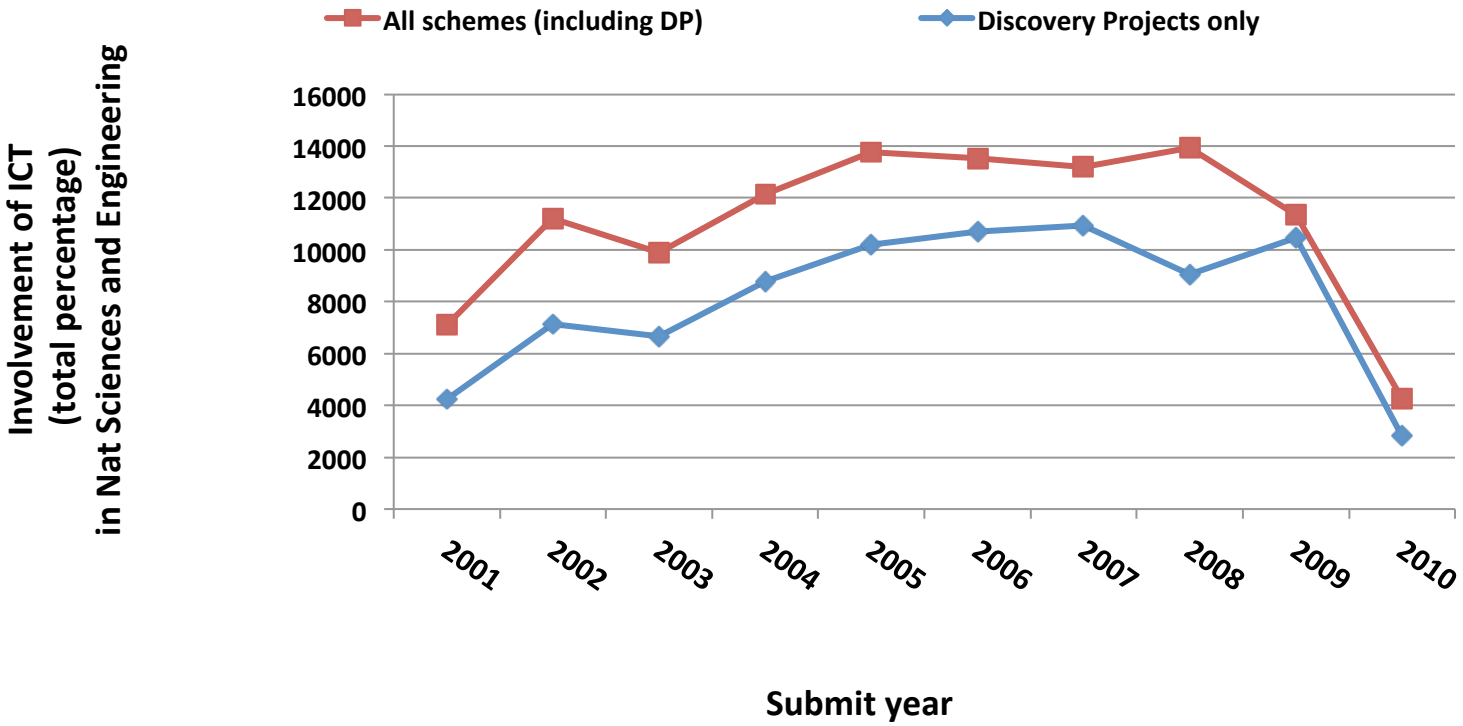
Proposals received in ICT with comparison to Engineering and Natural Sciences



Proposals received in ICT by schemes and submit year



Involvement of ICT components (by RFCD) in natural sciences and engineering research (cross-disciplinary research)

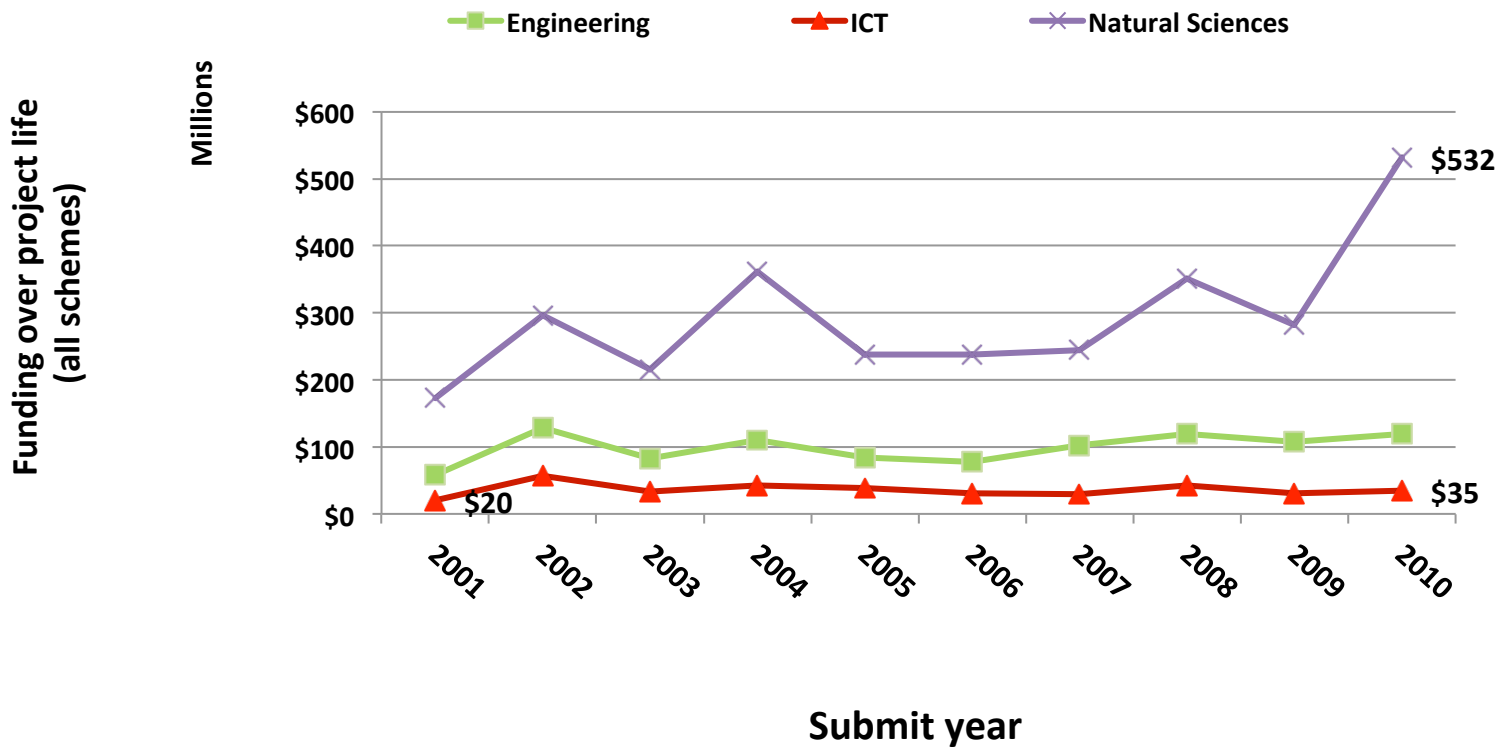


Number of proposals received in ICT in Submit Year 2011 and comparison with Engineering and Natural Sciences

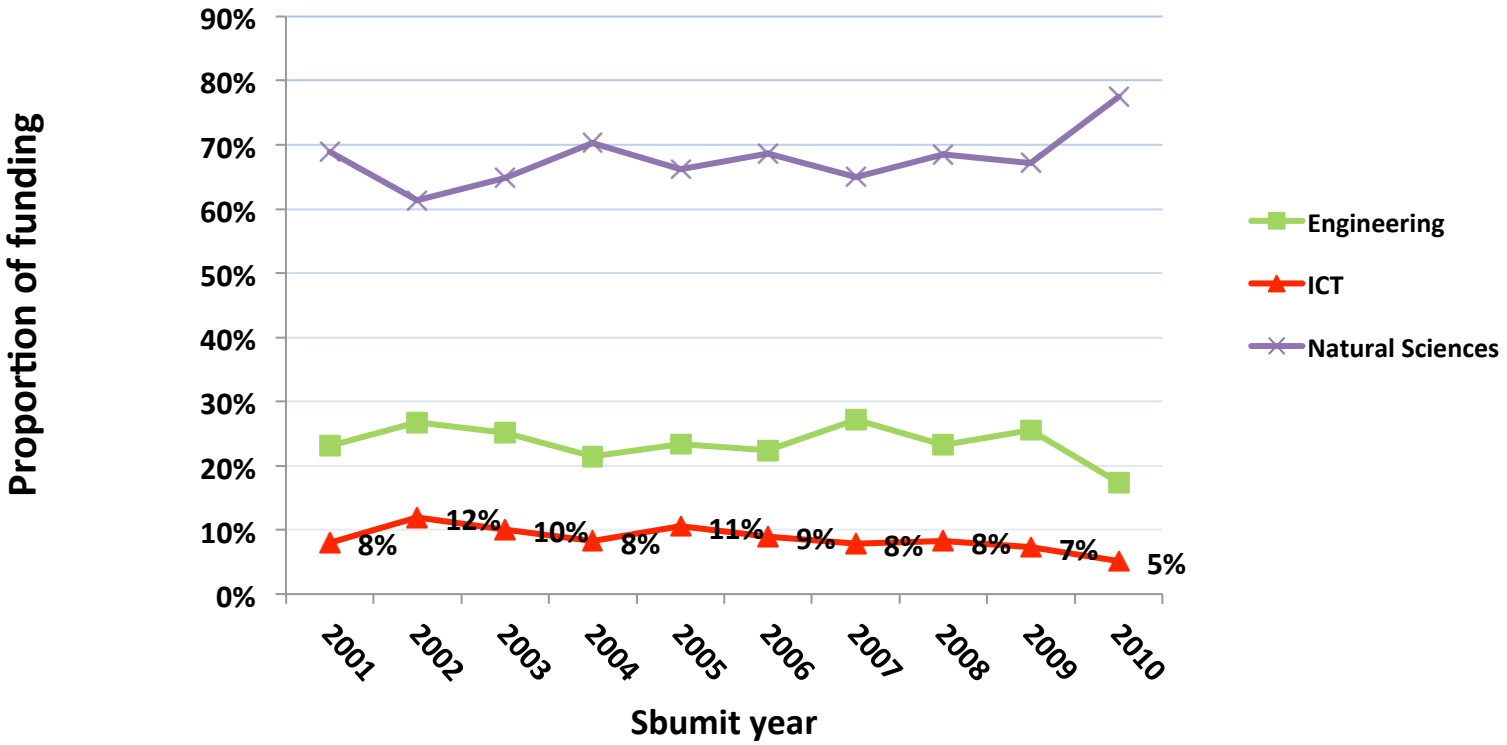
	DECRA	DP	IN	LE	LP	Total	%
Engineering	341	593	0	47	103	1084	25%
ICT	168	299	1	9	31	**508**	12%
Nat . Sciences	996	1507	6	104	163	2776	64%
Total	**1505**	**2399**	**7**	**160**	**297**	**4368**	**100%**

FL – 8 applications; FT – 37 applications (~50% in 0801)

Funding for projects in ICT, natural sciences and engineering since 2001 (not including co-funded Centres and some Special Research Initiatives projects)

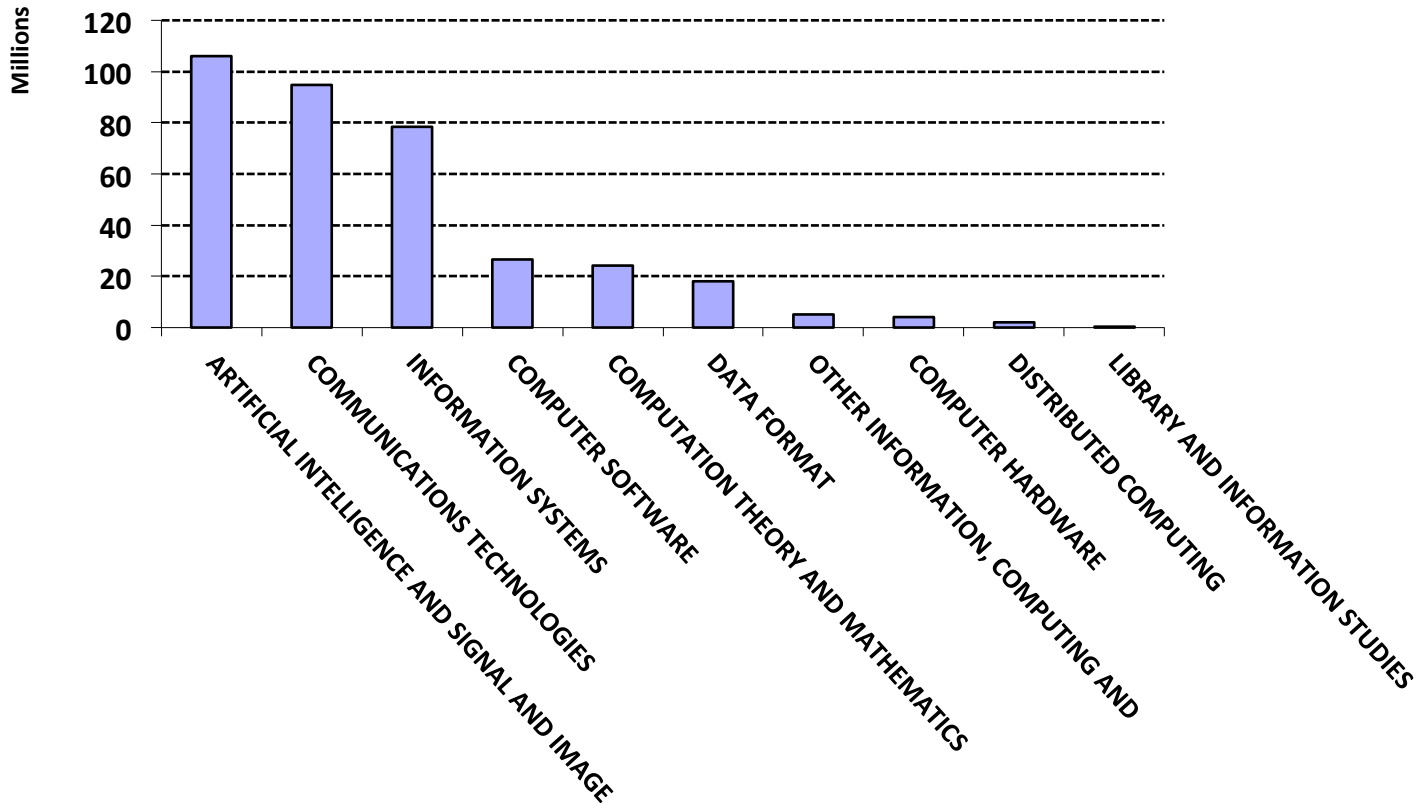


Funding proportion among ICT, natural sciences and engineering projects



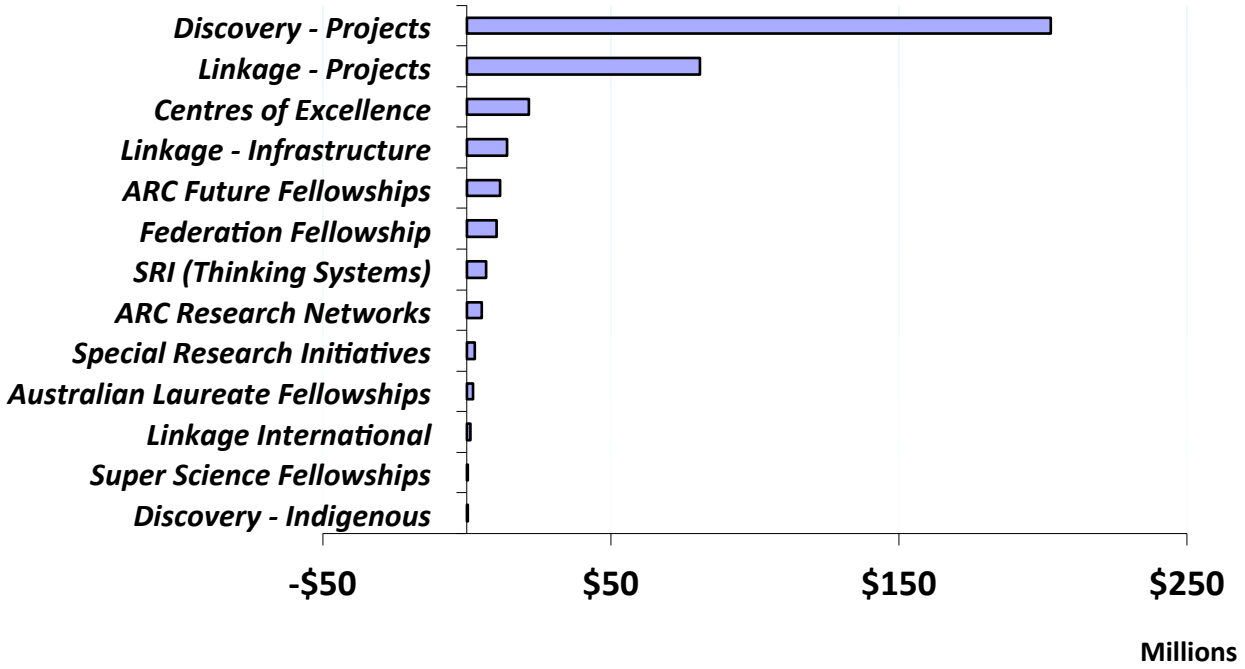
Funding for ICT by primary RFCD/FOR disciplines, since commencement year 2002

Funding by primary RFCD/FOR - since commencement year 2002 (inclusive)



Funding for ICT by scheme (since commencement year 2002)

Total funding for ICT by scheme since commencement year 2002 (inclusive)

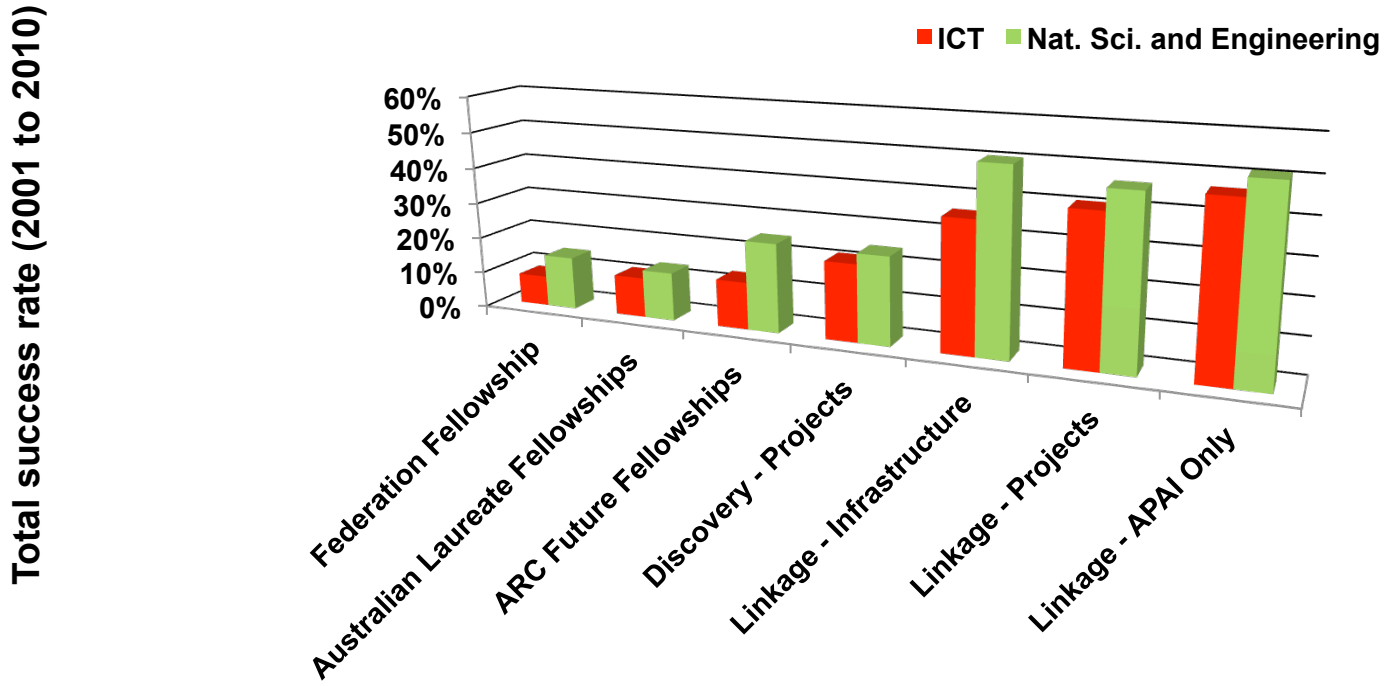


Funding for ICT by scheme and commencement year since 2006

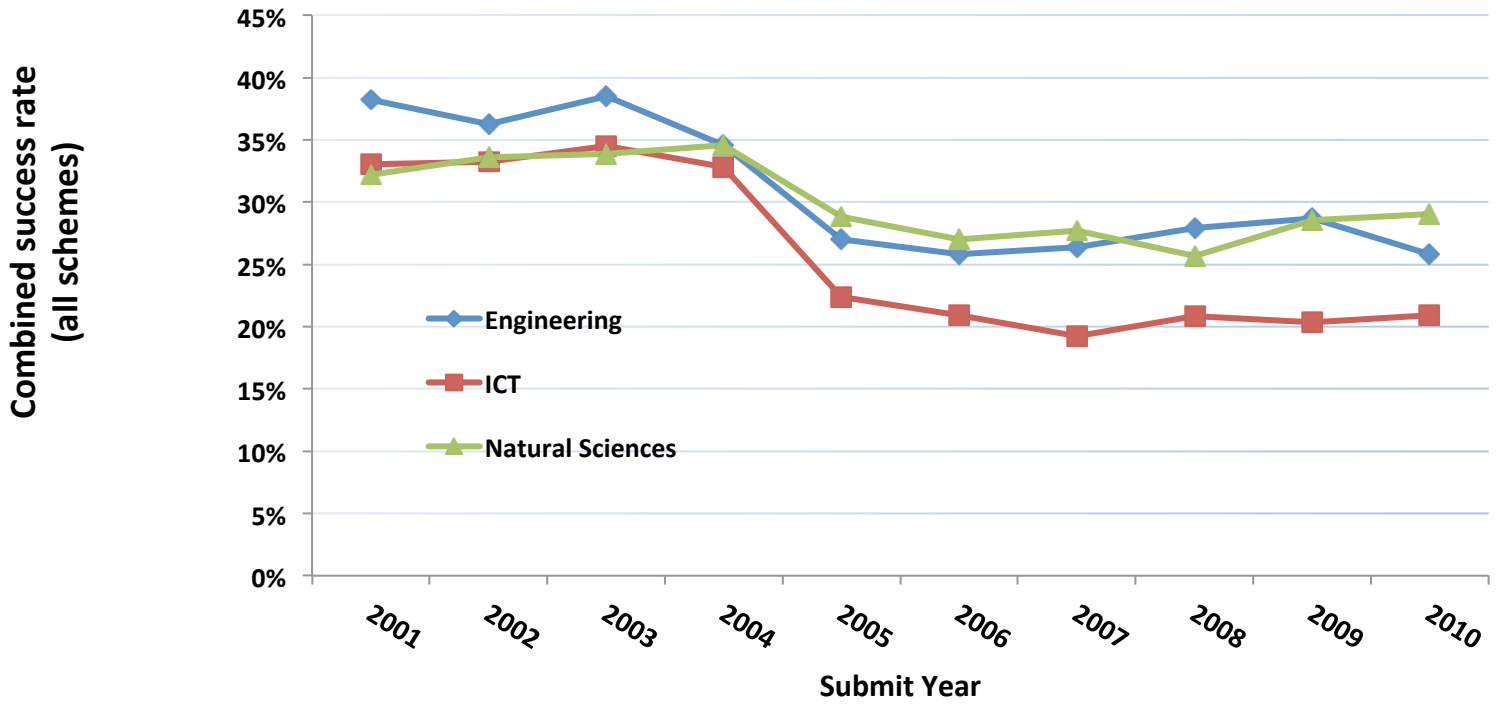
Scheme\Commencement year	2006	2007	2008	2009	2010	2011
ARC Future Fellowships				$6,689,600	$4,761,591	
Australian Laureate Fellowships				$2,064,351		
Discovery - Indigenous				$30,000		
Discovery - Projects	$20,406,072	$20,832,243	$20,992,493	$23,798,140	$22,106,000	$20,675,176
Federation Fellowship	$1,581,110	$1,606,210				
Linkage - Infrastructure	$2,402,000	$1,741,967	$429,776	$150,000	$469,410	$1,230,000
Linkage - Projects	$6,704,697	$6,804,102	$8,102,791	$9,256,420	$7,928,459	$8,249,371
Linkage International	$219,730	$51,900	$153,083	$255,100		
SRI (Thinking Systems)	$6,600,000					
Super Science Fellowships					$278,400	
Total	**$37,913,609**	**$31,036,422**	**$29,678,143**	**$42,243,611**	**$35,543,860**	**$30,154,547**

NICTA funding – 2002/03-2010/11: $379.1M (ARC $187.2M)

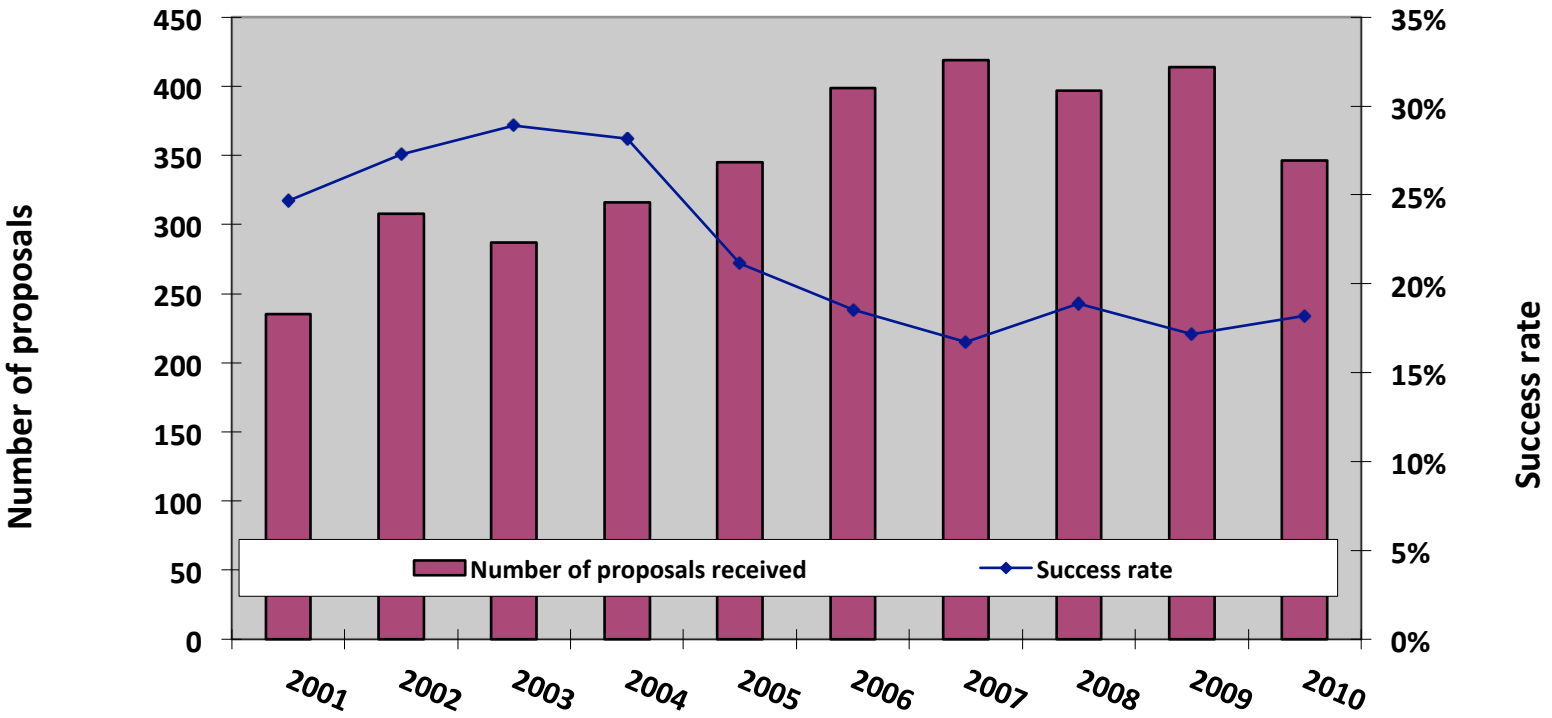
Success rate for ICT proposals in comparison with natural sciences and engineering disciplines combined, by scheme



Success rate of ICT proposals in comparison with natural sciences and engineering disciplines combined, by submit year



ICT proposals received in ICT and success rate - Submit Year



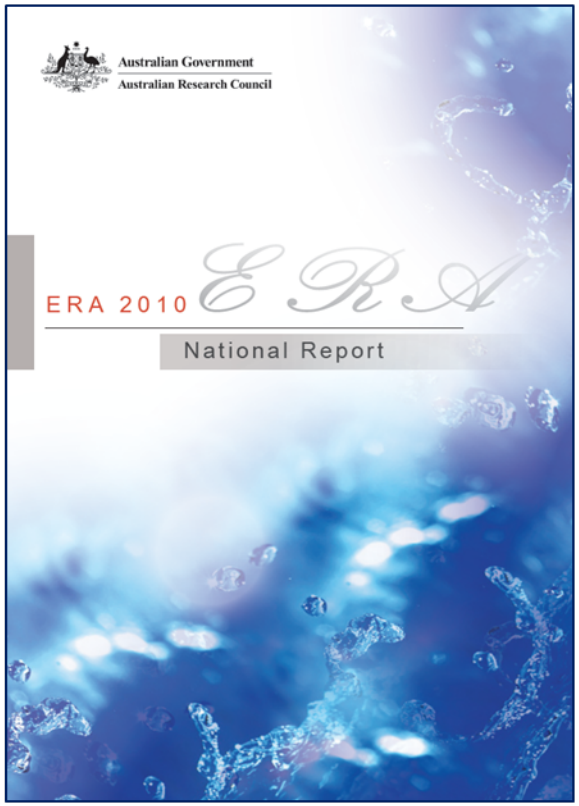
Discovery Projects Proposals Received and success rate - Submit Year

ERA Process Overview

Volume & Activity	Ranked Outlets
Citation Analysis	Esteem
Research Income	Applied Measures
Peer Review	

International Benchmarks

Research Evaluation Committees



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.

ERA 2010 at a glance

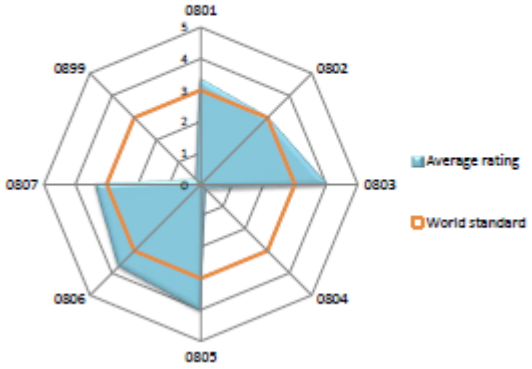
- All 41 eligible institutions participated
- 2435 units of evaluation assessed at the two- and four-digit level
- Over 330,000 research outputs and 55,000 researchers represented
- All ERA outcomes are available on the ARC website

ERA 2010 – 08 summary

Mathematical, Information and Computing Sciences				
08 Information and Computing Sciences				
% assessed UoEs rated at or above world standard: 91%	FTEs: 1,792	Esteem count(s): 101	Average National Rating: 3.4	
	Research outputs: 24,656	Patent(s): 14		
	Research income $: 238,748,216	Res. comm. income ($): 14,849,644		
	UoEs assessed: 23			

Rating:	1	2	3	4	5	Total
Distribution:	0	2	11	8	2	23

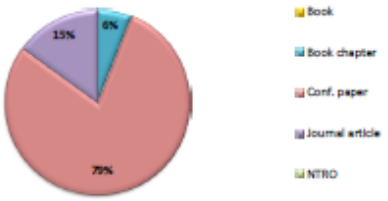
Four-digit FoR ratings



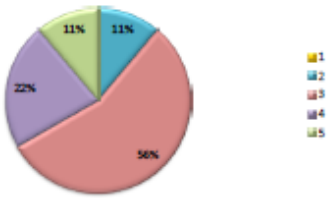
0801 Artificial Intelligence and Image Processing							
% assessed UoEs rated at or above world standard	FTEs	487		Esteem count(s)	42	Average National Rating	
89%	Research outputs	7,409		Patent(s)	6	3.3	
	Research income $	72,665,746		Res. comm. income ($)	5,977,511		
	UoEs assessed	9					

Rating:	1	2	3	4	5	Total
Distribution:	0	1	5	2	1	9

Research outputs by type



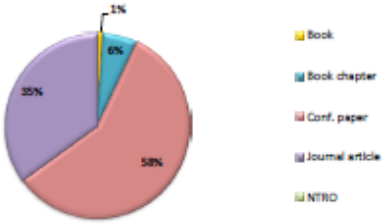
FoR rating distribution



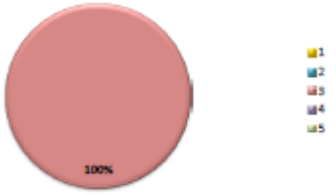
0802 Computation Theory and Mathematics							
% assessed UoEs rated at or above world standard	FTEs	76		Esteem count(s)	7	Average National Rating	
100%	Research outputs	1,447		Patent(s)	1	3.0	
	Research income $	10,001,041		Res. comm. income ($)	38,037		
	UoEs assessed	3					

Rating:	1	2	3	4	5	Total
Distribution:	0	0	3	0	0	3

Research outputs by type



FoR rating distribution

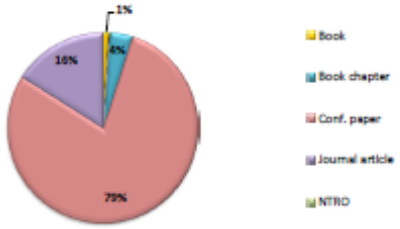


0803 Computer Software

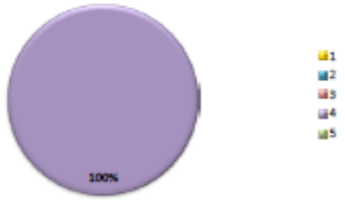
% assessed UoEs rated at or above world standard					Average National Rating
100%	FTEs	195	Esteem count(s)	14	4.0
	Research outputs	2,234	Patent(s)	1	
	Research income $	19,652,506	Res. comm. income ($)	1,012,819	
	UoEs assessed	1			

Rating:	1	2	3	4	5	Total
Distribution:	0	0	0	1	0	1

Research outputs by type



FoR rating distribution

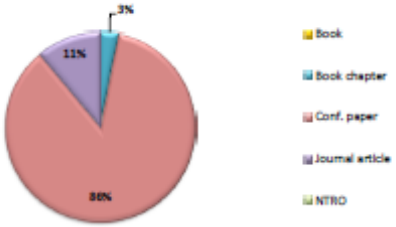


0804 Data Format

% assessed UoEs rated at or above world standard					Average National Rating
n/a	FTEs	76	Esteem count(s)	5	n/a
	Research outputs	1,442	Patent(s)	0	
	Research income $	10,014,425	Res. comm. income ($)	216,919	
	UoEs assessed	0			

Rating:	1	2	3	4	5	Total
Distribution:	0	0	0	0	0	0

Research outputs by type



FoR rating distribution

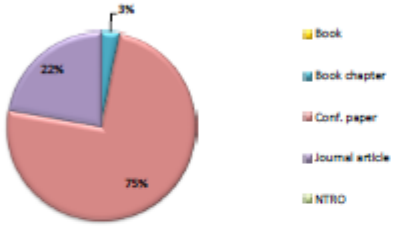
Insufficient data

0805 Distributed Computing

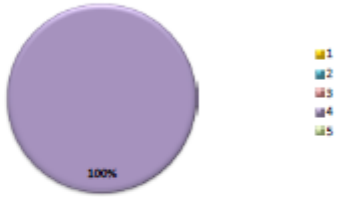
% assessed UoEs rated at or above world standard					Average National Rating
100%	FTEs	120	Esteem count(s)	4	4.0
	Research outputs	1,839	Patent(s)	1	
	Research income $	17,325,400	Res. comm. income ($)	0	
	UoEs assessed	1			

Rating:	1	2	3	4	5	Total
Distribution:	0	0	0	1	0	1

Research outputs by type



FoR rating distribution



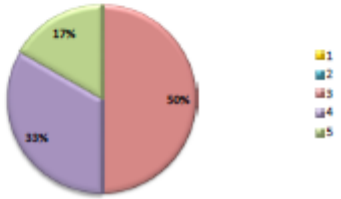
0806 Information Systems

% assessed UoEs rated at or above world standard					Average National Rating
100%	FTEs	530	Esteem count(s)	24	3.7
	Research outputs	7,892	Patent(s)	4	
	Research income $	58,000,706	Res. comm. income ($)	7,604,359	
	UoEs assessed	6			

Rating:	1	2	3	4	5	Total
Distribution:	0	0	3	2	1	6

Research outputs by type

FoR rating distribution

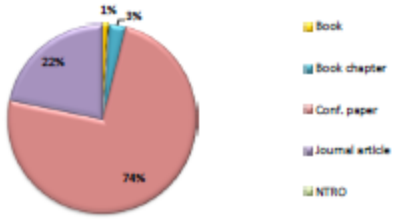


0899 Other Information and Computing Sciences

% assessed UoEs rated at or above world standard				Average National Rating
n/a	FTEs	159	Esteem count(s)	2	n/a
	Research outputs	1,250	Patent(s)	0	
	Research income $	35,959,010	Res. comm. income ($)	0	
	UoEs assessed	0			

Rating:	1	2	3	4	5	Total
Distribution:	0	0	0	0	0	0

Research outputs by type



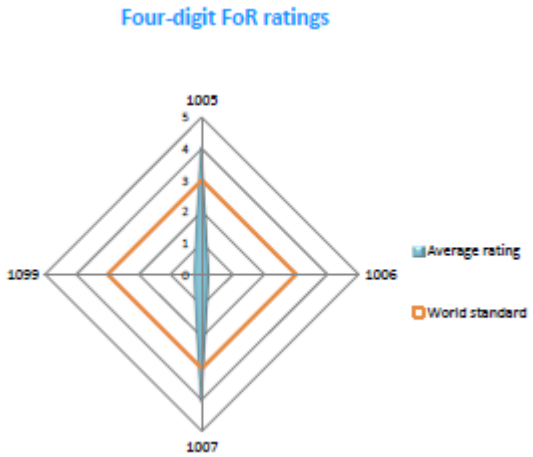
FoR rating distribution

Insufficient data

ERA 2010 – 10 summary

Mathematical, Information and Computing Sciences				
10 Technology				
% assessed UoEs rated at or above world standard: 83%	FTEs: 316	Esteem count(s): 51	Average National Rating: 4.0	
	Research outputs: 4,318	Patent(s): 20		
	Research income $: 74,819,298	Res. comm. income ($): 20,026		
	UoEs assessed: 6			

Rating:	1	2	3	4	5	Total
Distribution:	0	1	1	1	3	6

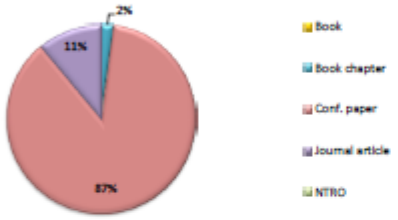


1005 Communications Technologies

% assessed UoEs rated at or above world standard					Average National Rating
100%	FTEs	171	Esteem count(s)	28	4.0
	Research outputs	2,638	Patent(s)	12	
	Research income $	35,132,946	Res. comm. income ($)	0	
	UoEs assessed	2			

Rating:	1	2	3	4	5	Total
Distribution:	0	0	1	0	1	2

Research outputs by type



FoR rating distribution

1006 Computer Hardware

% assessed UoEs rated at or above world standard					Average National Rating
n/a	FTEs	28	Esteem count(s)	1	n/a
	Research outputs	856	Patent(s)	1	
	Research income $	7,659,923	Res. comm. income ($)	0	
	UoEs assessed	0			

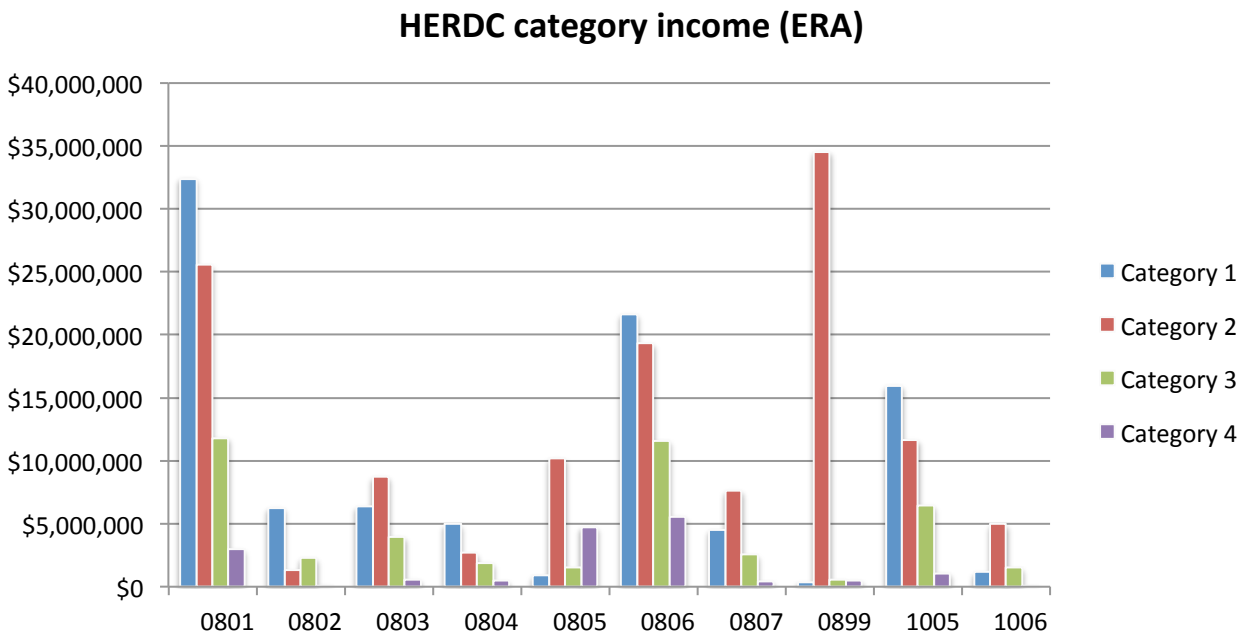
Rating:	1	2	3	4	5	Total
Distribution:	0	0	0	0	0	0

Research outputs by type

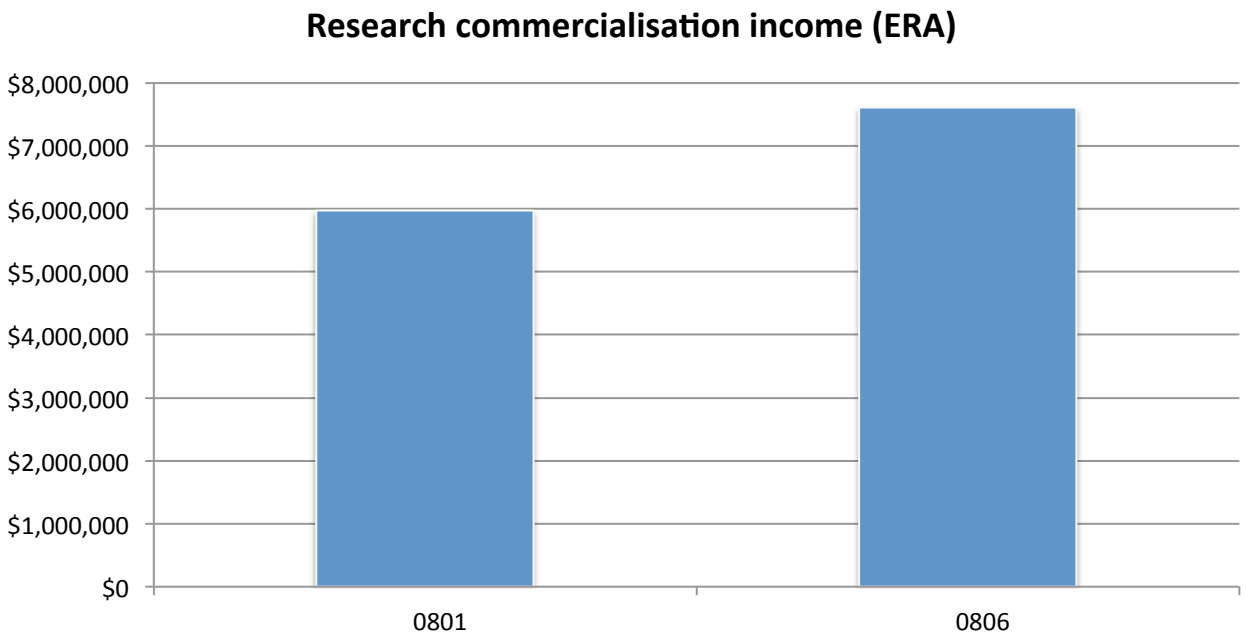
FoR rating distribution

Insufficient data

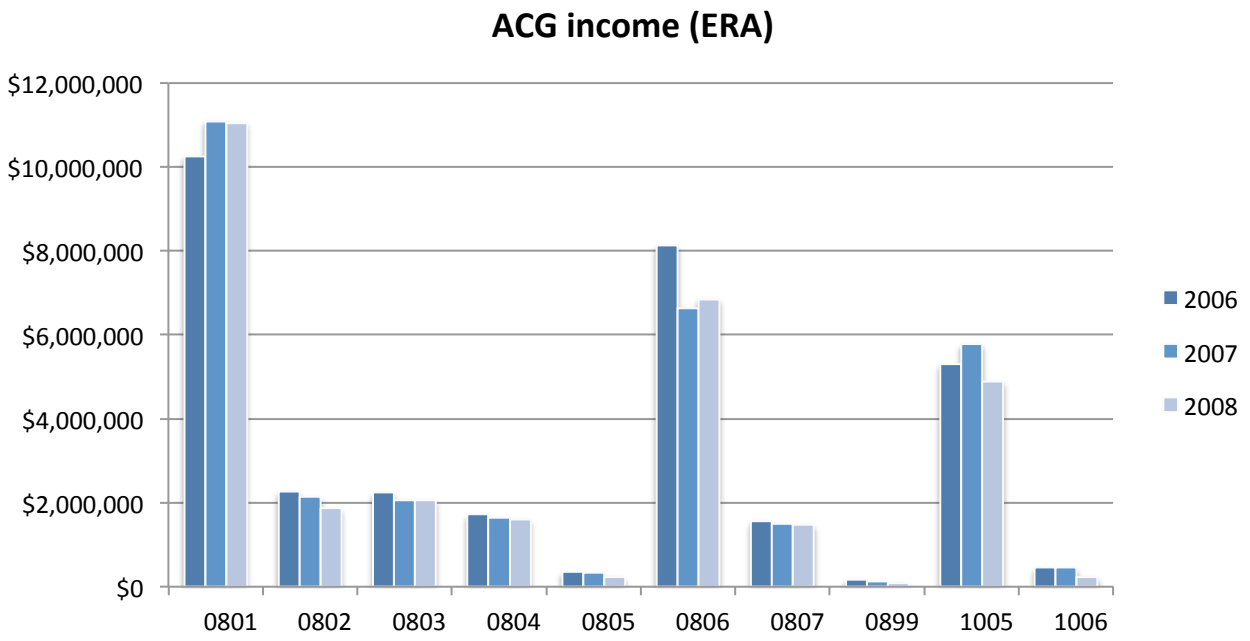
Income coded to ICT in ERA



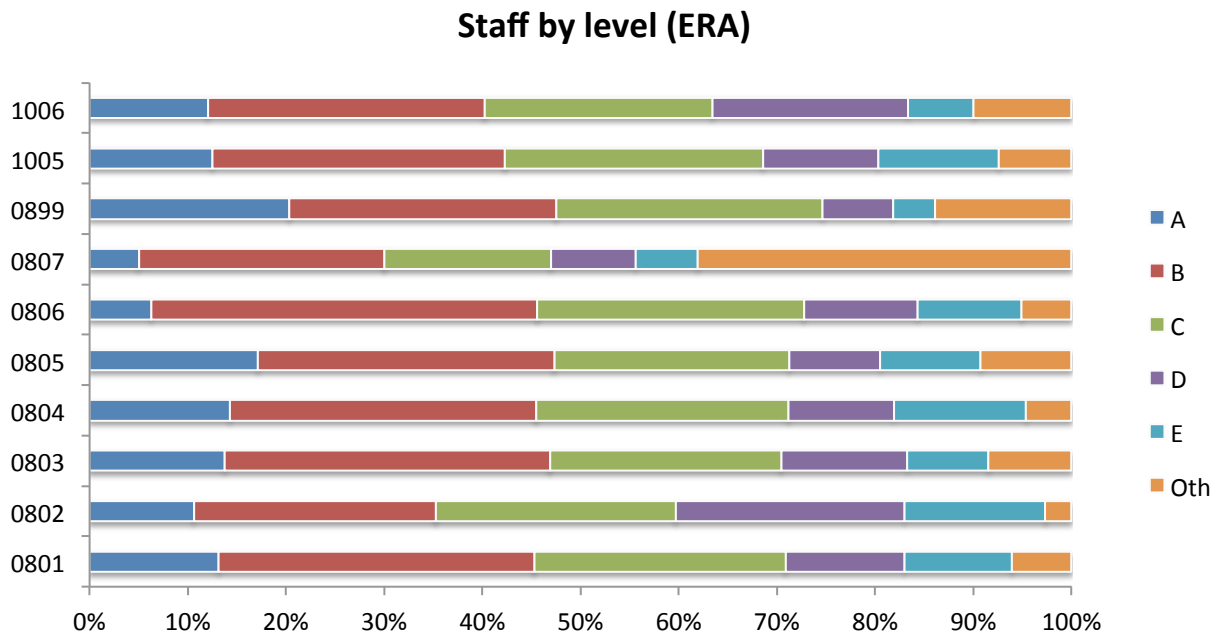
ERA RCI Income coded to ICT



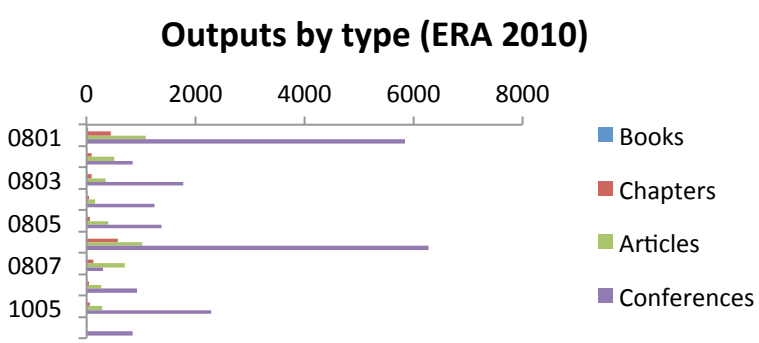
ERA Australian Competitive grant income coded to ICT

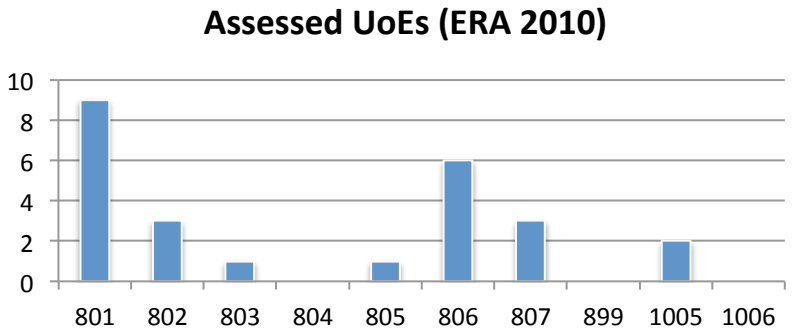


ERA staff coded to ICT



Where the discipline sits in ERA





IT issues from ERA

- Conference publications – peer review or metrics?
- Coding of articles with > 66% in discipline (helps enabling disciplines)
- Comments on ERA 2012 by Aug 1
- Suggestions for ERA RECs – both national and international expertise