NSERC Discovery Grant Writing Workshop
The Basics of a Discovery Grant

Presenters:  Dr. Doug Buchanan, Electrical & Computer Eng.
Ms. Andrea Craig, Research Grants Officer (NSERC)

Special question-answerers and discussion-participators:
Dr. Ivan Oresnik, Microbiology
Dr. Cyrus Shafai, Electrical & Computer Eng.

Room E3-262 (Senate Chamber, E.I.T.C.)
22 September 2011, 1:15 p.m. – 2:45 p.m.
“The Discovery Grants Program supports ongoing programs of research (with long-term goals) rather than a single short-term project or collection of projects.”
Subject Matter Eligibility


- Be clear early on about the eligibility of both the subject matter and yourself
Individual Vs. Group

**Discovery - Individual**
- You are the sole researcher (with potential to collaborate)
- This grant supports your overarching program of research

**Discovery - Team**
- Team should be a natural partnership of complementary expertise
- Researchers’ excellence is evaluated and averaged
- Expected to continue in the long term
2011-2012 Changes to the NSERC Discovery Grant Program

- Use headings in your proposal: recent progress, objectives, literature review, methodology, impact
- HQP Plan
- Budget Justification limited to 2 pages
- References page maximum has increased from 1 to 2
- Mandatory inclusion of budget & summary pages for any CIHR or SSHRC grants applied for or held
2009 Changes to the NSERC Discovery Grant Program

1. Evaluation Groups

2. Peer Review System

3. 3 Equally-Weighted criteria
Evaluation Groups

The Grant Selection Committees were replaced by 12 discipline-based Evaluation Groups:

1501 - Genes, Cells and Molecules
1502 - Biological Systems and Functions
1503 - Evolution and Ecology
1504 - Chemistry
1505 - Physics
1506 - Geosciences
1507 - Computer Science
1508 - Mathematics and Statistics
1509 - Civil, Industrial and Systems Engineering
1510 - Electrical and Computer Engineering
1511 - Materials and Chemical Engineering
1512 - Mechanical Engineering
Members of the Groups will meet in different combinations (based on the match between their expertise and the areas of a subset of applications) to form these sections. This new process is referred to as the “conference model.”

In the conference review model, your proposal will be read by FIVE PEOPLE: 2 Assessors and 3 Readers – each with a vote.
2-Step Review Process

<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>Merit of proposal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contribution to training of HQP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of research</td>
<td>High</td>
<td>Normal</td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Funding “Bins”
A (L, N, H)  
B (L, N, H)  
C (L, N, H)  
D (L, N, H)  
N  
O  
P
Peer Review Resources

- Frequently Asked Questions about the new structure of conference review:

- Complete 2011-2012 Peer Review Manual:
3 Equally-Weighted Criteria

- Excellence of the Researcher
- Training of HQP
- Merit of the Proposal

See handout on DISCOVERY GRANTS MERIT INDICATORS
## Discovery grants merit indicators

A rating in any of the three categories of ‘insufficient’ will result in an unsuccessful application.

<table>
<thead>
<tr>
<th>Category</th>
<th>Very Strong</th>
<th>Strong</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Presented in the application</strong></td>
<td>The accomplishments presented in the application were deemed to be of superior quality, impact and/or importance.</td>
<td>The accomplishments presented in the application were deemed to be solid in their quality, impact and/or importance.</td>
</tr>
<tr>
<td><strong>Research Program</strong></td>
<td>Proposed research program is clearly presented, is original and innovative and is likely to have impact by leading to advancements and/or addressing socio-economic or environmental needs. Long-term goals are defined and short-term objectives are planned. The methodology is clearly described and appropriate. The budget demonstrates how the research activities to be supported are distinct from and complement those funded by other sources.</td>
<td>Proposed research program is clearly presented, is original and innovative and is likely to have impact and/or address socio-economic or environmental needs. Long-term goals and short-term objectives are clearly described. The methodology described and appropriate. The budget demonstrates how the research activities to be supported are distinct from and complement those funded by other sources.</td>
</tr>
<tr>
<td><strong>Training</strong></td>
<td>Training record is superior to other applicants, with HQP contributing to quality, original research. Many HQP move on to appropriate positions that require desired skills, obtained through training received. Research plans for trainees are appropriate and clearly described. HQP success is likely.</td>
<td>Training record compares favourably with other applicants. HQP generally move on to positions that require desired skills, obtained through training received. Research plans for trainees are appropriate and described. HQP success is likely.</td>
</tr>
</tbody>
</table>

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1. See the Peer Review Manual (Chapter 6) which outlines how reviewers arrive at a rating.
Proposal composition

Excellence of the Researcher

Merit of the Proposal

Training of HQP
Checklist for a Complete Application

Form 101 - Proposal

- FAAF attached
- All necessary signatures
- Layman summary of proposal
- Budget – direct costs
- Budget – justification (attachment)
- Relationship to other funding (attachment)
- Proposal (5 pg; 8 for group)
- HQP Plan (1 page)
- References (2 page max)
Budget Justification

- You must *justify* the cost of what you are requesting
- Ask for what you need to carry out proposed research
- Does double-duty as often can reveal much about your proposal
- NSERC set **page limit of 2** for 2011-2012 – use them fully

- Salaries / Stipends
- Equipment
- Materials
- Travel
- Dissemination
- Other
Critical section; often overlooked

Applicants must *clearly* describe any relationship with other funding sources, conceptual or financial

“Applicants who currently hold, or have applied for, research support from the [Canadian Institutes of Health Research](https://www.cihr-irsc.gc.ca) (CIHR) or the [Social Sciences and Humanities Research Council of Canada](https://www.sshrc-crsh.gc.ca) (SSHRC) must provide the summary and budget page of these proposals.”

CIHR funding must be seen as *separate* - reviewers will be *highly critical* of blending of CIHR/NSERC funds

Unlimited pages gives the opportunity to describe support of HQP funded by other sources
The 5-Page Proposal

Provide details on:

- **Recent research progress** related to the proposal (or attributable to your previous DG)
- **Objectives** – short- AND long-term
- Pertinent **literature** – put your research into context
- **Methods** and proposed approach
- Anticipated **significance**
- **Training** to take place

Write for an expert-non-expert!
The 8-Page Proposal (Team Grant)

Same requirements as Individual, but additional details required:

- Description of expertise, expected roles & contributions
- Discussion of collaboration among members
- Details of team management and structure
Highly Qualified Personnel

Various places to herald your HQP throughout your proposal:

- Budget justification
- Relationship to other support (if appropriate)
- Proposal body
- Form 100

- NSERC highly values training of all types of HQP; MSc & PhD the most
- Ensure sufficient representation; sprinkle details throughout proposal
- Be explicit: who, doing what
- What do you offer to HQP?
- What can you offer to HQP?
- Consent form to use HQP personal info must be obtained
The 1-Page* HQP Plan

“CONTRIBUTION TO THE TRAINING OF HIGHLY QUALIFIED PERSONNEL”

This section should only contain information pertinent to training plans.

- Describe the projects
- Discuss the pertinence and involvement of trainees
- Explain the expected outcomes in terms of contribution to knowledge
- Training value of the proposed projects

WHAT training HQP will get

◊

HOW each student will receive this training

◊

WHO will deliver the training

[Image of University of Manitoba logo]
Checklist for a Complete Application

Form 100 - CV

✓ PI/Co-I Name, Academic Background, HQP Summary
✓ Academic, Research, Industrial Experience
✓ Support: a) held in past 4 years; b) currently held; c) applied for
✓ HQP Personal Data
✓ ...

University of Manitoba
Checklist for a Complete Application

Form 100 – CV (Continued)

- Contributions (5 pages max, over 6 years)
  1) Most Significant Contributions
  2) Research Contributions and Practical Applications (i.e. publications, etc.)
  3) Other Evidence of Impact and Contributions
  4) Delays in Research Activity (if any)
  5) Contributions to the training of HQP
NSERC Form 100 : CV Module

**TIP:**

The details within your Form 100 should jive – the HQP quantified on the first page should match your detailed list of HQP further in, for example.

- Follow guideline instructions closely
- Free-form (formerly ‘Part II’) 5 sections to include: Most Significant Contributions – Research Contributions – Other Evidence of Impact – Delays – Contributions to Training of HQP
- Maximum 5 pages in free-form section
NSERC Form 100 : CV Module

- “Most Significant Contributions” should be appropriate to proposal; narrative style
- Include the source of funding for each publication listed; clarify your role if you are not PI/corresponding author
- HIGHLIGHT your HQP authors – NSERC requests **bolding**
- Reviewers known to check funding acknowledgements on publications listed
- Where appropriate, state value/impact of contributions explicitly; if an award is prestigious, say so
<table>
<thead>
<tr>
<th>Field</th>
<th>Average Award Amount</th>
<th>Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1501 – Genes, Cells &amp; Molecules</td>
<td>$36,450</td>
<td>53.7%</td>
</tr>
<tr>
<td>1502 – Biological Systems &amp; Functions</td>
<td>$31,727</td>
<td>46.3%</td>
</tr>
<tr>
<td>1503 – Evolution &amp; Ecology</td>
<td>$30,472</td>
<td>45.3%</td>
</tr>
<tr>
<td>1504 – Chemistry</td>
<td>$40,331</td>
<td>52.0%</td>
</tr>
<tr>
<td>1505 – Physics</td>
<td>$33,145</td>
<td>64.3%</td>
</tr>
<tr>
<td>1508 – Mathematics &amp; Statistics</td>
<td>$14,433</td>
<td>61.7%</td>
</tr>
<tr>
<td>1510 – Electrical &amp; Computer Engineering</td>
<td>$29,265</td>
<td>53.7%</td>
</tr>
<tr>
<td>1511 – Materials &amp; Chemical Engineering</td>
<td>$26,936</td>
<td>55.0%</td>
</tr>
</tbody>
</table>

Time for some Q&A

Thanks for attending!