



Conseil de recherches en sciences  
naturelles et en génie du Canada

Canada



# Discovery Grants Program Info Session

Summer 2015



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

Canada



# Discovery Grant Program Overview



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

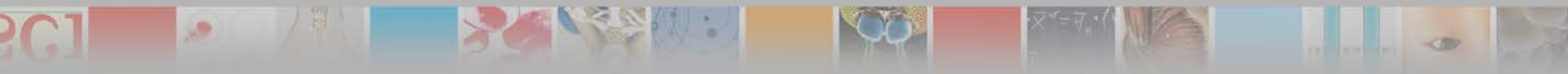
Canada



# Discovery Grants 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.





# Evaluation Process Overview

- Two-step process separates merit assessment from funding recommendations.
- Merit assessment uses six-point scale to evaluate:
  - Excellence of the researcher;
  - Merit of the proposal; and
  - Contributions to the training of HQP.
- Applications grouped in “bins” of comparable merit.
- Funding recommendations: similar overall ratings within an Evaluation Group (EG) receive comparable funding, with possible modulation related to the cost of research.

**Demystifying the review process for NSERC Discovery Grants**

[www.nserc-crsng.gc.ca/Professors-Professeurs/Videos-Videos/DG\\_eng.asp](http://www.nserc-crsng.gc.ca/Professors-Professeurs/Videos-Videos/DG_eng.asp)



# Two-Step Review Process

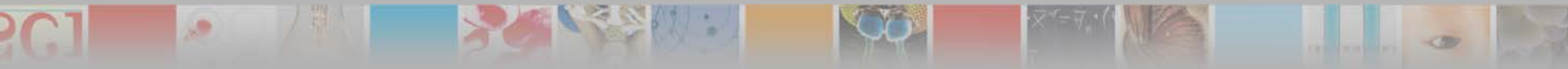
## Merit assessment

	Exceptional	Outstanding	Very Strong	Strong	Moderate	Insufficient
Excellence of researcher		✗				
Merit of proposal		✗				
Contribution to training of HQP		✗				

Cost of research	High	Normal	Low
------------------	------	--------	-----

## Funding recommendation

Funding "Bins"
A (L, N, H)
B (L, N, H)
C (L, N, H)
D (L, N, H)
⋮
⋮
N
O
P





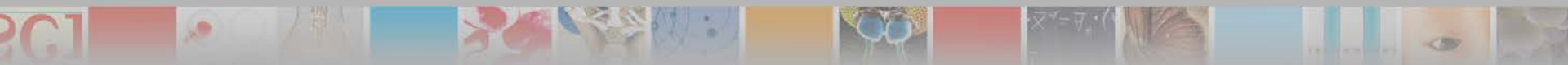
# Roles and Responsibilities in the EG

## Members

- Key participants in the review process (5 per application)
- Act as a reviewer within their EG and for other EGs (joint reviews)
- Input on policy issues related to the discipline

## Executive Committee

- Co-Chairs and Group Chair
- Ensures quality of process (consistency and equity)
- Confirms assignment of applications including joint reviews
- Provides recommendation to NSERC on options to balance the EG budget following review of applications
- Group Chair acts as EG representative on COGS
  - Acts as spokesperson on policies, scientific/ engineering issues





# The Conference Model

- Evaluation structure consists of 12 Egs.
- Similar to a scientific conference, several sessions occur in parallel streams.
- Members are assigned to sections/applications on the basis of the match between their expertise and application subject matter.
  - Members may participate in reviews in several EGs.
- Flexibility allows applications at the interface between EGs to be reviewed by a combination of members with pertinent expertise from relevant groups.





# Evaluation Groups

- Genes, Cells and Molecules (1501)
- Biological Systems and Functions (1502)
- Evolution and Ecology (1503)
- Chemistry (1504)
- Physics (1505)
- Geosciences (1506)
- Computer Science (1507)
- Mathematics and Statistics (1508)
- Civil, Industrial and Systems Engineering (1509)
- Electrical and Computer Engineering (1510)
- Materials and Chemical Engineering (1511)
- Mechanical Engineering (1512)

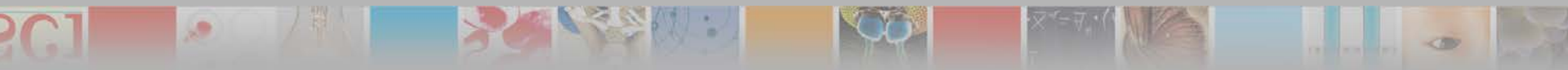
## List of Research Topics by EG



# Conference Model

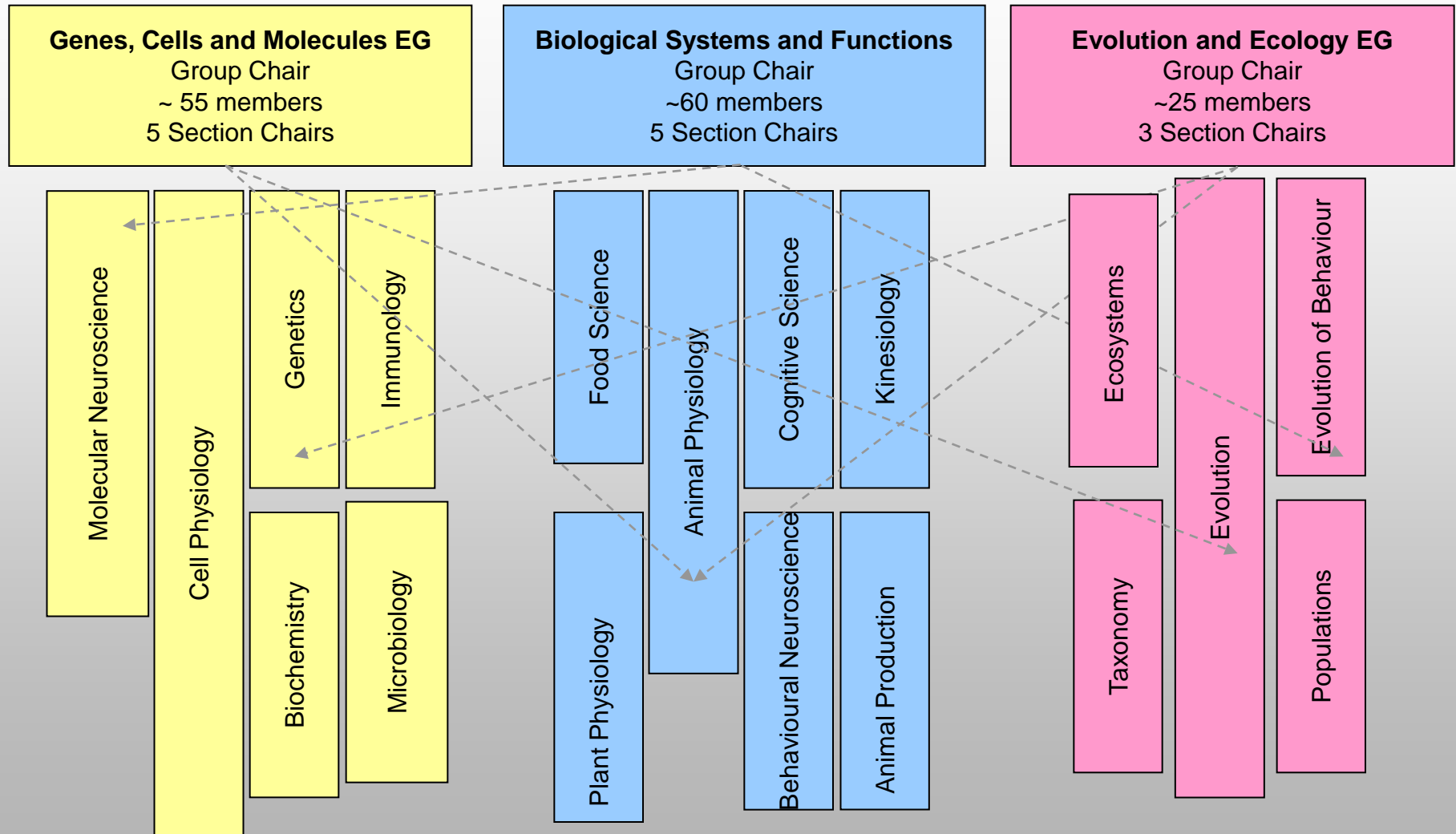
## How It Works

- Inside an Evaluation Group, applications are assessed within Sections.
- Reviewers are drawn from the Evaluation Group's membership as a function of the members' expertise and the need to ensure balanced reviews.
- Members from different Evaluation Groups could participate in the review of any application, if required to ensure a comprehensive review. Referred to as **Joint Reviews**.
  - Primary Evaluation Group: leads the review (“home” of application).
  - Secondary Evaluation Group(s): provides expert reviewer(s).
  - Reviewer(s) from secondary Evaluation Group(s): among the five reviewers assessing the application (full assessment, participation in deliberations, and vote).





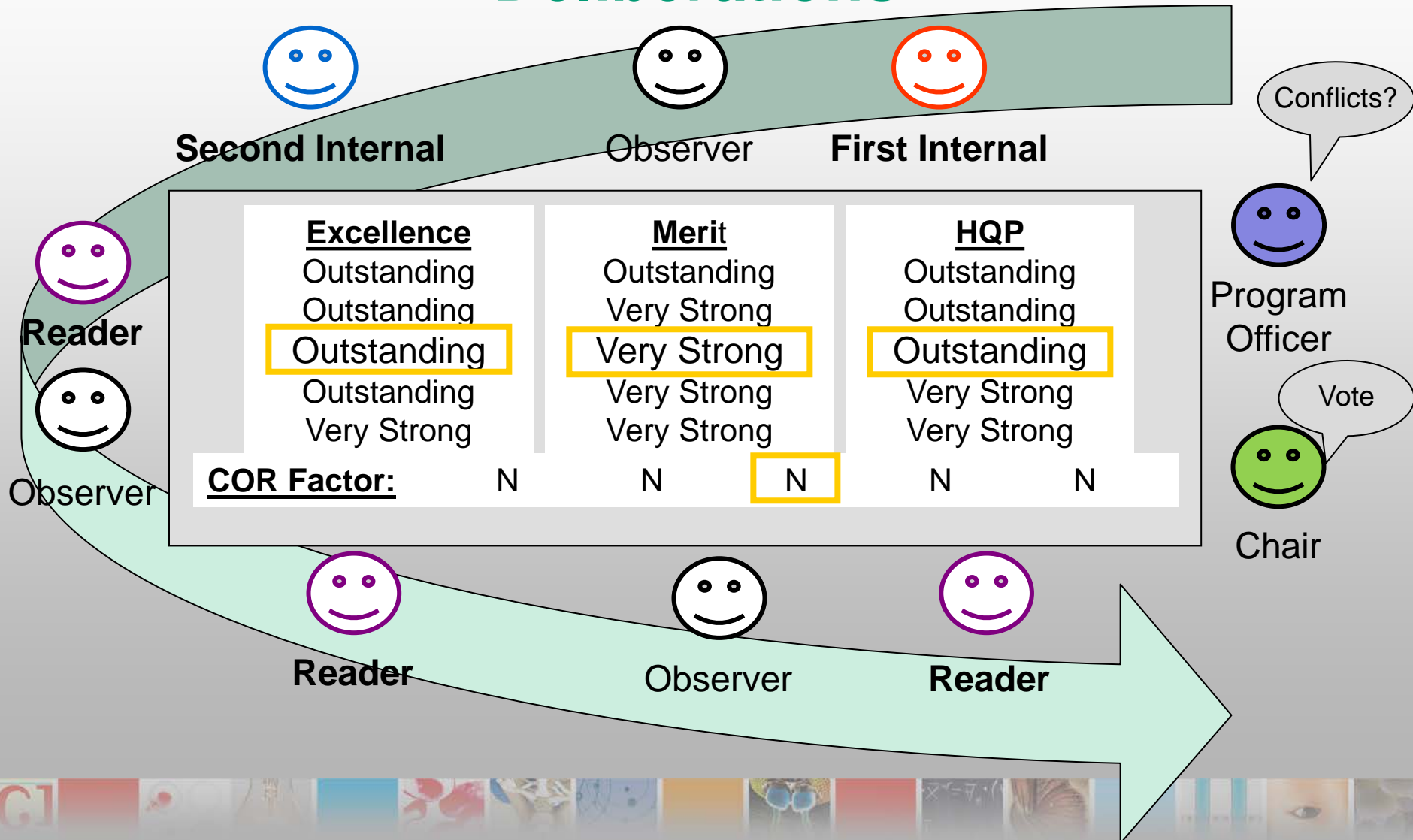
# How Does the Conference Model Work?





# Implementation of the Conference Model

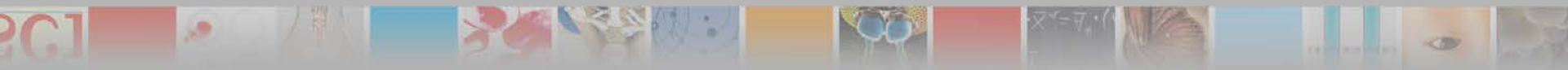
## Deliberations





# Joint Reviews

- Applications that cross boundaries of EGs (multidisciplinary, interdisciplinary) are reviewed by a combination of members with pertinent expertise from relevant groups.
- EG suggested by applicant usually the closest EG related to the research area (primary). Reviewers from other EGs are added as necessary based on expertise.
  - JRs can involve one or more visiting reviewers from one or more different EGs.
  - As for all other applications, normally 5 reviewers per applications with equal vote, regardless of number of EGs participating.
- For any application, decision to hold JR informed by:
  - Content of NOI
  - Consultation with EGs
  - Content of full application





# Determining a Joint Review

Applicant



Suggested EG



PO



Chair



Member

JR EG(s)



PO



Chair



Member



**Application**

Application Title (required) Aresnic and food safety

Language of the Application (required) ☒ English ☐ French

Suggested Evaluation Group (required) **1504 Chemistry**

**Proposed Research Topics**

Enter up to five Research Topics in order of relevance. The first Research Topic must be selected within the Suggested Evaluation Group. (required)

1. 1504 Chemistry / CH14 Atmospheric and Environmental Chemistry
2. 1506 Geosciences / GS12 Biogeosciences
3. 1504 Chemistry / CH06 Chemistry of biological systems
4. 1502 Biological Systems and Functions / LSB02 Food Science
5. 1504 Chemistry / CH15 Analytical chemistry

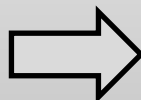
**Keywords**

List up to 10 keywords that best describe the proposal. (required)

Arsenic, Speciation, Bioaccessibility, Food safety, Heavy absorption spectroscopy, Risk assessment, Contaminate areas, Soil

Applicant Suggested EG

Possible JR EGs



**NOI**

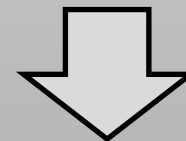
Suggested EG

Research Topics

Keywords

Proposal Summary

**Application**



**Decision on Joint Review**



# Applying to the Discovery Grants Program



Natural Sciences and Engineering  
Research Council of Canada

Conseil de recherches en sciences  
naturelles et en génie du Canada

Canada



# Life Cycle of a Discovery Grant Application

**August 1**

Submission of Notification of Intent to Apply with CCVs

**September to October**

Initial assignment to EG and contacting of external reviewers

**November 1**

Submission of grant application with CCVs

**Mid-November**

Applications sent out to external reviewers

**Early December**

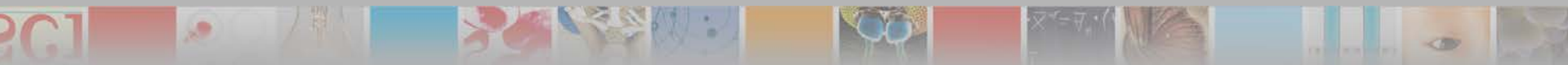
Evaluation Group members receive applications

**February**

Grants competition

**March to April**

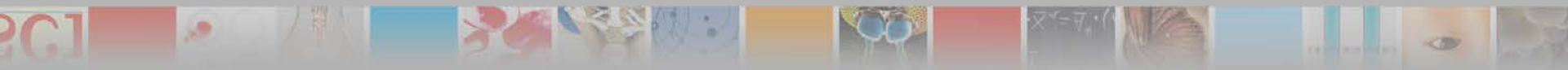
Announcement of results





# Notification of Intent to Apply for a Discovery Grant – When and What?

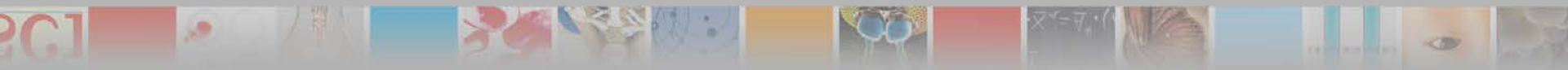
- Deadline: August 1<sup>st</sup>
  - Electronic submission only through the Research Portal
  - **Mandatory**: if not submitted by deadline, full application will not be accepted
- Includes:
  - Notification of Intent to Apply, listing up to five research topics in priority order
  - CCV





# Notification of Intent to Apply for a Discovery Grant – Why?

- Facilitates preliminary assignment:
  - to an Evaluation Group;
  - of internal reviewers; and
  - of external reviewers.
- First indication of need for joint review
  - Informed by choice of Research Topics, keywords and proposal summary
- First review of subject matter eligibility





# Notification of Intent to Apply for a Discovery Grant – Research Topics

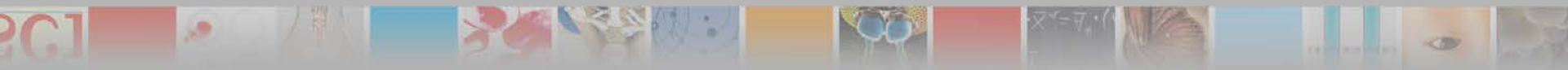
- Important to select appropriate research topics
  - First must be from the suggested EG
  - Up to 4 others from suggested EG or other EGs
- Play an important role in the determination of a joint review with other EGs





# Submitting a Discovery Grant Application

- Deadline November 1<sup>st</sup> through Research Portal
  - Check institutional internal deadline
- A full Discovery Grant submission includes:
  - Application for a Grant
  - NSERC Researcher CCV for the applicant
  - Samples of research contributions (reprints, pre-prints, thesis chapters, manuscripts, patents, technical reports, etc.)



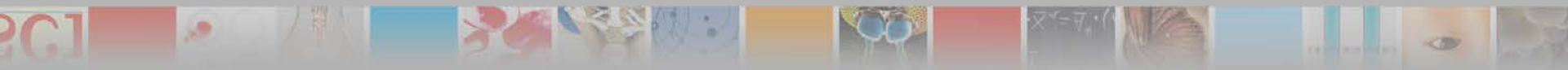






# Discovery Grants Evaluation Criteria

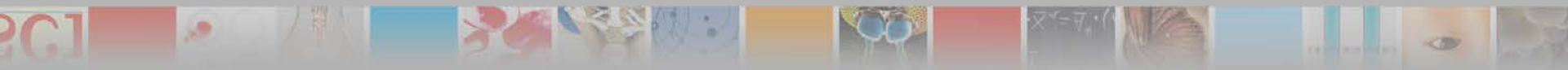
- Scientific or Engineering Excellence of the Researcher
- Merit of the Proposal
- Training of Highly Qualified Personnel (HQP)





# Excellence of Researcher

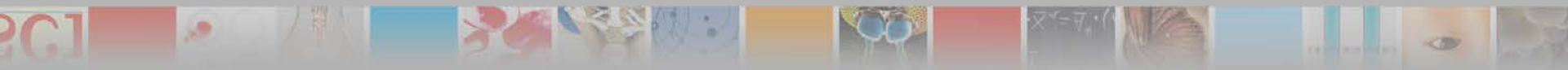
- Knowledge, expertise and experience.
- Contributions to, and impact on, proposed and other areas of research.
  - Focus on Natural Sciences and Engineering
- Assessment based on the quality and impact of contributions.
- Assessment based on achievements demonstrated over past six years.
  - “Most significant contributions” section may include earlier work **if** they still have a significant impact (e.g., exploitation of patents).





# Excellence of the Researcher: advice

- Describe up to five most significant research contributions (now in **application**) and highlight quality & impact
- List all types of research contributions (**from 2009-2015**)
- Explain your role in collaborative research activities
- List all sources of support
- Give other evidence of impact
- Explain delays in research activity (See Peer Review Manual)





# Excellence of Researcher

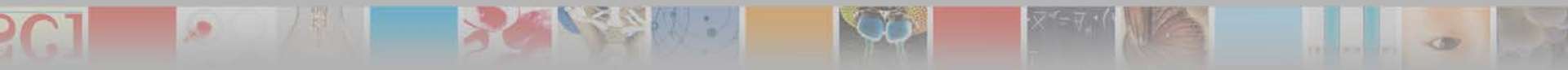
## Location of Information

### ■ In CCV

- “Contributions” section (publications, books, patents, etc.).
- “Recognitions” section (honors, prizes and awards, etc.).
- “Activities” section (international collaborations, event organization, editorial activities, assessment and review activities, knowledge and technology transfers, etc.).
- “Memberships” section (service on committees).

### ■ In Application

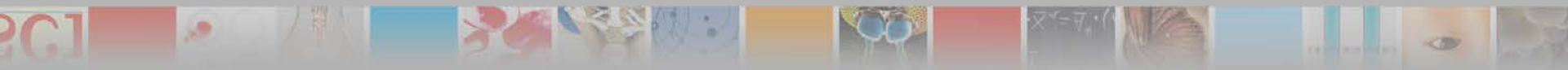
- “Most Significant Contributions” section (discusses most significant contributions).
- “Additional Information on Contributions” section (discusses choice of venues, order of authors, etc.).





# Merit of the Proposal

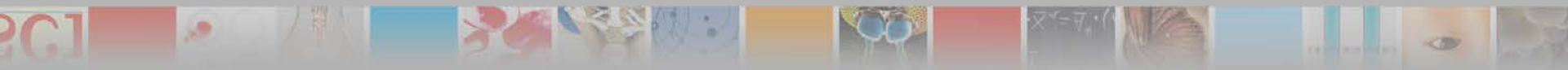
- Originality and innovation
- Significance and expected contributions to research; potential for impact
  - Must describe a **program** of research that will advance knowledge in the Natural Sciences and Engineering
- Clarity and scope of objectives
- Clarity and appropriateness of methodology
- Feasibility of program
- Appropriateness of budget
  - Relationship to other sources of funds must be clearly explained





# Merit of the Proposal: advice

- Write summary in plain language
- Keep in mind that two audiences read your application: expert and non-expert
- Can provide a progress report on related research
- Position the research within the field and state-of-the-art
- Clearly articulate short- and long-term objectives
- Provide a detailed methodology and realistic budget
- Consider comments/recommendations you may have received for previous applications



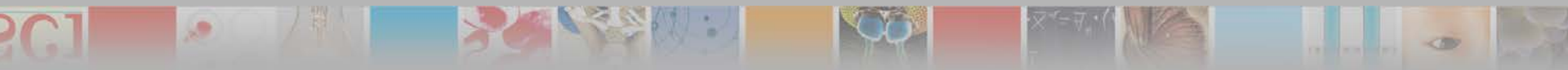


# **Merit of the Proposal :**

## **Advice on Overlap**

### **Discuss relationships to other research support**

- For each grant currently held or applied for, clearly provide: the main objective, a brief outline of the methodology, budget details, and details on the support of HQP
- Must include summary and budget pages for CIHR and SSHRC grants currently held or applied for
- Should include summary and budget information for other grants with budget overlap

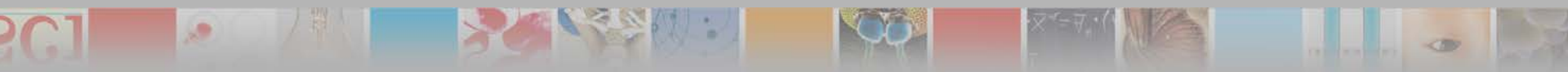




# Merit of the Proposal

## Conceptual Overlap

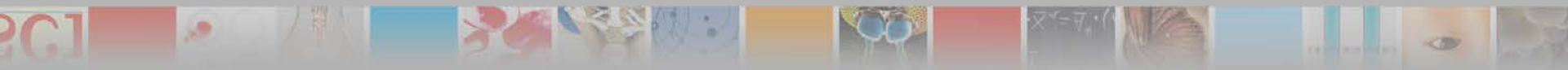
- Conceptual overlap occurs when the ideas in the proposal are, or appear to be, the same ideas that are supported by other sources (applicant's other projects/programs).
- **Complementary** parts of an applicant's research program can be supported by different sources.
- The onus is on the applicant to differentiate between the research program covered by the Discovery Grants proposal and other research programs/projects supported by other sources.
- Funds requested from Discovery Grants must support a **program** of research in the Natural Sciences and Engineering.
- It is **not sufficient** to simply state that there is no overlap





# Advice from EG members

- Do...
  - Be original and creative, but also show you have the expertise to carry out the program
  - Have long term vision and short term plan
  - Integrate HQP into the proposal
- Don't...
  - Propose an unfeasible number of objectives
  - Propose a project or a series of disconnected projects
  - Use a lot of jargon and acronyms
  - Be vague when describing methodology
  - Only reference your own publications

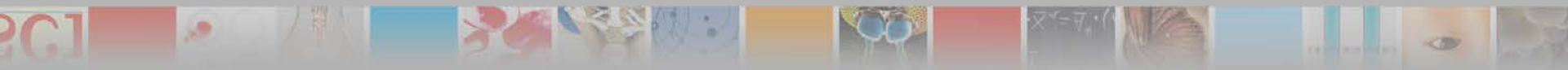




# Merit of the Proposal

## Location of Information

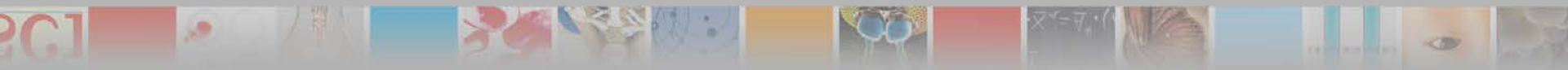
- In **Application**
  - Proposal (dedicated 5-page section).
  - List of References (dedicated 2-page section).
  - Budget Justification (dedicated 2-page section).
  - Relationship to Other Sources of Support Explanation (dedicated 2-page section).
- In **CCV**
  - “Research Funding History” section to assess possible conceptual or budgetary overlaps.
- Standalone **attachment** (when applicable)
  - Relationship to Other Sources of Support
  - Attachments (Summary and budget section of applications to other agencies).





# Contributions to the Training of HQP

- **Quality, extent and impact** of past contributions during the last six years **(2009-2015)**
- Appropriateness and quality of proposed training plan in the Natural Sciences and Engineering.
  - Assessment based on appropriateness of plan to train particular trainees; Is the proposed level and mix of trainees (e.g. undergraduate, Master's, or Ph.D. students; postdoctoral fellows) appropriate for the proposed program?
  - Capacity of the researcher to supervise the proposed number and type of HQP.
- Enhancement of training arising from a collaborative or interdisciplinary environment, where applicable.

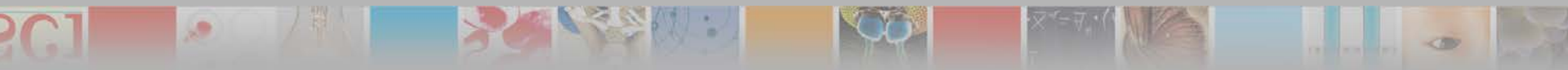




# Contributions to the Training of HQP: advice

Past Contributions to Training:

- Use an asterisk to identify students who are co-authors on the listed contributions
- Explain your role in any co-supervision
- Explain any delays that might have affected your ability to train HQP
- Describe nature of HQP studies
  - HQP ranges from undergraduate theses and summer projects to postdoctoral levels
- Do not select “Academic Advisor”

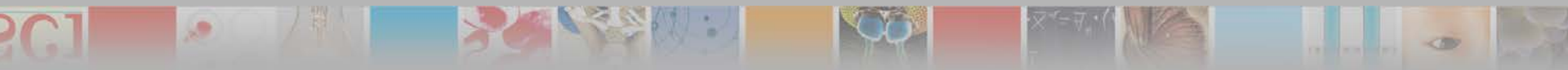




# Contributions to the Training of HQP: advice

## Training Plan

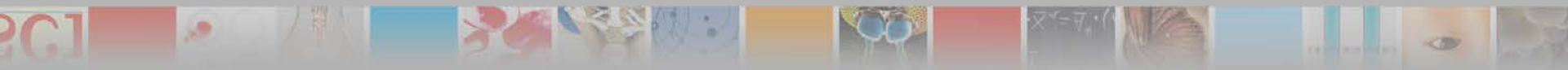
- Describe the nature of the training (e.g., length, specific projects) in which HQP will be involved, the HQP's contributions and pertinence to the research program proposed
  - The plan should **describe in detail** the activities in which HQP will participate, the skills they will acquire, the appropriateness of the activities based on HQP type (undergraduate, masters, etc) and impact of the training.
- Discuss the training philosophy and the expected outcomes
- Clearly define your role in any collaborative research and planned joint HQP training





# Advice from EG Members

- Do...
  - Describe your involvement and interaction with HQP
  - Describe the nature (PhD, master's, undergraduate), length of time (summer project vs. thesis) and type of training (course-related or thesis)
  - Fully describe the nature of co-supervision
  - Include present position for past HQP
  - Include all levels of HQP, including undergraduates
  - Make sure projects are appropriate for level of HQP proposed
- Don't...
  - Just list numbers
  - Have name withheld on all entries
  - Have a blanket statement, be specific





# Contributions to the Training of HQP

## Location of Information

### *Record of Training*

- In **CCV**
  - “Supervisory Activities”
  - “Contributions” section: Co-authors who are trained HQP are to be identified by an asterisk (\*).
- In **Application**
  - Section “Past Contributions to HQP Training” in application

### *Plan for Training*

- In **Application** - one dedicated page



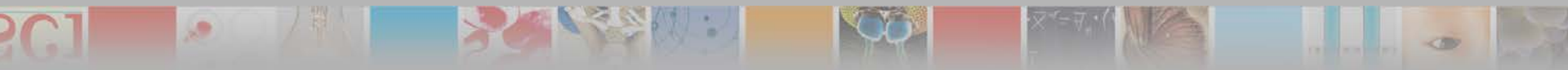


# Cost of Research

- Not used by all Evaluation Groups
- Relative cost of research of the proposed research program as compared to the norms for a given **discipline / field of research**.
  - High, Normal, Low.
  - It is expected that **most applications** will be deemed to have a **normal** Cost of Research relative to the discipline.
- A budget that is large simply because of the **program's size**, while the cost of the activities is **similar to the norm** in the discipline / field of research, does not translate into a High cost of research.

## Location

- In **Application**
  - Proposal (dedicated 5-page section).
  - Budget Justification (dedicated 2-page section).





# Merit Indicators for Discovery Grant Applications

## 6.13. DISCOVERY GRANTS MERIT INDICATORS<sup>1</sup>

	Exceptional	Outstanding	Very Strong	Strong	Moderate	Insufficient
Excellence of the Researcher	Acknowledged as a <b>leader</b> who has continued to make, over the last six years, <b>influential accomplishments</b> at the highest level of quality, impact and/or importance to a <b>broad community</b> .	The accomplishments presented in the application were deemed to be <b>far superior</b> in quality, impact and/or importance to a <b>broad community</b> .	The accomplishments presented in the application were deemed to be of <b>superior</b> quality, impact and/or importance.	The accomplishments presented in the application were deemed to be <b>solid</b> in their quality, impact and/or importance.	The accomplishments presented in the application were deemed to be of <b>reasonable</b> quality, impact and/or importance.	The accomplishments presented in the application were deemed to be <b>below an acceptable level</b> of quality, impact and/or importance.
Merit of the Proposal	Proposed research program is clearly presented, is <b>extremely original and innovative</b> and is <b>likely to have impact</b> by leading to <b>groundbreaking advances</b> in the area and/or <b>leading to a technology or policy</b> that addresses socio-economic or environmental needs. <b>Long-term vision and short-term objectives are clearly defined</b> . The methodology is <b>clearly defined and appropriate</b> . The budget <b>clearly demonstrates</b> how the research activities to be supported are distinct from and complement those funded by other sources.	Proposed research program is clearly presented, is <b>highly original and innovative</b> and is <b>likely to have impact</b> by contributing to <b>groundbreaking advances</b> in the area, and/or <b>leading to a technology or policy</b> that addresses socio-economic or environmental needs. <b>Long-term goals are clearly defined and short-term objectives are well planned</b> . The methodology is <b>clearly described and appropriate</b> . The budget <b>clearly demonstrates</b> how the research activities to be supported are distinct from and complement those funded by other sources.	Proposed research program is clearly presented, is <b>original and innovative</b> and is <b>likely to have impact</b> by leading to <b>advancements</b> and/or addressing socio-economic or environmental needs. <b>Long-term goals are defined and short-term objectives are planned</b> . The methodology is <b>clearly described and appropriate</b> . The budget <b>demonstrates</b> how the research activities to be supported are distinct from and complement those funded by other sources.	Proposed research program is clearly presented, is <b>original and innovative</b> and is <b>likely to have impact</b> and/or address socio-economic or environmental needs. <b>Long-term goals and short-term objectives are clearly described</b> . The methodology is <b>described and appropriate</b> . The budget <b>demonstrates</b> how the research activities to be supported are distinct from and complement those funded by other sources.	Proposed research program is clearly presented, has <b>original and innovative aspects</b> and <b>may have impact</b> and/or address socio-economic or environmental needs. <b>Long-term and short-term objectives are described</b> . The methodology is <b>partially described and/or appropriate</b> . The budget <b>demonstrates</b> how the research activities to be supported are distinct from and complement those funded by other sources.	Proposed research program, as presented <b>lacks clarity</b> , and/or is of <b>limited originality and innovation</b> . Objectives are <b>not clearly described</b> and/or likely not attainable. Methodology is <b>not clearly described and/or appropriate</b> . The budget <b>does not clearly demonstrate</b> how the research activities to be supported are distinct from and complement those funded by other sources.
Training of HQP	Training record is <b>at the highest level</b> , with HQP contributing to <b>top quality research</b> . Most HQP move on to positions that require <b>highly desired skills</b> , obtained through training received. Research plans for trainees are <b>appropriate and clearly defined</b> . HQP success highly likely.	Training record is <b>far superior</b> to other applicants, with HQP contributing to <b>high-quality research</b> . Most HQP move on to positions that require <b>highly desired skills</b> , obtained through training received. Research plans for trainees are <b>appropriate and clearly defined</b> . HQP success highly likely.	Training record is <b>superior</b> to other applicants, with HQP contributing to <b>quality, original research</b> . Many HQP move on to appropriate positions that require <b>desired skills</b> , obtained through training received. Research plans for trainees are <b>appropriate and clearly described</b> . HQP success is likely.	Training record compares <b>favourably</b> with other applicants. HQP <b>generally</b> move on to positions that require <b>desired skills</b> , obtained through training received. Research plans for trainees are <b>appropriate and described</b> . HQP success is likely.	Training record is acceptable but may be modest relative to other applicants. <b>Some</b> HQP move on to programs or positions that require <b>desired skills</b> , obtained through training received. Plans for trainees are <b>described and should contribute to HQP success</b> .	Training record is <b>below an acceptable level</b> relative to other applicants. HQP do not, in general, move on to positions that require skills obtained through training received. Plans for trainees are <b>not appropriate or are not described</b> with enough information to predict likelihood of HQP success.

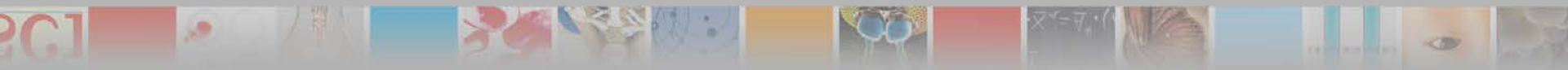
<sup>1</sup>The Discovery Grants Merit Indicators should be used in conjunction with the Peer Review Manual (Chapter 6) which outlines how reviewers arrive at a rating.

(See the Peer Review Manual)



# Reminders

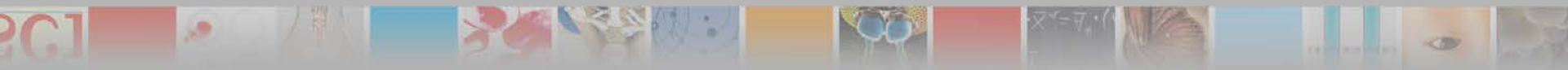
- Consult the Peer Review Manual
  - [www.nserc-crsng.gc.ca/NSERC-CRSNG/Reviewers-Examineurs/IntroPRManual-IntroManuelEP\\_eng.asp](http://www.nserc-crsng.gc.ca/NSERC-CRSNG/Reviewers-Examineurs/IntroPRManual-IntroManuelEP_eng.asp)
- Read all instructions carefully
- Ensure completeness of application
- Ask colleagues and/or your RGO for comments on your application
- Ask someone not directly in your field of research
- Read other successful proposals
- Plan ahead and check institution deadlines





# Application Process for Discovery Grants

- Instructions are available on NSERC's Web site.
  - [www.nserc-crsng.gc.ca/ResearchPortal-PortailDeRecherche/Instructions-Instructions/index\\_eng.asp](http://www.nserc-crsng.gc.ca/ResearchPortal-PortailDeRecherche/Instructions-Instructions/index_eng.asp)
- Applicants should carefully read the instructions on how to complete the NOI and NSERC CCV.
- Applicants are encouraged to complete their CCV as soon as possible as it can be time consuming to populate its fields the first time.





# Support Tools for the Discovery Grants Program

**Natural Sciences and Engineering  
Research Council of Canada**

**Conseil de recherches en sciences  
naturelles et en génie du Canada**





**Natural Sciences and Engineering Research Council of Canada**  
[www.nserc-crsng.gc.ca](http://www.nserc-crsng.gc.ca)



[Français](#)  
[canada.gc.ca](#)

[Home](#)

[Contact Us](#)

[Help](#)

[Search](#)

[Home](#) > [Professors](#) > Resource Videos

**Professors**

[Grants Programs Overview](#)

[Partnerships Programs Overview](#)

[Chairs and Faculty Support Overview](#)

[Research Tools and Instruments and Infrastructure Programs](#)

[Other Programs](#)

**Resource Videos**

[Contact Newsletter](#)

[Frequently Asked Questions](#)

[Eligibility](#)

[Application Deadlines and Notification of Decision](#)

[Back](#) [Print](#) [Bookmark](#) [Larger](#) [Smaller](#) [Share](#)

**Resource Videos**

**Submitting an NSERC individual Discovery Grant application through the Research Portal**  
This set of videos has been created to assist researchers to submit an NSERC individual Discovery Grants application through the Research Portal. Each video represents a step in the application process and complement the [Instructions](#).

**Putting Your Best Foot Forward: How to Prepare for a Successful NSERC Site Visit**  
NSERC's site visit process is a critical part of the peer review process for large grants. This video provides an overview of "best practices" NSERC-funded researchers, their industrial partners, and top university and college administrators use to prepare for an effective site visit.

**Tips on applying for an NSERC Discovery Grant**  
This video provides practical tips to help applicants write a better proposal for an NSERC Discovery Grant. It features interviews with members of the Evaluation Groups that review applications.



# Contacts

NSERC Staff	<a href="mailto:First Name.Last Name@nserc-crsng.gc.ca">First Name.Last Name@nserc-crsng.gc.ca</a>
Deadlines, acknowledgement of applications and results	Your university RGO
Your account, Grants in Aid of Research Statement of Account (Form 300)	Your university Business Officer (BO)
NSERC Web site	<a href="http://www.nserc-crsng.gc.ca">www.nserc-crsng.gc.ca</a>
Discovery Grants Program (including eligibility)	E-mail: <a href="mailto:resgrant@nserc-crsng.gc.ca">resgrant@nserc-crsng.gc.ca</a> Tel.: 613-995-5829
Use of Grant Funds	E-mail: <a href="mailto:awdad@nserc-crsng.gc.ca">awdad@nserc-crsng.gc.ca</a>
On-line Services Helpdesk	E-mail: <a href="mailto:webapp@nserc-crsng.gc.ca">webapp@nserc-crsng.gc.ca</a>

