NSERC Discovery Grant Writing Session
The Basics of a Discovery Grant

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

Room D112A, Dentistry Bldg (Alpha Omega Boardroom)
17 September 2014, 1:30 – 3:30 p.m.
NSERC Discovery Grant Writing Session
The Basics of a Discovery Grant

Presenters: Dr David Lobb, Soil Science
Ms Andrea Craig, Research Grants Officer (NSERC)

Room E3-262 (Senate Chamber)
18 September 2014, 9:30 – 11:30 a.m.
Finding Research Services

Start here!

Then go here
Eligibility

- Be clear about the eligibility of both of these before you begin
“The Discovery Grants Program supports ongoing programs of research (with long-term goals) rather than a single short-term project or collection of projects.”
Individual Vs. Team/Group

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

**Discovery – Team/Group**
- 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
The NSERC On-Line system platform for submitting Discovery Grant applications was eliminated in favour of the NSERC Portal.

NSERC “Form 100” (Personal Data Form) is no longer used for DG application, and is replaced with the NSERC Canadian Common CV (CCV).

NSERC “Form 101” (Application Form) is no longer used for DG application – information is captured in the NSERC Portal.
2013-2014 Changes to the NSERC Discovery Grant Program (cont’d)

<table>
<thead>
<tr>
<th>Contributions to training of HQP (I.e. Past Training)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQP Plan (1 page; I.e. Future Training)</td>
</tr>
<tr>
<td>Most Significant Contributions to Research</td>
</tr>
<tr>
<td>Additional Info about contributions</td>
</tr>
<tr>
<td>References (2 page max)</td>
</tr>
</tbody>
</table>

- **Layman summary of proposal**
- **Budget – direct costs**
- **Budget – justification**
  (attachment)
- **Relationship to other funding (description & attachment)**
- **Proposal** (5 pg; additional text box for team proposal)
Evaluation Mechanics

How will my NSERC Discovery Grant proposal be evaluated?
Evaluation Mechanics

1. Evaluation Groups
2. Peer Review System
3. 3 Equally-Weighted criteria
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

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Early Career</th>
<th>Established</th>
<th>Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1501 – Genes, Cells &amp; Molecules</td>
<td>$37,527</td>
<td>$44,601</td>
<td>55/69%</td>
</tr>
<tr>
<td>1502 – Biological Systems &amp; Functions</td>
<td>$30,733</td>
<td>$37,767</td>
<td>59/84%</td>
</tr>
<tr>
<td>1503 – Evolution &amp; Ecology</td>
<td>$26,563</td>
<td>$37,592</td>
<td>52/79%</td>
</tr>
<tr>
<td>1504 – Chemistry</td>
<td>$34,273</td>
<td>$61,359</td>
<td>58/87%</td>
</tr>
<tr>
<td>1505 – Physics</td>
<td>$25,500</td>
<td>$44,747</td>
<td>67/94%</td>
</tr>
<tr>
<td>1506 – Geosciences</td>
<td>$27,750</td>
<td>$40,697</td>
<td>69/71%</td>
</tr>
<tr>
<td>1508 – Mathematics &amp; Statistics</td>
<td>$14,579</td>
<td>$18,354</td>
<td>61/86%</td>
</tr>
<tr>
<td>1510 – Electrical &amp; Computer Engineering</td>
<td>$25,000</td>
<td>$35,183</td>
<td>93/81%</td>
</tr>
</tbody>
</table>

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

“Peer review involves the assessment of the merit of applications by impartial experts in the specific field.”

“[The Conference Model’s] primary advantage lies in the increased flexibility it offers, allowing a rigorous assessment of proposals regardless of whether they are purely disciplinary or cross over several fields, or whether they are in established areas or newly emerging fields.”
## 2-Step Review Process

<table>
<thead>
<tr>
<th>Excellence of researcher</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>
</tr>
<tr>
<td>Contribution to training of HQP</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>
</tr>
</tbody>
</table>

### Funding “Bins”
- A (L, N, H)
- B (L, N, H)
- C (L, N, H)
- D (L, N, H)
- E
- N
- O
- P
3 Equally-Weighted Criteria

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

See DISCOVERY GRANTS MERIT INDICATORS
## Discovery Grants Merit Indicators

<table>
<thead>
<tr>
<th>Category</th>
<th>Very Strong</th>
<th>Strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific and/or community</td>
<td>The accomplishments presented in the application were deemed to be superior in 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>Original and innovative</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 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 is 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>Prior to training</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>
<tr>
<td>Likely to be of benefit</td>
<td>Proposed 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 is 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 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 is 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>
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A rating in any of the three categories of ‘insufficient’ will result in an unsuccessful application.
Proposal Composition

Answering the call
Proposal Composition

Excellence of the Researcher

Merit of the Proposal

Training of HQP

Most Significant Contributions to Research

Additional Info about contributions

Contributions to training of HQP (I.e. Past Training)

HQP Plan (1 page; I.e. Future Training)

Relationship to other funding

Layman summary of proposal

Proposal

Budget – direct costs

Budget – justification (attachment)
You must *justify* the cost of what you are requesting – each budget item

- 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** – use fully, but discuss budget *only*
- Consider a Gantt chart if it helps to clarify HQP involvement

- Salaries / Stipends
- Equipment
- Materials
- Travel
- Dissemination
- Other
Must clearly describe any relationship with other funding sources, conceptual or budgetary.

2 places to discuss: 10,000 characters in application, “1 attachment” for uploads (max. 10Mb)

Consider HQP support details for your other grants held.

“Applicants who currently hold, or have applied for, research support from the Canadian Institutes of Health Research (CIHR) or the Social Sciences and Humanities Research Council of Canada (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.
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/impact**

Write for an expert-non-expert

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5 pages
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
Most Significant Contributions to Research

Contributions made over the last 6 years

Should be appropriate to proposal

Narrative style

Discuss the importance of the contribution to your target community (advancements, influence...)

For collaborative contributions, elaborate on your role

Focus on the impact your contribution made vs. summarized findings
2,500 ch.

Additional Information on Contributions

Explain things that deserve explanation, highlighting, or attention

- Nature of collaborations with others; your role in joint publications
- Rationale or practice for order of authors; students in the list of authors
- Venue selection rationale; target audiences
- Impact or potential of patents & tech. transfer
- Nature of industrially-relevant R&D
- Significance of technical reports

...otherwise they won’t know
Highly Qualified Personnel

Various places to herald your HQP throughout your proposal:

- Budget justification
- Relationship to other support (if appropriate)
- Proposal body
- Each training plan

- NSERC highly values training of all types of HQP; MSc & PhD the most (unwritten)
- Ensure sufficient representation; sprinkle details throughout proposal
- Be explicit: who, doing what
- What do you offer to HQP currently?
- What can you offer to HQP if funded?
- Consent form to use HQP personal info must be obtained; an email from the student giving permission is also acceptable.
HQP Training Plan (see handout)

This section should only contain information pertinent to training plans

- **Describe** the work designated for HQP
- **Discuss** the pertinence and involvement of trainees
- **Explain** the expected outcomes in terms of contribution to knowledge
  - Training **value** of the proposed work
  - Co-supervisory **details/plans**

WHAT training HQP will get

◊

HOW each student will receive this training

◊

WHO will deliver the training
Past Contributions to HQP Training

The training of HQP you’ve provided over the last 6 years (or, for those with research backgrounds in non-university setting, 10 years)

How have your contributions made a positive impact on your past trainees? (Discuss your role)

Have they published?
Have they won awards?
Do they hold a position that is worth highlighting?
Specialized methodologies/techniques?
Opportunities for interdisciplinary or industrial collaborations?
Proposal Summary

- explain the proposal in plain language
- using simple terms, briefly describe the nature of the work to be done
- why and to whom is the research important?
- what are the anticipated outcomes; how will your field and Canada benefit?

• I recommend you write this part last

* What * Why
* Who * How
* Outcomes * Impact
Peer Review Resources

- Discovery Grants Information Centre:
  [www.nserc-crsng.gc.ca/Professors-Professeurs/DGIC-CISD_eng.asp](http://www.nserc-crsng.gc.ca/Professors-Professeurs/DGIC-CISD_eng.asp)

- Discovery Grant Program Guidelines/“Program Literature”:

- Video: “Demystifying the review process ...”

- Complete 2014-2015 Peer Review Manual:
Final Thoughts

Clear
Consistent
Complete
Compelling
Time for some Q&A

Don’t hesitate to ask!