2017 Discovery Grants Competition

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Kate Henbest Program Officer
Computer Science Evaluation Group (1507)

CS-Can / Info-Can Chairs Meeting
May 16, 2017 – Edmonton, AB
Presentation Overview

- Discovery Grants Competition
  - Context
  - 2017 Results
- NSERC Updates
- Questions
Program Objectives

- To promote and maintain a diversified base of high-quality research capability in the natural sciences and engineering (NSE) in Canadian universities.
- To foster research excellence.
- To provide a stimulating environment for research training.
Discovery Grants Competition
General Context

Conference Model

- 12 Evaluation Groups
- Within each Evaluation Group, applications are reviewed in parallel streams (sections)
- Members from different Evaluation Groups review applications covering topics that cross the traditional boundaries between disciplines (joint reviews)
Discovery Grants Competition

Review Process

Two-stage review process, as recommended by the International Review of the Discovery Grants Program

- **Stage 1: Merit assessment**
  - Each application assessed by 5 reviewers, using six-point scale to rate three criteria:
    - Excellence of the researcher
    - Merit of the proposal
    - Contributions to the training of HQP

- **Stage 2: Funding recommendation**
  - Ratings lead to grouping of applications into “bins” of comparable overall quality
  - Executive Committee recommends balanced budget at level of “bins”
## Discovery Grants Competition

### Review Process

#### Merit Assessment

<table>
<thead>
<tr>
<th>Excellence of researcher</th>
<th>Exceptional</th>
<th>Outstanding</th>
<th>Very Strong</th>
<th>Strong</th>
<th>Moderate</th>
<th>Insufficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Merit of proposal</th>
<th>Exceptional</th>
<th>Outstanding</th>
<th>Very Strong</th>
<th>Strong</th>
<th>Moderate</th>
<th>Insufficient</th>
</tr>
</thead>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Contribution to training of HQP</th>
<th>Exceptional</th>
<th>Outstanding</th>
<th>Very Strong</th>
<th>Strong</th>
<th>Moderate</th>
<th>Insufficient</th>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost of research</th>
<th>High</th>
<th>Normal</th>
<th>Low</th>
</tr>
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<tbody>
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<td></td>
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</tr>
</tbody>
</table>

#### Funding “Bins”

- A (L, N, H)
- B (L, N, H)
- C (L, N, H)
- D (L, N, H)
- N
- O
- P
Discovery Grants Competition
Roles in Evaluation Group

Members

- 5 members review each application
- Review applications within own EG and other EGs (joint reviews)
- Input on policy issues related to the discipline

Executive Committee

- Section Chairs and Group Chair
- Ensures quality of process, consistency and fairness
- Confirms assignment of applications including joint reviews
- Provides recommendation to NSERC on budget options following review of applications
- Group Chair acts as EG representative on Committee on Discovery Research

How to Apply for a DG info session
Session at MacEwan University

May be of interest for newer faculty or researchers submitting a DG application this year

MacEwan University, Room 8-211
May 17, 10am-12pm

Please rsvp to Garson Law lawg22@macewan.ca
2017 COMPETITION RESULTS
ALL EGs AND COMPUTER SCIENCE

Competition statistics in this presentation are not official. Official results will be posted once available: http://www.nserc-crsng.gc.ca/Professors-Professeurs/DiscoveryGrants-SubventionsDecouverte/Index_eng.asp
2017 Competition Results

Peer Review – Thank You!

- 3200+ Discovery Grants Applications =
  - 400+ Evaluation Group Members
  - 16 000+ reviews by EG members
  - 8000+ External Reviewers Reports

“A big thank you from NSERC!
Your insight, excellence and informed feedback are essential to ensure quality in Canada’s research endeavour.”

B. MARIO PINTO
NSERC PRESIDENT
Overall Statistics (All EGs)
2017 Discovery Grants Competition

<table>
<thead>
<tr>
<th>Data¹</th>
<th>Number of Applications</th>
<th>Number of Awards</th>
<th>Success Rate</th>
<th>Average Grant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Career Researchers (ECR)</td>
<td>562</td>
<td>385</td>
<td>69%</td>
<td>$25,409</td>
</tr>
<tr>
<td>Established Researchers (ER)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Holding a grant</td>
<td>1636</td>
<td>1360</td>
<td>83%</td>
<td>$37,396</td>
</tr>
<tr>
<td>Not holding a grant²</td>
<td>1042</td>
<td>409</td>
<td>39%</td>
<td>$26,806</td>
</tr>
<tr>
<td>Grand Total</td>
<td>3240</td>
<td>2154</td>
<td>66%</td>
<td>$33,243</td>
</tr>
</tbody>
</table>

¹. Includes Discovery Grants only (excludes all Subatomic Physics grants).
². Includes returning established unfunded applicants and experienced researchers submitting a first application.

- Total budget for all EGs: ~ $71,605,000

Note: Non-official results
**Overall Statistics** *(Computer Science)*  
2017 Discovery Grants Competition

<table>
<thead>
<tr>
<th>Data</th>
<th>Number of Applications</th>
<th>Number of Awards</th>
<th>Success Rate</th>
<th>Average Grant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Career Researchers (ECR)</td>
<td>51</td>
<td>30</td>
<td>59%</td>
<td>$24,700</td>
</tr>
<tr>
<td>Established Researchers (ER)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Holding a grant</td>
<td>181</td>
<td>144</td>
<td>80%</td>
<td>$31,938</td>
</tr>
<tr>
<td>Not holding a grant²</td>
<td>100</td>
<td>34</td>
<td>34%</td>
<td>$24,647</td>
</tr>
<tr>
<td>Grand Total</td>
<td>332</td>
<td>208</td>
<td>63%</td>
<td>$29,702</td>
</tr>
</tbody>
</table>

1. *Includes Discovery Grants in EG1507.*  
2. *Includes returning established unfunded applicants and experienced researchers submitting a first application.*

- **Total budget for CS:** ~ $6,178,000

*Note: Non-official results*
Bin Distribution (All EGs)
2017 Discovery Grants Competition

Note: Non-official results

Includes only Discovery Grants Individual

Percentage of Applications

Quality Bin

Note: Non-official results

CS-Can / Info-Can 2017
Bin Distribution (Computer Science)
2017 Discovery Grants Competition

Note: Non-official results

Includes only Discovery Grants Individual

Quality Bin

Grant Value (ER)
Grant Value (ECR)*

Percentage of Applications

Grant Value ($1,000)
Rating Distribution (Computer Science)
2017 Discovery Grants Competition

Note: Non-official results

Includes only Discovery Grants Individual

Percentage of Applications

Merit Rating

Excellence of the Researcher
Merit of the Proposal
Training of Highly Qualified Personnel

Exceptional
Outstanding
Very Strong
Strong
Moderate
Insufficient
Budget balancing in Computer Science EG

- Always a challenging task of balancing the amounts to be awarded (i.e., assigned to merit bins) in relation to the number of applicants funded.

- For Computer Science:
  - ER applicants supported down to merit category J. All applications in category J were supported.
  - ECR applicants supported down to merit category K. All applications in category K were supported.
Budget balancing in Computer Science EG

2017 results relative to the last 3 years within EG 1507:

- **Success rate is higher**
  63% in 2017 vs. 58-60% in 2014-2016

- **Number of applications is higher**
  332 in 2017 vs. 262-298 in 2014-16

- **Average grant is lower**
  $29,702 in 2017 vs. $29,727-$33,734 in 2014-2016

- **Bin values are lower**
Feedback from Computer Science EG

From policy meeting at end of competition 2017:

- How to improve quality of external reviewer reports
- Suggestions for CCV
- Focus on DAS calibration
- Focus on DG calibration at high/low ends of grid and for ECRs
- Reduce workload of review process where possible
- Overall pleased with expertise coverage on EG and joint reviews for interdisciplinary applications
2017 RESULTS: DAS, RTI AND DDG
ALL EGs AND COMPUTER SCIENCE
Discovery Accelerator Supplements

- DAS provides resources to researchers who:
  - Have highly original and innovative research programs
  - Show strong potential to become international leaders within their field

- $120,000 over three years, up to 125 Supplements per year

- Process:
  - Each EG receives a quota of DAS nominations to recommend.
  - EG members nominate candidates during competition and vote on DAS rating
  - Executive Committee discusses nominees and makes the final recommendation to NSERC
## Discovery Accelerator Supplements (All EGs)
### 2017 Competition

<table>
<thead>
<tr>
<th>Evaluation Group</th>
<th>Awards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genes, Cells and Molecules (1501)</td>
<td>12</td>
</tr>
<tr>
<td>Biological Systems and Functions (1502)</td>
<td>11</td>
</tr>
<tr>
<td>Evolution and Ecology (1503)</td>
<td>9</td>
</tr>
<tr>
<td>Chemistry (1504)</td>
<td>6</td>
</tr>
<tr>
<td>Physics (1505)</td>
<td>6</td>
</tr>
<tr>
<td>Geosciences (1506)</td>
<td>11</td>
</tr>
<tr>
<td><strong>Computer Science (1507)</strong></td>
<td><strong>19</strong></td>
</tr>
<tr>
<td>Mathematics and Statistics (1508)</td>
<td>6</td>
</tr>
<tr>
<td>Civil, Industrial and Systems Engineering (1509)</td>
<td>11</td>
</tr>
<tr>
<td>Electrical and Computer Engineering (1510)</td>
<td>13</td>
</tr>
<tr>
<td>Materials and Chemical Engineering (1511)</td>
<td>10</td>
</tr>
<tr>
<td>Mechanical Engineering (1512)</td>
<td>10</td>
</tr>
<tr>
<td>Subatomic Physics (19)</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>125</strong></td>
</tr>
</tbody>
</table>

Note: Non-official results
Research Tools & Instruments (All EGs)  
2014-17 Competition

RTI grants foster and enhance the discovery, innovation and training capability of university researchers in the NSE by supporting the purchase of research equipment.

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
<td>$19.5M</td>
<td>$25M</td>
<td>$26M</td>
<td>$30.5M</td>
</tr>
<tr>
<td># Appl.</td>
<td>468</td>
<td>666</td>
<td>657</td>
<td>748</td>
</tr>
<tr>
<td># Funded</td>
<td>176</td>
<td>218</td>
<td>215</td>
<td>241</td>
</tr>
<tr>
<td>Success Rate</td>
<td>38%</td>
<td>33%</td>
<td>33%</td>
<td>32%</td>
</tr>
</tbody>
</table>

Note: Non-official results
## Research Tools & Instruments (Computer Science) 2017 Competition

<table>
<thead>
<tr>
<th>Research Tools &amp; Instruments</th>
<th>Computer, Mathematical and Statistical Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Applications</td>
<td>34</td>
</tr>
<tr>
<td>Number of Awards</td>
<td>12</td>
</tr>
<tr>
<td>Success Rate</td>
<td>35%</td>
</tr>
<tr>
<td>Total Budget</td>
<td>$1,257,191</td>
</tr>
</tbody>
</table>

Note: Non-official results
Discovery Development Grants (All EGs)

- Promote a diversified base of high-quality research in small universities
- Foster a stimulating environment for research training in small universities
- Award valued at $10K /year for 2 years

**Competition Results**
- 2015: 57 awards
- 2016: 42 awards
- 2017: 54 awards

*Note: Non-official results*
Results and Statistics
2017 Competitions

Official results will be posted:
http://www.nserc-crsng.gc.ca/Professors-Professeurs/DiscoveryGrants-SubventionsDecouverte/Index_eng.asp
NSERC UPDATES
Discovery Grant Updates

Early Career Researcher - New DG definition

- Early Career Researchers (ECR) are researchers who are within three years of the start date of an NSERC eligible position, and who have no academic or non-academic independent research experience prior to the three-year window at the time of submitting the Notification of Intent to Apply for a Discovery Grant (NOI).

- For example, for the 2018 competition, to be classified as an ECR, a researcher submitting an NOI in August 2017 would have been hired on or after July 2014.
Discovery Grant Updates
ECR extension option with funds

- ECRs re-applying for the first time will now have the option of extending their DG by one year with funds

- **Goal:** Allow early stage researchers additional time to better establish themselves and their research program before re-applying to the Discovery Grant program as established researchers
Discovery Grant Updates
Highly Qualified Personnel – Literature Change

**NEW Instructions**

- Rewording of current HQP criterion
  - Instructions to Applicants
  - Peer Review Manual

Objective:

- Applicants – better description of what is expected
- Members – clearer information for review
Discovery Grant Updates
Gender Equity and Diversity – Literature Change

Applicants are encouraged to promote approaches that increase the inclusion and advancement of women and other under-represented groups in the natural sciences and engineering, as one means to foster excellence in research and training.

Applicants should describe their planned approach to promoting participation from a diverse group of HQP, taking into account equity in recruitment practices, mentorship and initiatives aimed at ensuring an inclusive research and work environment.
Discovery Grant Updates

DND/NSERC Discovery Grant supplement

- Supporting discovery-based research
- 20 supplements at $40,000 per year for 3 years
- Eligibility
  - Researchers applying to current DG competition
  - Proposed research must fit within DND defence and security target areas
- Internal DND committee will select recipients
- Results will be announced in the spring
- Contact: dndsuppmdn@nserc-crsng.gc.ca
Discovery Grant Updates
Maternity and Parental Leave

Reminder - NSERC Policy on Paid Maternity / Parental Leave for Students and Postdoctoral Fellows paid from Grants

- Students and Postdoctoral fellows who are supported by NSERC grants and are eligible may receive up to 6 months of paid maternity / parental leave.
- The leave supplement will be paid by NSERC.
Discovery Grant Updates

Primary Caregiver Policy

NSERC Policy for New Primary Caregivers (Pilot)

- In place as of March 1, 2016
- Researchers who become primary caregivers following the birth or adoption of a child and who are eligible for maternity or parental leave but decline the leave, may be eligible to receive a one-year grant extension with funds
RTI Program Update

- University quotas to be removed for the 2018 competition
  - Competition open to all eligible Canadian university researchers
  - Researchers will be able to participate on one application per competition, either as an applicant or a co-applicant, but not both
Reminder - Tri-Agency Open Access Policy on Publications
http://www.science.gc.ca/eic/site/063.nsf/eng/h_F6765465.html

 Researchers must make articles freely available online within 12 months of publication
 Applies to all grants awarded May 1, 2015 and onward
 How to comply:
  – Deposit final, peer-reviewed manuscript in a repository; and/or
  – Submit final, peer-reviewed manuscript to journal that offers open access within 12 months
 Contact: openaccess@nserc-crsng.gc.ca
NSERC Updates
Data Management


- Over the coming months, NSERC, SSHRC and CIHR will be seeking input from the research community on draft policy text and how best to realize the principles presented in the Statement.

- **Online consultation in coming months** – visit NSERC’s website over the next few months for news [http://www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca)
NSERC Updates

2017 Federal Budget

• Chief Science Advisor
• PromoScience Program
• Canada 150 Research Chairs
• Accelerating innovation through Superclusters
• Investing in R&D for Clean Energy and Transportation
• Advancing Agricultural Science and Innovation
• Investing in Artificial Intelligence
• Review of the National Research Council

New investments in federal science in areas such as clean technology, energy and agricultural science
NSERC Updates

2017 Federal Science Review

• The Advisory Panel on Federal Support for Fundamental Science presented its report on April 10, 2017

• Recommendations include:
  o increased investment in independent investigator-led research
  o increased coordination among the granting councils and CFI
  o new oversight body for the federal research and innovation ecosystem
Thank you!

Questions or comments?