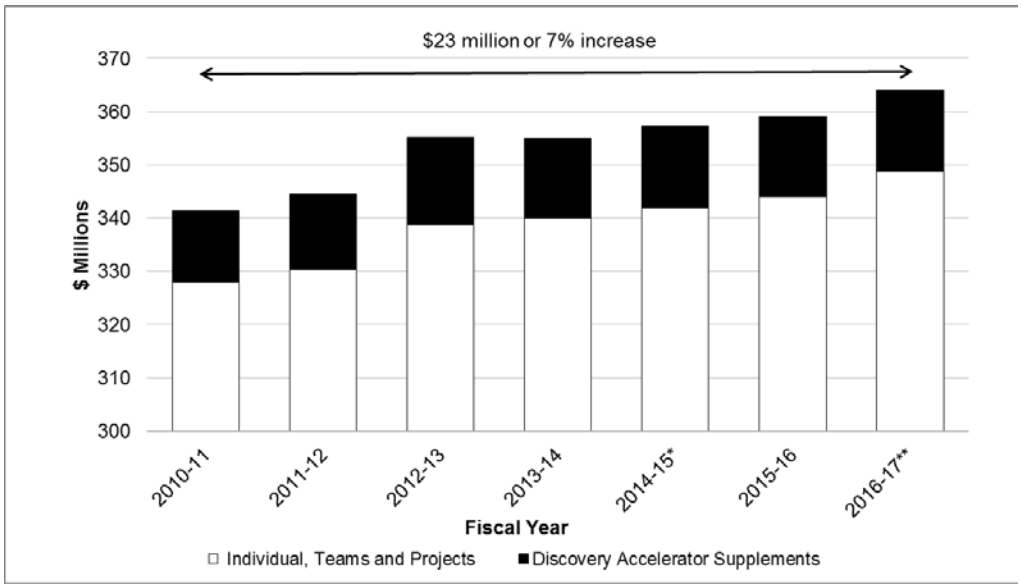
2016 Competition Statistics
Discovery Grants (DG) and Research Tools and Instruments (RTI) Programs

This report includes tables and figures that provide summary information on the 2016 Discovery Grants and Research Tool and Instruments Competitions. More detailed statistics are also included in this document.

SECTION 1 – FISCAL YEAR STATISTICS

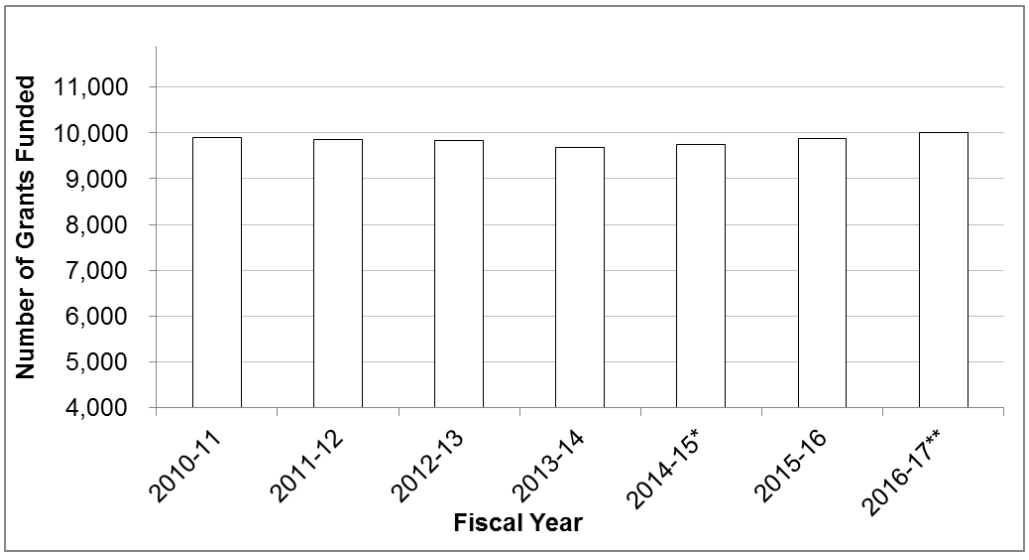
This section presents data on a fiscal year basis and is inclusive of ongoing installments.

Figure 1 Expenditures in the Discovery Grants Program Elements, 2010-11 to 2016-17**



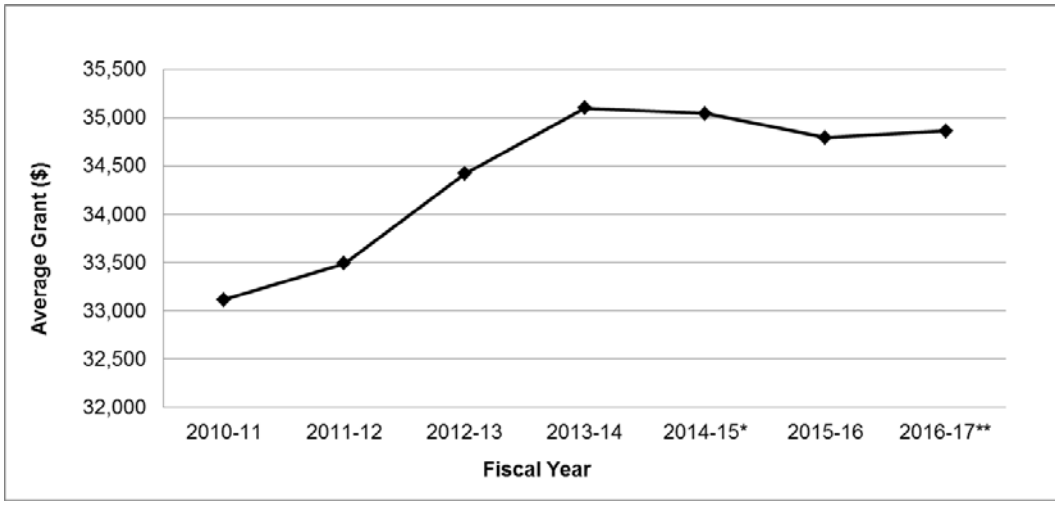
*Includes additional funding received resulting from Federal Budget 2014
**Projected Expenditures for 2016-17

Figure 2 Number of Grants Funded through Individual and Team Discovery Grants (including those in Subatomic Physics) and Subatomic Physics Projects, 2010-11 to 2016-17**



*Reflects additional funding resulting from Federal Budget 2014
**Projected Numbers of Grants for 2016-17

Figure 3 **Average Grant for Individual and Team Discovery Grants (including those in Subatomic Physics) and Subatomic Physics Projects, 2010-11 to 2016-17****



*Reflects additional funding resulting from Federal Budget 2014
**Projected Average for 2016-17

SECTION 2 – COMPETITION STATISTICS

For the 2016 DG competition, the total awarded amount for Discovery and Subatomic Physics (Individual and Team) Grants was $70.1 million. The number of DG applications in 2016 was 3,191. Going into the competition, there were 1,641 renewal applicants who held grants of, on average, $32,719; after the competition, there are 2,115 funded researchers, at an average grant level of $33,155.

Table 1 Overall Comparative Statistics 2016 Discovery Grants Competition[1]

Data[1]	**Success Rate**	**Average Grant ($)**
Early Career Researchers (ECR)	75%	$26,741
Established Researchers (ER)		
Renewing their grant (ER-R)	82%	$36,471
Not Holding a Grant[2] (ER-NHG)	37%	$27,814

1. Includes Discovery and Subatomic Physics (Individual and Team) Grants, but excludes the Subatomic Physics Projects. It cannot therefore be compared with data presented in Figure 3.

2. Includes returning established unfunded applicants and experienced researchers submitting a first application.

Figure 4 Distribution of Grant Levels to Successful Applicants, 2016 Competition

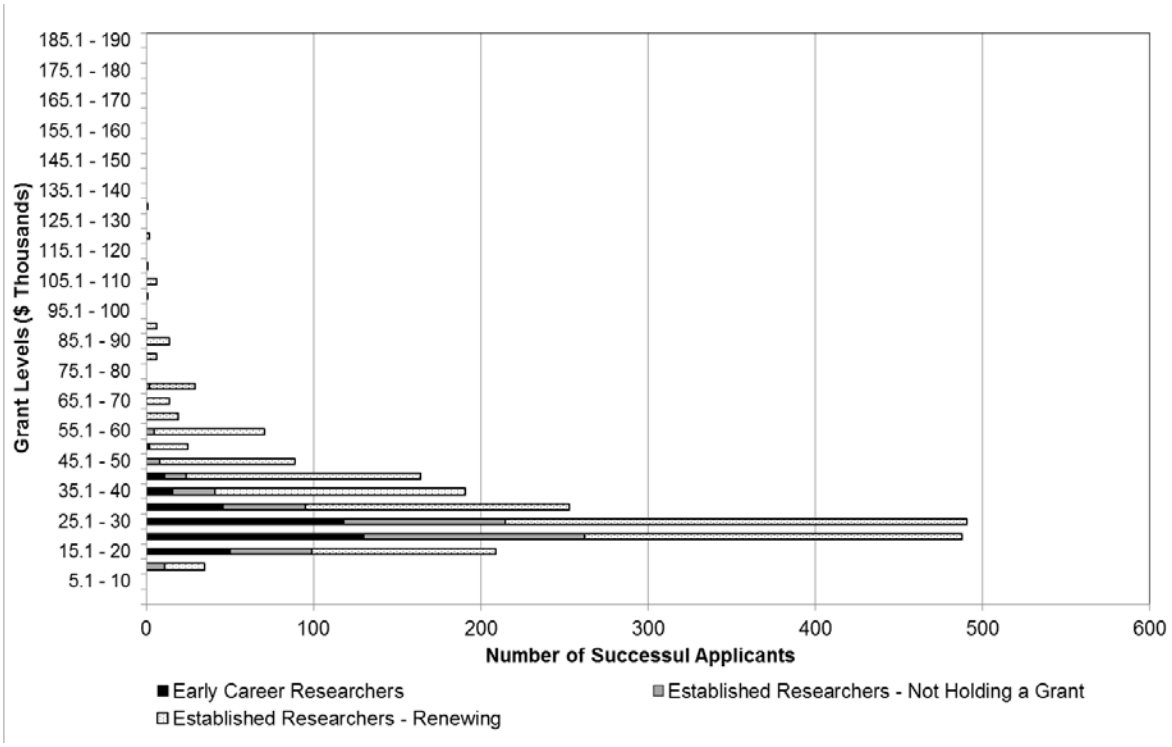
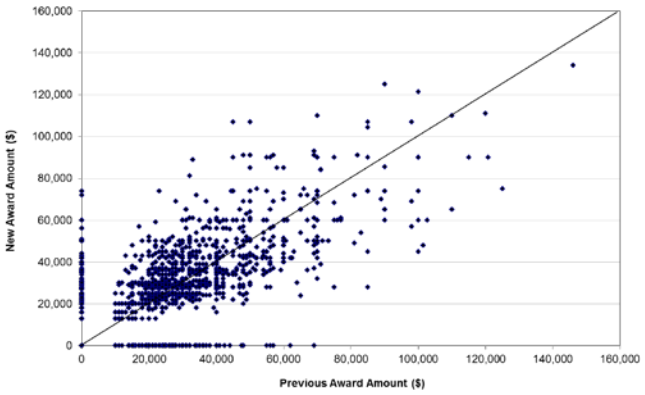


Figure 5 Change in Grant Level, 2016 Competition

a) All Established Researchers



b) Established Researchers – First Renewal

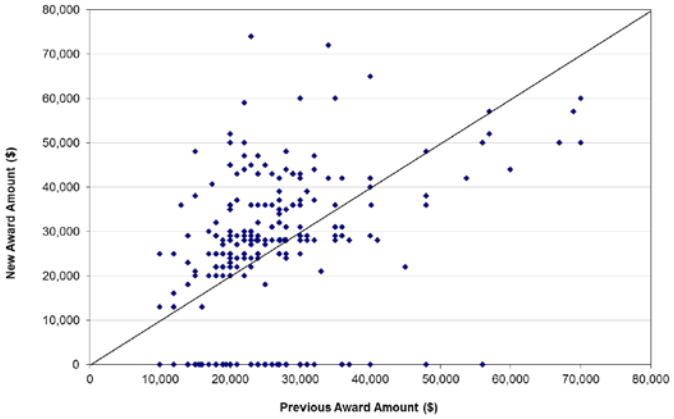


Figure 6 Percentage Change in Grant Level for Established Researchers Renewing a Grant, 2016 Competition

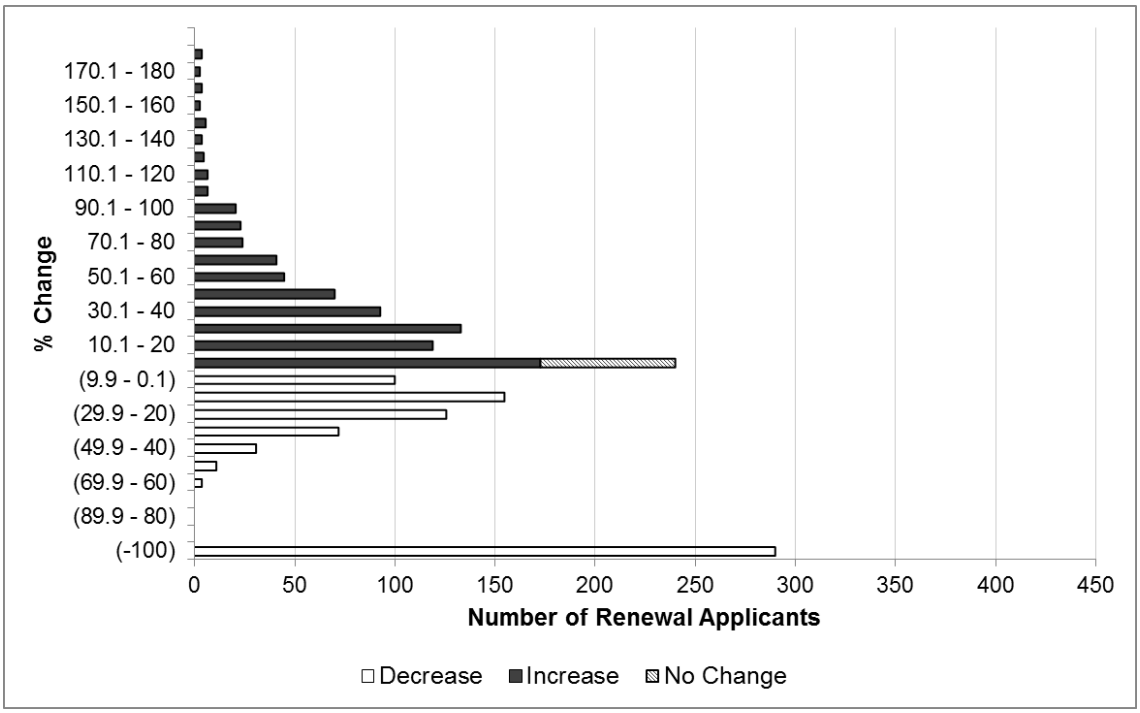
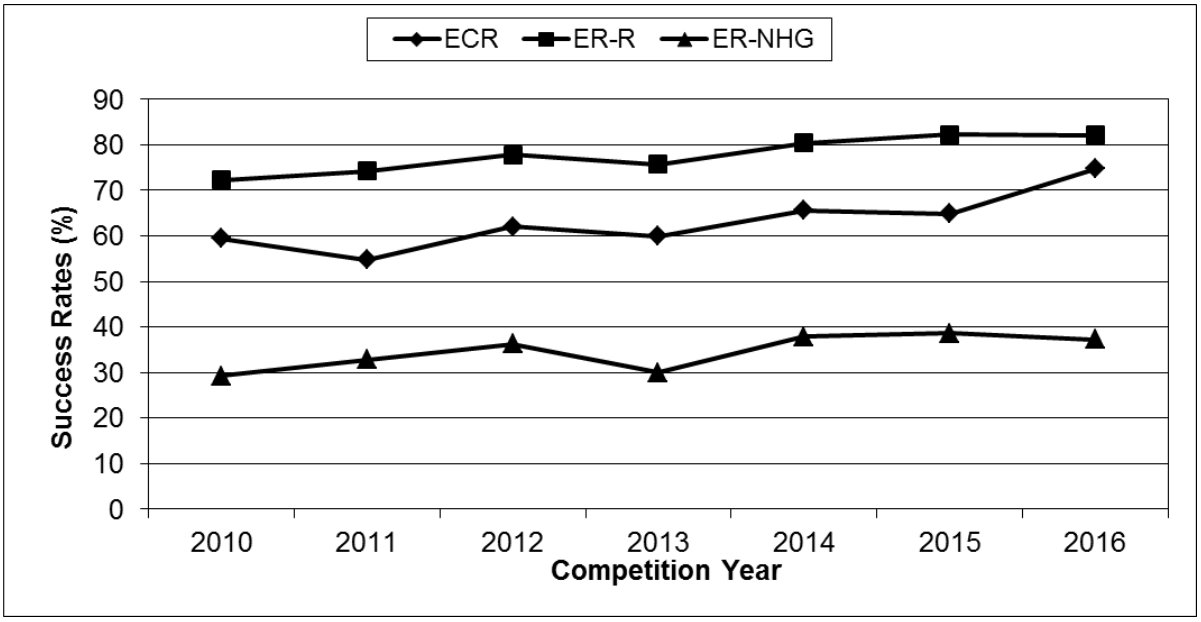


Figure 7 Success Rate[1] by Category of Individual Applicants, Competition Years 2010-16



[1] Only includes Discovery Grant Individual
Note: Success rate for 2014 has not been adjusted to reflect additional funding resulting from Federal Budget.

Table 2 Number of Applications and Awards by Category of Applicants, 2010-16

Competition Year	Number of Applications[1]				Number of Awards[1]			
	ECR	*ER-R*	*ER-NHG*	*Total*	*ECR*	*ER-R*	*ER-NHG*	*Total*
2010	513	1,864	902	3,279	305	1,348	264	1,917
2011	457	1,835	1,137	3,429	250	1,363	373	1,986
2012	480	1,848	1,102	3,430	298	1,438	399	2,135
2013	474	1,853	1,128	3,455	284	1,404	338	2,026
2014	427	1,647	1,060	3,134	280	1,324	401	2,005
2015	489	1,632	1,038	3,159	317	1,342	400	2,059
2016	494	1,622	1,051	3,167	369	1,333	392	2,094

[1] Only includes Discovery Grant Individual
Note: Number of award for 2014 has not been adjusted to reflect additional funding resulting from Federal Budget.

Table 3 Discovery Grants[1] Competition Results by University (including Affiliated University Research Centers), 2016 Competition

	Early Career Researchers			Established Researchers - Renewing			Established Researchers - Not Holding a Grant		
Universities	**Success Rate (%)**	**Total Awarded ($)**	**Average Grant ($)**	**Success Rate (%)**	**Total Awarded ($)**	**Average Grant ($)**	**Success Rate (%)**	**Total Awarded ($)**	**Average Grant ($)**
Acadia University	*	*	*	50%	70,000	23,333	*	*	*
Algoma University	*	*	*	*	*	*	*	*	*
Athabasca University	*	*	*	*	*	*	*	*	*
Bishop's University	*	*	*	*	*	*	*	*	*
Brandon University	67%	107,000	26,750	*	*	*	*	*	*
British Columbia Institute of Technology	*	*	*	*	*	*	*	*	*
Brock University	*	*	*	69%	294,000	32,667	17%	29,000	29,000
Cape Breton University	*	*	*	*	*	*	*	*	*
Carleton University	75%	244,900	27,211	73%	961,400	30,044	29%	148,500	24,750
Centre de recherche informatique de Montréal	*	*	*	*	*	*	*	*	*
Centre for Cold Ocean Resources Engineering	*	*	*	*	*	*	*	*	*
Concordia University	92%	314,000	28,545	70%	747,000	32,478	52%	236,000	21,455
Dalhousie University	60%	245,000	27,222	74%	882,000	31,500	47%	416,000	26,000
École de technologie supérieure	100%	246,000	24,600	89%	476,000	28,000	40%	145,000	24,167
École Polytechnique de Montréal	86%	148,000	24,667	89%	1,118,000	32,882	36%	98,000	24,500
Grant MacEwan University	*	*	*	*	*	*	*	*	*
HEC Montréal	*	*	*	100%	183,000	26,143	*	*	*
Institut national de la recherche scientifique	67%	121,000	30,250	92%	444,000	40,364	*	*	*
Lakehead University	*	*	*	50%	81,000	27,000	18%	72,000	24,000
Laurentian University	*	*	*	*	*	*	27%	74,000	24,667
McGill University	87%	753,000	27,889	87%	2,929,320	40,128	45%	942,363	32,495
McMaster University	71%	145,000	29,000	88%	1,940,900	36,621	36%	242,000	26,889
Memorial University of Newfoundland	87%	350,000	26,923	76%	589,700	31,037	38%	274,000	22,833
Mount Allison University	*	*	*	*	*	*	*	*	*
Mount Royal University	*	*	*	*	*	*	*	*	*
Mount Saint Vincent University	*	*	*	*	*	*	*	*	*
Nipissing University	*	*	*	*	*	*	*	*	*
OCAD University	*	*	*	*	*	*	*	*	*
Queen's University	57%	124,000	31,000	92%	1,454,720	40,409	41%	325,000	36,111
Royal Military College of Canada	*	*	*	50%	120,000	40,000	9%	35,000	35,000
Royal Roads University	*	*	*	*	*	*	*	*	*
Ryerson University	*	*	*	71%	401,000	26,733	24%	151,000	25,167
Saint Mary's University	*	*	*	67%	142,000	35,500	*	*	*
Simon Fraser University	*	*	*	88%	1,233,913	35,255	33%	164,000	32,800
St. Francis Xavier University	*	*	*	*	*	*	*	*	*
Télé-université	*	*	*	*	*	*	*	*	*
The King's University College (Edmonton)	*	*	*	*	*	*	*	*	*
The University of British Columbia	92%	589,000	26,773	88%	4,652,400	42,683	44%	530,000	31,176
The University of Western Ontario	60%	156,000	26,000	86%	2,133,002	37,421	33%	472,000	33,714
The University of Winnipeg	*	*	*	*	*	*	27%	78,000	26,000
Thompson Rivers University	*	*	*	*	*	*	17%	22,000	22,000
Trent University	*	*	*	75%	187,000	31,167	*	*	*
Trinity Western University	*	*	*	*	*	*	*	*	*
TRIUMF	*	*	*	*	*	*	*	*	*
Université de Moncton	*	*	*	*	*	*	*	*	*
Université de Montréal	63%	334,000	27,833	85%	1,571,400	35,714	45%	501,000	27,833
Université de Sherbrooke	83%	146,000	29,200	84%	927,000	34,333	42%	357,000	27,462
Université du Québec à Chicoutimi	*	*	*	*	*	*	*	*	*
Université du Québec à Montréal	40%	88,000	22,000	80%	643,000	32,150	33%	107,000	26,750
Université du Québec à Rimouski	*	*	*	*	*	*	*	*	*
Université du Québec à Trois-Rivières	*	*	*	60%	151,000	25,167	29%	49,000	24,500
Université du Québec en Abitibi-Témiscamingue	*	*	*	*	*	*	*	*	*
Université du Québec en Outaouais	*	*	*	*	*	*	*	*	*
Université Laval	70%	407,000	25,438	78%	1,641,000	35,674	44%	433,000	25,471
University of Alberta	66%	507,000	26,684	85%	3,103,500	37,848	36%	655,000	27,292
University of Calgary	93%	370,000	26,429	75%	1,415,000	37,237	50%	639,000	29,045
University of Guelph	82%	248,900	27,656	79%	1,593,400	38,863	28%	189,000	27,000
University of Lethbridge	*	*	*	100%	375,000	46,875	*	*	*
University of Manitoba	82%	357,000	25,500	95%	1,226,200	32,268	36%	336,000	25,846
University of New Brunswick	57%	87,000	21,750	79%	568,000	29,895	41%	148,000	21,143
University of Northern British Columbia	*	*	*	*	*	*	*	*	*
University of Ontario Institute of Technology	*	*	*	77%	309,000	30,900	20%	71,000	35,500
University of Ottawa	87%	539,000	26,950	87%	1,796,260	38,218	41%	373,214	28,709
University of Prince Edward Island	*	*	*	67%	95,000	23,750	30%	77,000	25,667
University of Regina	67%	87,000	21,750	36%	154,200	38,550	8%	21,000	21,000
University of Saskatchewan	100%	293,000	26,636	76%	1,084,000	33,875	49%	452,000	26,588
University of the Fraser Valley	*	*	*	*	*	*	*	*	*
University of Toronto	86%	1,261,800	28,677	85%	4,692,098	42,655	47%	807,000	31,038
University of Victoria	86%	151,000	25,167	84%	1,187,200	37,100	63%	142,000	28,400
University of Waterloo	91%	546,000	27,300	94%	3,285,360	36,504	62%	514,000	28,556
University of Windsor	*	*	*	76%	464,000	35,692	10%	41,000	20,500
Vancouver Island University	*	*	*	*	*	*	*	*	*
Wilfrid Laurier University	*	*	*	71%	262,000	26,200	*	*	*
York University	63%	120,000	24,000	76%	731,000	33,227	20%	94,000	31,333
Grand Total	**75%**	**9,947,800**	**26,741**	**82%**	**49,272,673**	**36,471**	**37%**	**10,903,077**	**27,814**

[1]Includes Discovery and Subatomic Physics Individuals and Team Grants but, excludes Subatomic Physics Projects

* Less than five applications

Table 4 Statistics by University Size, 2016 Competition

Category of Applicants	Data	University Size		
		Large	Medium	Small
Early Career Researchers	Number of Applications	340	87	71
	Number of grants	273	64	35
	Success Rate	80%	74%	49%
	Total Amount	$7,441,700	$1,666,900	$839,200
	Average Grant	$27,259	$26,045	$23,977
Established Researchers - Renewing	Number of Applications	1231	251	159
	Number of grants	1,052	193	106
	Success Rate	85%	77%	67%
	Total Amount	$39,866,673	$6,144,800	$3,261,200
	Average Grant	$37,896	$31,838	$30,766
Established Researchers - Not Holding a Grant	Number of Applications	693	184	175
	Number of grants	296	61	35
	Success Rate	43%	33%	20%
	Total Amount	$8,587,577	$1,445,500	$870,000
	Average Grant	$29,012	$23,697	$24,857

Table 5 Success Rate by Category of Applicants and University Size, 2012-16

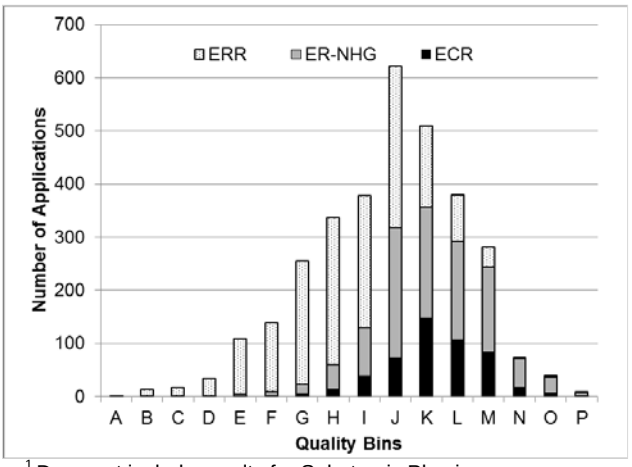
	Large					Medium					Small				
	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016	2012	2013	2014	2015	2016
Early Career Researchers	66%	64%	70%	67%	80%	64%	58%	62%	76%	74%	48%	43%	48%	47%	49%
Established Researchers - Renewing	81%	80%	83%	85%	85%	72%	69%	74%	75%	77%	63%	57%	63%	72%	67%
Established Researchers - Not Holding a Grant	42%	34%	42%	44%	43%	33%	24%	37%	32%	33%	19%	21%	23%	24%	20%

Note: Success rate for 2014 has not been adjusted to reflect additional funding resulting from Federal Budget.

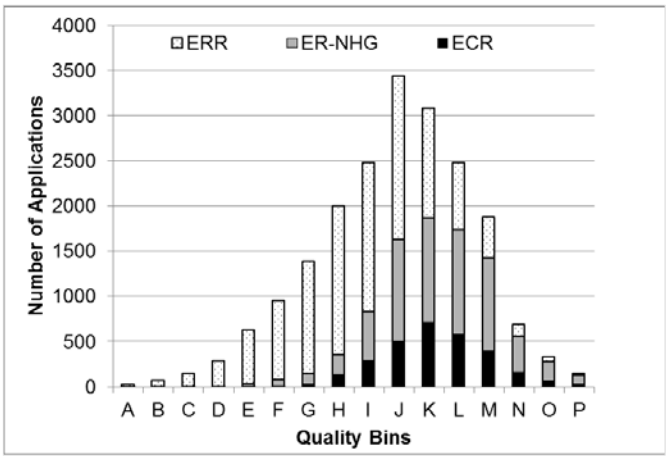
As a result of peer review, applications are placed in 16 “quality bins” based on their merit against the three selection criteria using a six point scale – Excellence of Researcher (EoR), Merit of Proposal (MoP), and Contribution to the Training of High Quality Personnel (HQP). Figure 8 shows the distribution of applications for Early Career Researchers (ECR), Established Researchers Renewing their grant (ER-R), and Established Researchers Not Holding a Grant (ER-NHG) at the time of application between 2011 and 2015, and the same distribution for the 2016 competition. Budget permitting, NSERC aims to support Established Researchers to Bin J (which corresponds to ratings of Strong on three criteria or equivalent) and ECR to Bin K or Bin L.

Figure 8 Distribution of Applications[1] by Quality Bin

a) 2016 Competition



b) 2011-2015 Competitions



[1] Does not include results for Subatomic Physics

Note: Distribution of Applications for b) has not been adjusted to reflect additional funding resulting from Federal Budget in 2014.

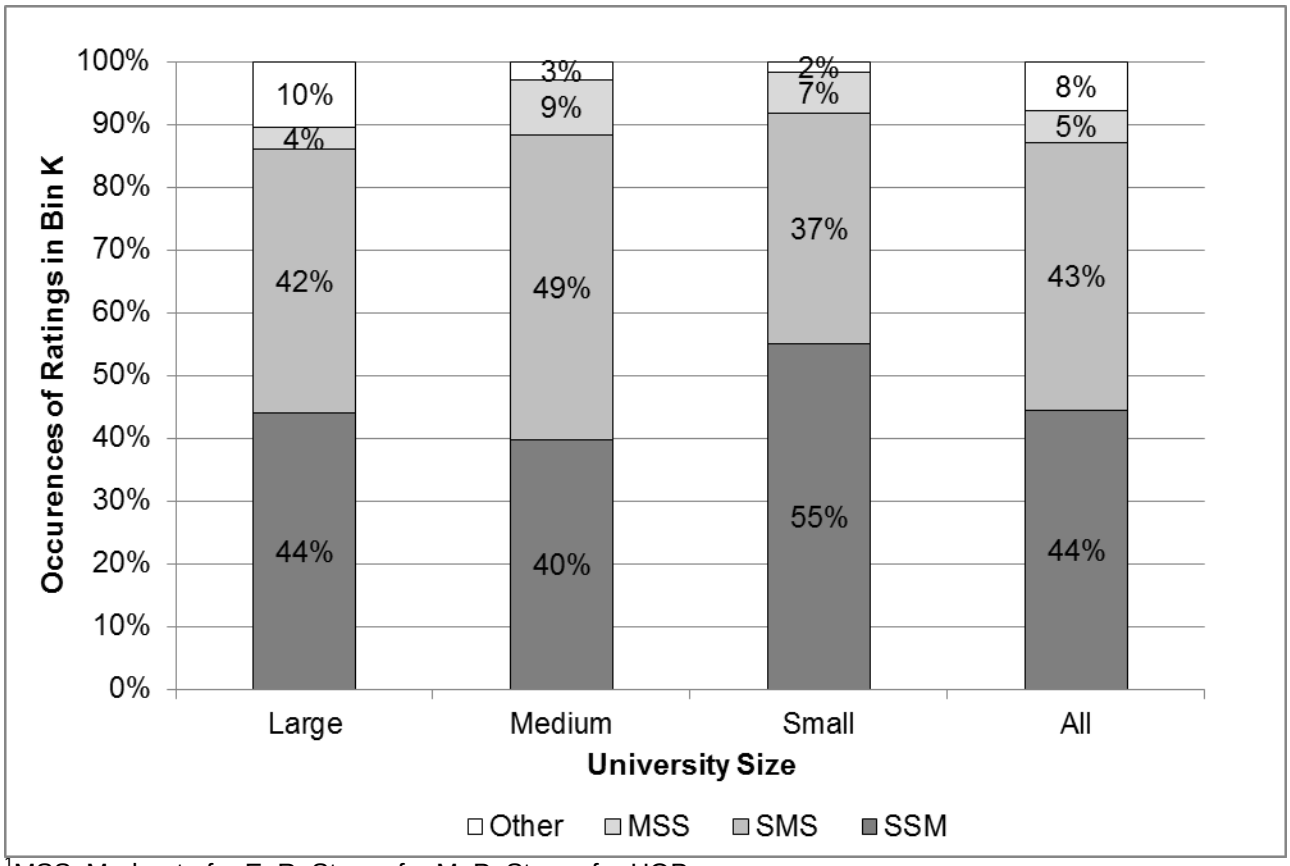
Table 6 Number of applications[1] by Quality Bins by University Size, 2016 Competition

	University Size					
	Large		Medium		Small	
Bin	Number	Percentage	Number	Percentage	Number	Percentage
A	1	0.0%	0	0.0%	0	0.0%
B	12	0.5%	0	0.0%	0	0.0%
C	20	0.9%	1	0.2%	1	0.2%
D	41	1.8%	7	1.4%	1	0.2%
E	91	4.0%	9	1.7%	6	1.5%
F	170	7.6%	11	2.1%	7	1.7%
G	199	8.9%	26	5.0%	15	3.7%
H	229	10.2%	46	8.9%	16	4.0%
I	322	14.3%	74	14.3%	30	7.4%
J	389	17.3%	97	18.8%	71	17.6%
K	334	14.9%	103	20.0%	60	14.9%
L	215	9.6%	76	14.7%	77	19.1%
M	154	6.9%	49	9.5%	70	17.4%
N	40	1.8%	10	1.9%	27	6.7%
O	17	0.8%	4	0.8%	14	3.5%
P	14	0.6%	3	0.6%	8	2.0%
Total	2248	100.0%	516	100.0%	403	100.0%

[1]Does not include results from Subatomic Physics

The rating pattern of applications in Bin K, which usually is the first bin not funded for Established Researchers is presented in Figure 9. Bin K generally corresponds to receiving two ratings of Strong and one Moderate. Other combinations – such as a Very Strong, a Strong, and an Insufficient; or two ratings of Moderate and a Very Strong – make up the rest of the cases.

Figure 9 Percentage of Occurrences of Various Combinations of Ratings[1] in Bin K by University Size for the 2016 Competition



[1]MSS: Moderate for EoR, Strong for MoP, Strong for HQP
SMS: Strong for EoR, Moderate for MoP, Strong for HQP
SSM: Strong for EoR, Strong for MoP, Moderate for HQP

SECTION 3 – STATISTICS BY EVALUATION GROUP

Table 7 Success Rate, Average Grant and Total Amount Awarded by Category of Applicant for Each Evaluation Group, 2016 Competition

1501 - Genes, Cells and Molecules	Early Career Researchers	Established Researchers	
		Renewing	Not Holding a Grant
Success Rate	73%	73%	37%
Average Grant	$33,236	$38,312	$33,659
Total Amount Awarded	$2,393,000	$5,555,260	$3,063,000

1502 - Biological Systems and Functions	Early Career Researchers	Established Researchers	
		Renewing	Not Holding a Grant
Success Rate	74%	85%	36%
Average Grant	$26,942	$37,673	$28,600
Total Amount Awarded	$1,427,930	$7,270,940	$1,744,577

1503 - Evolution and Ecology	Early Career Researchers	Established Researchers	
		Renewing	Not Holding a Grant
Success Rate	67%	87%	46%
Average Grant	$26,611	$39,068	$25,235
Total Amount Awarded	$479,000	$3,359,880	$429,000

1504 - Chemistry	Early Career Researchers	Established Researchers	
		Renewing	Not Holding a Grant
Success Rate	78%	91%	38%
Average Grant	$25,833	$51,955	$29,000
Total Amount Awarded	$465,000	$5,818,918	$609,000

1505 - Physics*	Early Career Researchers	Established Researchers	
		Renewing	Not Holding a Grant
Success Rate	86%	92%	42%
Average Grant	$25,350	$41,692	$21,533
Total Amount Awarded	$760,500	$5,128,082	$323,000

*Includes Subatomic Physics Discovery Individual and Group, but not Projects

1506 - Geosciences	Early Career Researchers	Established Researchers	
		Renewing	Not Holding a Grant
Success Rate	72%	83%	43%
Average Grant	$23,100	$34,735	$24,063
Total Amount Awarded	$531,300	$2,500,902	$770,000

1507 - Computer Science	Early Career Researchers	Established Researchers	
		Renewing	Not Holding a Grant
Success Rate	64%	78%	23%
Average Grant	$24,480	$32,237	$25,545
Total Amount Awarded	$612,000	$4,061,831	$562,000

1508 - Mathematics and Statistics	Early Career Researchers	Established Researchers	
		Renewing	Not Holding a Grant
Success Rate	74%	88%	48%
Average Grant	$19,338	$21,937	$18,240
Total Amount Awarded	$502,800	$2,522,740	$456,000

1509 - Civil, industrial and Systems Engineering	Early Career Researchers	Established Researchers	
		Renewing	Not Holding a Grant
Success Rate	75%	84%	43%
Average Grant	$22,953	$28,220	$21,414
Total Amount Awarded	$987,000	$3,076,000	$621,000

1510 - Electrical and Computer Engineering	Early Career Researchers	Established Researchers	
		Renewing	Not Holding a Grant
Success Rate	83%	72%	36%
Average Grant	$31,600	$42,149	$33,183
Total Amount Awarded	$790,000	$4,004,120	$995,500

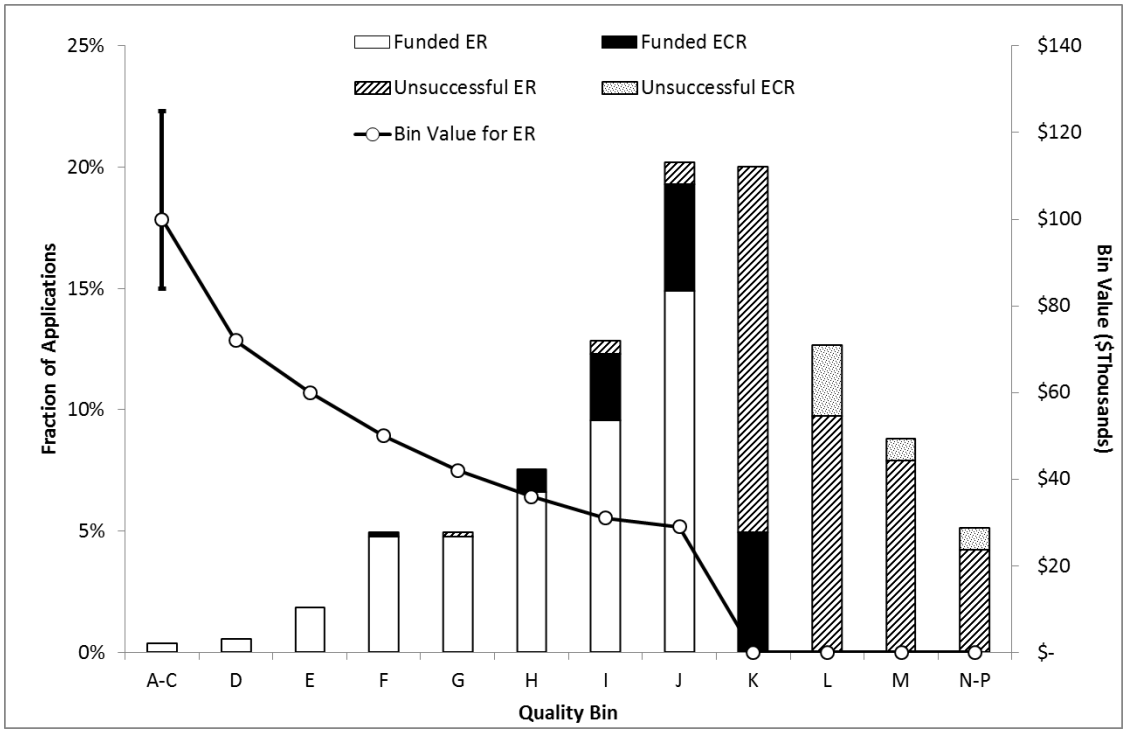
1511 - Materials and Chemical Engineering	Early Career Researchers	Established Researchers	
		Renewing	Not Holding a Grant
Success Rate	71%	79%	34%
Average Grant	$28,189	$37,013	$32,857
Total Amount Awarded	$338,270	$2,961,000	$690,000

1512 - Mechanical Engineering	Early Career Researchers	Established Researchers	
		Renewing	Not Holding a Grant
Success Rate	82%	82%	38%
Average Grant	$24,481	$31,716	$22,857
Total Amount Awarded	$661,000	$3,013,000	$640,000

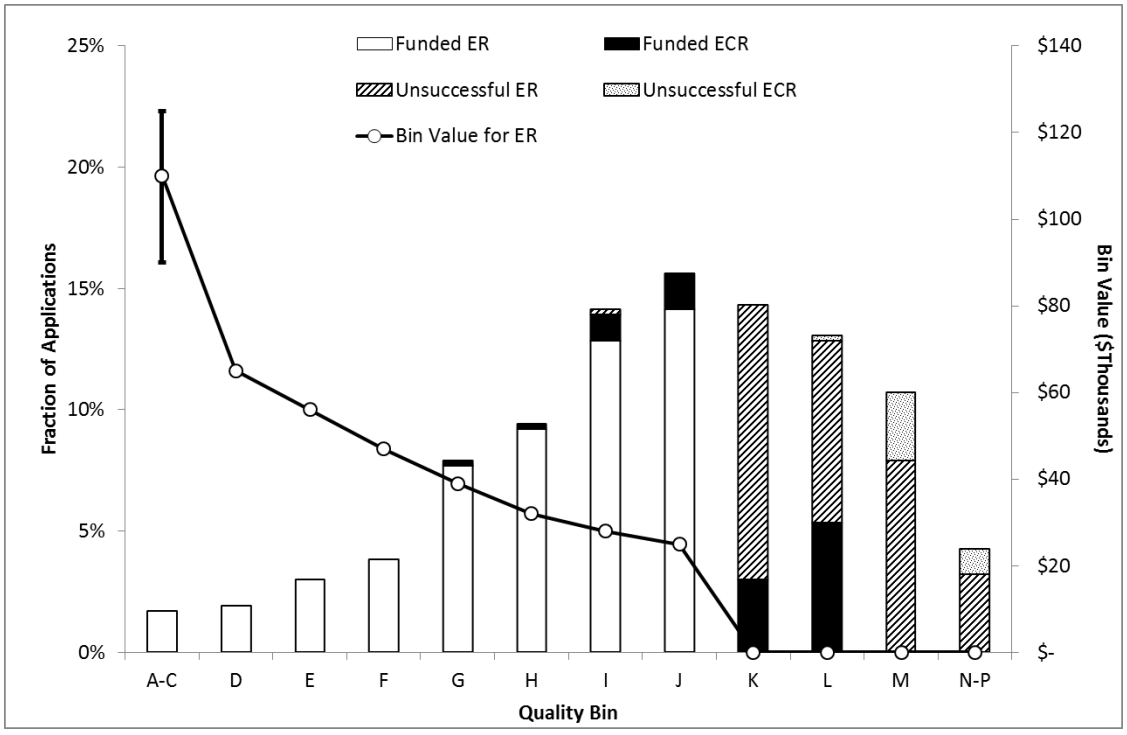
The distribution of applications by quality bins is presented in Figure 10 for each Evaluation Group (EG). The bin value illustrated represents the value of the bin for the normal cost of research for Establish Researchers (ER). For Early Career Researchers (ECR), the bin value is $5000 more than the bin amount.

Figure 10 Distribution of the Fraction of Applications by Quality Bin for Each Evaluation Group, 2016 Competition

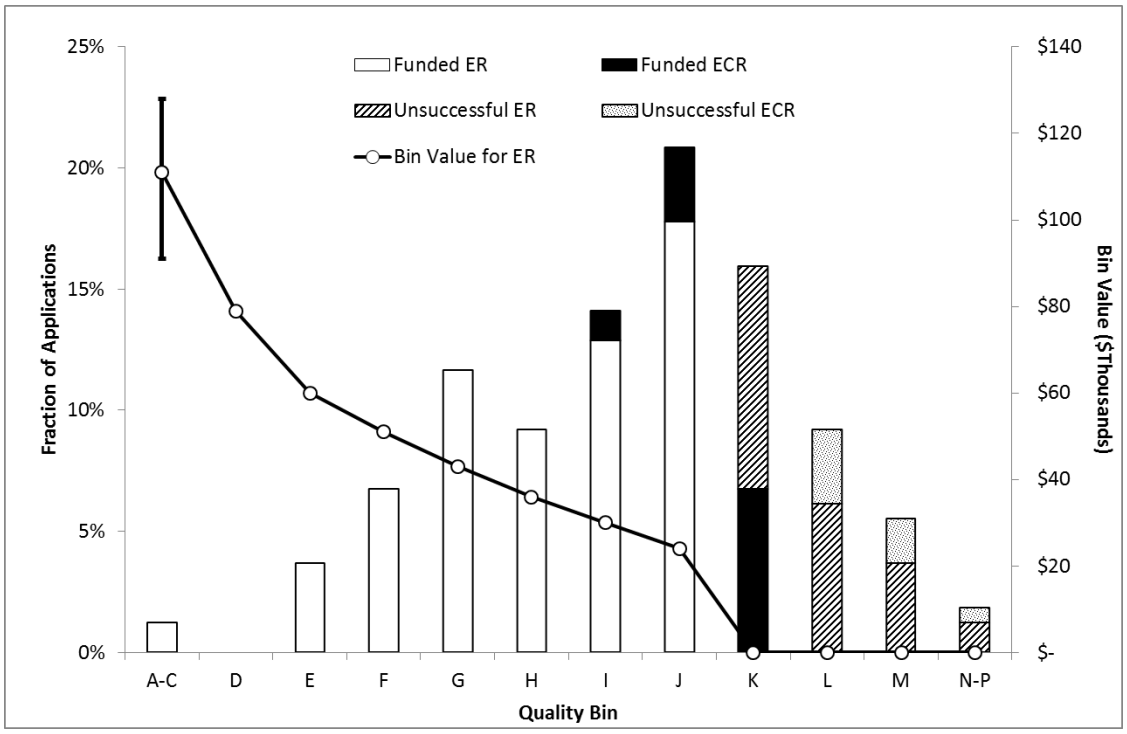
Gene, Cells and Molecules



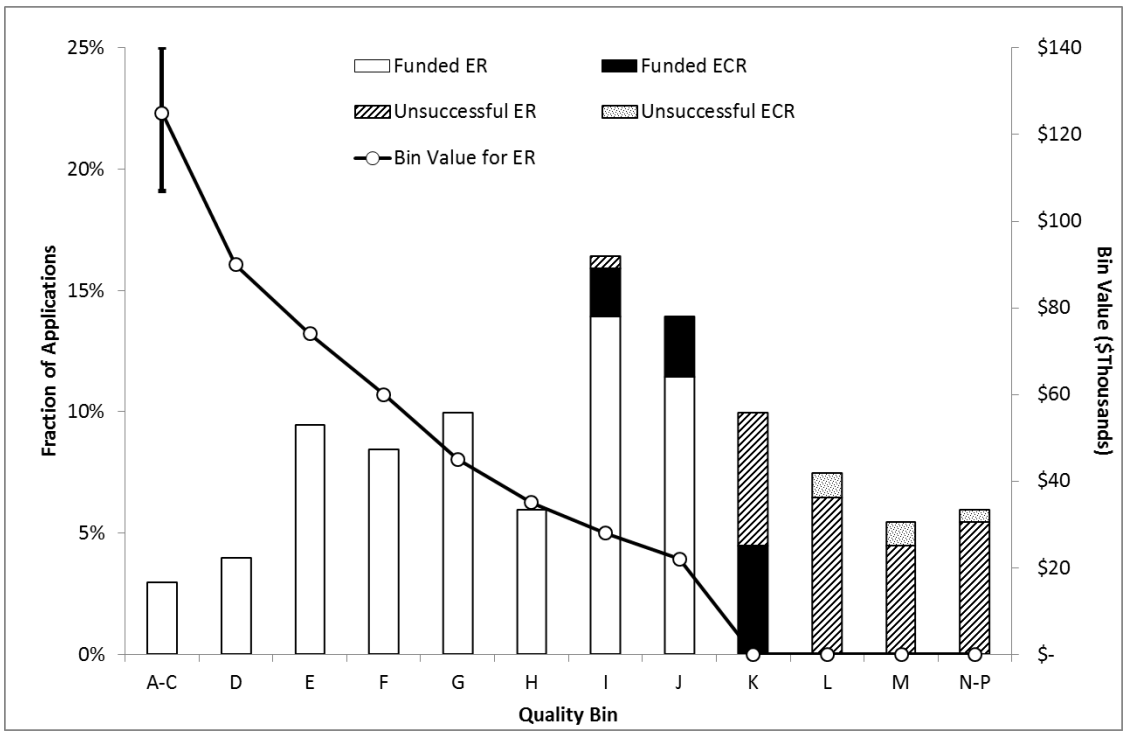
Biological Systems and Functions



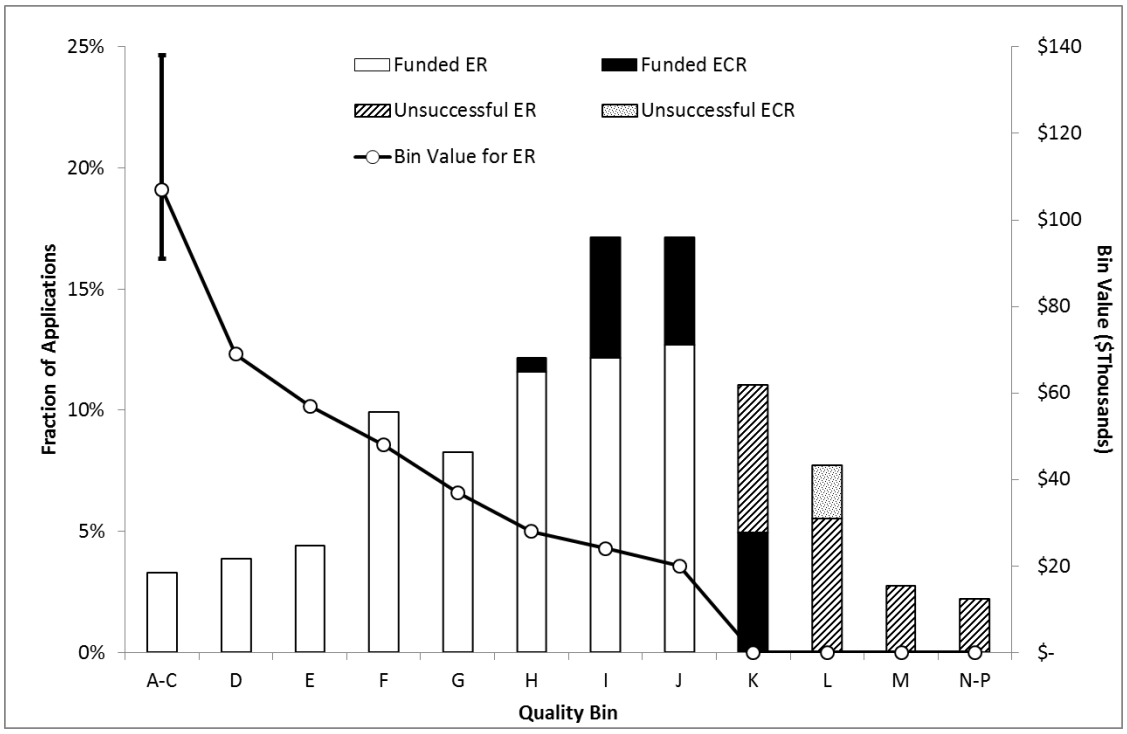
Evolution and Ecology



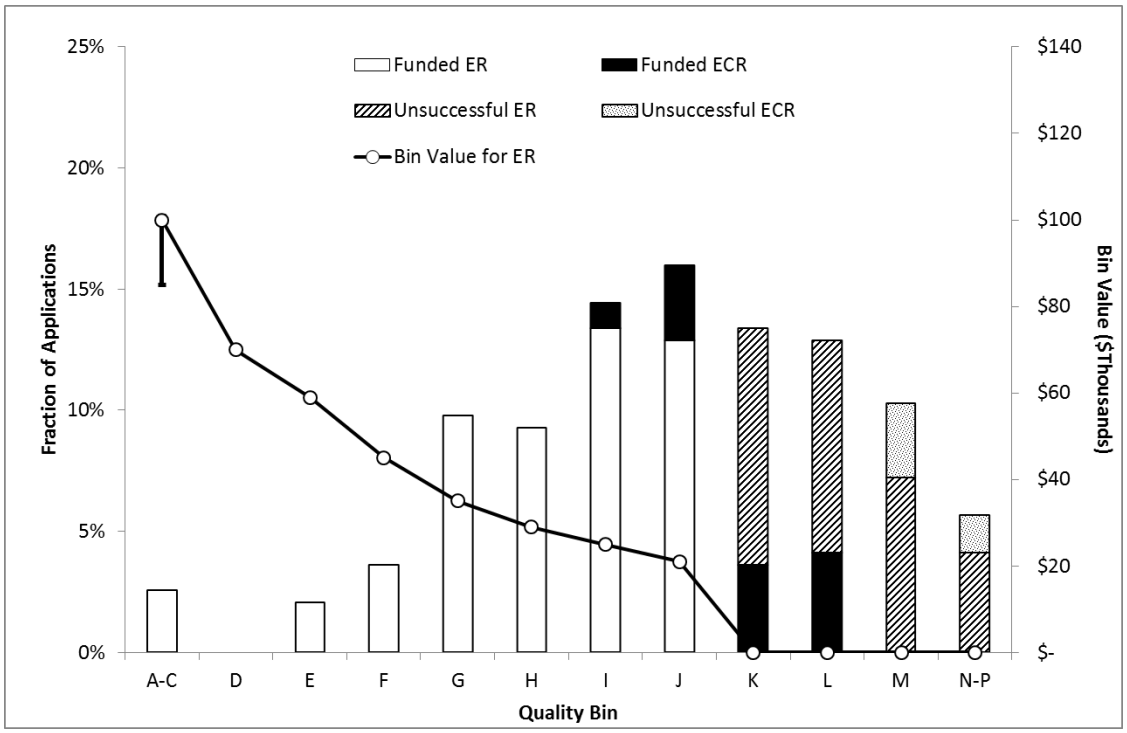
Chemistry



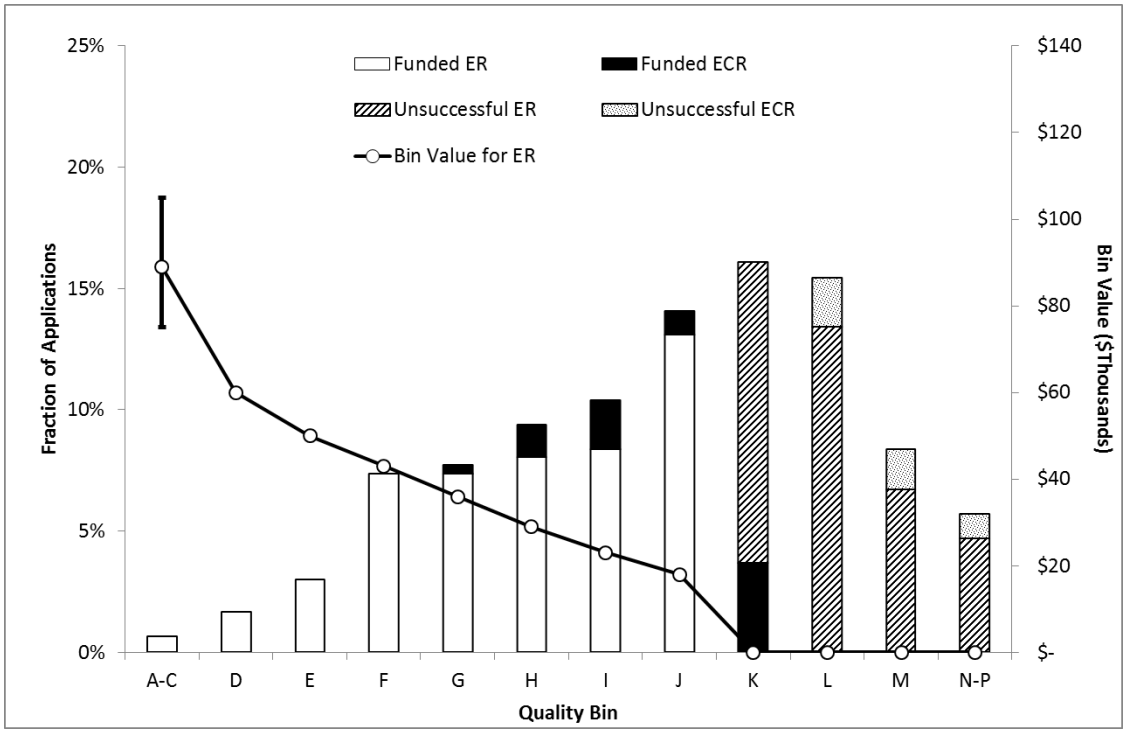
Physics (excluding Subatomic Physics)



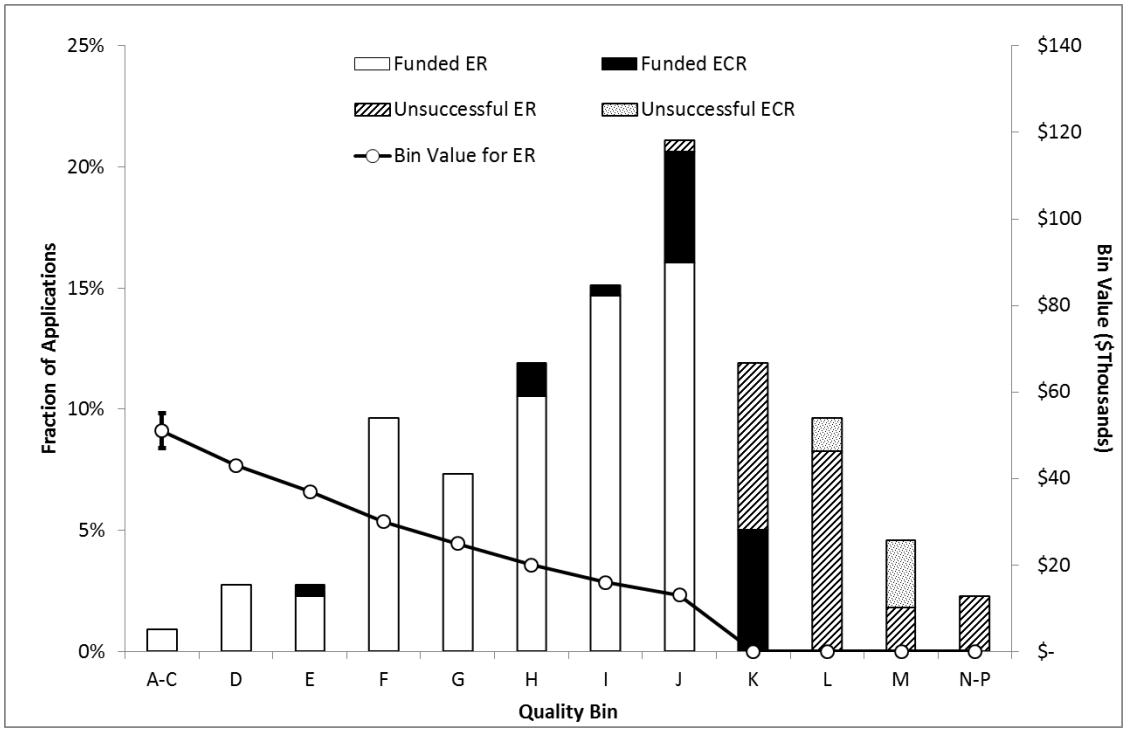
Geoscience



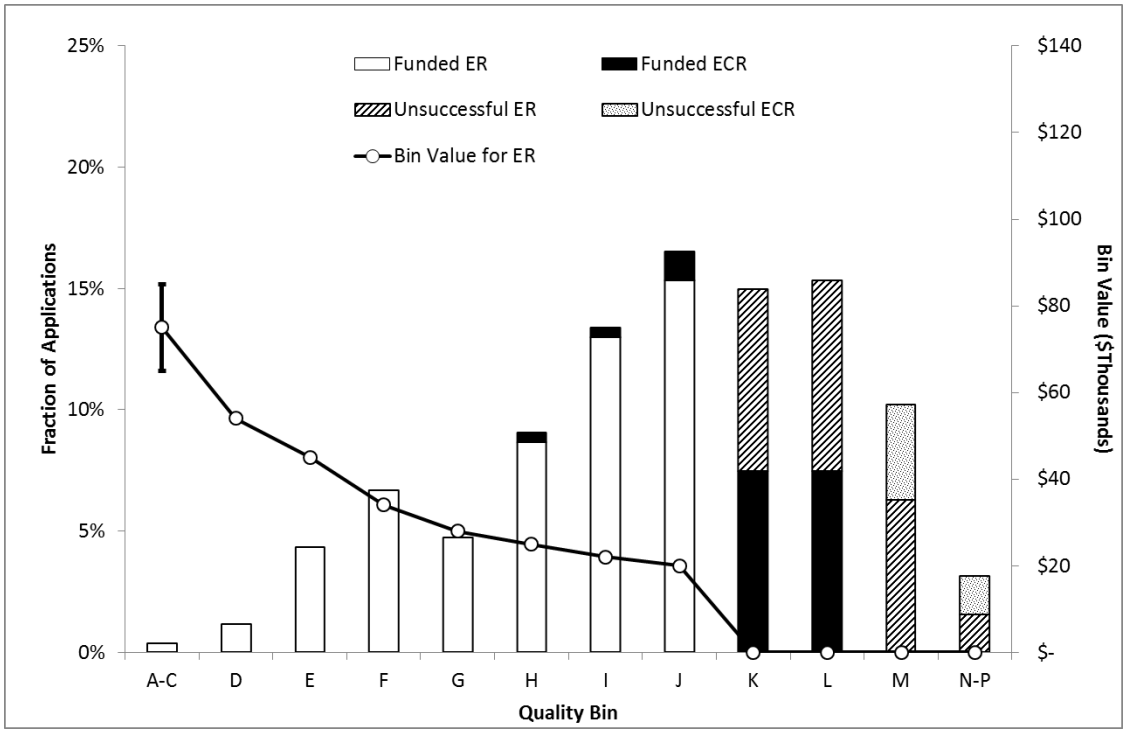
Computer Science



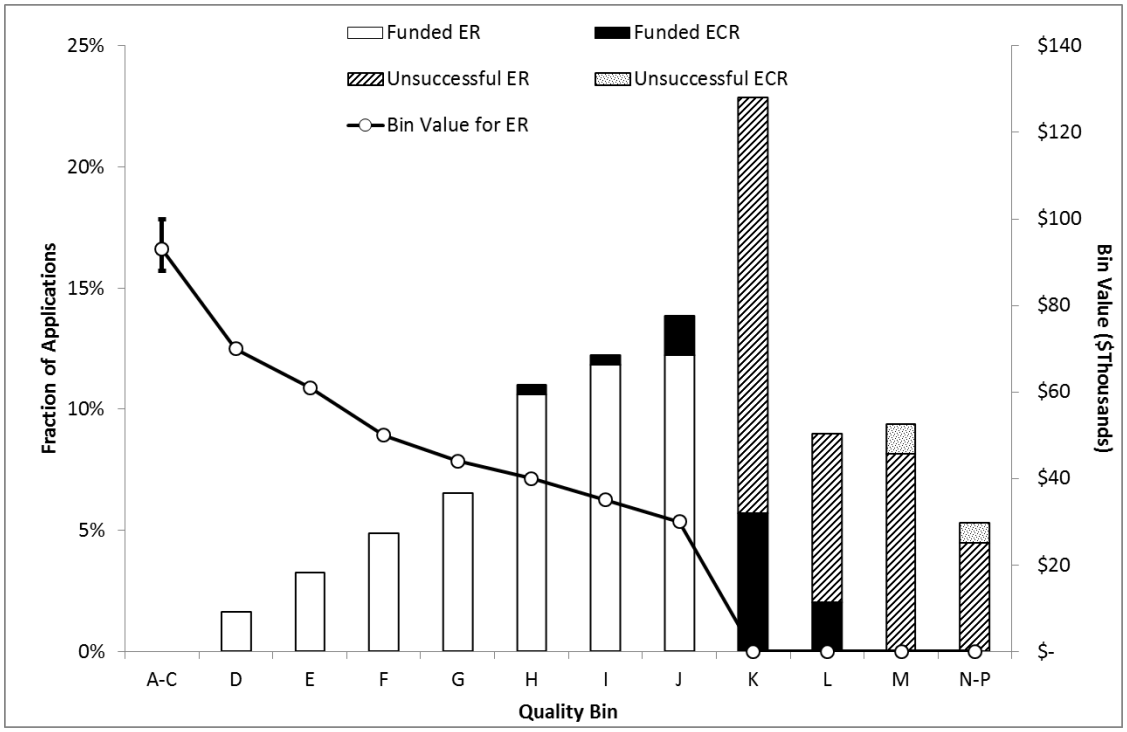
Mathematics and Statistics



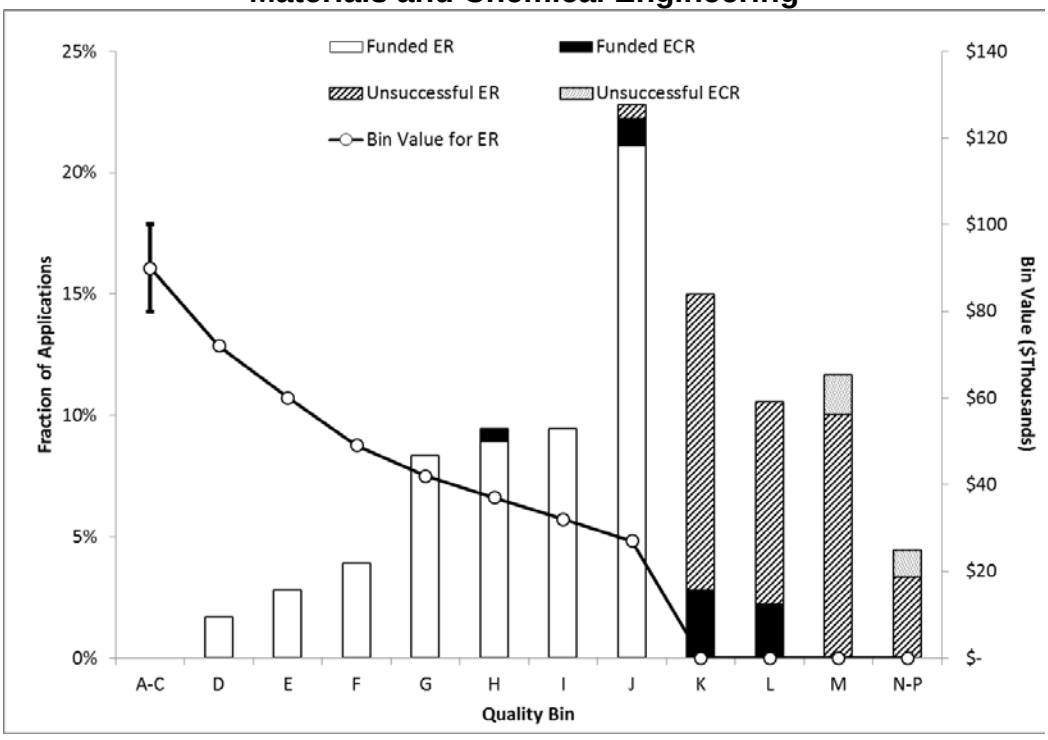
Civil, Industrial and Systems Engineering



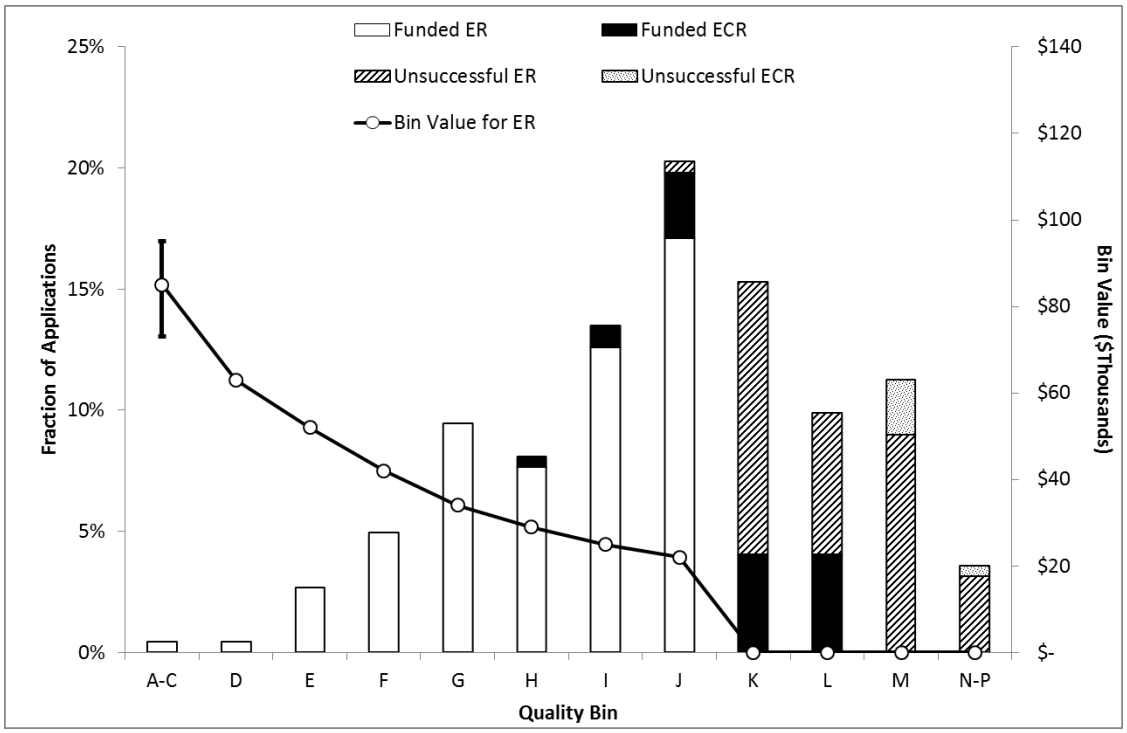
Electrical and Computer Engineering



Materials and Chemical Engineering



Mechanical Engineering



SECTION 4 – STATISTICS BY GENDER

As part of NSERC's commitment to gender equality, processes and competitions are monitored to ensure that no potential bias affects the evaluation of any submission. Analysis of the outcome of the 2016 Discovery Grants competition is presented in this section.

Table 8 Proportion of Applicants by Gender and Career Stage, 2016 Competition

	Gender		
	Male	Female	Not Indicated
Assistant Professor	21%	30%	29%
Associate Professor	29%	36%	28%
Professor	45%	31%	36%
Adjunct, Emeriti & Other	5%	3%	6%

Figure 11 Discovery Grant Success Rate and Average Awarded Amount by Career Stage and Gender, 2016 Competition

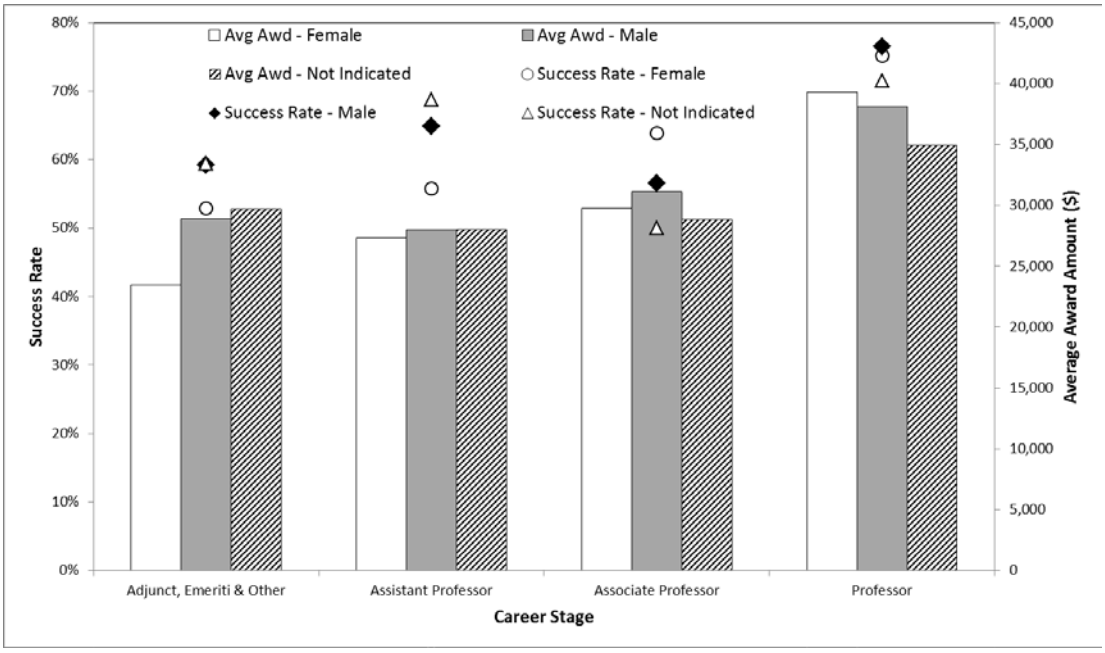


Figure 12 Discovery Grant Success Rate and Average Grant by Applicant Status and Gender, 2016 Competition

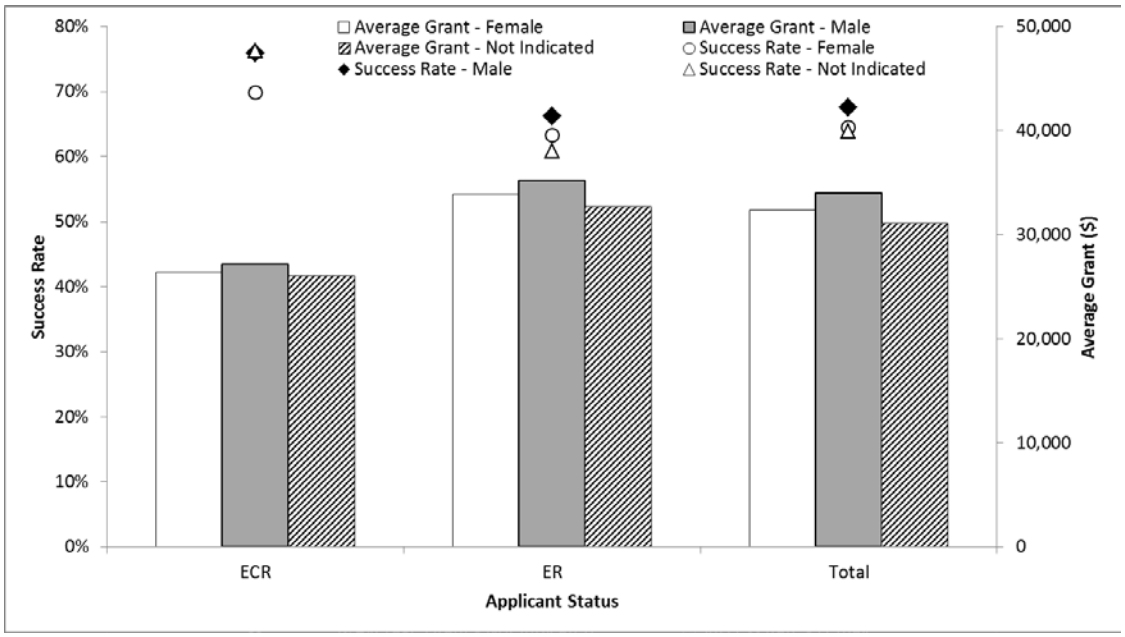
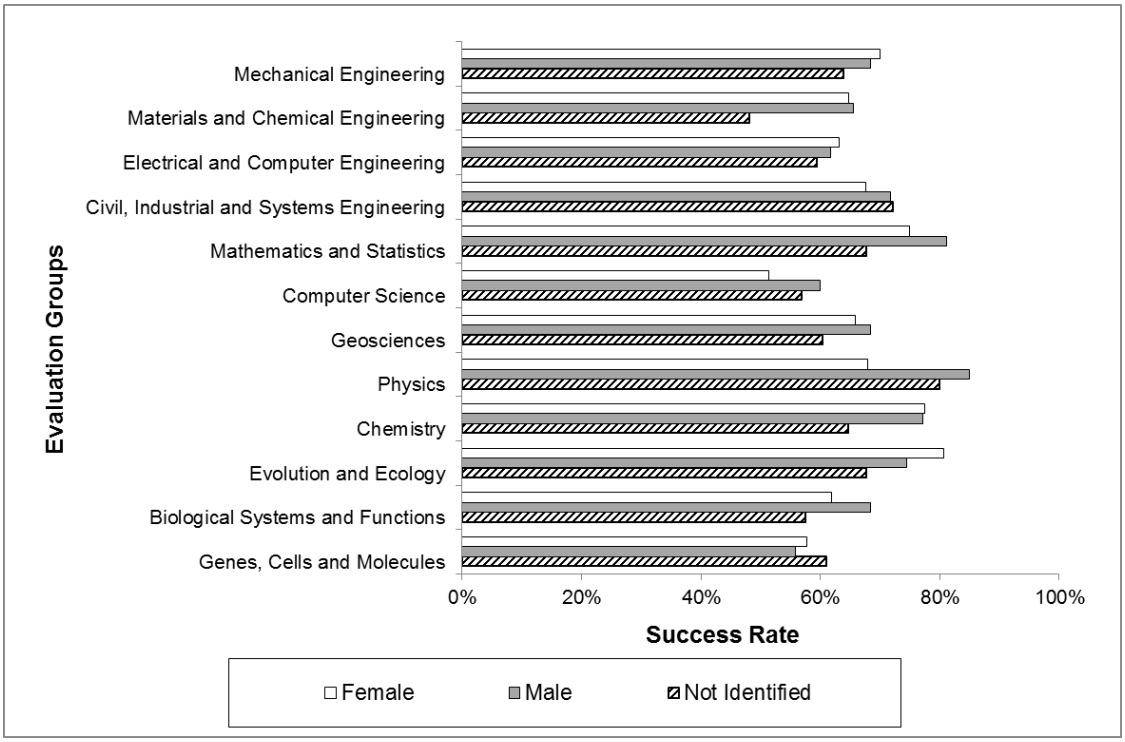


Figure 13 Discovery Grant Success Rate by Gender and Evaluation Group, 2016 Competition



SECTION 5 – RESEARCH TOOLS AND INSTRUMENTS

Table 9 Overall Comparative Statistics, 2014-2016 Research Tools and Instruments Competitions

	2014*	2015	2016
Requested Amount	$51,330,842	$73,990,321	$79,110,834
Awarded Amount	$19,542,330	$25,207,106	$26,133,975
Funding Rate	38%	34%	33%
Number of Applications	468	666	657
Number of Awarded Applications	176	218	215
Success Rate	38%	33%	33%

* Includes additional funding received resulting from Federal Budget 2014

Table 10 Research Tools and Instruments 2016 Competition Results by Evaluation Group

RTI EG #	RTI EGs	Requested	Awarded	Funding Rate	Applied	Awarded	Success Rate	Average Requested	Average Awarded
1601	Genes, Cells and Molecules (RTI)	$10,042,322	$3,260,972	32.47 %	87	29	33.33 %	$115,429	$112,447
1602	Biological Systems and Functions (RTI)	$9,926,973	$3,398,531	34.24 %	87	29	33.33 %	$114,103	$117,191
1603	Environmental Sciences (RTI)	$8,898,201	$3,032,482	34.08 %	82	28	34.15 %	$108,515	$108,303
1604	Chemistry (RTI)	$10,585,492	$3,552,178	33.56 %	87	26	29.89 %	$121,672	$136,622
1605	Physics (RTI)	$7,488,067	$2,438,480	32.56 %	56	19	33.93 %	$133,715	$128,341
1607	Computer, Mathematical and Statistical Sciences (RTI)	$2,562,796	$858,974	33.52 %	24	7	29.17 %	$106,783	$122,711
1609	Engineering (RTI)	$29,606,983	$9,592,358	32.40 %	234	77	32.91 %	$126,526	$124,576