## 2012 Competition Statistics Discovery Grants Program


#### Abstract

This report includes tables and figures that provide summary information on the 2012 Discovery Grants competition. More detailed statistics are also included in this document.


SECTION 1 - FISCAL YEAR STATISTICS ..... 3
Figure 1: Expenditures in the Discovery Grants Program Elements, 1998-99 to 2012-13* ..... 3
Figure 2: Number of Grants Funded through Individual and Team Discovery Grants (including those in Subatomic Physics) and Subatomic Physics Projects, 1998-99 to 2012-13* ..... 3
Figure 3: Average Grant for Individual and Team Discovery Grants (including those in Subatomic Physics) and Subatomic Physics Projects, 1998-99 to 2012-13* ..... 4
SECTION 2 - COMPETITION STATISTICS ..... 5
Table 1. Overall Comparative Statistics - 2012 Discovery Grants Competition ${ }^{1}$ ..... 5
Figure 4. Distribution of Grant Levels to Successful Applicants, 2012 Competition ..... 6
Figure 5. Change in Grant Level, 2012 Competition ..... 6
Figure 6. Percentage Change in Grant Level, 2012 Competition ..... 7
Figure 7. Success Rate ${ }^{1}$ by Category of Individual Applicants, Competition Years 2002-12 ..... 7
Table 2. Number of Applications and Awards by Category of Applicants, 2002-12 ..... 8
Table 3. Discovery Grants ${ }^{1}$ Competition Results by University, 2012 Competition ..... 9
Table 4. Statistics by University Size, 2012 Competition ..... 10
Table 5. Success Rate by Category of Applicants and University Size, 2009-12 ..... 10
Figure 8. Distribution of Applications ${ }^{1}$ by Quality Bin ..... 11
Table 6. Number of applications ${ }^{1}$ by Quality Bins by University Size, 2012 Competition ..... 11
SECTION 3 - STATISTICS BY EVALUATION GROUP ..... 12
Table 7. Success Rate, Average Grant and Total Amount Awarded by Category of Applicant for Each Evaluation Group, 2012 Competition ..... 12
Figure 9. Distribution of the Fraction of Applications by Quality Bin for Each Evaluation Group, 2012 Competition ..... 14
SECTION 4 - STATISTICS BY GENDER ..... 20
Table 8. Proportion of Applicants by Gender and Career Stage, 2009-12 Competitions ..... 20
Figure 10. Discovery Grant Success Rate and Average Awarded Amount by Career Stage and Gender, 2009-12 Competitions ..... 20
Figure 11. Discovery Grant Success Rate and Average Grant by Applicant Status and Gender, 2009- 12 Competitions ..... 21

Figure 12. Discovery Grant Success Rate by Gender and Evaluation Group, 2009-12 Competitions . 21

## SECTION 5 - SURVEY OF COMMITTEE MEMBERS 22

Figure 13. Grades Assigned to the Pre-CY2009 (old) and CY2010 (new) Peer Review Systems by Members Completing their Three-Year Terms.
Figure 14. Change in Grade Assigned to Pre CY2009 Peer Review Process Versus the CY2010 PeerReview Process by Members Completing their Three-Year Terms.23

## SECTION 1 - FISCAL YEAR STATISTICS

This section present data on a fiscal year basis and is inclusive of ongoing installments.
Figure 1: Expenditures in the Discovery Grants Program Elements, 1998-99 to 2012-13*

*Projected Expenditures for 2012-13
Figure 2: Number of Grants Funded through Individual and Team Discovery Grants (including those in Subatomic Physics) and Subatomic Physics Projects, 1998-99 to 2012-13*

*Projected Numbers of Grants for 2012-13

Figure 3: Average Grant for Individual and Team Discovery Grants (including those in Subatomic Physics) and Subatomic Physics Projects, 1998-99 to 2012-13*

*Projected Average for 2012-13

## SECTION 2 - COMPETITION STATISTICS

The total awarded amount for the 2012 DG competition was $\$ 67.5$ millions. The number of DG applications in 2012 was 3,477 . Going into the competition, there were 1,874 renewal applicants who held grants of, on average, $\$ 30,139$; after the competition, there are 2,161 funded researchers, at an average grant level of \$31,244.

NSERC continued to put a strong emphasis on giving early career researchers (ECR) a chance to demonstrate their potential and exceeded the minimum target success rate of 50 percent recommended in the International Review of the DG Program. In Budget 2011, NSERC was allocated additional funding "to support outstanding research in the natural sciences and engineering fields, such as the Strategy for Partnerships and Innovation (SPI)." NSERC is devoting half of this money to enhance the DGs of ECRs in the form of supplements to their grants. These supplements, of a value of up to $\$ 5,000$ per year, are included in the awarded amount and reflected in the following statistics.

Table 1. Overall Comparative Statistics - 2012 Discovery Grants Competition ${ }^{1}$

| Data $^{1}$ | Success <br> Rate | Average <br> Grant |
| :--- | :---: | :---: |
| Early Career Researchers (ECR) | $62 \%$ | $\$ 26,740$ |
| Established Researchers (ER) |  |  |
| $\quad$ Renewing their grant (ER-R) | $78 \%$ | $\$ 33,354$ |
| $\quad$ Not Holding a Grant ${ }^{2}$ (ER-NHG) | $36 \%$ | $\$ 26,964$ |

1. Includes Discovery and Subatomic Physics (Individual and Team) Grants, but excludes the Subatomic Physics Projects. It can not 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, 2012 Competition


Early Career Researchers $\square$ Established Researchers - Not Holding a Grant Established Researchers - Renewing

Figure 5. Change in Grant Level, 2012 Competition


Figure 6. Percentage Change in Grant Level, 2012 Competition


Figure 7. Success Rate ${ }^{1}$ by Category of Individual Applicants, Competition Years 2002-12

${ }^{1}$ Only includes Discovery Grant Individual

Table 2. Number of Applications and Awards by Category of Applicants, 2002-12

| Competition Year | Number of Applications ${ }^{1}$ |  |  | Number of Awards ${ }^{1}$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | ECR | ER-R | ER-NHG | ECR | ER-R | ER-NHG |
| 2002 | 520 | 1,712 | 597 | 401 | 1,625 | 346 |
| 2003 | 509 | 1,673 | 712 | 385 | 1,552 | 395 |
| 2004 | 677 | 1,557 | 716 | 464 | 1,432 | 343 |
| 2005 | 683 | 1,731 | 713 | 457 | 1,592 | 309 |
| 2006 | 672 | 1,805 | 703 | 410 | 1,638 | 291 |
| 2007 | 768 | 2,053 | 699 | 436 | 1,810 | 249 |
| 2008 | 710 | 1,944 | 680 | 426 | 1,718 | 252 |
| 2009 | 503 | 1,850 | 819 | 298 | 1,481 | 278 |
| 2010 | 513 | 1,864 | 902 | 305 | 1,348 | 264 |
| 2011 | 457 | 1,835 | 1,137 | 250 | 1,363 | 373 |
| 2012 | 480 | 1,848 | 1,102 | 298 | 1,438 | 399 |

[^0]Table 3. Discovery Grants ${ }^{1}$ Competition Results by University, 2012 Competition

|  | Early Career Researchers |  |  | Established Researchers Renewing |  |  | Established Researchers - Not Holding a Grant |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Universities | Success <br> Rate (\%) | Total Amount Awarded (\$) | Average <br> Grant (\$) | Success <br> Rate (\%) | Total Amount Awarded (\$) | Average <br> Grant (\$) | Success <br> Rate (\%) | Total Amount Awarded (\$) | Average <br> Grant (\$) |
| Acadia University | * | * | * | 57 | 95,000 | 23,750 | 29 | 47,000 | 23,500 |
| Algoma University | * | * | * | * | * | * | * | * | * |
| Athabasca University | * | * | * | * | * | * | 0 | 0 | 0 |
| Bishop's University | * | * | * | * | * | * | * | * | * |
| Brandon University | * | * | * | * | * | * | * | * | * |
| British Columbia Institute of Technology | * | * | * | * | * | * | * | * | * |
| Brock University | * | * | * | 82 | 387,000 | 27,643 | 17 | 45,000 | 22,500 |
| Cape Breton University | * | * | * | * | * | * | * | * | * |
| Carleton University | 50 | 94,000 | 23,500 | 68 | 748,000 | 29,920 | 16 | 105,000 | 26,250 |
| Centre de recherche informatique de Montréal | * | * | * | * | * | * | * | * | * |
| Concordia University | 64 | 170,000 | 24,286 | 73 | 1,152,000 | 28,098 | 38 | 254,000 | 25,400 |
| Dalhousie University | 50 | 116,000 | 23,200 | 83 | 1,814,044 | 34,227 | 30 | 258,000 | 36,857 |
| École de technologie supérieure | 40 | 89,000 | 22,250 | 69 | 259,000 | 23,545 | 57 | 170,000 | 21,250 |
| École Polytechnique de Montréal | 67 | 144,000 | 24,000 | 85 | 936,800 | 33,457 | 53 | 214,000 | 23,778 |
| HEC Montréal | * | * | * | * | * | * | * | * | * |
| Institut national de recherche scientifique | 100 | 234,000 | 29,250 | 79 | 307,000 | 27,909 | 44 | 102,000 | 25,500 |
| Lakehead University | 60 | 63,000 | 21,000 | 42 | 149,000 | 29,800 | 11 | 100,000 | 33,333 |
| Laurentian University | * | * | * | 60 | 170,000 | 28,333 | 7 | 15,000 | 15,000 |
| McGill University | 85 | 966,238 | 29,280 | 78 | 3,291,226 | 36,980 | 43 | 711,000 | 30,913 |
| McMaster University | 53 | 207,500 | 25,938 | 86 | 1,780,000 | 36,327 | 36 | 217,000 | 21,700 |
| Memorial University of Newfounland | 65 | 260,000 | 23,636 | 76 | 829,000 | 28,586 | 21 | 113,000 | 22,600 |
| Mount Allison University | * | * | * | * | * | * | * | * | * |
| Mount Royal University | * | * | * | * | * | * | * | * | * |
| Mount Saint Vincent University | * | * | * | * | * | * | * | * | * |
| Nipissing University | * | * | * | * | * | * | 20 | 14,000 | 14,000 |
| Nova Scotia Agricultural College | * | * | * | * | * | * | * | * | * |
| Queen's University | 60 | 64,000 | 21,333 | 83 | 1,101,000 | 36,700 | 40 | 221,000 | 36,833 |
| Redeemer University College | * | * | * | * | * | * | * | * | * |
| Royal Military College of Canada | 40 | 55,000 | 27,500 | 17 | 25,000 | 25,000 | 7 | 20,000 | 20,000 |
| Ryerson University | 71 | 130,000 | 26,000 | 70 | 576,000 | 27,429 | 35 | 176,000 | 19,556 |
| Saint Mary's University | * | * | * | 78 | 161,920 | 23,131 | 33 | 44,000 | 22,000 |
| Simon Fraser University | 43 | 80,000 | 26,667 | 76 | 1,558,000 | 37,095 | 43 | 289,000 | 24,083 |
| St. Francis Xavier University | * | * | * | * | * | * | 33 | 53,000 | 26,500 |
| The King's University College | * | * | * | * | * | * | * | * | * |
| The University of British Columbia | 73 | 444,000 | 27,750 | 87 | 4,556,000 | 37,967 | 44 | 603,000 | 27,409 |
| The University of Western Ontario | 63 | 131,000 | 26,200 | 83 | 2,650,000 | 37,324 | 40 | 459,000 | 25,500 |
| The University of Winnipeg | 57 | 103,000 | 25,750 | * | * | * | 17 | 14,000 | 14,000 |
| Thompson Rivers University | * | * | * | * | * | * | * | * | * |
| Trent University | * | * | * | 63 | 157,000 | 31,400 | 33 | 86,000 | 28,667 |
| Trinity Western University | * | * | * | * | * | * | * | * | * |
| TRIUMF | * | * | * | * | * | * | * | * | * |
| Université de Moncton | 43 | 84,000 | 28,000 | 60 | 62,000 | 20,667 | 13 | 25,052 | 25,052 |
| Université de Montréal | 69 | 277,000 | 30,778 | 82 | 989,000 | 30,906 | 0 | 344,680 | 26,514 |
| Université de Sherbrooke | 75 | 244,000 | 27,111 | 93 | 789,000 | 29,222 | 30 | 170,000 | 28,333 |
| Université du Québec à Chicoutimi | 33 | 45,000 | 22,500 | 50 | 79,000 | 26,333 | * | * | * |
| Université du Québec à Montréal | 70 | 177,000 | 25,286 | 71 | 470,000 | 27,647 | 31 | 132,000 | 26,400 |
| Université du Québec à Rimouski | 29 | 56,000 | 28,000 | 100 | 279,000 | 31,000 | * | * | * |
| Université du Québec à Trois-Rivières | * | * | * | 90 | 215,000 | 23,889 | 20 | 67,000 | 22,333 |
| Université du Québec en Abitibi-Témiscamingue | * | * | * | * | * | * | * | * | * |
| Université du Québec en Outaouais | * | * | * | * | * | * | 17 | 18,000 | 18,000 |
| Université Laval | 48 | 308,000 | 28,000 | 78 | 1,975,656 | 35,280 | 38 | 408,000 | 29,143 |
| University of Alberta | 64 | 344,000 | 24,571 | 75 | 2,395,000 | 31,513 | 42 | 427,912 | 28,527 |
| University of Calgary | 69 | 241,040 | 26,782 | 77 | 1,540,000 | 31,429 | 48 | 502,000 | 26,421 |
| University of Guelph | 54 | 186,000 | 26,571 | 73 | 874,000 | 29,133 | 25 | 232,000 | 25,778 |
| University of Lethbridge | * | * | * | 58 | 218,000 | 31,143 | 38 | 138,000 | 46,000 |
| University of Manitoba | 73 | 281,000 | 25,545 | 79 | 1,174,800 | 31,751 | 32 | 300,000 | 25,000 |
| University of New Brunswick | * | * | * | 70 | 473,000 | 29,563 | 6 | 21,000 | 21,000 |
| University of Northern British Columbia | * | * | * | 67 | 173,000 | 28,833 | 29 | 42,000 | 21,000 |
| University of Ontario Institute of Technology | 50 | 66,000 | 22,000 | 80 | 146,000 | 18,250 | 29 | 36,000 | 18,000 |
| University of Ottawa | 57 | 215,000 | 26,875 | 75 | 1,557,800 | 37,090 | 44 | 451,000 | 32,214 |
| University of Prince Edward Island | * | * | * | * | * | * | * | * | * |
| University of Regina | * | * | * | 64 | 245,000 | 27,222 | 38 | 95,000 | 19,000 |
| University of Saskatchewan | 45 | 143,000 | 28,600 | 66 | 1,043,000 | 31,606 | 42 | 428,000 | 26,750 |
| University of the Fraser Valley | * | * | * | * | * | * | * | * | * |
| University of Toronto | 61 | 567,958 | 28,398 | 86 | 5,111,340 | 39,932 | 58 | 888,000 | 31,714 |
| University of Victoria | * | * | * | 82 | 1,023,746 | 33,024 | 45 | 222,000 | 24,667 |
| University of Waterloo | 81 | 562,000 | 25,545 | 85 | 3,214,000 | 32,465 | 58 | 768,000 | 26,483 |
| University of Windsor | * | * | * | 56 | 401,000 | 28,643 | 41 | 202,000 | 22,444 |
| Wilfrid Laurier University | 67 | 111,000 | 27,750 | 57 | 88,000 | 22,000 | 31 | 130,000 | 26,000 |
| York University | 83 | 152,000 | 30,400 | 85 | 920,000 | 26,286 | 46 | 335,000 | 30,455 |
| Grand Total | 62 | 8,048,736 | 26,740 | 78 | 48,630,612 | 33,354 | 36 | 10,839,644 | 26,964 |
| ${ }^{1}$ Includes Discovery and Subatomic Physics Individuals and <br> * Less than five applications | am Grants but | bt, excludes Subaton | ic Physics Pro |  |  |  |  |  |  |

Table 4. Statistics by University Size, 2012 Competition

|  |  | University Size |  |  |
| :--- | :--- | :--- | :---: | :---: |
| Category of Applicants | Data | Large | Medium | Small |
| Early Career Researchers | Success Rate | $66 \%$ | $64 \%$ | $48 \%$ |
|  | Total Amount | $\$ 5,604,736$ | $\$ 1,329,000$ | $\$ 1,115,000$ |
|  | Average Grant | $\$ 27,207$ | $\$ 25,558$ | $\$ 25,930$ |
| Established Researchers - Renewing | Success Rate | $81 \%$ | $72 \%$ | $63 \%$ |
|  | Total Amount | $\$ 39,428,412$ | $\$ 6,233,000$ | $\$ 2,969,200$ |
|  | Average Grant | $\$ 35,110$ | $\$ 28,077$ | $\$ 26,276$ |
| Established <br> a Researchers - Not Holding | Success Rate | $42 \%$ | $33 \%$ | $19 \%$ |
|  | Total Amount | $\$ 8,113,592$ | $\$ 1,645,000$ | $\$ 1,081,052$ |
|  | Average Grant | $\$ 27,882$ | $\$ 24,552$ | $\$ 24,569$ |

Table 5. Success Rate by Category of Applicants and University Size, 2009-12

|  | Large |  |  |  | Medium |  |  |  | Small |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2009 | 2010 | 2011 | 2012 | 2009 | 2010 | 2011 | 2012 | 2009 | 2010 | 2011 | 2012 |
| Early Career Researchers | 62\% | 61\% | 59\% | 66\% | 57\% | 57\% | 57\% | 64\% | 42\% | 42\% | 34\% | 48\% |
| Established Researchers - Renewing | 83\% | 76\% | 78\% | 81\% | 69\% | 69\% | 52\% | 72\% | 65\% | 65\% | 55\% | 63\% |
| Established Researchers - Not Holding a Grant | 37\% | 35\% | 38\% | 42\% | 36\% | 36\% | 36\% | 33\% | 18\% | 18\% | 19\% | 19\% |

As a result of peer review, applications are placed in 16 "quality bins" based on their merit against the three selection criteria-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 ECR, Established Researchers Renewing their grant (ER-R), and Established Researchers Not Holding a Grant (ERNHG) at the time of application between 2009 and 2011, and the same distribution for the 2012 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) 2012 Competition
b) 2009-11 Competitions


${ }^{1}$ Does not include results for Subatomic Physics
Table 6. Number of applications ${ }^{1}$ by Quality Bins by University Size, 2012 Competition

|  |  |  |  |  | University Size |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Bin | Large |  | Medium |  | Small |  |  |  |  |  |  |
|  | Number | Percentage | Number | Percentage | Number | Percentage |  |  |  |  |  |
| A | 4 | $0.2 \%$ |  | $0.0 \%$ |  | $0.0 \%$ |  |  |  |  |  |
| B | 14 | $0.6 \%$ |  | $0.0 \%$ |  | $0.0 \%$ |  |  |  |  |  |
| C | 24 | $1.0 \%$ |  | $0.0 \%$ | 2 | $0.4 \%$ |  |  |  |  |  |
| D | 38 | $1.6 \%$ | 3 | $0.5 \%$ | 1 | $0.2 \%$ |  |  |  |  |  |
| E | 85 | $3.6 \%$ | 7 | $1.2 \%$ | 1 | $0.2 \%$ |  |  |  |  |  |
| F | 157 | $6.6 \%$ | 20 | $3.4 \%$ | 5 | $1.0 \%$ |  |  |  |  |  |
| G | 209 | $8.8 \%$ | 28 | $4.8 \%$ | 9 | $1.8 \%$ |  |  |  |  |  |
| H | 278 | $11.7 \%$ | 58 | $9.9 \%$ | 18 | $3.7 \%$ |  |  |  |  |  |
| I | 335 | $14.1 \%$ | 74 | $12.6 \%$ | 48 | $9.8 \%$ |  |  |  |  |  |
| J | 407 | $17.1 \%$ | 128 | $21.8 \%$ | 94 | $19.1 \%$ |  |  |  |  |  |
| K | 343 | $14.4 \%$ | 94 | $16.0 \%$ | 82 | $16.7 \%$ |  |  |  |  |  |
| L | 244 | $10.3 \%$ | 72 | $12.3 \%$ | 98 | $20.0 \%$ |  |  |  |  |  |
| M | 147 | $6.2 \%$ | 66 | $11.3 \%$ | 87 | $17.7 \%$ |  |  |  |  |  |
| N | 67 | $2.8 \%$ | 24 | $4.1 \%$ | 27 | $5.5 \%$ |  |  |  |  |  |
| O | 20 | $0.8 \%$ | 9 | $1.5 \%$ | 10 | $2.0 \%$ |  |  |  |  |  |
| P | 7 | $0.3 \%$ | 3 | $0.5 \%$ | 9 | $1.8 \%$ |  |  |  |  |  |
| Total | 2379 | $100.0 \%$ | 586 | $100.0 \%$ | 491 | $100.0 \%$ |  |  |  |  |  |

${ }^{1}$ Does not include results for Subatomic Physics

SECTION 3 - STATISTICS BY EVALUATION GROUP

Table 7. $\quad$ Success Rate, Average Grant and Total Amount Awarded by Category of Applicant for Each Evaluation Group, 2012 Competition

| 1501 - Genes, Cells and Molecules | Early Career | Established Researchers |  |
| :--- | :---: | :---: | :---: |
|  | Researchers | Renewing | Not Holding a Grant |
|  | $72 \%$ | $75 \%$ | $48 \%$ |
| Total Amount Awarded | $\$ 31,764$ | $\$ 34,451$ | $\$ 31,360$ |


| 1502 - Biological Systems and | Early Career | Established Researchers |  |
| :--- | :---: | :---: | :---: |
| Functions | Researchers | Renewing | Not Holding a Grant |
| Success Rate | $51 \%$ | $80 \%$ | $33 \%$ |
| Average Grant | $\$ 30,354$ | $\$ 37,961$ | $\$ 29,754$ |
| Total Amount Awarded | $\$ 1,274,858$ | $\$ 7,060,682$ | $\$ 1,815,000$ |


|  | Early Career | Established Researchers |  |
| :--- | :---: | :---: | :---: |
| $\mathbf{1 5 0 3}$ - Evolution and Ecology | Researchers | Renewing | Not Holding a Grant |
| Success Rate | $52 \%$ | $82 \%$ | $49 \%$ |
| Average Grant | $\$ 27,167$ | $\$ 33,135$ | $\$ 24,483$ |
| Total Amount Awarded | $\$ 326,000$ | $\$ 3,214,086$ | $\$ 710,000$ |


| $\mathbf{1 5 0 4}$-Chemistry | Early Career | Established Researchers |  |
| :--- | :---: | :---: | :---: |
|  | Researchers | Renewing | Not Holding a Grant |
|  | $61 \%$ | $65 \%$ | $18 \%$ |
| Average Grant | $\$ 36,455$ | $\$ 65,764$ | $\$ 42,121$ |
| Total Amount Awarded | $\$ 401,000$ | $\$ 4,735,000$ | $\$ 716,052$ |


| $\mathbf{1 5 0 5}$ - Physics* | Early Career | Established Researchers |  |
| :--- | :---: | :---: | :---: |
|  | Researchers | Renewing | Not Holding a Grant |
|  | $67 \%$ | $86 \%$ | $43 \%$ |
| Average Grant | $\$ 26,773$ | $\$ 39,081$ | $\$ 30,334$ |
| Total Amount Awarded | $\$ 589,000$ | $\$ 4,924,240$ | $\$ 788,680$ |

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

| 1506 - Geosciences | Early Career | Established Researchers |  |
| :--- | :---: | :---: | :---: |
|  | Researchers | Renewing | Not Holding a Grant |
|  | $54 \%$ | $66 \%$ | $33 \%$ |
| Average Grant | $\$ 30,526$ | $\$ 36,240$ | $\$ 29,783$ |
| Total Amount Awarded | $\$ 580,000$ | $\$ 3,732,684$ | $\$ 685,000$ |


|  | Early Career | Established Researchers |  |
| :--- | :---: | :---: | :---: |
| $\mathbf{1 5 0 7}$ - Computer Science | Researchers | Renewing | Not Holding a Grant |
| Success Rate | $68 \%$ | $84 \%$ | $38 \%$ |
| Average Grant | $\$ 21,609$ | $\$ 27,966$ | $\$ 17,214$ |
| Total Amount Awarded | $\$ 497,000$ | $\$ 5,033,920$ | $\$ 482,000$ |


|  | Early Career | Established Researchers |  |
| :--- | :---: | :---: | :---: |
| $\mathbf{1 5 0 8}$ - Mathematics and Statistics | Researchers | Renewing | Not Holding a Grant |
| Success Rate | $63 \%$ | $76 \%$ | $23 \%$ |
| Average Grant | $\$ 18,407$ | $\$ 22,183$ | $\$ 14,667$ |
| Total Amount Awarded | $\$ 497,000$ | $\$ 2,906,000$ | $\$ 220,000$ |


| 1509 - Civil, industrial and Systems | Early Career | Established Researchers |  |
| :--- | :---: | :---: | :---: |
| Engineering | Researchers | Renewing | Not Holding a Grant |
| Success Rate | $75 \%$ | $80 \%$ | $24 \%$ |
| Average Grant | $\$ 23,111$ | $\$ 27,168$ | $\$ 20,300$ |
| Total Amount Awarded | $\$ 832,000$ | $\$ 2,744,000$ | $\$ 406,000$ |


| 1510 - Electrical and Computer | Early Career <br> Engineering |  | Established Researchers |  |
| :--- | :---: | :---: | :---: | :---: |
|  | Researchers | Renewing | Not Holding a Grant |  |
| Success Rate | $63 \%$ | $78 \%$ | $46 \%$ |  |
| Average Grant | $\$ 23,047$ | $\$ 29,304$ | $\$ 22,270$ |  |
| Total Amount Awarded | $\$ 507,040$ | $\$ 4,044,000$ | $\$ 824,000$ |  |


| 1511 - Materials and Chemical | Early Career | Established Researchers |  |
| :--- | :---: | :---: | :---: |
| Engineering | Researchers | Renewing | Not Holding a Grant |
| Success Rate | $72 \%$ | $85 \%$ | $18 \%$ |
| Average Grant | $\$ 25,438$ | $\$ 30,400$ | $\$ 20,800$ |
| Total Amount Awarded | $\$ 457,880$ | $\$ 2,888,000$ | $\$ 208,000$ |


| 1512 - Mechanical Engineering | Early Career | Established Researchers |  |
| :--- | :---: | :---: | :---: |
|  | Researchers | Renewing | Not Holding a Grant |
|  | $49 \%$ | $74 \%$ | $44 \%$ |
| Average Grant | $\$ 25,944$ | $\$ 28,230$ | $\$ 21,357$ |
| Total Amount Awarded | $\$ 467,000$ | $\$ 2,456,000$ | $\$ 598,000$ |

The distribution of applications by "quality bins" is presented in Figure 9 for each Evaluation Group (EG). The bin value illustrated represents the value of the bin for the normal cost of research. For EGs marked with a star (*), a differential for the cost of research was used and, as a result, individual grant values within a bin may be lower or higher than indicated.

Figure 9. Distribution of the Fraction of Applications by Quality Bin for Each Evaluation Group, 2012 Competition

Gene, Cells and Molecules*


Biological Systems and Functions*


## Evolution and Ecology




Computer Science


Mathematics and Statistics


Civil, Industrial and Systems Engineering


Electrical and Computer 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. Data has been pooled over four competitions to ensure sufficient numbers in each category. Regular analysis of the outcomes of the Discovery Grants competitions reveals that male and female applicants have similar success rates ( 61 percent for males, 59 percent for females); and average grants (\$32,831 for males; \$30,801 for females). The difference in an average grant is largely attributable to the career stage of applicants, with a larger proportion of female applicants who are assistant or associate professors as compared to male applicants (Table 8).

Table 8. Proportion of Applicants by Gender and Career Stage, 2009-12 Competitions

|  | Gender |  |
| :--- | :---: | :---: |
|  | Male | Female |
| Assistant Professor | $25 \%$ | $39 \%$ |
| Associate Professor | $28 \%$ | $31 \%$ |
| Professor | $37 \%$ | $24 \%$ |
| Adjunct, Emereti and Other | $10 \%$ | $7 \%$ |

Similar results are observed for both males and females for applicants at equivalent career stages (Figure 10) and of the same applicant status (Figure 11). Success rates vary between the disciplines (Figure 12).

Figure 10. Discovery Grant Success Rate and Average Awarded Amount by Career Stage and Gender, 2009-12 Competitions


Figure 11. Discovery Grant Success Rate and Average Grant by Applicant Status and Gender, 2009-12 Competitions


Figure 12. Discovery Grant Success Rate by Gender and Evaluation Group, 2009-12 Competitions


## SECTION 5 - SURVEY OF COMMITTEE MEMBERS

Following the 2010 DG competition, a survey was sent to members completing their three-year terms. These members had exposure to both the "old" (pre-2009) system of review and the "new" system and were, therefore, well-placed to offer feedback regarding the changes. Members were asked for feedback on a variety of topics, including use of the rating scale and indicators, the new two-step evaluation system, and the conference model.

Fifty-four members responded (52 percent response rate) representing the 12 EGs. The findings were:

- The majority of surveyed members feel that the introduction of the rating scale and use of the evaluation indicators has improved the review process.
- A majority of respondents also found the quality of the review to be improved (78 percent overall).
- Members' opinions were more divided on the subject of consistency; still the majority of members reported that the new system improved consistency (61 percent) and fairness of review (55 percent) between applications.
- It was suggested that additional time should be devoted to the calibration process in addition to reviewing the full range of indicators -- from exceptional to insufficient.
- The majority of respondents (77 percent) felt that the new two-step evaluation system substantially improved funding recommendations, in that applicants were able to reach an appropriate funding level more quickly than with the previous system.
- A recurring theme throughout the survey results was the responsiveness of the review process in eliminating inertia from the system and the enhanced fairness of the process.
- Opinions were also positive overall regarding the ability of the conference model to provide fair review of applications in interdisciplinary areas.

Finally, members were also asked to assign a letter grade to the "Pre-CY2009" evaluation system and the new two-step system (Figure 13). A majority of respondents indicated that the new system is either an improvement over the old one or was of the same quality as before. Figure 14 illustrates the change in grades assigned to the former and current evaluation systems, where a response of "C" for the pre-CY2009 system and "B" for the CY2010 system would be reported as "+1." In contrast, responses of "A" for the pre-CY2009 system and "C" for the CY2010 system are reported as "-2."

Since the survey was conducted NSERC has implemented several refinements in response to the issues identified in the survey--such as clarifying the performance indicators and providing increased opportunities for members to develop a consistent understanding and application of the performance indicators.

Figure 13. Grades Assigned to the Pre-CY2009 (old) and CY2010 (new) Peer Review Systems by Members Completing their Three-Year Terms


Figure 14. Change in Grade Assigned to Pre CY2009 Peer Review Process Versus the CY2010 Peer Review Process by Members Completing their Three-Year Terms



[^0]:    ${ }^{1}$ Only includes Discovery Grant Individual

