People. Discovery. Innovation.
Les gens. La découverte. L'innovation.

NSERC
CRSNG

Natural Sciences and Engineering
Research Council of Canada

Conseil de recherches en sciences
naturelles et en génie du Canada

Canada

NSERC Workshop
CANCAM 2015

June 1st , 2015
London, Ontario

Lise Désabrais, NSERC Program Officer, Mechanical Eng.
Dr. Gregory Kopp, Dept. of Civil & Environmental Eng.
Western University

Presentation Overview

- Discovery Grant and Research Tools and Instrument Competition results – 2015

- Discovery Grant Program
  - Overview
  - How to Apply?
  - Evaluation of DG applications

- Questions

NSERC
News and Updates

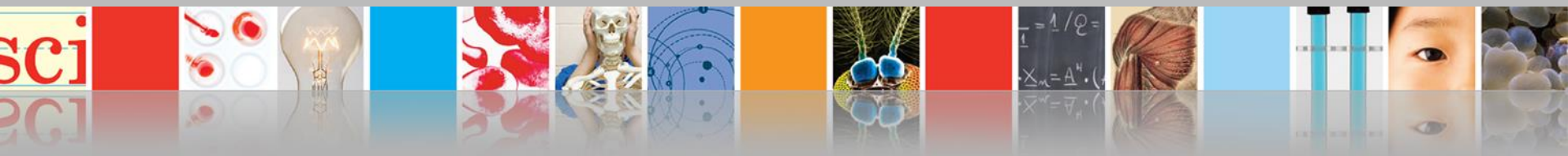
NSERC
CRSNG

- $1.1 billion dollars
- 30,500 post-secondary students and post-doctoral fellows
- 11,300 professors
- 3,000 Canadian companies

“Making Canada a country of discoverers and innovators for the benefit of all Canadians”

Budget 2015: The Highlights

- **In 2014, $15 million** per year to NSERC went to Discovery Grants, Post-Doctoral Fellowships and Research Tools and Instruments.
- **2015 Budget**:
  - $15 million per year to NSERC for collaborations between researchers and companies (starting 2016-17)
  - Industrial Postgraduate Scholarships Program will be wound down



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Discover /

We invest in scientific discovery and talent for the benefit of Canada – science and engineering at the frontier of knowledge.

Innovate /

We ensure businesses are the first to know – use discoveries to accelerate R&D.

Featured News

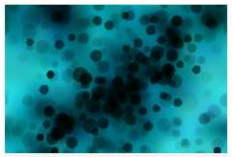
Governor general announces Canada's top natural sciences and engineering researchers for 2015

February 17, 2015

Celebrated research includes ground-breaking chemical theories, computers that think like humans, and new production of medical isotopes.

Latest News

+ See all news



Zooming in on cancer cells
April 2, 2015

New NSERC funding for arctic observing and research for sustainability
March 24, 2015

Minister Holder says Government will increase investment to create jobs in sciences, technology, engineering and mathematics
March 18, 2015

Minister Holder announces new Open Access Policy for research
February 27, 2015

Search for the next Vice-President of Research Partnerships
February 11, 2015

Government of Canada supports over 75 science and engineering research teams
February 10, 2015

NSERC announces increase in postdoctoral fellowships offers for 2015
February 4, 2015

Features

Celebrate research excellence
NSERC award winners shine

Strategic plan consultations
A Vision of NSERC in 2020

Dr. B. Mario Pinto
Connect with our President

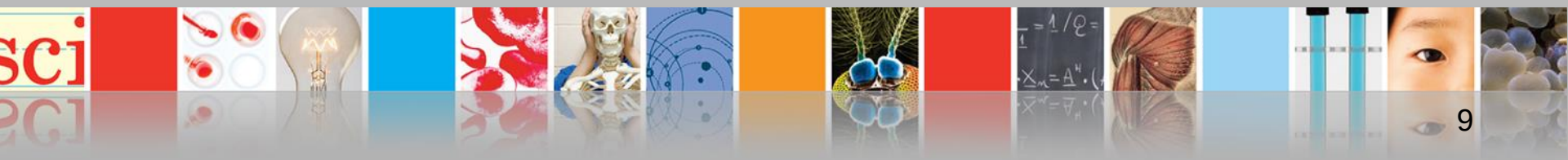
NSERC Dashboard
Where we invest and why

Discovery Grants Budget Allocation

- Preparing to launch a review of the budget allocation methodology
- **Goal**: ensure the program remains effective, accountable and that funds are used optimally
- Opportunity to introduce new factors to allocate funds among the 12 Evaluation Groups
- Discipline comparisons and allocations to be informed by quantitative indicators and expert judgment

Phase-out of Team Grants

- Starting with the 2016 competition, Team Grant applications no longer accepted through the Discovery Grants Program
- All new applications must be for individual Discovery Grants
- Existing Team Grants will continue until completion



Discovery Development Grants

- Promote a diversified base of high-quality research in small universities
- Foster a stimulating environment for research training in small universities
- $10K/year for 2 years

Paid Parental Leave

- Increased from 4 months to 6 months
- Starting April 1, 2015
- For graduate students and postdoctoral fellows
- Applies to scholarships and fellowships as well as well as those paid from supervisor grant

NSERC's Mandate

- …to promote and assist research in the natural sciences and engineering, other than the health sciences… (NSERC Act 1978)

- Clarification of NSERC guidelines
  - Updates to tri-agency document: "Selecting the Appropriate Federal Granting Agency"
  - Creation of NSERC-specific guidelines document
  - Staff validation of updated Subject Matter Eligibility tools

Open Access

Tri-Agency Open Access Policy on Publications

- Researchers must make articles freely available online within 12 months of publication
- Applies to all grants awarded May 1, 2015 and onward
- How to comply:
  - Deposit peer-reviewed manuscript in a repository; and/or
  - Submit manuscript to journal that offers open access within 12 months
- For more information: Tri-Agency Policy FAQs and Toolbox or contact: openaccess@nserc-crsng.gc.ca

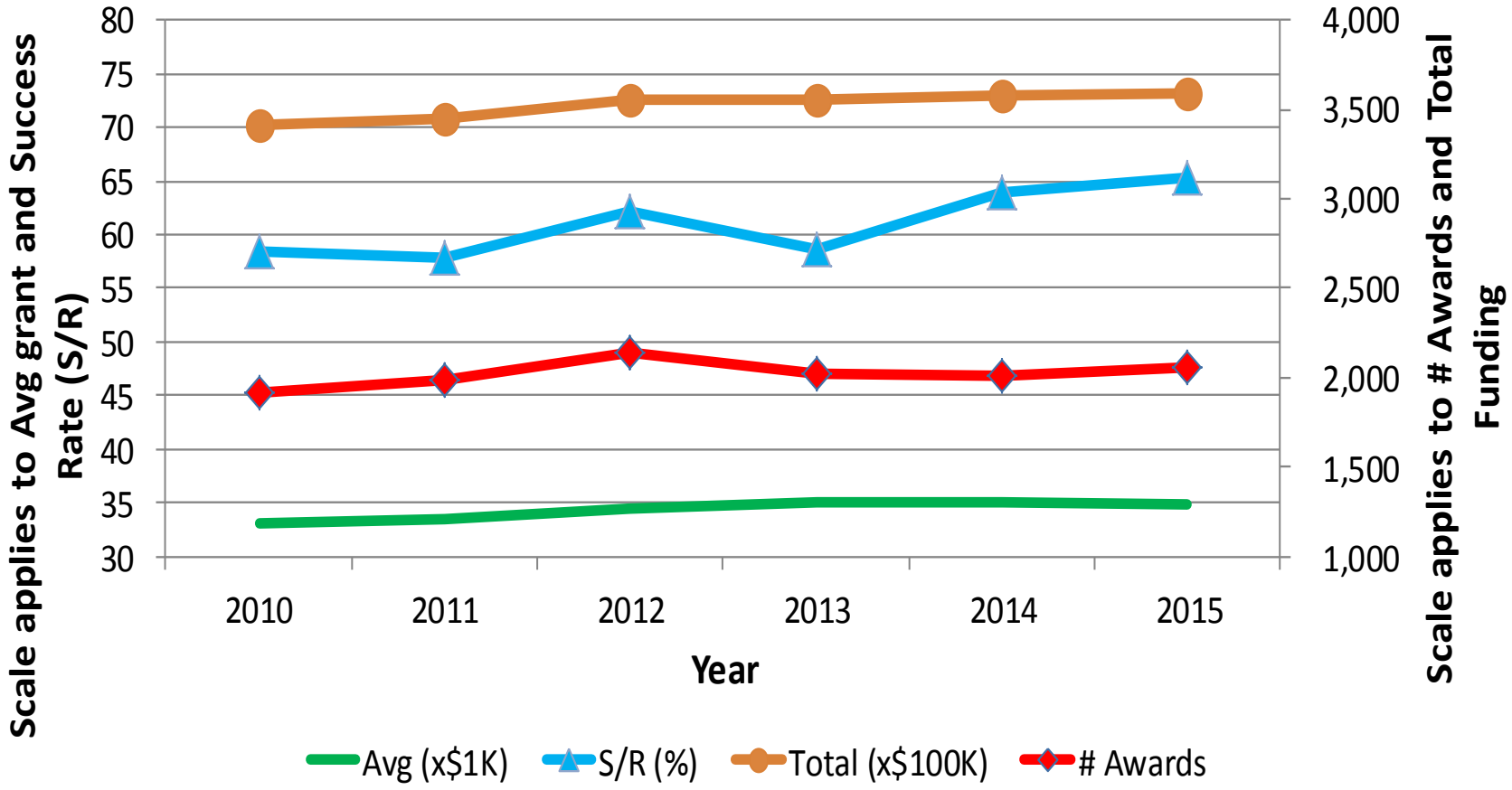
Discovery Grants Program and Research Tools and Instruments

2015 Results

2015 Competition Statistics Discovery Grants (DG) available at:

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

Discovery Grant: Total Funding, Success Rates, Number of Awards and Average Award



Discovery Grants Overall Results – 2015 Competition

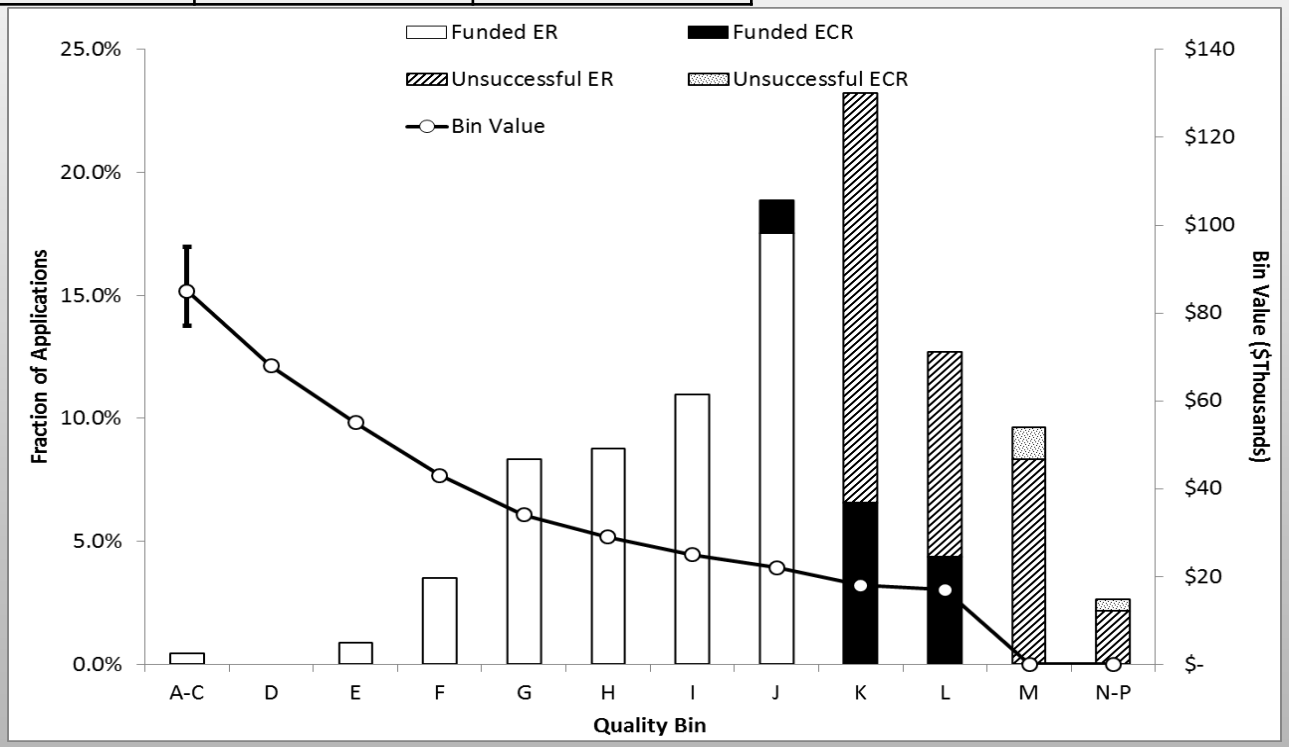
Data[1]	Success Rate	Average Grant
Early Career Researchers (**ECR**)	65%	$26,191
Established Researchers (**ER**)		
Renewing their grant (**ER-R**)	82%	$35,109
Not Holding a Grant[2] (**ER-NHG**)	38%	$26,756

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.

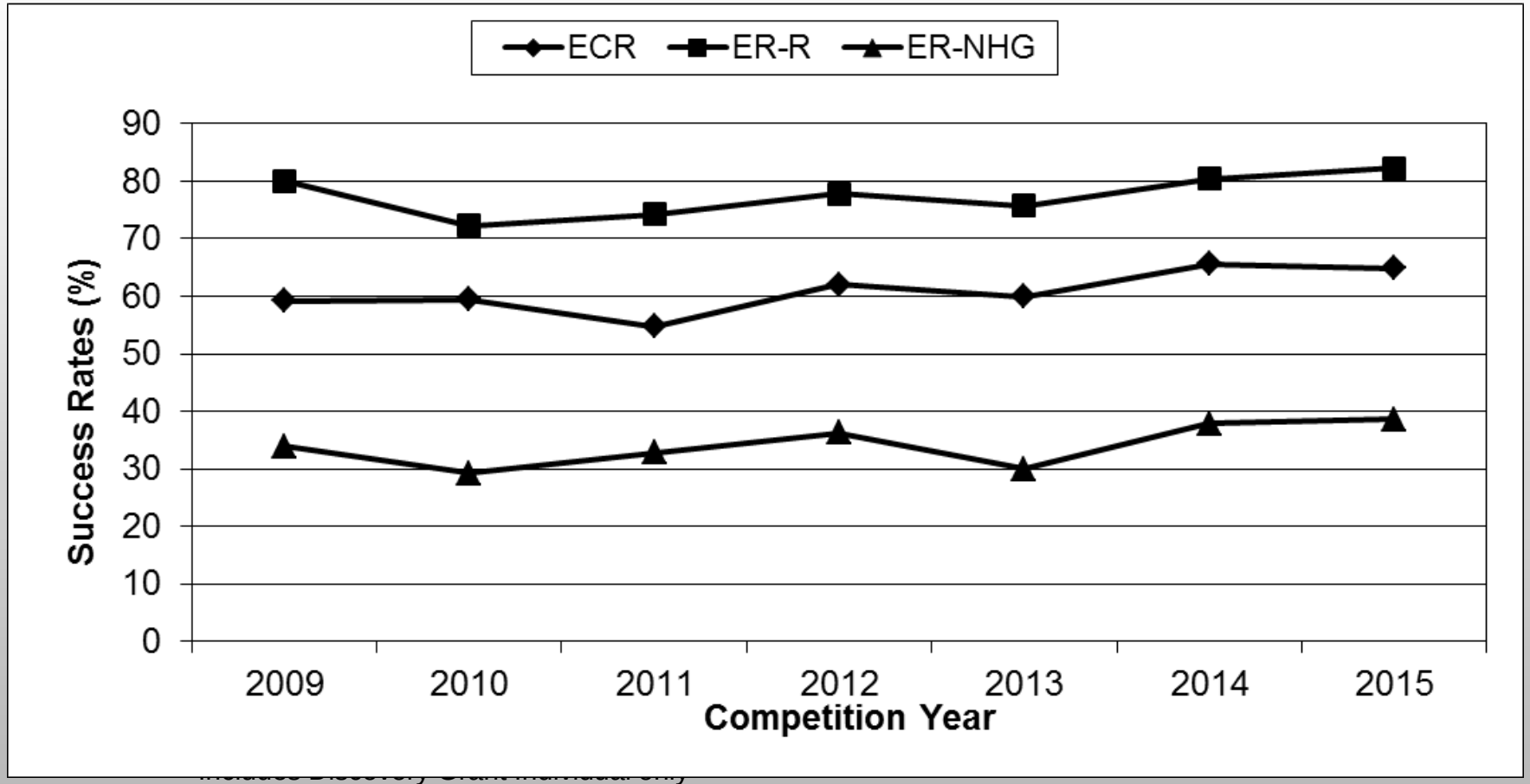
Mechanical Engineering (EG1512)

	Early Career Researchers	Established Researchers	
		Renewals	Not Holding a Grant
$ awarded	$668,000	$2,676,000	$586,000
Success rate	88%	75%	32%
Average Grant	$23,034	$29,407	$24,417



Note: Non-official results

Success Rate[1] by Category of Individual Applicants – 2009-2015 Competitions



Research Tools and Instruments

- **New:** RTI applications to use the Research Portal and CCV for the 2016 competition
- Quota is now 700. Minimum of 2 per institution
- Funding level for 2015 increased

Research Tools and Instruments - Overall Results

- Smaller national competition with quota of applications per university

	2015	2014	2013
Budget	$25M	$19.5M	$25M
# Appl.	666	468	1,262
# Funded	218	176	295
Success Rate	33%	38%	23%
Funding Rate	34%	38%	24%

Research Tools and Instruments - EG 1512 Results

Research Tools & Instruments (Category 1)	1512 applicants
Number of Applications	61
Number of Awards	20
Funding Rate	34.3%
Total Budget	$2,578,972

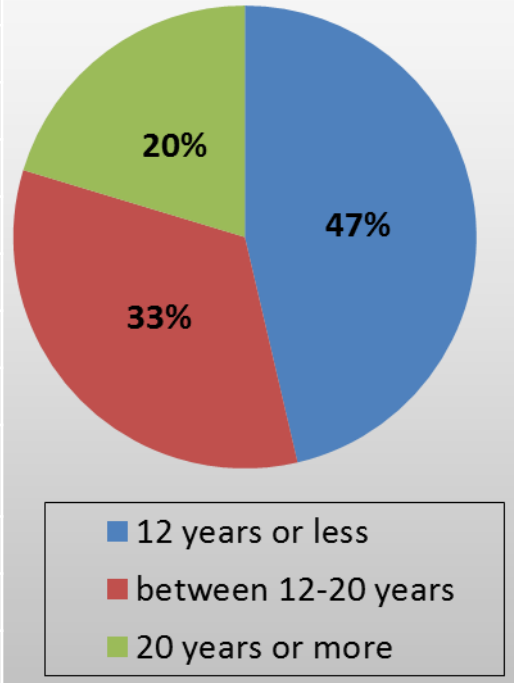
Discovery Accelerator Supplements

- DAS provides resources to researchers who:
  - *Have highly original and innovative research programs*
  - *Show strong potential to become international leaders within their field*

- $120,000 - typically over three years
- Up to 125 Supplements per year
- Each EG will receive a quota of DAS nominations to recommend
- EG members nominate candidates. Executive Committee makes the final recommendation to NSERC

Discovery Accelerator Supplements 2015 Competition Results

Evaluation Group	Awards
Genes, Cells and Molecules (1501)	**11**
Biological Systems and Functions (1502)	**11**
Evolution and Ecology (1503)	**10**
Chemistry (1504)	**7**
Physics (1505)	**5**
Geosciences (1506)	**13**
Computer Science (1507)	**16**
Mathematics and Statistics (1508)	**8**
Civil, Industrial and Systems Engineering (1509)	**11**
Electrical and Computer Engineering (1510)	**13**
Materials and Chemical Engineering (1511)	**9**
Mechanical Engineering (1512)	**10**
Subatomic Physics (19)	**1**
Total	**125**



Discovery Grants (DG) Program
Overview

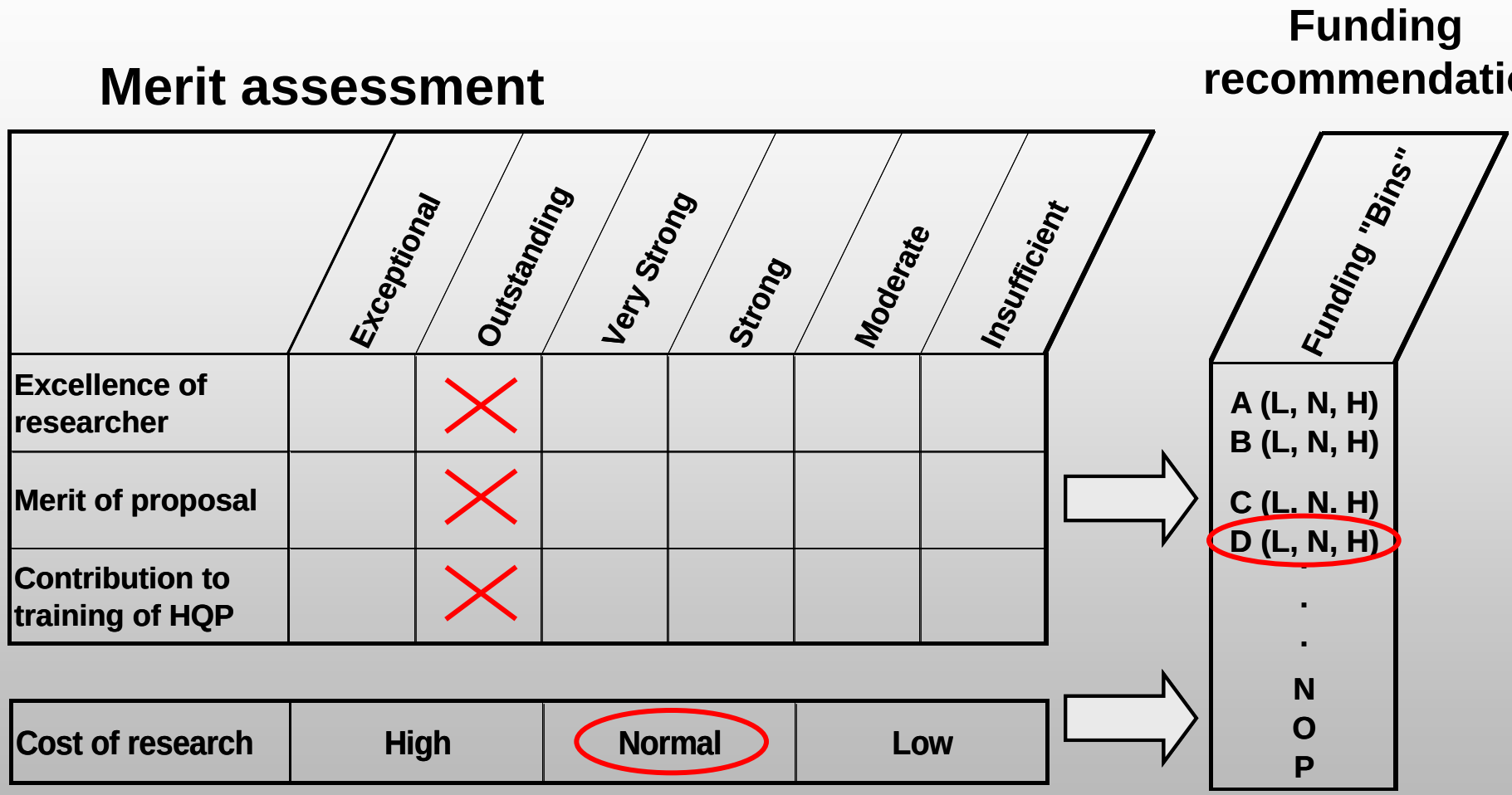
"Delivering on NSERC's commitment to excellence"

Discovery Grants (DG) 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.

Two-Step Review Process



Discovery Grant Program
The Conference Model

- 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 (EGs)

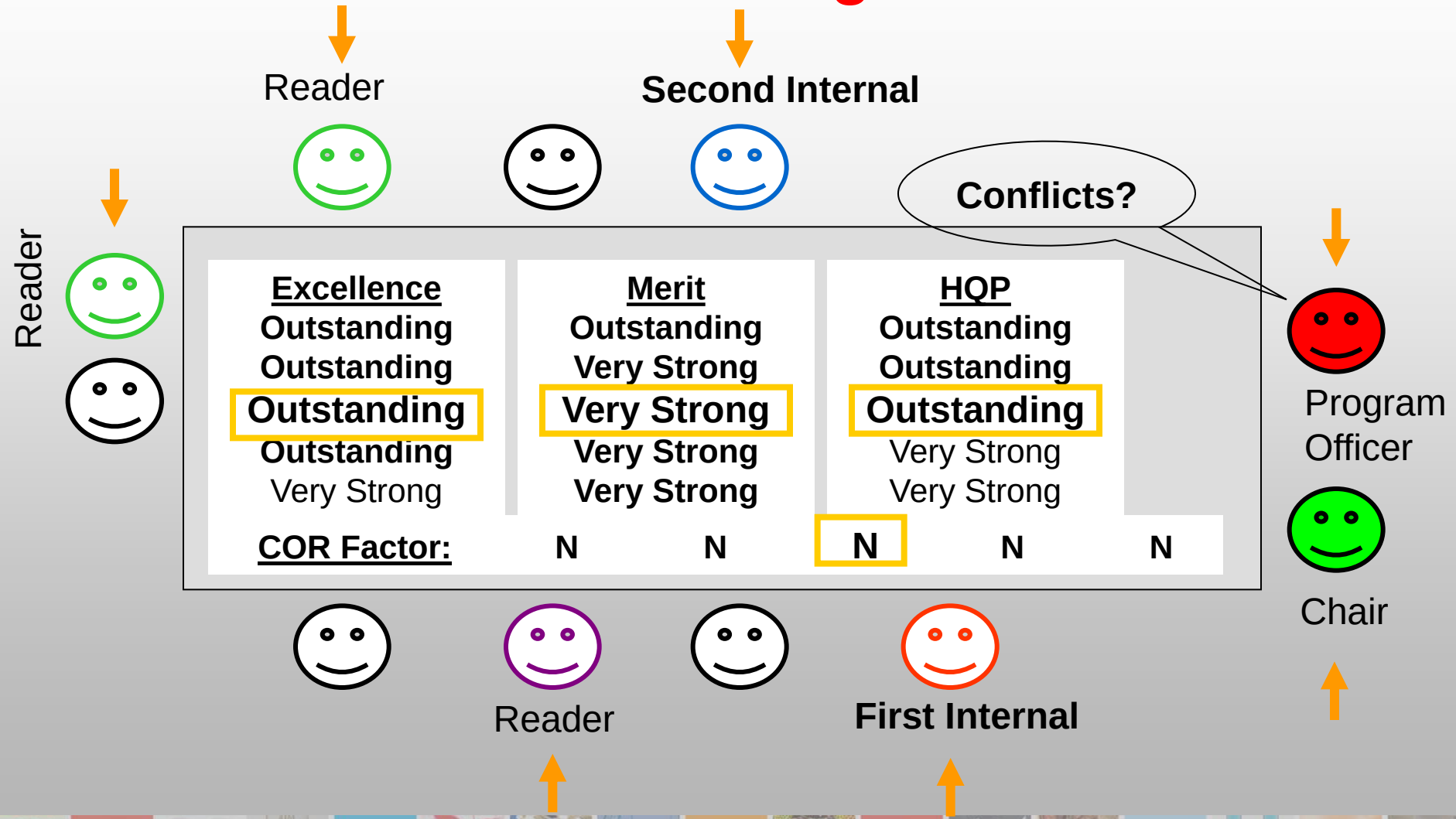
Evaluation Groups

- 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?

- 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).

Implementation of the Conference Model and the Rating Indicators



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

DISCOVERY GRANTS PROGRAM

HOW TO APPLY?

Eligibility to Apply

To be eligible, you must:

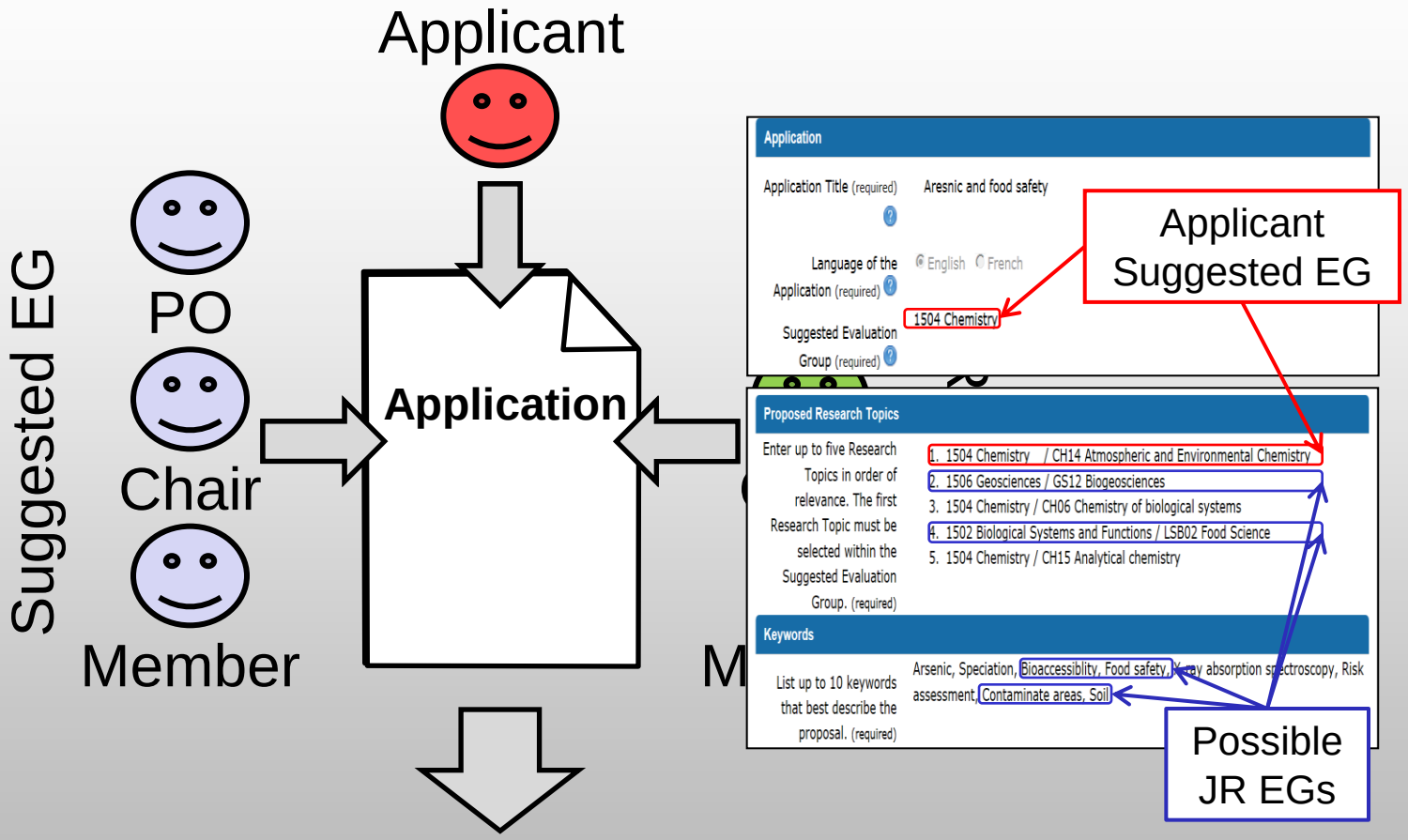
- hold, or have a firm offer of, an academic appointment at a Canadian institution (minimum three-year term position) and take up the position no later than September 1 of the year of the award
- be in a position that requires independent research and allows supervision of highly qualified personnel (HQP)
- work full-time in an eligible Canadian institution (if your primary position is outside of Canada)

Requirements can be found on NSERC website

Eligibility of Subject Matter

- Discovery Grants Program supports
  - Research programs in the natural sciences and engineering (NSE); and
  - Interdisciplinary research that is predominantly in the NSE
    - Significance, impact, advancement of knowledge or practical applications in NSE
- The same proposal cannot be submitted to two federal granting agencies
- Eligibility guidelines on NSERC's Web site and www.science.gc.ca
- Applications deemed more appropriate for another agency will be rejected

Before the Review



Evaluation of Discovery Grant Applications

Dr. Gregory Kopp, Western University
Member – Mechanical Engineering EG

Evaluation Criteria

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

Scientific or Engineering Excellence of the 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).

Scientific or Engineering Excellence of the Researcher: Tips

- Describe up to five most significant research contributions (found in the **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, Section 6, for details)

Scientific or Engineering Excellence of the Researcher

Location of Information

- **In <u>CCV</u>**

  - "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 <u>Application</u>**

  -"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.
- Extent to which the proposal addresses all relevant issues
- Appropriateness of budget.

  - Relationship to other sources of funds must be clearly explained.

Merit of the Proposal: Tips

- Write summary in plain language
- Keep in mind that two audiences read your application: expert and non-expert
- 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

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 grant 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.
- Saying "there is no 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 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 <u>Application</u>**

  - 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 <u>CCV</u>**

  - "Research Funding History" section to assess possible conceptual or budgetary overlaps.

- **Standalone <u>attachment</u>** (when applicable)

  - Relationship to Other Sources of Support – Attachments

    (Summary and budget section of applications to other agencies).

Contributions to the Training of HQP

Describe and list:

- Quality and impact of contributions to training during the last six years (2009– 2015)
- Proposed plan for future training of HQP in the NSE
- 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 (PRM)

Contributions to the Training of HQP - Tips

Past Contributions to Training:

- Use an asterisk to identify students who are co-authors on the listed contributions
- Explain your role in co-supervision activities
- 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

Contributions to the Training of HQP - Tips

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
- Do not select "Academic Advisor"

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
  - 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

Plan for Training

- In **Application** - one dedicated page.
  - This page is to be used by applicant to present the training plan to be undertaken as part of the proposed research activities.
  - Among other things, the plan should provide details on activities in which trainees will be involved, skills and knowledge trainees would learn, the relevance of training activities for the level of trainees involved (undergraduate, Master's, etc.), and the expected impact.

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

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.

Cost of Research

Location of Information

- In **Application**
  - Proposal (dedicated 5-page section).
  - Budget Justification (dedicated 2-page section).
  - Relationship to Other Sources of Support – Explanation (dedicated 2-page section).

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, …)

FINAL ADVICE:
Discovery Grant Applications

- Ask colleagues and/or your RGO for comments on your application
- Read other successful proposals
- Consult the Peer Review Manual section 6
- 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.
- Applicants are encouraged to 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

Resource Materials

- Consult the *Peer Review Manual*, Section Six (6) in conjunction with the Merit Indicators
- Consult Resource Videos:

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

  - Submitting a DG through the Research Portal
  - Tip to help applicants write a better proposal (interviews with EG members)
  - Demystifying the DG review process
- Webinars on the Research Portal and 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

Questions?

Thank you

www.nserc-crsng.gc.ca