



Australian Government

Australian Research Council

Discovery Projects

**Selection Report
for funding commencing in 2005**

Please note this selection report is a revision of the Discovery Projects selection report released on the ARC website on 19 November 2004.

Discovery Projects

Overview

Recognising the importance of fundamental research to the national innovation system, *Discovery Projects* supports excellent research projects and excellent individual researchers and teams of researchers. To build research capability and foster the research careers of outstanding young researchers, *Discovery Projects* includes targets for funding Early Career Researchers. Under *Discovery Projects*, ARC Fellowships provide opportunities for emerging and established researchers to undertake research of national and international significance.

Objectives

The objectives of *Discovery Projects* are to:

- support excellent fundamental research by individuals and teams;
- assist researchers to undertake their research in conditions most conducive to achieving best results;
- expand Australia's knowledge base and research capability;
- encourage research training in high-quality research environments.

Selection process

Assessment of applications was undertaken by the College of Experts, which:

- excluded ineligible applications;
- assigned independent readers/assessors to review the applications;
- sought applicants' comments on assessors' reports;
- ranked each application relative to the others on the basis of the application, the assessors' reports and applicants' response to these assessments;
- assessed and recommended budgets;
- prepared funding recommendations for submission to the ARC Board and, subject to its views, then to the Minister for approval.

The ARC applied strict procedures for declaring conflicts of interest and for members to withdraw from considering particular applications. Readers for each discipline grouping were drawn from a range of institutions to avoid potential conflict of interest problems.

At the selection meeting held on 16-20 August 2004, the College of Experts ranked the applications, taking into account readers and assessors' reports and rejoinders from applicants. The Committee made final checks on eligibility. A list of projects recommended for funding was then prepared for submission to the ARC Board.

Selection criteria

The selection criteria for *Discovery Projects* are:

- track record of the researchers relative to opportunities (40%);
- significance and degree of innovation in the proposed research program (30%);
- relevance and adequacy of the proposed approach (20%);
- national benefit (10%).

National Research Priorities

The Australian Government has identified four National Research Priorities (NRP) and within them 21 national research priority goals.

For Discovery Projects 2,586 applications selected a NRP area. This represented 75.7% of all applications. Of these 2,586 NRP applications, 777 are recommended for funding by the College of Experts, with a success rate of 30.0%. National Research Priority applications represented 73.6% of the 1,055 applications recommended for funding.

In terms of funding endorsed over 2005-2009 for *Discovery Projects*, priority applications received \$230,459,743 (77.5% of the total recommended).

For *Discovery Projects* the greatest amount of funding, \$117,515,505 is recommended for projects in the Frontier Technologies for Building and Transforming Australian Industries national research priority.

Table 1. Numbers and Success Rates for Discovery Projects by National Research Priority (NRP)

	Applications Received less withdrawals	Recommended Applications	Success rate %	Recommended funds 2005-2009
No area	828	278	33.6	\$67,081,904
An Environmentally Sustainable Australia	577	148	25.6	\$46,997,897
Promoting and Maintaining Good Health	465	134	28.8	\$34,320,926
Frontier Technologies for Building and Transforming Australian Industries	1,111	358	32.2	\$117,515,505
Safeguarding Australia	433	137	31.6	\$31,625,415
Total applications	3,414	1,055	30.9	\$297,541,647
Total NRP applications	2,586	777	30.0	\$230,459,743
Priority as % of total	75.7	73.6		77.5

Summary of outcomes

The ARC considered 3,414 proposals (3,441 minus 27 withdrawn) for funding under the *Discovery Projects* scheme. Of these, 1,055 (30.9%) were recommended for funding, 2,322 were not recommended for funding, and 37 were ineligible. The 1,055 recommended projects represent an ARC commitment of \$99,528,276 in 2005 or \$297, 541,647 over 5 years.

Table 2. Success Rates for Discovery Projects commencing 2003-2005

	2003	2004	2005
Number of applications Received	3,601	3,260	3,441
Withdrawn	27	20	27
Funded	942	875	1,055
Success Rate	26.4%	27.0%	30.9

In all cases, success rates are calculated without including withdrawn applications.

Table 3. Numbers and Success Rates for Discovery Projects by Discipline Group

Discipline	Applications Received less withdrawn	Recommended Applications	Success Rate %	Requested funds by funded projects 2005-2009	Recommended funds 2005-2009
BSB	647	191	29.5	\$94,310,888	\$59,834,030
EE	474	142	30.0	\$71,869,300	\$47,386,118
HCA	565	185	32.7	\$56,579,845	\$39,485,308
MIC	485	155	32.0	\$77,132,760	\$40,920,359
PCG	600	181	30.2	\$118,995,062	\$68,410,786
SBE	643	201	31.3	\$69,958,279	\$41,505,046
Total	3,414	1,055	30.9	\$488,846,134	\$297,541,647

The average first-year funding per project for *Discovery Projects* is \$94,340. In 2004, the equivalent figure was \$84,060.

Table 4. Average first-year funding for Discovery Projects commencing 2003-2005

DP	2003	2004	2005
Average first year funding	\$81,461	\$84,060	\$94,340

The average total grant for *Discovery Projects*, over the projects' lives is listed in Table 5.

Table 5. Average total grant size for Discovery commencing 2003-2005

DP	2003	2004	2005
Average total grant size	\$249,240	\$271,939	\$282,030

Under *Discovery Projects*, applicants may seek funding for up to 5 years. For funding commencing in 2005, 752 applications requested funding for 4 or 5 years, of which 136 are recommended. Table 6 shows comparative data for 2003, 2004 and 2005 *Discovery Projects*.

Table 6. Duration of Funding for Discovery Projects

No. of years	2003		2004		2005	
	Applications	Funded	Applications	Funded	Applications	Recommended
1	33	52*	40	10*	37	9
2	215	84	203	27	191	45
3	2,628	650	2,352	514	2,434	865
4	153	32	159	32	184	36
5	545	103	486	78	568	100
Total	3,574	921	3,240	661	3,414	1,055

*Note: a number of projects requesting multi-year funding were given funding for 1 year.

It should be noted that, in applications for funding commencing in 2005, the ARC is funding 72.4% of the average amount requested for 2005. In applications for funding commencing in 2004 the equivalent figure was 67.2%. For specific discipline group percentages see Table 7.

Table 7. Amounts requested by and allocated to successful applicants for 2005

Discipline	Average amount requested by funded applications for 2005	Average funds recommended for 2005	Average amount recommended as a proportion of amount requested
BSB	\$142,460	\$104,884	73.6
EE	\$147,928	\$110,951	75.0
HCA	\$91,822	\$70,071	76.3
MIC	\$135,595	\$92,126	67.9
PCG	\$169,491	\$122,098	72.0
SBE	\$102,216	\$71,632	70.1
Total	\$130,278	\$94,340	72.4

Early Career Researcher applications

Early Career Researcher (ECR)-only applications are a sub-set of *Discovery Projects* applications. The ARC introduced specific measures to encourage and support Early Career Researchers in 2001. A separate budget allocation was identified for ECR-only applications (i.e. applications in which all Investigators are Early Career Researchers).

ECR-only applications were assessed against the same criteria as other *Discovery Projects* applications.

Summary of ECR-only application outcomes

Of the 747 ECR-only applications, 171 are recommended for funding, giving a success rate of 22.9% for such applications. Table 8 shows all ECR-only and recommended ECR-only applications by discipline and success rates.

Table 8. ECR-only application numbers and success rates.

Discipline	ECR-only applications	ECR-only applications recommended for funding	Success rate %	ECR recommended funding for 2005	ECR recommended funding for 2005 as proportion of DP 2005 allocations
BSB	112	27	24.1	\$2,704,860	13.5
EE	90	22	24.4	\$1,945,255	12.3
HCA	175	28	16.0	\$1,888,062	14.6
MIC	114	30	26.3	\$1,817,377	12.7
PCG	127	30	23.6	\$3,084,385	14.0
SBE	129	34	26.4	\$1,862,374	12.9
Total	747	171	22.9	\$13,302,313	13.4

History of ECR-only application funding

In years 2000 and 2001, ECR-only applications were identified but not allocated a separate budget. The years 2002 and 2003 have seen a surge in the number of applications. Table 9 gives application numbers and success rates over 5 years. The success rate of 24.7% in 2002 included the funding of 51 one-year ECR-only grants. Over 2002 to 2003, funding for ECR-only applications and the total number of recommended grants increased significantly.

Table 9. Total, and funded applications, and success rates for funding commencing 2000-2005

	2000	2001	2002	2003	2004	2005
Number of applications	450	251	653	861	663	747
Funded ECR-only applications	82	47	161	162	138	171
Success rate	17.3%	18.0%	24.7%	18.8%	20.8%	22.9%

Fellowships

Fellowships are integrated into *Discovery Projects*. Researchers are encouraged to tailor their applications to their specific research needs, and applications may request one or more fellowships, together with research project support. (Fellowship applicants who do not request project funding are required to demonstrate that their research is supported.)

The ARC offers three categories of Fellowships under *Discovery Projects*:

- Australian Postdoctoral Fellowship (APD): 3 or 4 years
- Australian Research Fellowship (ARF) and Queen Elizabeth II Fellowship(QEII): 5 years
- Australian Professorial Fellowship (APF): 5 years

ARFs and QEII's are treated as a single category, with the top applicants awarded QEII Fellowships. APDs and QEII's are tenable at universities and other Commonwealth-funded research organisations.

Summary of Fellowship outcomes

The ARC received 1,002 DP05 *Discovery Projects* applications seeking a total of 1,024 Fellowships. Fourteen applications were withdrawn leaving a total of 1,010 Fellowship applications. The minimum number of available Fellowships was 155 (110 APDs, 30 ARF/QEII's, 15 APFs). Some additional flexibility in the number available resulted from the take-up of the 50:50 option, with 167 Fellowships recommended for funding, representing a commitment for Fellowship salaries in 2005 of \$12,718,347.

The success rate across all discipline clusters for all Fellowships is 16.5%. Table 10 shows success rates by discipline cluster. Table 11 shows success rates by discipline cluster for APDs, ARF/QEII's and APFs.

Table 10. Recommended applicants, and recommended success rates by discipline cluster

Discipline	Fellowship applicants	Fellowships recommended	Success rate for Fellowship applicants (%)
BSB	226	36	15.9
EE	131	25	19.1
HCA	169	29	17.2
MIC	109	19	17.4
PCG	254	39	15.4
SBE	121	19	15.7
Total	1,010	167	16.5

Table 11. APD, ARF/QEII and APF total and recommended applicants, and recommended success rates by discipline cluster

Discipline	APD			ARF/QEII			APF		
	Applicants	Rec.	Success rate (%)	Applicants	Rec.	Success rate (%)	Applicants	Rec.	Success rate (%)
BSB	134	24	17.9	69	10	14.5	23	2	8.7
EE	79	18	22.8	33	4	12.1	19	3	15.8
HCA	108	21	19.4	35	4	11.4	26	4	15.4
MIC	57	12	21.1	25	3	12.0	27	4	14.8
PCG	122	24	19.7	77	9	11.7	55	6	10.9
SBE	70	13	18.6	25	2	8.0	26	4	15.4
Total	570	112	19.6	264	32	12.1	176	23	13.1

2005 Outcomes compared with previous years

Noting that Fellowships applications are now integrated into *Discovery Projects*, in contrast to the separate Research Fellowships scheme of previous years, indicative success rate comparisons are given in Table 12.

Table 12. Total funded applicants, and success rates, for funding commencing in 1999-2005

	1999	2000	2001	2002	2003	2004	2005
Number of applicants	742	687	701	830	1,005	871	1,010
Fellowships awarded	102	100	100	163	166	161	167
Success rate	13.8%	14.6%	14.3%	19.6%	16.5%	18.5%	16.5%

ARC/university partnerships to fund Fellowships

The ARC offers partnership funding to universities for APDs and the senior fellowships (ARF/QEII and APFs).

For APDs, the 4 year '75% research and 25% teaching' option was introduced in 1999 to provide a development opportunity. The ARC funds the 75% research component and the university the 25% teaching component. The usual APD is a 3 year full-time research position. Of 570 applicants, 65 requested ARC salary funding at 75% over 4 years. Table 13 indicates the number of total and recommended applicants requesting 100% salary over 3 years and 75% salary over 4 years.

Table 13. APD applications, by 100% and 75% salary request: total and funded applicants, and success rates

	Applicants	Recommended	Success rate (%)
100% salary requested over 3 years	505	98	19.4
75% salary requested over 4 years	65	14	21.5
Total	570	112	19.6

Under the 50:50 option for ARF/QEII and APFs, the ARC funds 50% of the salary costs for research fellows on continuing appointments, with the university also contributing 50% salary costs over the standard duration of 5 years. The combined salary funding is to support a full-time research position.

Increased flexibility in the number of Fellowships awarded results from the introduction of the 50:50 option, particularly for APFs. Table 14 indicates the number of total and funded applications requesting 100% salary and 50% salary.

Table 14. ARF/QEII and APF applicants, by 100% and 50% salary request: total and funded applications, and success rates

	ARF/QEII			APF		
	Applicants	Rec.	Success rate (%)	Applicants	Rec.	Success rate (%)
100% salary requested	254	30	11.8	112	14	12.5
50% salary requested	10	2	20.0	64	9	14.1
Total	264	32	12.1	176	23	13.1

Success Rates by Gender

In *Discovery Projects*, of a total of 6,791 applicants, 1,612 (23.7%) investigators applying were female and 5,179 (76.3%) were male. In recommended applications, 485 (21.0%) applicants are female and 1,829 (79.0%) are male. The overall success rate is 30.1% for female investigators and 35.3% for male investigators.

Table 15. Comparative success rate for applicants by gender

Gender	Number of applicants	Percentage of applicants (%)	Number of recommended applicants	Percentage of recommended applicants (%)	Success Rate %
Female	1,612	23.7	485	21.0	30.1
Male	5,179	76.3	1,829	79.0	35.3
Total	6,791	100	2,314	100	34.1

Of the 869 ECR applicants on ECR-only applications, 317 (36.5%) are female and 552 (63.5%) are male. Of 199 ECR applicants recommended for funding, 66 (33.2%) are female and 133 (66.8%) are male.

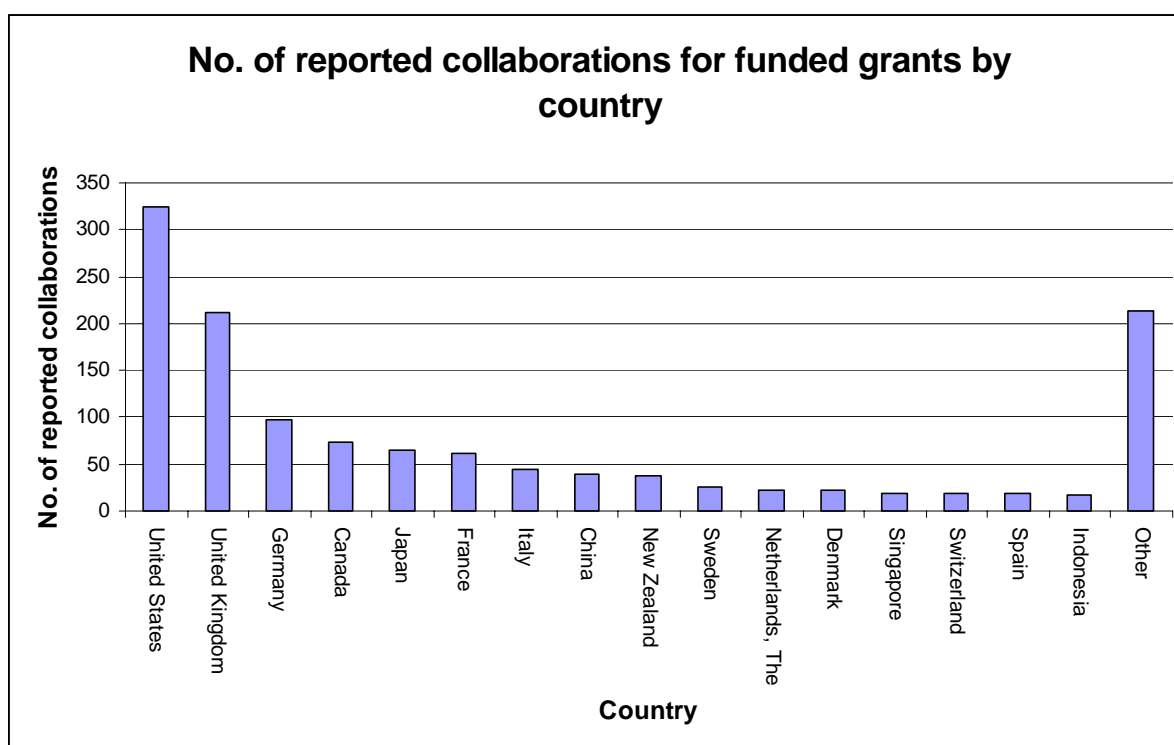
Of the 1,010 Fellowship applicants, 332 (32.9%) are female and 678 (67.1%) are male. Of the 165 applicants recommended for funding, 48 (28.7%) are female and 119 (71.3%) are male.

International Collaboration

Applicants reported 3,596 instances of international collaboration with 110 countries on 1,718 applications. Of the 1,055 successful applications, 594 reported 1,312 instances of international collaboration with 68 countries.

The highest incidence of collaboration is with the United States, with 324 applications recommended for funding. The second highest incidence of international collaboration is with the United Kingdom with 211 applications recommended for funding.

Figure 1 Collaborations by country in recommended applications



Discovery Projects funding by institution

The following table shows applications and total ARC funding by institution for *Discovery Projects* commencing in 2005.

Table 16. Applications and recommended funding by Administering Organisation

Administering Organisation	Applications received less withdrawn	Recommended Applications	Success rate %	Total Allocation 2005-2009
Australian Catholic University	10	0	0.0	\$0
Australian Maritime College	2	0	0.0	\$0
Australian Museum	7	0	0.0	\$0
Bond University	5	1	20.0	\$78,000
CAMBIA	1	0	0.0	\$0
Central Queensland University	14	1	7.1	\$100,000
Charles Darwin University	8	2	25.0	\$570,000
Charles Sturt University	16	1	6.3	\$27,221
CSIRO - Molecular Science	1	0	0.0	\$0
Curtin University of Technology	71	20	28.2	\$4,343,412
Deakin University	71	9	12.7	\$1,769,844
Edith Cowan University	22	3	13.6	\$397,000
Griffith University	98	20	20.4	\$3,669,868
James Cook University	35	9	25.7	\$1,913,497

Administering Organisation	Applications received less withdrawn	Recommended Applications	Success rate %	Total Allocation 2005-2009
La Trobe University	74	21	28.4	\$5,088,162
Macquarie University	112	38	33.9	\$9,604,517
Monash University	210	69	32.9	\$15,922,696
Murdoch Childrens Research Institute	1	0	0.0	\$0
Murdoch University	31	9	29.0	\$2,170,088
Museum Victoria	5	0	0.0	\$0
Queensland Museum	1	0	0.0	\$0
Queensland University of Technology	81	20	24.7	\$4,863,634
RMIT University	53	8	15.1	\$1,776,720
Royal Botanic Gardens and Domain Trust	1	0	0.0	\$0
Southern Cross University	8	0	0.0	\$0
St. Vincent's Institute of Medical Research	1	0	0.0	\$0
Swinburne University of Technology	45	7	15.6	\$2,104,000
The Australian National University	289	117	40.5	\$38,838,641
The Flinders University of South Australia	50	11	22.0	\$2,712,931
The University of Adelaide	142	48	33.8	\$15,201,365
The University of Melbourne	350	135	38.6	\$37,953,748
The University of New England	52	8	15.4	\$2,418,664
The University of New South Wales	317	104	32.8	\$34,254,172
The University of Newcastle	105	39	37.1	\$9,383,655
The University of Queensland	280	88	31.4	\$25,392,296
The University of Sydney	305	111	36.4	\$34,636,283
The University of Western Australia	129	38	29.5	\$13,680,963
University of Ballarat	6	0	0.0	\$0
University of Canberra	13	2	15.4	\$331,000
University of South Australia	44	10	22.7	\$2,624,512
University of Southern Queensland	18	3	16.7	\$425,038
University of Tasmania	73	19	26.0	\$5,040,664
University of Technology, Sydney	72	27	37.5	\$5,929,265
University of the Sunshine Coast	1	1	100.0	\$150,000
University of Western Sydney	46	15	32.6	\$3,265,591
University of Wollongong	113	37	32.7	\$9,780,606
Victoria University of Technology	20	1	5.0	\$218,000
Walter & Eliza Hall Institute of Medical Research	5	3	60.0	\$905,594
Total	3,414	1,055	30.9	\$297,541,647

Scheme Budget

The following allocations from the *Discovery Projects* budget have been recommended for new grants to commence in 2005.

2005	2006	2007	2008	2009	Total
\$99,528,276	\$85,037,516	\$83,783,415	\$16,154,013	\$13,038,427	\$297,541,647