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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

How to prepare a Discovery Grant application

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Mathematical, Environmental and Physical Sciences Division

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Canada

Life Cycle of a Discovery Grant Application

August

Submission of notification of intent to apply
(due Aug. 1)

September

Internal assignment to EG

October

Selection of external reviewers and preliminary joint review discussions

November

Submission of application
(due Nov. 1)

December

Members receive applications and begin reviewing

January

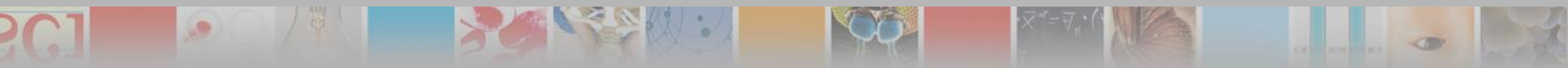
Members review applications and external reviewer reports are received

February

Grants competition

April

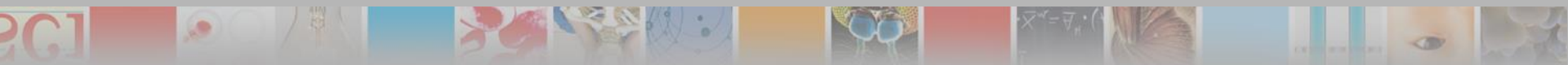
Announcement of results



Notification of Intent to Apply (NOI)

Overview

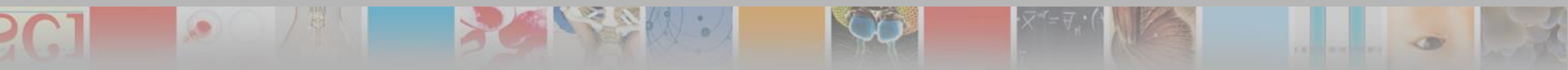
- **Deadline:** August 1st - **Mandatory**
- **Main components:**
 - Research topics, keywords, title
 - Summary of proposal
 - Suggested external reviewers
 - Canadian Common CV (CCV)
- **Submission:**
 - Research Portal



Notification of Intent to Apply

Purpose

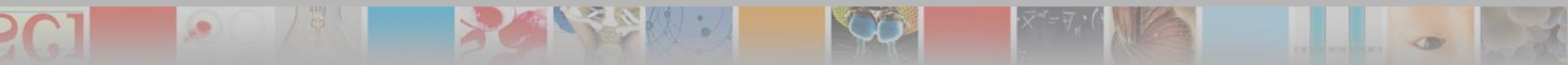
- **Facilitates preliminary assignments:**
 - to an Evaluation Group
 - of internal reviewers
 - of external reviewers
- **First indication of joint review**
 - Informed by research topics, keywords, and proposal summary
- **First review of subject matter eligibility**



Notification of Intent to Apply

Joint Reviews - 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)



Notification of Intent to Apply

Joint Reviews - Conference Model in Action

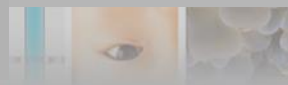
		Participating (Visiting) Evaluation Group											Total	
		GCM	BSF	EE	Chem	Phys	Geo	CS	MS	CISE	ECE	MCE		ME
Reviewing (Home) Evaluation Group	GCM		36	14	1	10	0	8	5	0	0	5	1	80
	BSF	46		22	4	3	1	2	3	5	2	1	2	91
	EE	12	23		0	0	22	0	10	0	0	0	2	69
	Chem	17	3	2		6	1	0	1	0	0	1	0	31
	Phys	7	5	0	4		0	1	5	0	11	2	1	36
	Geo	4	3	21	5	1		1	4	15	0	0	1	55
	CS	5	9	1	0	2	1		10	2	10	0	4	44
	MS	4	4	7	1	7	1	11		3	3	1	4	46
	CISE	0	2	1	1	0	13	12	4		6	14	11	64
	ECE	2	5	0	0	9	0	8	2	1		0	3	30
	MCE	6	0	0	8	5	2	1	6	6	3		8	45
	ME	1	3	0	0	0	0	0	0	11	5	12		32
Total	104	93	68	24	43	41	44	50	43	40	36	37	623	

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
EG1508 provided a JR for EG 19 (SAP).



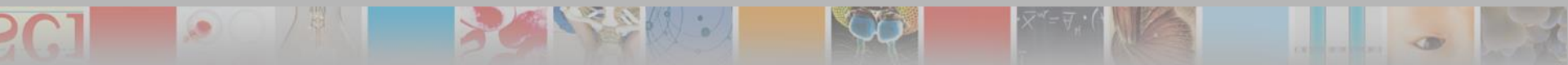
Notification of Intent to Apply Transfers

		Reviewing Evaluation Group (Transferred to)												Total
		GCM	BSF	EE	Chem	Phys	Geo	CS	MS	CISE	ECE	MCE	ME	
Original Evaluation Group (Transferred from)	GCM		1	1	1	0	0	0	0	0	0	1	0	4
	BSF	9		1	3	1	1	0	0	0	0	0	1	16
	EE	0	2		0	0	5	0	0	0	0	0	0	7
	Chem	0	1	0		0	0	0	0	0	0	0	0	1
	Phys	0	0	0	0		0	0	0	0	0	0	0	0
	Geo	0	0	7	0	0		0	0	8	0	1	0	16
	CS	2	0	0	0	0	0		0	0	1	0	0	3
	MS	3	0	1	0	0	0	0		0	1	0	0	5
	CISE	0	1	0	0	0	1	0	1		1	0	7	11
	ECE	0	0	0	0	2	0	1	0	0		0	0	3
	MCE	1	0	0	0	0	0	0	0	0	0		0	1
	ME	0	0	0	0	0	0	0	0	0	0	0		0
Total	15	5	10	4	3	7	1	1	8	3	2	8	67	

Notification of Intent to Apply

Tips

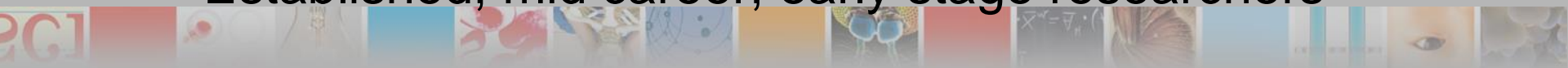
- **Select appropriate research topics**
 - First selected must be from suggested EG
 - Helps identify potential joint reviews
- **Submit a detailed summary**
 - Helps internal reviewers select appropriate external reviewers
 - Helps identify potential joint reviews



Notification of Intent to Apply

Tips for selecting external reviewers

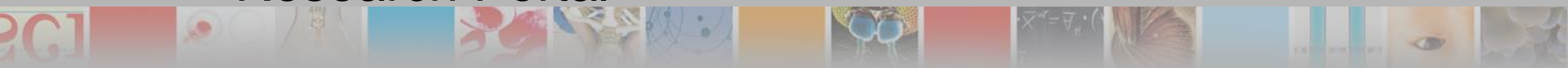
- **Be mindful of conflicts of interest**
 - Reviewers outside your institution (primary & adjunct)
 - Adhere to [NSERC guidelines](#) (e.g., six-year window)
- **Identify the best expertise**
 - Ability to comment/review with confidence
- **Consider diversity in your selection**
 - National, International
 - Private, government, public sectors
 - Gender
 - Under-represented groups
 - Established, mid career, early stage researchers



Discovery Grant Application

Overview

- **Deadline:** November 1st - **internal deadlines are earlier**
- **Main components:**
 - Application for a grant
 - Research proposal
 - Samples of research contributions
 - Budget and justification
 - Canadian Common CV (CCV)
- **Submission:**
 - Research Portal

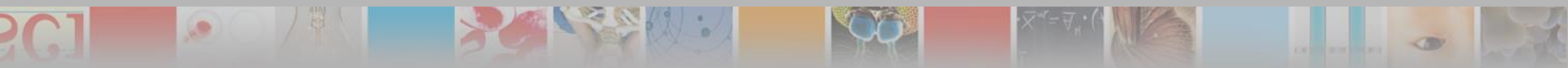


Grants Competition

Review Process

Step 1: Merit Assessment

- **Three equally weighted criteria:**
 - Excellence of the Researcher
 - Merit of the Proposal
 - Contribution to Training of Highly Qualified Personnel (HQP)
- **Uses six-point scale**
 - From exceptional to insufficient



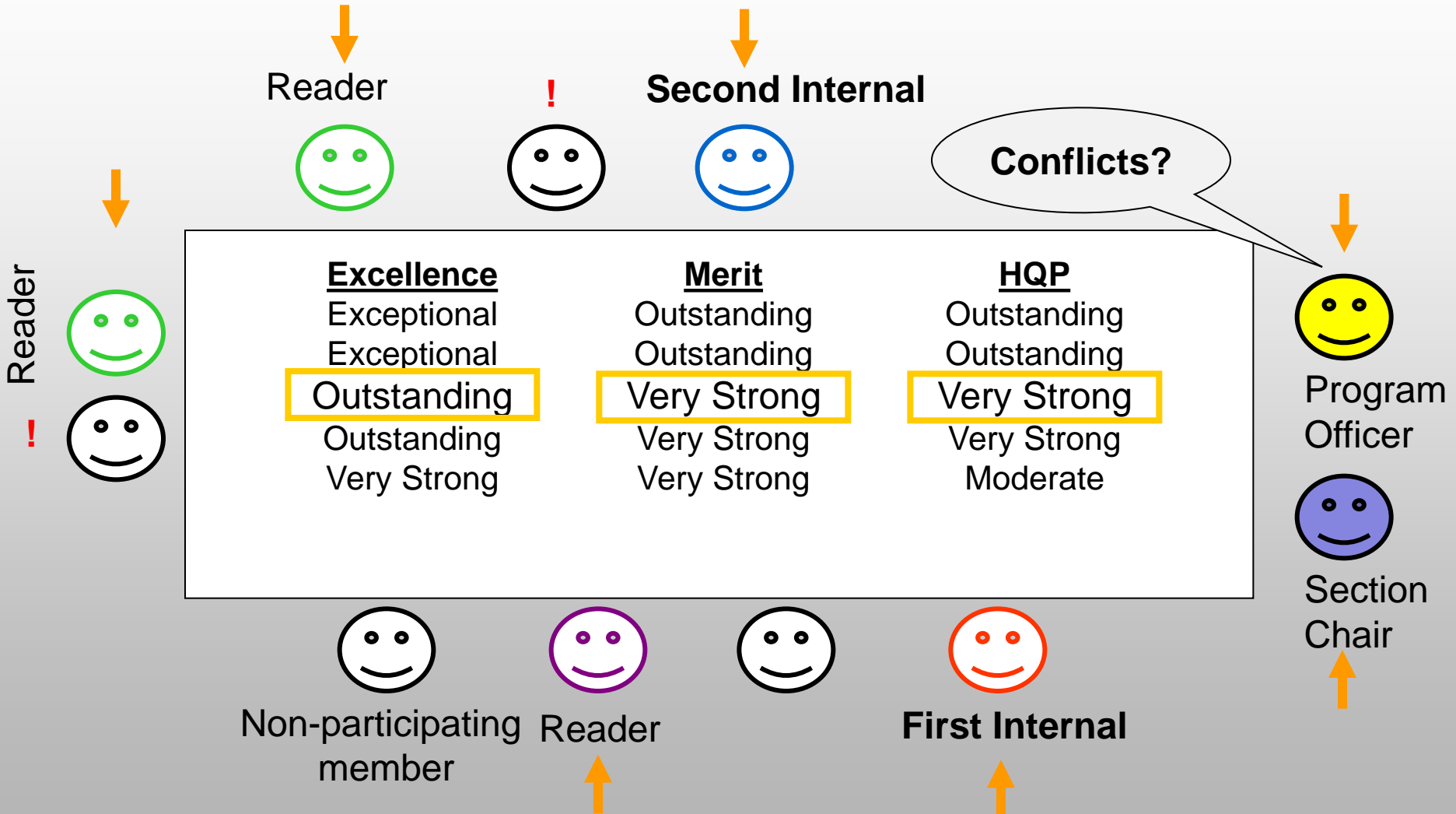
Grants Competition Review Process

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.	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.	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.	Proposed research program is clearly presented, is original and innovative and is likely to have impact and/or address socio-economic or environmental needs.	Proposed research program is clearly presented, has original and innovative aspects and may have impact and/or address socio-economic or environmental needs.	Proposed research program, as presented lacks clarity , and/or is of limited originality and innovation .
	Long-term vision and short-term objectives are clearly defined.	Long-term goals are clearly defined and short-term objectives are well planned.	Long-term goals are defined and short-term objectives are planned.	Long-term goals and short-term objectives are clearly described.	Long-term and short-term objectives are described.	Objectives are not clearly described and/or likely not attainable.
	The methodology is clearly defined and appropriate.	The methodology is clearly described and appropriate.		The methodology is described and appropriate.	The methodology is partially described and/or appropriate.	The methodology is not clearly described and/or appropriate.
	The application clearly demonstrates how the research activities to be supported are distinct from those funded (or applied for) by other sources.					The application does not clearly demonstrate how the research activities to be supported are distinct from those funded (or applied for) by other sources.
Training of Highly Qualified Personnel	Past training is at the highest level in terms of the research training environment provided and HQP contributions to research. Most HQP move on to highly impactful positions that require skills gained through the training received. Training philosophy and research training plans are of the highest quality: highly appropriate, clearly defined and expected to produce top quality results in terms of the overall approach and specific projects for HQP.	Past training is far superior to other applicants in terms of research training environment provided and HQP contributions to research. Most HQP move on to impactful positions that require skills gained through the training received. Training philosophy and research training plans are far superior: highly appropriate, clearly defined and expected to produce high quality results in terms of the overall approach and specific projects for HQP.	Past training is superior to other applicants in terms of the research training environment provided and HQP contributions to research. HQP generally move on to impactful positions that require skills gained through the training received. Training philosophy and research training plans are superior: highly appropriate, clearly defined and expected to produce quality results in terms of the overall approach and specific projects for HQP.	Past training compares favourably with other applicants in terms of the research training environment provided and HQP contributions to research. HQP generally move on to positions that require skills gained through the training received. Training philosophy and research training plans are appropriate and clearly defined in terms of the overall approach and specific projects for HQP.	Past training is modest relative to other applicants in terms of the research training environment provided and HQP contributions to research. Some HQP move on to positions that require skills gained through the training received. Training philosophy and research training plans are partially appropriate and partially defined in terms of the overall approach and specific projects for HQP.	Past training is below an acceptable level in terms of the research training environment provided and HQP contributions to research. HQP rarely move on to positions that require skills gained through the training received. Training philosophy and research training plans are not appropriate and not clearly defined in terms of the overall approach and specific projects for HQP.

¹The Discovery Grants Merit Indicators should be used in conjunction with the Peer Review Manual which outlines how reviewers arrive at a rating.

Grants Competition Conference Model



Grants Competition 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	

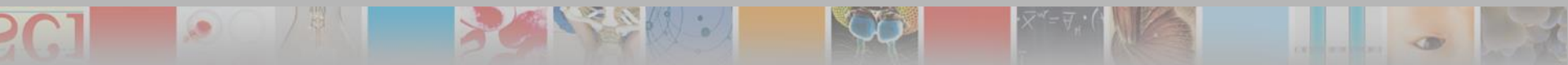


Outstanding – Very Strong – Very Strong



Step 2: Funding Recommendation

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

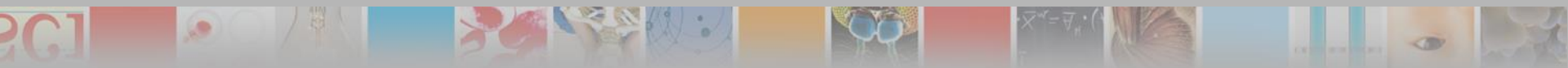


Grants Competition

Review Process

Step 2: Funding Recommendations

- Applications grouped into 'bins' of comparable merit
- Similar overall ratings within an EG receive comparable funding
- Possible adjustment related to the cost of research

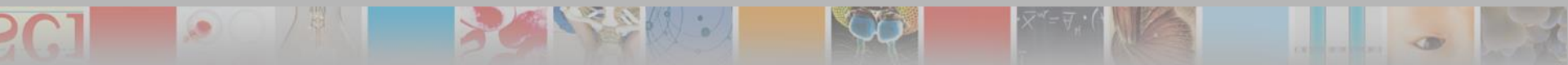


Discovery Grant Application

Excellence of the Researcher

Assessment based on achievements demonstrated over the past **six** years (2013 – 2019).

- Knowledge, expertise, and experience (in the NSE)
- Quality and impact of contributions to Natural Sciences and Engineering (NSE) research
- Importance of contributions to researchers and end-users

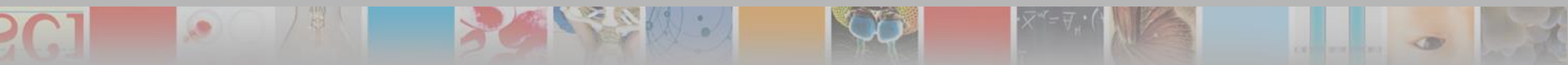


Discovery Grant Application

Excellence of the Researcher

Members will assess this using information from:

- **Most significant contributions**
 - Highlighted quality and impact
- **Samples of research contributions**
 - Up to 4 attached with application *within the last 6 years*
- **CCV contributions, recognitions, activities**
 - Additional information on contributions in application

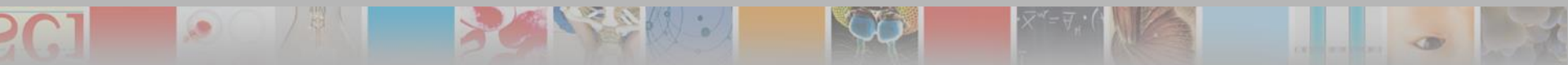


Discovery Grant Application

Merit of the Proposal

Assessment based on the following elements:

- Originality and innovation
- Significance and expected contributions to research
- Clarity, scope of objectives, and appropriateness of methodology
- Feasibility
- Appropriateness and justification for the budget
- Relationship to other research support

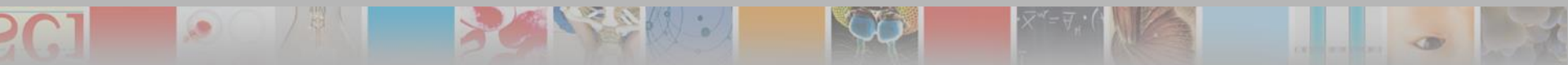


Discovery Grant Application

Merit of the Proposal

Relationship to other research support

- Budget requested in DG is for different expenses than the ones supported (or to be supported) by other sources.
- The DG proposal is distinct conceptually from research supported (or to be supported) by CIHR and/or SSHRC.
- ***New in CY2018*** For CIHR Foundation Grant holders only: convincing evidence that support from DG is essential to carry out the work proposed.

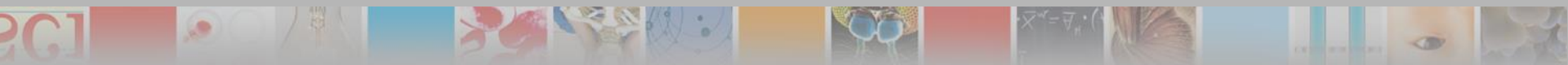


Discovery Grant Application

Merit of the Proposal

Members will assess this using information from:

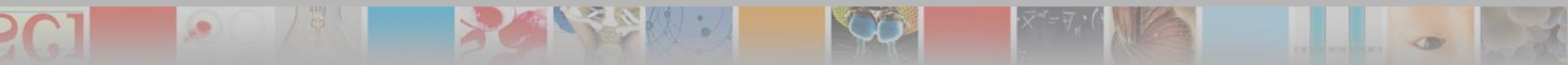
- **Research proposal (5 pages)**
 - List of references (2 pages)
- **Proposed expenditures and budget justification**
- **Relationship to other research support**
 - CIHR and/or SSHRC summary and budget pages
 - CCV research funding history



Discovery Grant Application

Subject Matter Eligibility

- NSERC supports research whose major challenges lie in the natural sciences and engineering (NSE), other than the health sciences.
- The intended objective(s) of the research must primarily be to advance knowledge in one or more of the NSE disciplines.
- Applicants should refer to:
 - [Selecting the Appropriate Federal Granting Agency](#)
 - ***Updated*** [Addendum to the Guidelines for the Eligibility of Applications Related to Health](#).
 - The Addendum provides examples that illustrate the eligibility of applications related to human health.



Discovery Grant Application

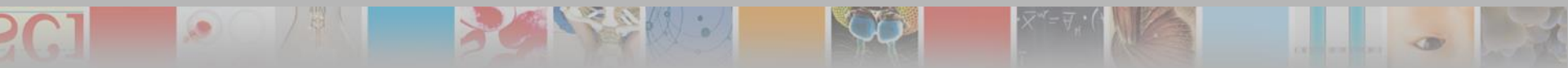
Contributions to the training of HQP

Assessment is based on both:

- the **past contributions to training**; and
- the **future plans for training**

Quality **research training at all levels** are valued, including:

- Undergraduate students involved in research
- Graduate students and postdoctoral fellows
- Technicians and research associates
- Other research personnel from non-academic sectors i.e. government, or industry



Discovery Grant Application

Contributions to the training of HQP

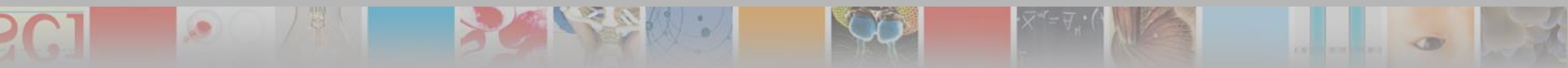
Past contributions to the training of HQP

Assessment based on training over the past **six** years

****New Instructions in CY2018 ****

Include three components:

1. Training environment
2. HQP awards and research contributions
3. Outcomes and skills gained by HQP



Discovery Grant Application

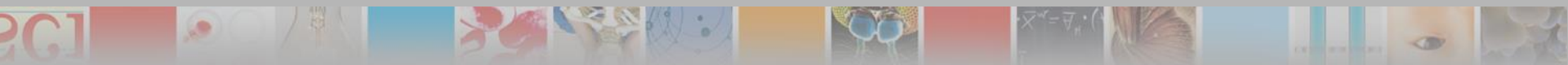
Contributions to the training of HQP

Past contributions to the training of HQP

Other items to consider:

- Explain the level, context, and role in supervision and co-supervision
- Note impact of delays in training (those taken by the applicant or HQP)
- Focus on quality and impact of training

Members are instructed not to rate Early Career Researchers (ECRs) as *Insufficient* solely due to a limited past record of contributions to the training of HQP.



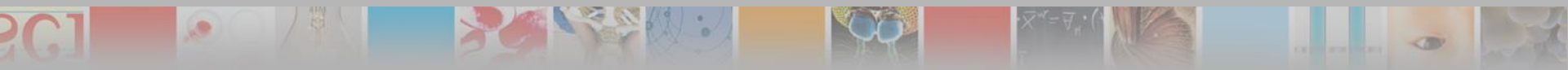
Discovery Grant Application

Equity, Diversity and Inclusion (EDI)

****Privacy Considerations****

■ **Past Contributions to HQP Training**

- If describing a record of training a diverse group of trainees, any HQP demographic information should be clearly linked to the practices which achieved the equity, diversity and inclusion, and should be in **aggregate format**.
- Due to privacy and confidentiality concerns, do not include personal identification data linked to individuals.



Discovery Grant Application

Contributions to the training of HQP

Future plans for training

****New Instructions in CY2018****

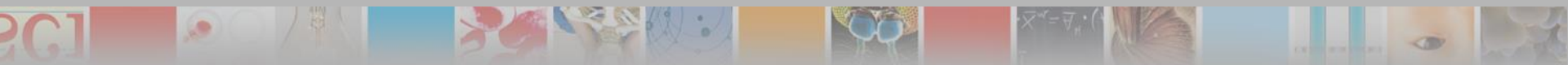
Include two components:

1. Training Philosophy

- Describe approaches that promote increased inclusion and advancement of under-represented and disadvantaged groups in NSE

2. Research Training Plan

- Focus on quality, suitability and clarity of plan
- Must be planned training in the NSE
- Define your role in any planned co-supervision



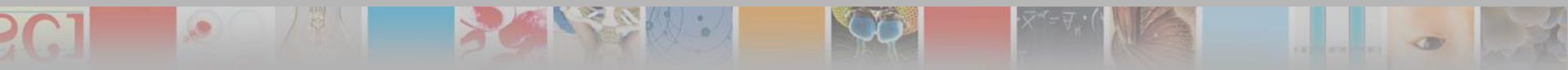
Discovery Grant Application

Equity, Diversity and Inclusion (EDI)

****Additional requirement - CY2020****

■ HQP Plan

- Beginning CY2020, as part of the *Training Philosophy* element, **applicants are expected** to describe the specific measures they commit to implementing in order to promote equity, diversity and inclusion in the training environment.
- Additional text will appear in the **Merit Indicators Grid** describing EDI considerations within the *Training Philosophy* element.



Discovery Grant Application

Contributions to the training of HQP

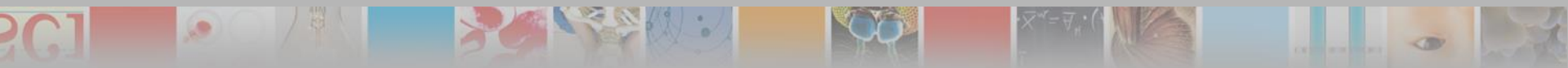
Evaluation Group will assess HQP using information from:

- **Application:**

- Past contributions to HQP training
- HQP training plan

- **CCV**

- Supervisory activities and contributions
- Trained HQP who co-authored should be identified with an asterisk “*”
- Do not use “academic advisor”



Discovery Grant Application

Equity, Diversity and Inclusion (EDI)

Summary - EDI with Evaluation Criteria

- **Excellence of the Researcher**

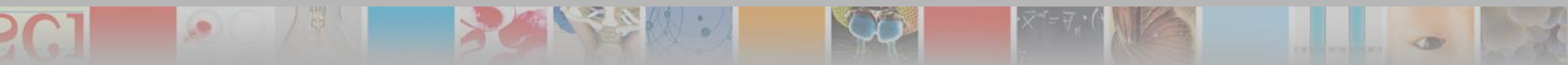
- Applicants are asked to describe (if applicable) contributions towards the promotion of equity, diversity and inclusion in the research enterprise

- **Merit of the Proposal**

- Applicants are asked to describe (if applicable) consideration of sex, gender and diversity in the research design

- **Contributions to the Training of HQP**

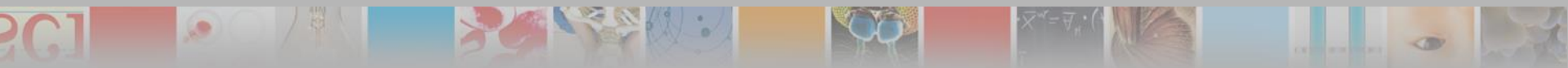
- Applicants are required to describe EDI considerations they commit to in their future approach to recruitment, training and mentoring
- Applicants are asked to describe EDI measures implemented in the past training of HQP (if applicable)



Discovery Grant Application

Delays

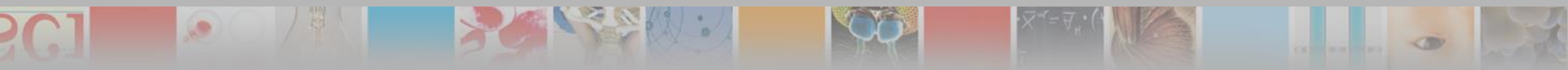
- Applicant delays are recorded in the CCV, under the Employment section
- HQP delays are recorded in the HQP section of the application
- In both cases, clearly explain
 - the **duration** (i.e., start/end dates)
 - the **impact** on your research (e.g., dissemination of results, ability to recruit HQP)



Discovery Grant Application

Tips

- **Read other successful applications**
- **Ask colleagues and/or your RGO for comments on your application**
 - Ask both experts in your field and non-experts to review
- **Plan ahead and check institutional deadlines**
- **Use the resources available**



Discovery Grant Application

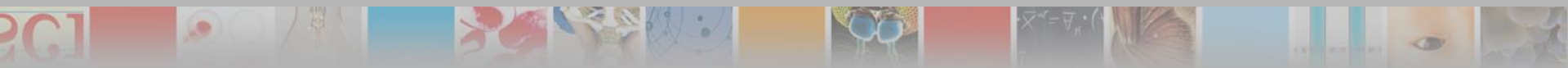
Available Resources

- **Discovery Grants Information Centre**
- **Peer Review Manual**
 - Includes information on each of the three criteria and the merit indicators (the Grid!)
- **HQP FAQ Document**
- **EDI Guide for Applicants**
- **Webinars on how to apply**
 - NOI and full application stages (French and English)

RGS Program Updates

Support for Early Career Researchers

- The ECR eligibility window is now 5 years (previously 3 years) to harmonize with the other agencies (*New!*)
- NSERC devotes additional funds to support ECRs through
 - increases to Discovery Grants
 - Discovery Launch Supplement (*New!*)
- ECRs re-applying for the first time have the option of extending their DG by one year with funds



RGS Program Updates

NSERC Leave Policies

Primary Caregivers (Pilot)

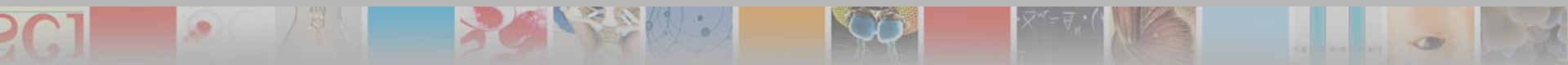
- Researchers who become primary caregivers following the birth or adoption of a child and who are eligible for maternity or parental leave but decline the leave, may be eligible to receive a one-year grant extension with funds

Family and Medical Leave

- Grant holders who plan to take family-related leave or medical leave may be eligible for a grant extension with funds for up to two years.

Paid Maternity / Parental Leave for Students and Postdoctoral Fellows paid from Grants

- Students and Postdoctoral fellows who are supported by NSERC grants and are eligible may receive up to 6 months of paid maternity / parental leave.
- The leave supplement will be paid by NSERC.



Other Updates:

Committee on Discovery Research (CDR)

- One of two standing committees of NSERC Council
 - Provides advice to Council and VP of Research Grants and Scholarships (RGS) on funding opportunities and related policy issues
 - Meets at least twice a year
- Membership
 - 15 members, representative of community served by RGS
 - Diverse, balanced representation (gender, language, region, institution size, career stage, sector)
- Members
 - May act as a channel to bring issues, concerns, etc. to the attention of CDR (and NSERC)

http://www.nserc-crsng.gc.ca/NSERC-CRSNG/committees-comites/GrantsAndScholarships-SubventionsEtBourses_eng.asp

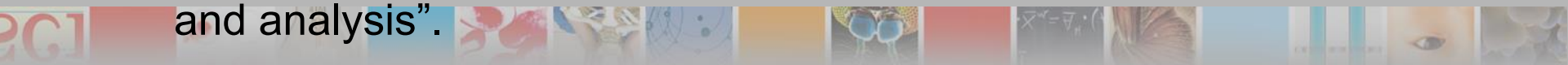


NSERC News

Collection of Self-Identification Data

Why is self-identification data collection important?

- Driven by the Government of Canada's commitment to equity, diversity and inclusion (EDI) in the federal research enterprise.
- Also guided by:
 - [Canada Research Coordinating Committee's](#) work plan includes “removing barriers faced by under-represented and disadvantaged groups to ensure equitable access across the granting agencies and establish Canada as a world leader in equity, diversity and inclusion in research”;
 - [Budget 2018](#) which requires the granting agencies “to publish an annual report for Canadians on progress in addressing challenges in the research system, including equity and diversity, and support for researchers at various career stages”; and
 - [Canada's Fundamental Science Review's](#) recommendation that federal funding agencies “should collaborate to improve data collection and analysis”.



NSERC News

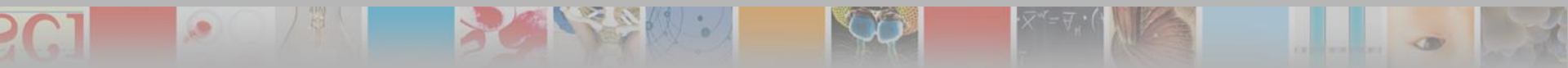
Collection of Self-Identification Data

What questions are included in the mandatory self-identification form?

The granting agencies ask for the following information:

1. Age - What is your date of birth?
2. Gender – Select the option that you identify with, i.e. Woman; Man; or Gender-fluid, non-binary; and/or Two-Spirit
3. Indigenous Identity – Do you identify as Indigenous - that is First Nations (North American Indian), Métis, or Inuit?
4. Person with a disability – are you person with a disability?
5. Visible Minority - Do you identify as a member of a visible minority in Canada?

Completing the self-identification form is mandatory, but for each category there is an option for “I prefer not to answer.”



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Collection of Self-Identification Data

Progress to date:

- Summer 2018: [An open letter from Tri-Agency Presidents to the research community](#)
- May-December 2018, collection of self-identification information from **applicants and co-applicants** to all funding opportunities
 - Questions focussed on age, gender, Indigenous identity, and status as a member of a visible minority group or person with a disability
 - Over 10,000 forms collected over this period (**NSERC data**)
 - High response rates (over 90%, *all fields combined*)

Upcoming data collection:

- Implementing self-identification data collection from members of panels and reviewers;
- Including members of governance committees in self-identification data collection.

