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Les gens. La découverte. L'innovation.



Natural Sciences and Engineering
Research Council of Canada

Conseil de recherches en sciences
naturelles et en génie du Canada

Canada

Discovery Grants Program Overview



Natural Sciences and Engineering
Research Council of Canada

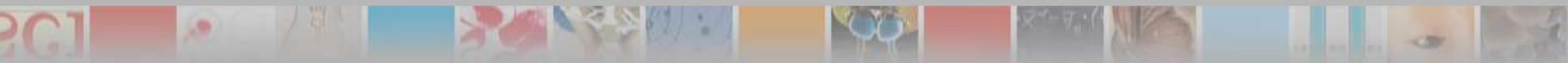
Conseil de recherches en sciences
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Discovery Grants Program

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.

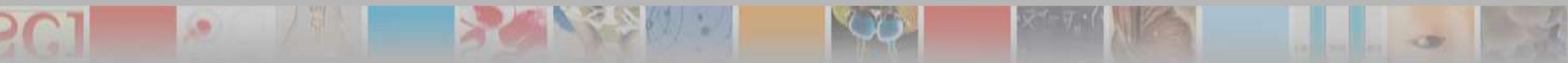


Evaluation Process Overview

- 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
 - 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

http://www.nserc-crsng.gc.ca/Professors-Professeurs/Videos-Videos/DG_eng.asp



Two-Step Review Process

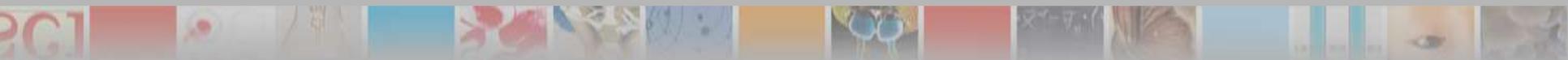
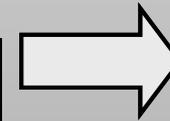
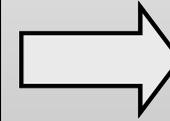
Merit assessment

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

Cost of research	High	Normal	Low
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Funding recommendation

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



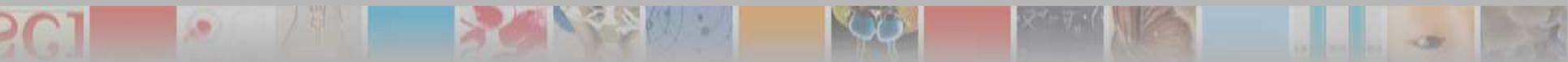
Roles and Responsibilities in the EG

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
- Balances the EG budget following review of applications
- Group Chair acts as EG representative on Committee on Discovery Research, CDR (formerly known as COGS)
 - Acts as spokesperson on policies, scientific/engineering issues



The Conference Model

- Evaluation structure consists of 12 Evaluation Groups.
- Similar to a scientific conference, several sessions occur in parallel streams.
- Members are assigned to various sections/applications on the basis of the match between their expertise and application subject matter.
 - Members may participate in reviews in more than one EG.
- Flexibility allows applications at the interface between Evaluation Groups 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

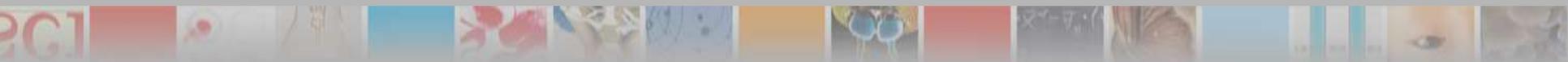
www.nserc-crsng.gc.ca/Professors-Professeurs/Grants-Subs/DGPList-PSDListe_eng.asp



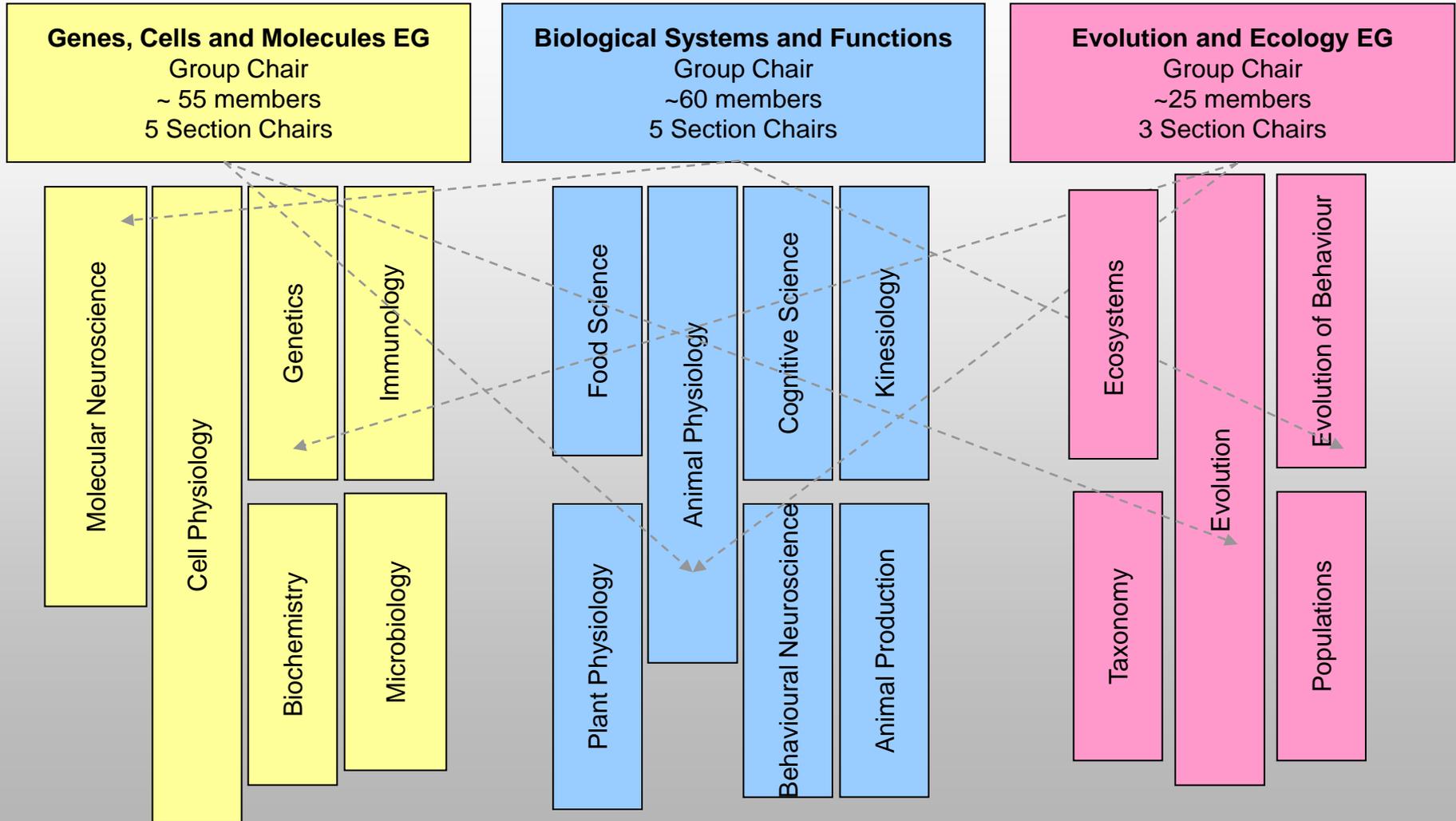
Conference Model

How It Works

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

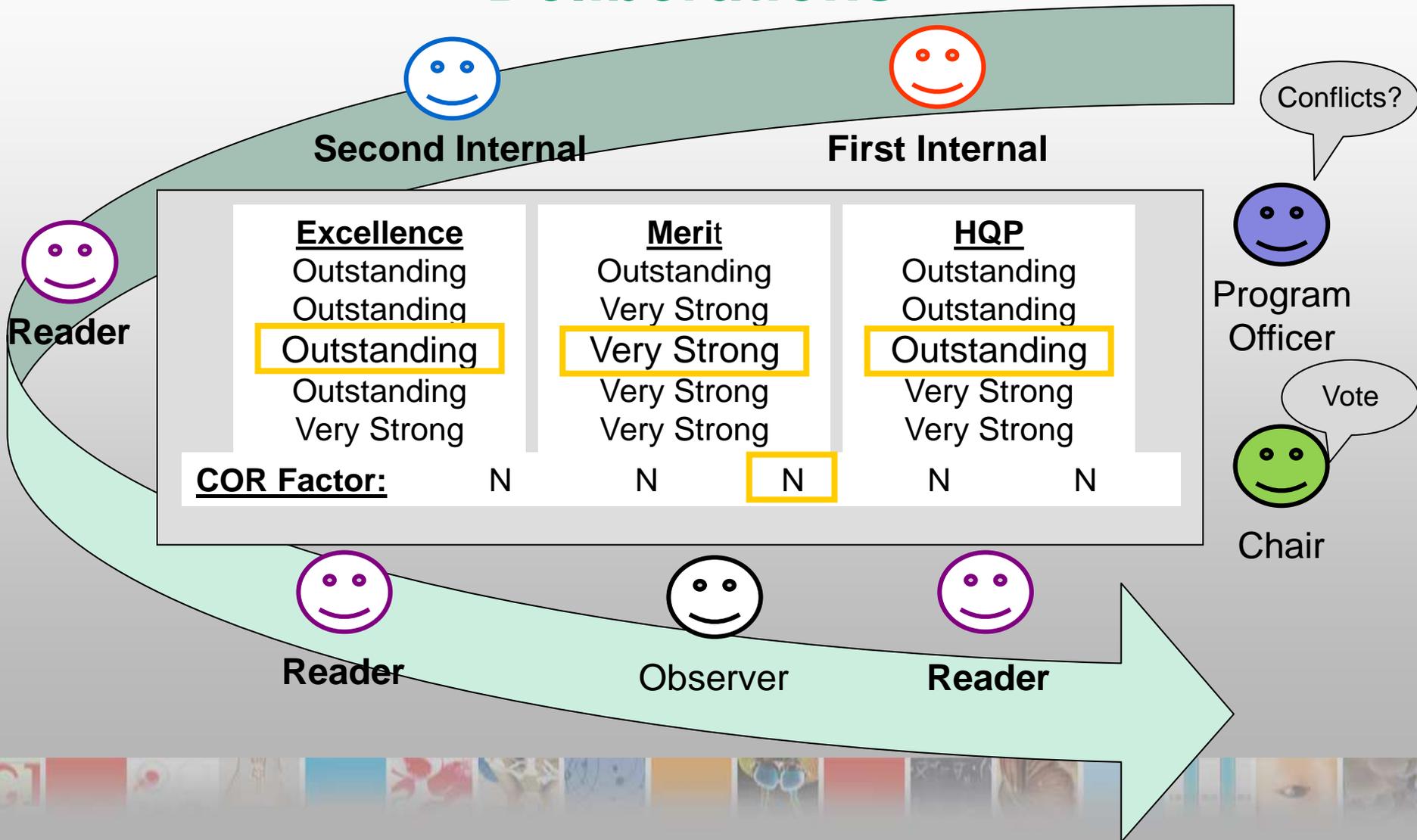


How Does the Conference Model Work?



Implementation of the Conference Model

Deliberations



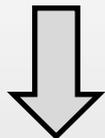
Joint Reviews

- 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.
- For any application, decision to hold joint review informed by:
 - Content of NOI
 - Consultation with EGs
 - Content of full application



Determining a Joint Review

Applicant



Suggested EG



PO



Chair Member



PO

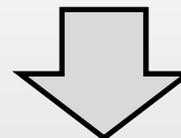


Chair



Member

JR EG(s)



Application

Application Title (required)

Language of the Application (required) English French

Suggested Evaluation Group (required)

Applicant Suggested EG

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)

-
-
-
-
-

Keywords

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

Arsenic, Speciation,

Possible JR EGs

NOI

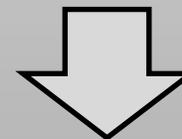
Suggested EG

Research Topics

Keywords

Proposal Summary

Application



Decision on Joint Review

Life Cycle of a Discovery Grant Application

August 1

Submission of Notification of Intent to Apply with CCV

September to October

Initial assignment to EG and contacting of external reviewers

November 1

Submission of grant application with CCV

Mid-November

Applications sent out to external reviewers

Early December

Evaluation Group members receive applications

February

Grants competition

March to April

Announcement of results



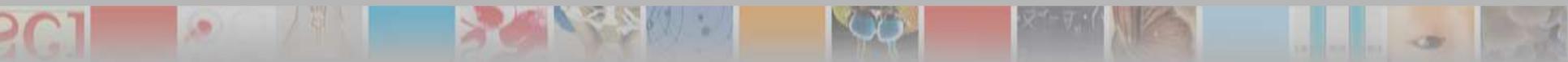
Notification of Intent to Apply for a Discovery Grant – When and What?

- Deadline: August 1st
 - 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



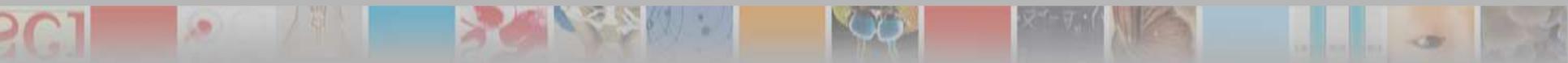
Notification of Intent to Apply for a Discovery Grant – Why?

- 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 1st 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.)

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 of resume may include earlier work **if** they still have a significant impact (e.g., exploitation of patents).



Excellence of Researcher Advice

- Describe up to five most significant research contributions (now in **application**) and highlight quality & impact
- List all types of research contributions (**from 2010-2016**)
- 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**
 - Recognitions (honors, prizes and awards, etc.)
 - Activities (international collaborations, event administration, editorial activities, organizational review, knowledge and technology transfers, etc.)
 - Memberships (service on committees)
 - Contributions (publications, books, patents, etc.)
- In **Application**
 - Most Significant Contributions (discusses most significant contributions)
 - Additional Information on Contributions (discusses choice of venues, order of authors, etc.)



Merit of the Proposal

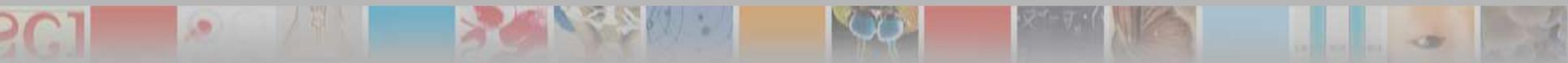
- Originality and innovation
- Significance and expected contributions to research; potential for impact
 - Must describe a **program** of research that will advance knowledge in the Natural Sciences and Engineering
- Clarity and scope of objectives
- Clarity and appropriateness of methodology
- Feasibility of program
- Extent to which the scope of the proposal addresses all relevant issues
- 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

Overlap

Discuss relationships to other research support

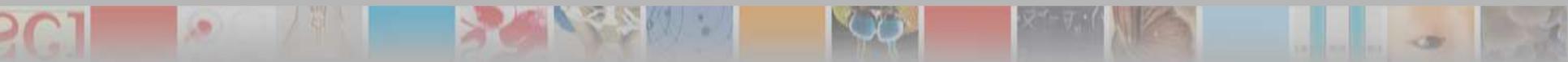
- For each grant currently held or applied for, clearly provide: the main objective, a brief outline of the methodology, budget details, and details on the support of HQP
- Must include summary and budget pages for CIHR and SSHRC grants currently held or applied for
- Should include summary and budget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



Merit of the Proposal

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

- Be original and creative, but also show you have the expertise to carry out the program
- Avoid referencing only your own publications
- Have long term vision and short term plan
- Propose a feasible number of objectives
- Propose a program instead of a single short-term project or collection of projects
- Provide clear, precise description of methodology
- Integrate HQP into the proposal

Contributions to the Training of HQP

- **Quality and impact** of past contributions to training during the last six years (2010-2016)
- Appropriateness and quality of proposed training 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 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
- Clearly define your role in any co-supervision
- 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
- 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

- 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



Contributions to the Training of HQP

Location of Information

Record of Training

- In **CCV**
 - Supervisory Activities
 - Publications: Co-authors who are trained HQP are to be identified by an asterisk (*)
- In **Application**
 - Past Contributions to HQP Training

Plan for Training

- In **Application**
 - HQP Training Plan

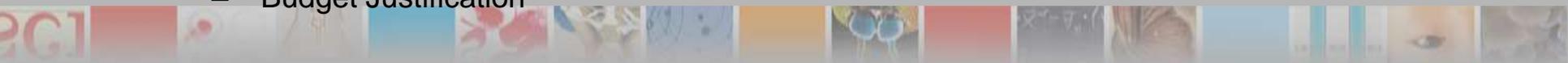


Cost of Research

- 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
 - Budget Justification



Merit Indicators for Discovery Grant Applications

6.13. DISCOVERY GRANTS MERIT INDICATORS¹

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

¹The 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)

We suggest...

- Ask colleagues and/or your RGO for comments on your application
- Read other successful proposals
- Consult the Peer Review Manual
 - www.nserc-crsng.gc.ca/NSERC-CRSNG/Reviewers-Examineurs/IntroPRManual-IntroManuelEP_eng.asp
- Plan ahead and check institution deadline
 - Give yourself time: CCV



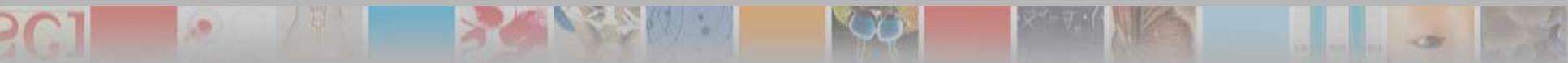
Application Process for Discovery Grants

- Instructions are available on NSERC's Web site.
 - http://www.nserc-crsng.gc.ca/ResearchPortal-PortailDeRecherche/Instructions-Instructions/index_eng.asp
- Applicants are encouraged to carefully read the instructions on how to complete the NSERC CCV, NOI and application (including page/character limits).
- 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

- Discovery Grants Information Centre
 - http://www.nserc-crsng.gc.ca/Professors-Professeurs/DGIC-CISD_eng.asp
 - Includes links for the **Peer Review Manuals** (DG and RTI), Merit Indicators, DAS
- Resource Videos
 - http://www.nserc-crsng.gc.ca/Professors-Professeurs/Videos-Videos/Index_eng.asp
- Webinars on How to apply (NOI and Full Application stages)



NSERC Contacts

NSERC Staff	First Name.Last Name@nserc-crsng.gc.ca
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	www.nserc-crsng.gc.ca
Discovery Grants Program (including eligibility)	E-mail: resgrant@nserc-crsng.gc.ca Tel.: 613-995-5829
Use of Grant Funds	E-mail: awdad@nserc-crsng.gc.ca
On-line Services Helpdesk	E-mail: webapp@nserc-crsng.gc.ca

