NSERC Information Session for Dalhousie University

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Halifax

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Natural Sciences and Engineering Research Council of Canada

Conseil de recherches en sciences naturelles et en génie du Canada

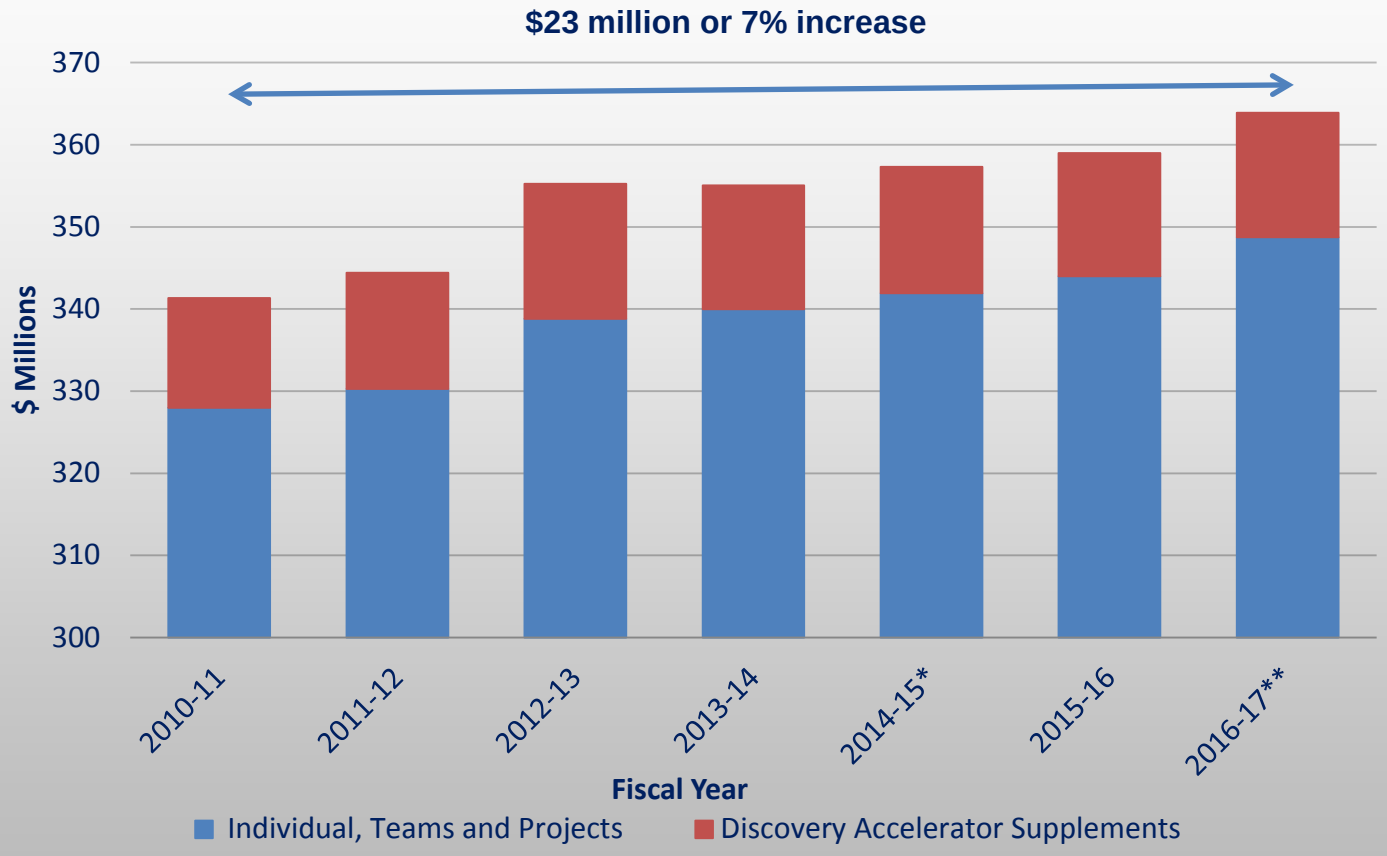
Canada

Presentation Overview

- Competition results – 2016
- NSERC news
- Discovery Grants Program
  - Program Overview
  - How to Prepare a DG application
  - Deadlines and Resources
- Questions

2016 Discovery Grant Results

NSERC Discovery Grants Funding (millions of dollars)



* Includes additional funding received resulting from Federal Budget 2014

** Projected expenditures for 2016-2017

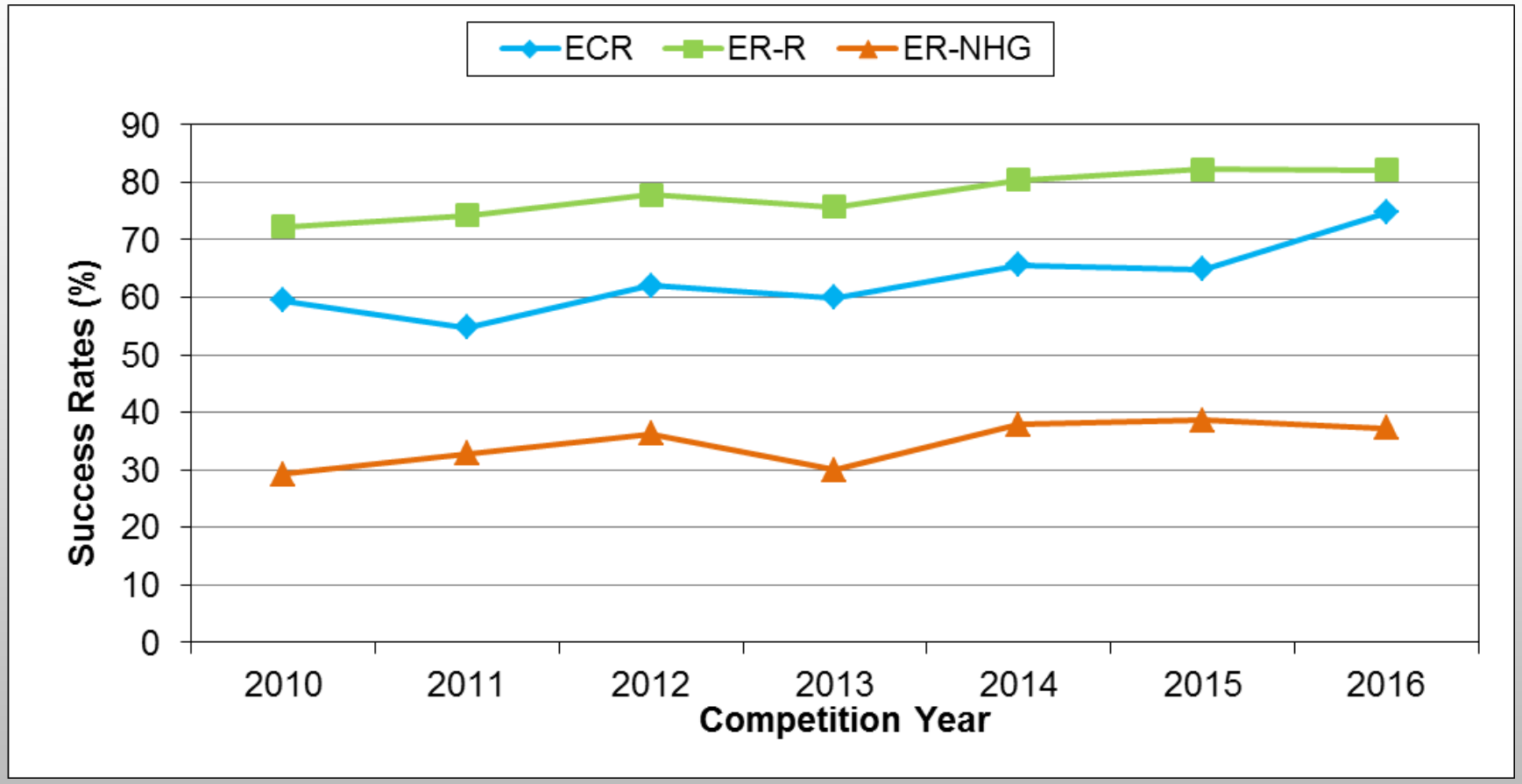
Discovery Grants Overall Results – 2016 Competition

Data[1]	Success Rate	Average Grant	Amount Awarded
Early Career Researchers (**ECR**)	75%	$26,741	$9.95M
Established Researchers (**ER**)			
Renewing their grant	82%	$36,471	$49.27M
Not Holding a Grant[2]	37%	$27,814	$10.9M

1. Includes Discovery and Subatomic Physics (Individual and Team) Grants, but excludes the Subatomic Physics Projects.

2. Includes returning established unfunded applicants and experienced researchers submitting a first application.

Success Rate[1] by Category of Applicant



[1] Only includes Discovery Grants Individual

Discovery Development Grants (DDG)
A 5 year Pilot

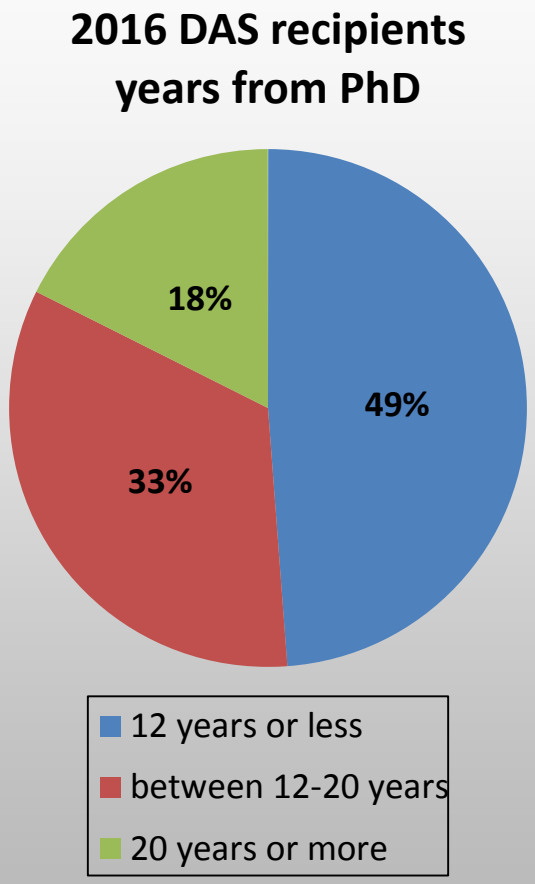
- Promote a diversified base of high-quality research in small universities
- Foster a stimulating environment for research training in small universities
- Facilitate recipients' access to additional funding from other sources
- Award valued at $10K /year for 2 years
- Was first launched in 2015 competition cycle

Competition Results

- 2015, 57 awards
- 2016, 42 awards

Discovery Accelerator Supplements 2016 Competition Results

Evaluation Group	Awards
Genes, Cells and Molecules (1501)	11
Biological Systems and Functions (1502)	11
Evolution and Ecology (1503)	9
Chemistry (1504)	8
Physics (1505)	7
Geosciences (1506)	10
Computer Science (1507)	18
Mathematics and Statistics (1508)	7
Civil, Industrial and Systems Engineering (1509)	13
Electrical and Computer Engineering (1510)	9
Materials and Chemical Engineering (1511)	9
Mechanical Engineering (1512)	12
Subatomic Physics (19)	1
Total	**125**



Research Tools and Instruments
2016 Competition Results

	2016	2015	2014
Budget	$26M	$25M	$19.5M
# Appl.	657	666	468
# Funded	215	218	176
Success Rate	33%	33%	38%
Funding Rate	33%	34%	38%

NSERC UPDATE

Extension option for ECR first renewal

- Early Career Researchers (ECRs) renewing for the first time will have the option of **extending their DG by one year**

- **Goal:** Allow early stage researchers additional time to better establish themselves and their research program before reapplying to the Discovery Grant program and competing with established researchers

Paid Parental Leave

- Primary caregivers who decline parental leave **may be eligible to receive a one-year grant extension with funds**
  - Pilot program, starting March 1, 2016
  - For grantees holding a DG or DDG

Subject matter eligibility

- **Subject matter eligibility guidelines:**
  - Tri-agency guidelines updated
  - NSERC Addendum with specific examples now available

HQP criterion

- FAQ for applicants and reviewers published
- Impact being evaluated through Evaluation Group member survey
- Next steps still to be determined

DG PROGRAM OVERVIEW

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

- Each application assessed by 5 reviewers in conference model setting, ensuring best possible review.

Evaluation Process Overview

- **Funding recommendations**: similar overall ratings within an Evaluation Group (EG) receive comparable funding, with possible modulation related to the cost of research.

- Applications grouped into “bins” of comparable merit.

Two-Step Review Process

Step 1 - Merit assessment

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

Outstanding – Very Strong – Very Strong

Step 2 – Funding Recommendation

Funding Bin	A	B	C	D	E	F	G	H	I	J	K	…	P
Value	…$	…$	…$	…$	…$	…$	…$	…$	…$	…$	…$	…$	…$

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

- Section 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

- 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 structure consists of 12 Evaluation Groups.

Evaluation Groups

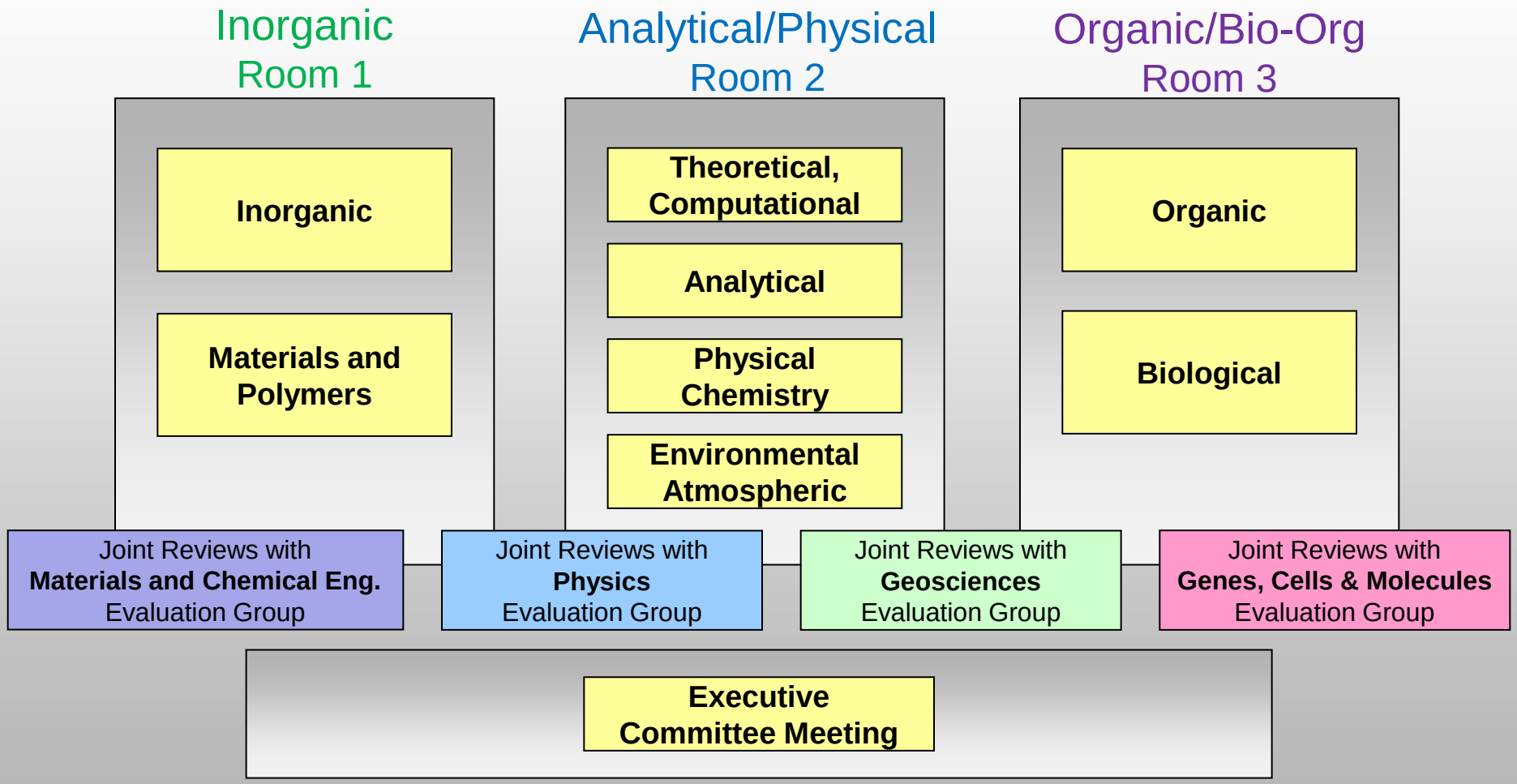
- Genes, Cells and Molecules (1501)
- Biological Systems and Functions (1502)
- Evolution and Ecology (1503)
- Chemistry (1504)
- Physics (1505)
- Geosciences (1506)
- Computer Science (1507)
- Mathematics and Statistics (1508)
- Civil, Industrial and Systems Engineering (1509)
- Electrical and Computer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

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.

How Does the Conference Model Work?

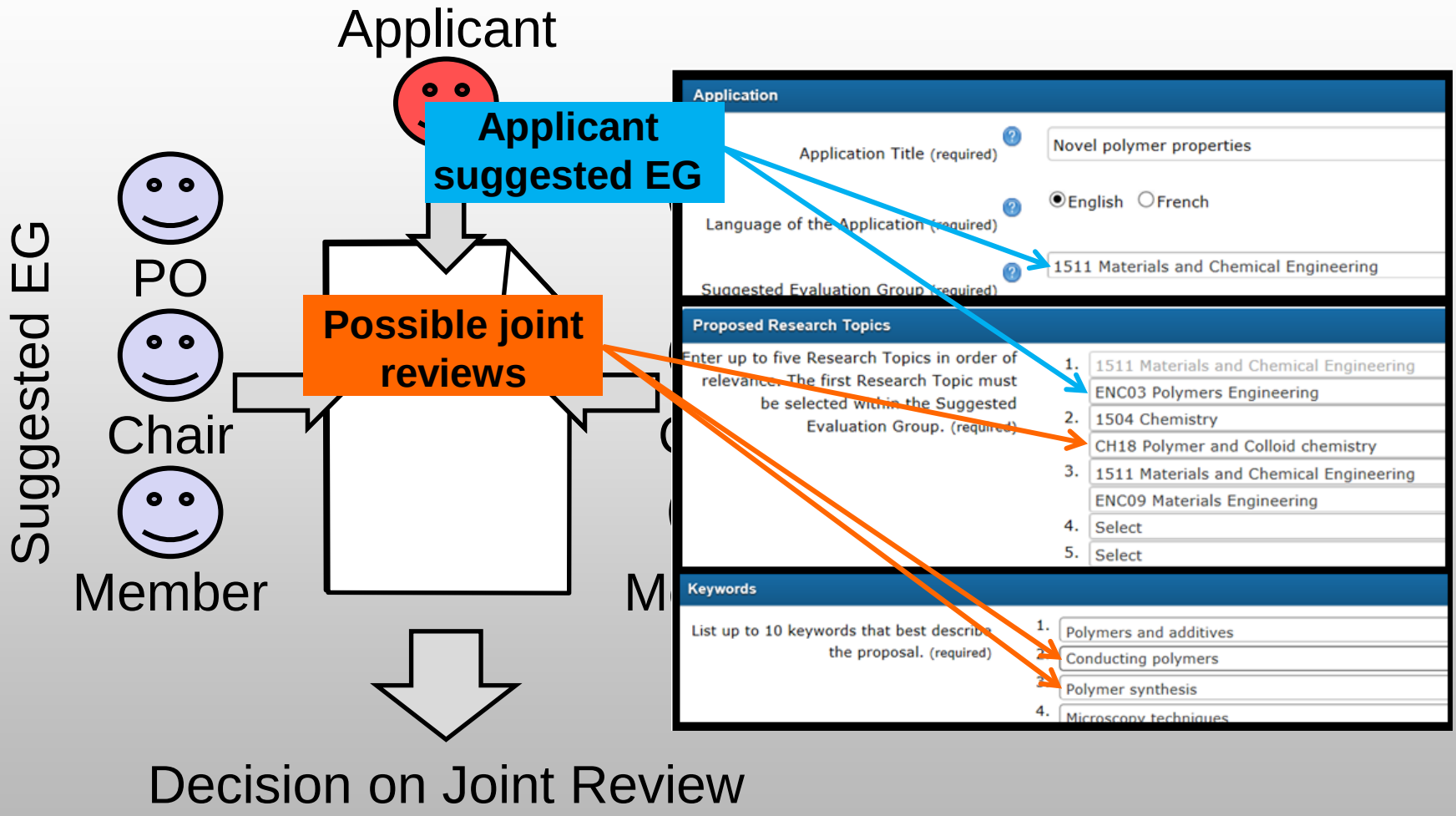


Schematic (simplified) representation of the Stream organization

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

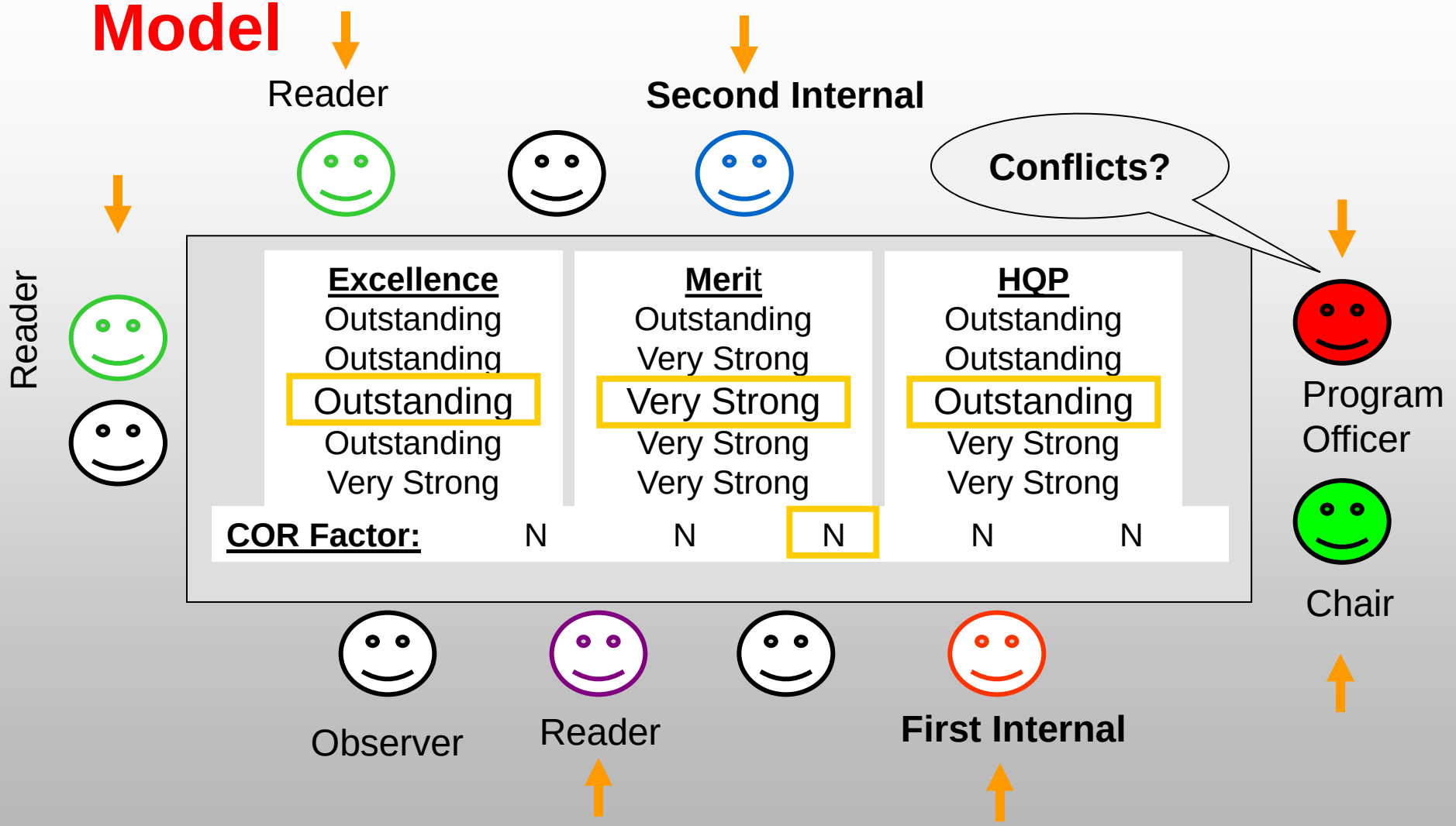


Conference Model in Action
Joint Review for 2016 Competition

Reviewing (Home) Evaluation Group	Participating (Visiting) Evaluation Group												
	GCM	BSF	EE	Chem	Phys	Geo	CS	MS	CISE	ECE	MCE	ME	Total
GCM		33	8	12	7	1	9	10	0	1	12	3	96
BSF	50		7	2	5	0	2	3	1	4	2	5	81
EE	16	17		1	0	21	1	8	2	0	0	0	66
Chem	6	0	0		2	4	0	0	1	1	4	1	19
Phys	1	1	0	1		2	4	3	0	4	4	0	20
Geo	0	4	9	3	4		2	2	13	0	2	2	41
CS	4	2	2	1	3	0		12	4	3	0	1	32
MS	5	4	5	0	6	1	9		3	2	2	3	40
CISE	0	3	3	3	2	24	6	4		8	11	20	84
ECE	0	5	0	2	9	0	13	1	3		8	9	50
MCE	3	2	1	13	2	3	0	2	8	4		7	45
ME	2	3	0	1	4	1	1	1	7	7	13		40
Total	87	74	35	39	44	57	47	46	42	34	58	51	614

Notes:
Applications involving members from more than one other EG (i.e. more than 2 EGs participating in the review) appear more than once.
Joint reviews involving more than one member from the same EG appear only once.
Reviews involving different streams of the same EG, without participation from other EGs, do not appear.

Implementation of the Conference Model



Applying to the Discovery Grants Program

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.)

Discovery Grants Indicators

(See Peer Review Manual)

6.13. DISCOVERY GRANTS MERIT INDICATORS[1]

	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**.

[1]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.

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, …)

How to prepare a Discovery Grant Application

Discovery Grants Evaluation Criteria

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

Excellence of Researcher

- 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

- 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 – 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
  - 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

Additional Recommendations

- 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

Merit of the Proposal

Location of Information

- In **Application**
  - Proposal
  - List of References
  - Budget Justification
  - Relationship to Other Sources of Support Explanation
  - Other Support Sources – Supporting Documents (if applicable)

- In **CCV**
  - Research Funding History (to assess possible conceptual or budgetary overlaps)

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

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

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

HQP - Additional Recommendations

- 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

We suggest…

- Ask colleagues and/or your RGO for comments on your application
- Read other successful proposals
- Consult the Peer Review Manual
- Plan ahead and check institution deadlines
  - Give yourself time: CCV

Application Process for Discovery Grants

- Notification of Intent to Apply (NOI) and full application must be submitted through NSERC's new Research Portal.
- Applicants must complete and submit NSERC's version of the Canadian Common CV (CCV) at the NOI and application stages.
- Notification of Intent to Apply (NOI) must be submitted to NSERC by the deadline date of August 1, 8:00 pm Eastern.
- If an NOI is not submitted by the deadline, it is not possible to submit a full application.

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

Over to you…

- Questions?
- Comments?