

People. Discovery. Innovation.
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 Grant Program and Application Process

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August 18, 2011



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Outline

- Discovery Grants program
- Applying to Discovery Grants
- Evaluation by Criteria: Tips
 - Excellence of the Researcher
 - Merit of the Proposal
 - Highly Qualified Personal
- Questions and Discussion



The Discovery Grants (DG) Program

- Excellence of Discovery Grants Program validated in two major independent reviews
- Strong support for existing program criteria to measure excellence
- Recommendations for enhancement:
 - New rating principles and measures to allow the peer review system to respond more dynamically to applicants' performance
 - New committee structure to give all applicants a higher quality, more focused review (as of 2010)



Eligibility to Apply

To be eligible, you **must**:

- hold, or have a firm offer of, an academic appointment at a Canadian institution (minimum three-year term position) as of **September 1, 2011**;
- be in a position that requires independent research and allows supervision of highly qualified personnel (HQP); and
- spend a minimum of six months per year at an eligible Canadian institution (if holding a position outside Canada).

Requirements can be found on [NSERC's Web site](#).

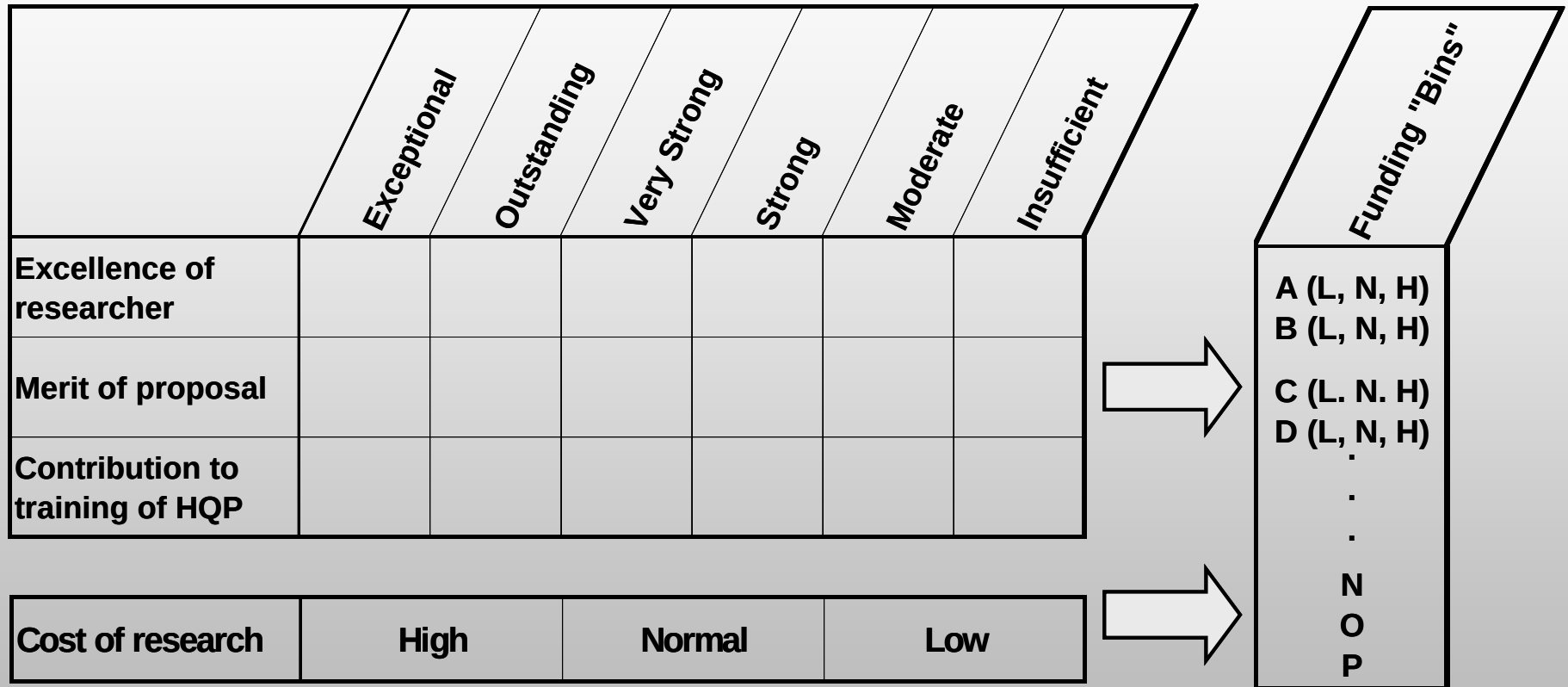


Eligibility of Subject Matter

- Discovery Grants support:
 - Research programs in the natural sciences and engineering (NSE)
 - Interdisciplinary research that is predominantly in NSE
Significance, impact, advancement of knowledge or practical application in NSE
- Eligibility Guidelines can be found on NSERC's Web site for:
 - [Health Research](#)
 - [Interdisciplinary Research](#)
- Consult NSERC or your RGO – applications deemed more appropriate for another agency will be rejected.



Evaluation: Two-Step Review Process



The Conference Model

- The 28 former Grant Selection Committees (GSCs) were replaced by 12 Evaluation Groups (EGs) in 2010.
- Similar to a scientific conference, several sessions occur in parallel streams.
- Members are assigned to various sections on the basis of the match between members' expertise and the 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.

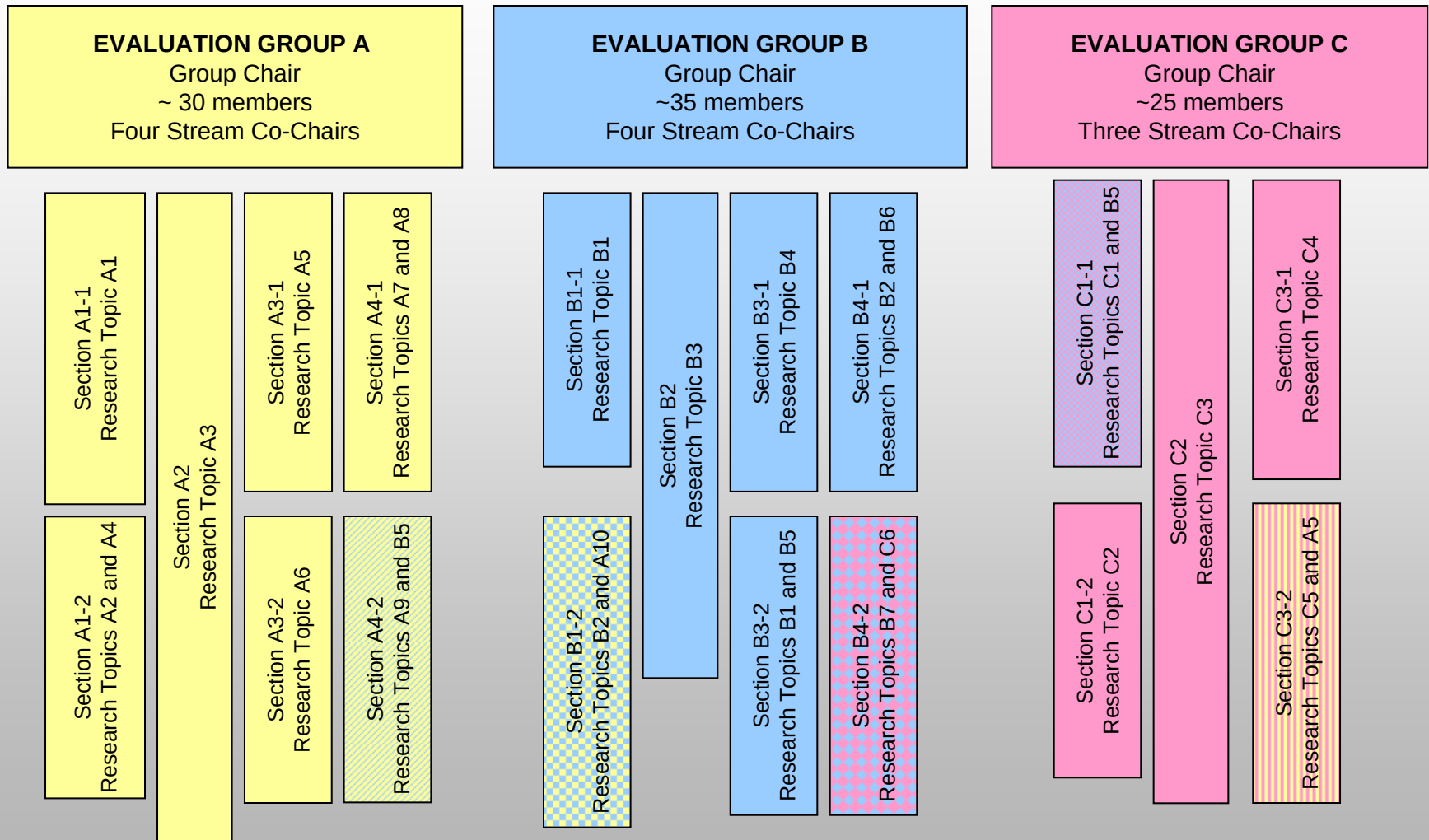


Evaluation Groups

- 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)



How Does the Conference Model Work?



Advantages of the Conference Model

- Provides a system with the flexibility to:
 - ensure that applications have the best possible review;
 - react to the emergence of new research areas; and
 - enable "traditional" disciplines or well-defined areas to remain together.
- Reviews benefit from a larger pool of expertise than previously existed in the former system.



Applying to the Discovery Grants Program

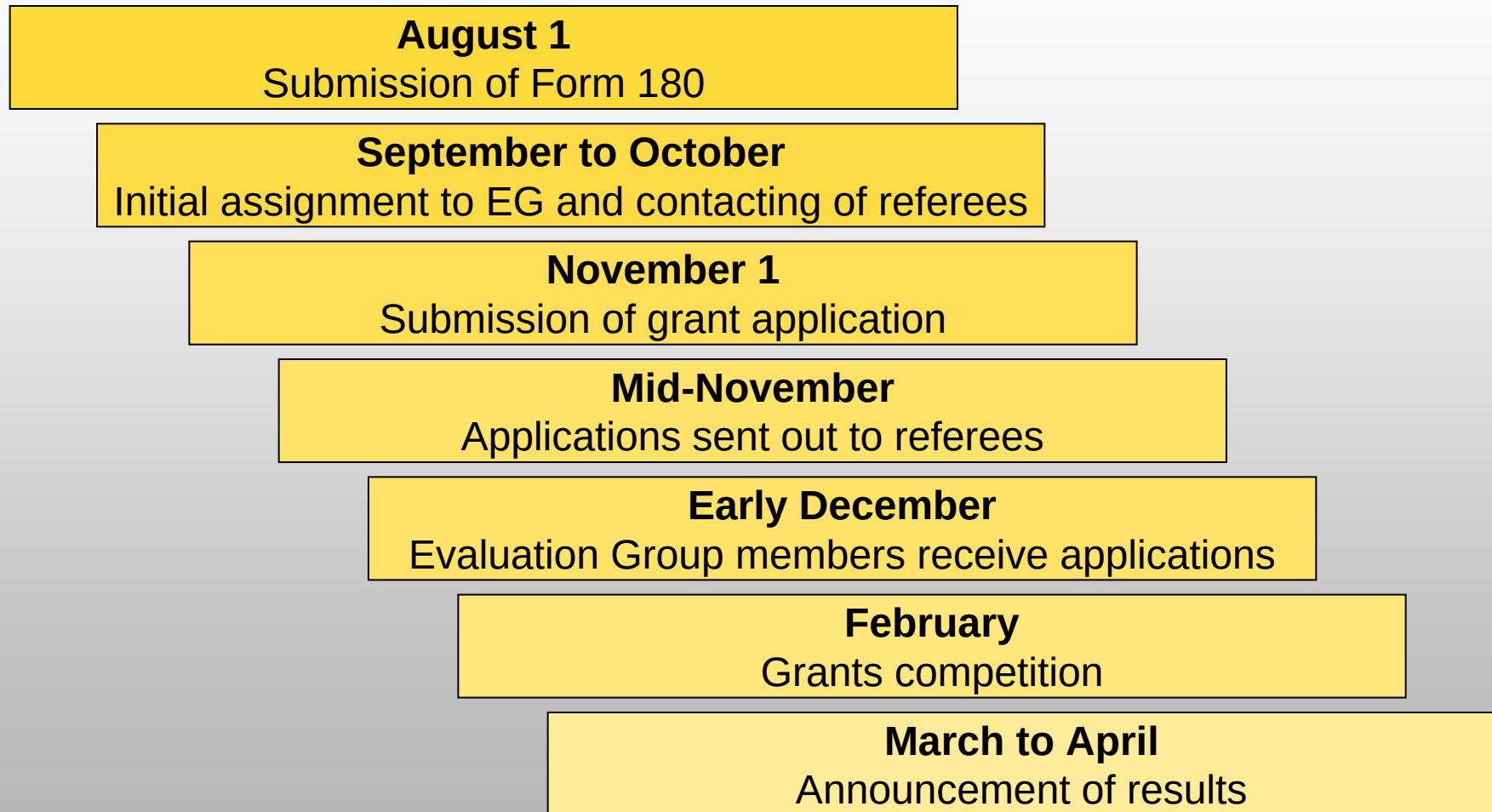


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Life Cycle of a Discovery Grant Application



Notification of Intent to Apply for a Discovery Grant (Form 180)

- Deadline: August 1
 - Electronic submission only
 - Can have adverse consequences if not submitted
- Includes:
 - Form 180, listing up to five Research Topics in priority order
 - List of Contributions **(2005-2011)**
 - List of Co-Applicants and their Contributions (for Team Grants)
- Facilitates preliminary assignment to an Evaluation Group and selection of external referees



A Complete Discovery Grant Application Includes:

1. Application for a Grant (Form 101) with supporting documentation*
2. Personal Data Form (Form 100) for the applicant and all co-applicants
3. Samples of Research Contributions (reprints, pre-prints, thesis chapters, manuscripts, patents, technical reports, etc.)
4. All required Appendices

*** The forms should be completed on-line and send electronically to NSERC with the samples of research contributions.**



Evaluation by Criteria



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Evaluation Criteria

- Scientific or engineering excellence of the researcher(s)
- Merit of the proposal
- Contribution to the training of highly qualified personnel (HQP)



Discovery Grant Indicators

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 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.

Cost of Research ²	High	Normal	Low
	Majority of justified expenses represent costs higher than the norm for the research area.	Majority of justified expenses are within the norm for the research area.	Majority of justified expenses are lower than the norm for the research area.

² Possible examples include: Cost of training of HQP; Equipment intensive research and/or high users fees; particularly expensive or frequent consumables; Travel (for collaborations, field work, access to facilities, conferences, ...)

Scientific or Engineering Excellence of the Researcher(s)

- Knowledge, expertise and experience
- Contributions to research in the NSE
- Importance of contributions
- Complementarity of expertise and synergy (for team applications)

	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.

Personal Data Form: Tips

- List all sources of support
- Describe up to five most significant research contributions
- List all other research contributions **(2005-2011)**
- Give other evidence of the impact of your work
- Clearly explain your role in any collaborative research



Tips from Evaluation Group Members

- **Do...**

- Include overviews or summaries of your most important contributions;
- Describe quality and impact of work (choice of journals and conferences);
- Describe contributions to NSE when not obvious
- Clearly describe your collaborations

- **Don't...**

- Include contributions past six years
- Don't assume anything! EG members will only evaluate the material that is in the application



Merit of the Proposal

- Originality and innovation
- Significance and expected contributions to research; potential for technological impact
- Clarity and scope of objectives
- Clarity and appropriateness of methodology
- Feasibility
- Extent to which the proposal addresses all relevant issues
- Appropriateness and justification of the budget
- Relationship to other sources of funding

	Exceptional	Outstanding	Very Strong	Strong	Moderate	Insufficient
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.

Grant Proposal: Tips

- Write summary in plain language
- Provide a progress report on related research
- Position the research within the field
- Articulate short- and long-term objectives
- Provide a detailed methodology
- Prepare realistic budget
- Consider recent evaluation comments/ recommendations in order to improve y our current application
- Ensure the proposal is well balanced



Merit of the Proposal – Tips: 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
 - ***NEW*** Must include summary and budget pages for CIHR and SSHRC grants currently held or applied for.
- Explain any potential conceptual overlap with other programs/projects
 - Complementary research is encouraged, but must be clearly explained
- Only saying “there is 0 overlap” is **not** sufficient



Tips from Evaluation Group Members

- **Do...**
 - Be original and creative, but also show you have the expertise to carry out the program
 - Highlight transformative research
 - Have long term goals (eg 5-10yrs)
 - Have specific, well focused and realistic short term objectives for this DG
 - Integrate HQP into the proposal
- **Don't...**
 - Propose an unfeasible number of objectives
 - Propose a project
 - Use a lot of jargon and acronyms
 - Be vague when describing methodology
 - Only reference your own publications



Contributions to Training HQP

- Quality and impact of contributions to training during the last six years
- Proposed plan for future training of HQP
 - Describe the nature of the training, e.g. length, outcome
 - Early Career Researchers should demonstrate the potential and soundness of their plan
- Enhancement of training arising from a collaborative or interdisciplinary environment (where applicable)
- Read the [Policy and Guidelines on the Assessment of Contributions to Research and Training](#)

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Training of Highly Qualified Personnel: Tips

Forms
100 & 101

- Describe contributions to HQP training **(2005-11)**
- Clearly define your role in joint HQP training
- Include as much information as possible
- List your student's names in bold font in the list of contributions
- Explain any delays in research activity or particular circumstances that might have affected productivity or contributions to HQP training
- Describe detailed plans for quality HQP training
- ***NEW*** 1 additional free form page for describing Training of HQP (forms available August 5th)



Tips from Evaluation Group 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
 - Make sure the HQP training numbers in the table on page 1 match the names and status of the students listed in the table on page 4
 - 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



Relative Cost of Research

- Determined by the reviewers as Low, Normal or High as compared to the norm for the research areas **represented in the applications considered by the Evaluation Group(s).**
- Factors considered include:
 - Salaries and benefits
 - Equipment and/or facilities
 - Materials and supplies
 - Travel
 - Dissemination



Final Advice

- Read all instructions carefully and follow presentation standards
- Use all the space allotted to you, with clear headings and good layout
- Respect guidelines for font size, margins and page limits
- Identify students' contributions in bold
- Consult the [Peer Review Manual](#) (Chapter 6)



Final Advice, cont.

- Remember that two audiences read your application – expert and non-expert
- Ask colleagues and/or your Research Grants Office for comments on your application
- Read other successful proposals
- Ensure completeness of application



New Resource Videos on NSERC Web Site

“Tips on applying for an NSERC Discovery Grant”

... practical tips from evaluation group members to help applicants write a better proposal

“Demystifying the review process for NSERC Discovery Grant”

...describes the various steps of the peer review process for each application

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



NSERC Contacts

Evaluation Group (EG) Program Officer	firstname.lastname@nserc-crsng.gc.ca
Deadlines, Acknowledgement of Applications, Results	Your university Research Grants Officer (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 (including eligibility)	resgrant@nserc-crsng.gc.ca 613-995-5829
Use of Grant Funds	casdfinance@nserc-crsng.gc.ca
On-line help	webapp@nserc-crsng.gc.ca

