

# ***ARC Centres of Excellence Selection Report***

## **Overview**

The *ARC Centres of Excellence* scheme aims to enhance and develop Australia's research excellence through highly innovative and collaborative research, as well as build Australia's human capacity in a range of research areas.

## **Objectives**

As indicated in the Funding Rules for this scheme, the objectives of the *ARC Centres of Excellence* scheme are to:

- a. undertake highly innovative and potentially transformational research that aims to achieve international standing in the fields of research envisaged and leads to a significant advancement of capabilities and knowledge;
- b. link existing Australian research strengths and build critical mass with new capacity for interdisciplinary, collaborative approaches to address the most challenging and significant research problems;
- c. develop relationships and build new networks with major national and international centres and research programs to help strengthen research, achieve global competitiveness and gain recognition for Australian research;
- d. build Australia's human capacity in a range of research areas by attracting and retaining, from within Australia and abroad, researchers of high international standing as well as the most promising research students;
- e. provide high-quality postgraduate and postdoctoral training environments for the next generation of researchers;
- f. offer Australian researchers opportunities to work on large-scale problems over longer periods of time; and
- g. establish Centres of such repute in the wider community that they will serve as points of interaction among higher education institutions, governments, industry and the private sector generally.

## **Selection process**

The *ARC Centres of Excellence* selection round was conducted through the following competitive three-stage process.

Applicants submitted an Expression of Interest (EOI) between 9 October and 25 November 2009. These EOIs were reviewed by an ARC Selection Advisory Committee (SAC) comprising international experts across the discipline areas. Successful EOIs were invited to submit a Proposal between 16 February and 19 April 2010.

Proposals were assessed by SAC members and specialist assessors against the selection criteria as listed in the *ARC Centres of Excellence Funding Rules for funding commencing in 2011*. The SAC ranked each Proposal relative to the others on the basis of the Proposal and assessors' reports. The highest ranked proposals were shortlisted for interview.

Interviews were held in the week of 5 July 2010. The SAC ranked each shortlisted Proposal relative to the others on the basis of the assessor reports and the interview. Individual budgets were assessed alongside the total *ARC Centres of Excellence* budget. The ARC Chief Executive Officer (CEO) made funding recommendations to the Minister for Innovation, Industry, Science and Research and these recommendations were subsequently approved.

## Selection criteria

Selection criteria and corresponding weights for EOIs:

- Proposed research program (50%)
- Investigators (50%).

Selection criteria and corresponding weights for Proposals:

- Research program (25%)
- Investigators (25%)
- Governance, leadership and mentoring (25%)
- Outcomes and linkages (25%)

## Funding levels and duration

Funding of between \$1 million and \$4 million per annum for up to seven years may be awarded for each *ARC Centre of Excellence*.

## Approved funding

The ARC received 111 EOIs and invited 32 applicants to submit Proposals. One invited Proposal was not submitted. Of the 31 *ARC Centres of Excellence* Proposals submitted, 13 (41.9%) are approved for funding. This represents an Australian Government commitment of \$255.9 million over the life of these Centres.

**Table 1. Numbers of EOIs, Proposals and success rates for *ARC Centre of Excellence* 2011 by discipline panel**

Panel*	EOIs considered	EOIs shortlisted	EOI Success rate	Proposals considered	Proposals interviewed	Proposals approved	Proposal Success rate
BSB	38	8	21.1%	8	3	2	25.0%
EMI	23	6	26.1%	6	2	1	16.7%
HCA	17	5	29.4%	4	2	1	25.0%
PCE	19	9	47.4%	9	8	7	77.8%
SBE	14	4	28.6%	4	3	2	50.0%
<b>Total</b>	<b>111</b>	<b>32</b>	<b>28.8%</b>	<b>31</b>	<b>18</b>	<b>13</b>	<b>41.9%</b>

\*BSB = Biological Sciences and Biotechnology; EMI = Engineering, Mathematics and Informatics; HCA = Humanities and Creative Arts; PCE = Physics, Chemistry and Earth Sciences; SBE = Social, Behavioural and Economic Sciences

**Table 2. Requested and approved funding for ARC Centre of Excellence 2011 by discipline panel**

Panel*	Proposals approved	Requested funds over project life (approved Proposals)	Approved funds over project life (approved Proposals)	Approved funds as % of requested funds
BSB	2	\$51,379,062	\$31,150,000	60.6%
EMI	1	\$28,000,000	\$14,400,000	51.4%
HCA	1	\$25,942,941	\$24,250,000	93.5%
PCE	7	\$182,569,206	\$152,400,000	83.5%
SBE	2	\$46,408,554	\$33,700,000	72.6%
<b>Total</b>	<b>13</b>	<b>\$334,229,763</b>	<b>\$255,900,000</b>	<b>76.5%</b>

\*BSB = Biological Sciences and Biotechnology; EMI = Engineering, Mathematics and Informatics; HCA = Humanities and Creative Arts; PCE = Physics, Chemistry and Earth Sciences; SBE = Social, Behavioural and Economic Sciences

### Outcomes by Administering Organisation

**Table 3. Numbers of EOIs and Proposals, success rates and ARC approved funding for ARC Centres of Excellence 2011 by Administering Organisation**

Administering Organisation	EOIs considered	EOIs shortlisted	EOI Success rate	Proposals considered	Proposals approved	Proposal Success rate	Approved funds over project life (approved Proposals)
Central Queensland University	1	0	0.0%	–	–	–	–
Charles Sturt University	2	0	0.0%	–	–	–	–
Curtin University of Technology	1	0	0.0%	–	–	–	–
Edith Cowan University	1	0	0.0%	–	–	–	–
Griffith University	4	1	25.0%	1	0	0.0%	–
La Trobe University	2	0	0.0%	–	–	–	–
Macquarie University	3	2	66.7%	2	2	100.0%	\$33,400,000
Monash University	9	0	0.0%	–	–	–	–
Murdoch University	1	0	0.0%	–	–	–	–
Queensland University of Technology	5	0	0.0%	–	–	–	–
RMIT	1	1	100.0%	1	0	0.0%	–
Southern Cross University	1	0	0.0%	–	–	–	–

The Australian National University	10	3	30.0%	3	0	0.0%	–
The University of Adelaide	5	2	40.0%	2	1	50.0%	\$19,250,000
The University of Melbourne	18	5	27.8%	5	1	20%	\$25,200,000
The University of New England	2	0	0.0%	–	–	–	–
The University of New South Wales	12	6	50.0%	6	3	50.0%	\$58,600,000
The University of Newcastle	4	2	50.0%	2	1	50.0%	\$14,400,000
The University of Queensland	13	4	30.8%	4	2	50.0%	\$36,400,000
The University of Sydney	5	4	80.0%	3	2	66.7%	\$44,400,000
The University of Western Australia	3	1	33.3%	1	1	100.0%	\$24,250,000
University of South Australia	1	0	0.0%	–	–	–	–
University of Tasmania	2	0	0.0%	–	–	–	–
University of Technology Sydney	1	1	100.0%	1	0	0.0%	–
University of Western Sydney	2	0	0.0%	–	–	–	–
University of Wollongong	2	0	0.0%	–	–	–	–

**Table 4. ARC Centre of Excellence 2011 Proposals approved for funding**

<b>ARC Centre of Excellence title</b>	<b>Centre Director</b>	<b>Administering Organisation</b>	<b>Total approved funds over project life</b>
All-sky Astrophysics	Professor B Gaensler	The University of Sydney	\$20,600,000
Climate System Science	Professor A Pitman	The University of New South Wales	\$21,400,000
Core to Crust Fluid System	Professor S O'Reilly	Macquarie University	\$12,400,000
Engineered Quantum Systems	Professor G Milburn	The University of Queensland	\$24,500,000
Environmental Decisions	Professor H Possingham	The University of Queensland	\$11,900,000
Geotechnical Science and Engineering	Professor S Sloan	The University of Newcastle	\$14,400,000
History of Emotions	Professor P Maddern	The University of Western Australia	\$24,250,000
Particle Physics at the Tera-Scale	Professor G Taylor	The University of Melbourne	\$25,200,000
Plant Cell Wall Biology	Professor G Fincher	The University of Adelaide	\$19,250,000

Population Ageing Research	Professor J Piggott	The University of New South Wales	\$12,700,000
Quantum Computation and Communication Technology	Professor M Simmons	The University of New South Wales	\$24,500,000
Study of Cognition and its Disorders	Professor S Crain	Macquarie University	\$21,000,000
Ultrahigh Bandwidth Devices for Optical Systems	Professor B Eggleton	The University of Sydney	\$23,800,000

## Collaboration

*ARC Centres of Excellence* encourage collaboration between university researchers at the Administering and Collaborating Organisations and researchers and end-users at Partner Organisations, both within Australia and internationally.

The approved Proposals involve eight Administering Organisations, 18 Collaborating Organisations and 124 Partner Organisations.

**Table 5. ARC requested funds and cash commitments from all Organisations for *ARC Centres of Excellence* 2011 approved Proposals**

ARC Centre of Excellence title	ARC requested funds over project life	Cash commitment from all Organisations* over project life	Cash commitment from all Organisations* as % of ARC requested funds over project life
All-sky Astrophysics	\$21,931,461	\$7,514,280	34.3%
Climate System Science	\$28,000,000	\$9,510,383	34.0%
Core to Crust Fluid System	\$23,647,745	\$13,580,400	57.4%
Engineered Quantum Systems	\$26,950,000	\$14,615,521	54.2%
Environmental Decisions	\$24,079,062	\$7,152,740	29.7%
Geotechnical Science and Engineering	\$28,000,000	\$8,225,000	29.4%
History of Emotions	\$25,942,941	\$6,112,122	23.6%
Particle Physics at the Tera-Scale	\$28,000,000	\$8,344,000	29.8%
Plant Cell Wall Biology	\$27,300,000	\$12,190,000	44.7%
Population Ageing Research	\$20,327,075	\$8,037,750	39.5%
Quantum Computation and Communication Technology	\$28,000,000	\$11,604,750	41.4%
Study of Cognition and its Disorders	\$26,081,479	\$7,989,411	30.5%
Ultrahigh Bandwidth Devices for Optical Systems	\$26,040,000	\$9,238,831	35.5%
<b>Total</b>	<b>\$334,299,763</b>	<b>\$124,115,188</b>	<b>37.1%</b>

\*Administering Organisation, Collaborating Organisations and Partner Organisations

International collaboration is an important component of *ARC Centres of Excellence*. All approved Proposals indicated international collaborations with at least three countries, with

the majority indicating international collaborations with five or more countries. Data relating to international collaboration is shown in Table 6.

**Table 6. International collaboration for ARC Centres of Excellence 2011 by country of collaboration**

<b>Collaborating country</b>	<b>Proposals considered</b>	<b>Proposals approved</b>
Argentina	1	0
Austria	3	2
Belgium	3	1
Brazil	1	0
Canada	13	7
Chile	2	0
China, People's Republic	9	2
Colombia	1	0
Costa Rica	1	0
Denmark	3	1
Finland	1	1
France	9	3
Germany	22	10
India	4	1
Indonesia	1	0
Ireland	1	0
Israel	1	1
Italy	3	2
Japan	10	6
Korea, Republic of	2	0
Netherlands, The	5	1
New Zealand	7	1
Norway	2	2
Portugal	1	0
Singapore	7	2
South Africa	2	1
Spain	1	0
Sri Lanka	1	0
Sweden	6	3
Switzerland	7	2
Taiwan	1	0
United Kingdom	25	12
United States	29	13
Uruguay	1	0
Vietnam	1	0
<b>Total</b>	<b>187</b>	<b>74</b>

## Gender

**Table 7. Proportion of male and female Centre Directors on Proposals for ARC Centres of Excellence 2011**

Centre Director	Proposals considered	Proposals approved	Success rate
Male	26	10	38.5%
Female	5	3	60.0%

\*BSB = Biological Sciences and Biotechnology; EMI = Engineering, Mathematics and Informatics; HCA = Humanities and Creative Arts; PCE = Physics, Chemistry and Earth Sciences; SBE = Social, Behavioural and Economic Sciences

## National Research Priorities

The Australian Government has identified four National Research Priorities and, within these, 21 National Research Priority goals. A number of Proposals identified multiple National Priority Areas and the information shown below is using the first priority listed.

**Table 8. Approved funding for ARC Centres of Excellence 2011 by National Research Priority**

Priority Area	Proposals considered	Proposals approved	Success rate	Approved funds over project life
An Environmentally Sustainable Australia	12	3	25.0%	\$45,700,000
Promoting and Maintaining Good Health	5	3	60%	\$57,950,000
Frontier Technologies for Building and Transforming Australian Industries	13	7	53.8%	\$152,250,000
Safeguarding Australia	1	0	0.0%	–
<b>Total Proposals</b>	<b>31</b>	<b>13</b>	<b>41.9%</b>	<b>\$255,900,000</b>