Equity, Diversity and Inclusion in Research

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Deputy Director, Engineering and Life Sciences
Research Grants
Outline

- Understanding Equity, Diversity and Inclusion - EDI
- Why is EDI important for research?
- NSERC actions
  - Data and reporting
  - Integrating EDI in applications
  - Resources
Tri-Agency Statement on Equity, Diversity and Inclusion

“Achieving a more equitable, diverse and inclusive Canadian research enterprise is essential to creating the excellent, innovative and impactful research necessary to advance knowledge and understanding, and to respond to local, national and global challenges.”

**Equity** - the removal of systemic barriers and biases enabling all individuals to have equal opportunity to access and benefit from programs.

**Diversity** - differences in race, colour, place of origin, religion, immigrant and newcomer status, ethnic origin, ability, sex, sexual orientation, gender identity, gender expression and age.

**Inclusion** - the practice of ensuring that all individuals are valued and respected for their contributions and equally supported.

*Best Practices on EDI in research, New Frontiers in Research Fund*
Equity, Diversity and Inclusion

• Fair process of allocating resources and decision making;
• Measures necessary to eliminate discrimination, barriers and inequalities between people
• Equal opportunities;
• Recognizing the value and benefits of diversity of knowledge, world views, experiences, contributions;
• Intentional, authentic inclusion of under-represented groups;
• Equity is a means. Equality is the result we are striving for.
Access to More Talent

2006 Canadian Census\textsuperscript{16}

♀ 47.4\% of workforce
♀ 21.9\% of engineering & science workforce

Diverse hiring increases the recruiting pool\textsuperscript{17} and is a more effective use of talent and leadership\textsuperscript{18}

More Innovation

If a group includes more women, the collective intelligence rises\textsuperscript{19}

Gender diversity has a positive effect on team innovation in radical research\textsuperscript{20}

Having a critical mass of 30\% or at least 2 or 3 women on a board decreases groupthink\textsuperscript{21}

Source: WWEST (Westcoast Women in Engineering, Science and Technology, Elizabeth Croft)
Multiple factors contribute to low % of women, people with disabilities, visible minorities, Indigenous Peoples and LGBTQ2+ people in various fields of research, including:

- Unconscious and implicit biases
- Hostile work environments, stereotype threats
- Biased indicators of excellence
- Few role models
- Assumed linearity norm of research career paths
- Under-valued service and outreach contributions
- Socio-economic inequality
Tri-Agency Statement on Equity, Diversity and Inclusion

...the agencies are committed to:

• Supporting equitable access to funding opportunities for all researchers and trainees

• Promoting the integration of equity, diversity and inclusion-related considerations in research design and practices

• Increasing equitable and inclusive participation in the research system, including on research teams

• Collecting the data and conducting the analyses needed to include equity, diversity and inclusion considerations in decision-making
Collecting the data and conducting the analyses needed to include EDI considerations in decision-making
Self-Identification Data

• Beginning 2018, tri-agencies have a common approach to collection of applicant self-identification data

| Gender | Visible minority | Indigenous Identity | Person with a disability | Age |

• Data used for reporting, analysis, and recruitment to peer review activities; any other uses require consent from applicants

• Self-identification data is never shared with reviewers
Discovery Grants: Applicants by Gender, 2019

Other Categories is an aggregation of the responses 'Gender-fluid, non-binary, and/or Two-Spirit' and 'I Prefer Not To Respond'.
## Applicants by funding opportunity (2018)

<table>
<thead>
<tr>
<th>Program</th>
<th># Applications</th>
<th>Women</th>
<th>Visible minorities</th>
<th>Persons with a disability</th>
<th>Indigenous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada Research Chairs</td>
<td>191</td>
<td>50.0%</td>
<td>22.5%</td>
<td>7.3%</td>
<td>-</td>
</tr>
<tr>
<td>SSHRC Insight Grants</td>
<td>1,379</td>
<td>47.4%</td>
<td>17.6%</td>
<td>4.4%</td>
<td>1.3%</td>
</tr>
<tr>
<td>SSHRC Partnership Grants</td>
<td>282</td>
<td>49.6%</td>
<td>16.3%</td>
<td>4.6%</td>
<td>-</td>
</tr>
<tr>
<td>NSERC Discovery Grants</td>
<td>3,417</td>
<td>22.2%</td>
<td>23.8%</td>
<td>1.7%</td>
<td>0.6%</td>
</tr>
<tr>
<td>NSERC Partnership Grants</td>
<td>606</td>
<td>14.5%</td>
<td>27.4%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CIHR Foundation Grants</td>
<td>216</td>
<td>27.9%</td>
<td>18.0%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CIHR Project Grants</td>
<td>2,484</td>
<td>35.8%</td>
<td>21.4%</td>
<td>2.1%</td>
<td>1.0%</td>
</tr>
<tr>
<td>John R. Evans Leaders Fund (CFI)</td>
<td>642</td>
<td>32.8%</td>
<td>20.1%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9,217</strong></td>
<td><strong>35.0%</strong></td>
<td><strong>20.9%</strong></td>
<td><strong>2.5%</strong></td>
<td><strong>0.4%</strong></td>
</tr>
</tbody>
</table>
## Discovery Grants: 2019 Results by gender and career stage

<table>
<thead>
<tr>
<th>Category</th>
<th>Women</th>
<th>Men</th>
<th>Other Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Early Career Researchers (ECR)</strong></td>
<td>Number of awards</td>
<td>166</td>
<td>320</td>
</tr>
<tr>
<td></td>
<td>Success rate</td>
<td>56%</td>
<td>57%</td>
</tr>
<tr>
<td><strong>Established Researchers (ER)</strong></td>
<td>Number of awards</td>
<td>334</td>
<td>1297</td>
</tr>
<tr>
<td></td>
<td>Success rate</td>
<td>73%</td>
<td>70%</td>
</tr>
</tbody>
</table>
Participation in NSE by academic level and gender - 2001/2010

Source: Statistics
Supporting **equitable access** to funding opportunities for all researchers and trainees
Dimensions
Equity, diversity and inclusion Canada

Encompasses a charter and a recognition program (in pilot stage)

Includes, but is not limited to, five underrepresented groups across all disciplines

Voluntary, no funding attached

Over 100 Canadian institutions have endorsed the charter

17 institutions participating in the pilot with the goal of applying for a Dimensions recognition award

Building a wide community of practice
EDI Institutional Capacity-Building Grants

- Launched in 2018
- Funds will allow institutions to undertake activities to advance their own EDI objectives

<table>
<thead>
<tr>
<th>Value</th>
<th>Up to $200,000 per year, for up to two years, non-renewable</th>
</tr>
</thead>
</table>
| Eligible institutions                      | • Canadian universities with Canada Research Chairs (CRC) program quota of 1 to 10  
• Canadian colleges that received between a total of $100K and $4M in tri-agency funding |
| Selection Criteria                         | • Motivation  
• Merit of Proposed Project  
• Institutional Commitment |
| Evaluation                                 | Reviewed by a Committee constituted of researchers, administrators with expertise in EDI. |

EDI in NSERC applications

Integrated into all stages of the review process
analytical process used to assess how diverse groups of women, men and non-binary people may experience policies, programs and initiatives.

Bias in Peer Review

## Training for Peer Reviewers & NSERC staff

<table>
<thead>
<tr>
<th>Evaluation Group Members</th>
<th>Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bias in Peer Review Training Module</td>
<td>✓</td>
</tr>
<tr>
<td>Gender Based Analysis Plus (GBA+)</td>
<td>✓</td>
</tr>
<tr>
<td>Competition-specific training</td>
<td>✓</td>
</tr>
<tr>
<td>Orientation sessions with program staff</td>
<td></td>
</tr>
</tbody>
</table>
Increasing **equitable and inclusive participation** in the research system, including on research teams
EDI in Selection Criteria
Future Research Training

Describe qualitatively any challenges or barriers encountered in ensuring an inclusive research and training environment.

Describe the planned approach to promoting participation from a diverse group of HQP, taking into account equity and inclusion in recruitment practices, mentorship approaches, and initiatives aimed at ensuring an inclusive research and training environment and trainee growth.

Discovery Grants Application Instructions, 2019. Similar requirements are in many NSERC programs.
EDI in Selection Criteria
Past Research Training

Describe specific actions implemented to support equity and inclusion in recruitment practices, mentorship approaches, and initiatives aimed at ensuring an inclusive research and training environment and trainee growth (if applicable).

Important: trainee demographic data is not requested, nor required to assess impacts resulting from consideration of equity, diversity and inclusion in the research and training environment.

Discovery Grants Application Instructions, 2019. Similar requirements are in many NSERC programs.
**EDI in Selection Criteria**

**Research Training**

**Specific actions** include a broad variety of practices which when implemented support equity and inclusion.

- specific actions can occur at any stage of training
- there is no priority or value placed on different stages
- applicants are not expected to participate at every stage
# Discovery Grants - Merit Indicator Grid

## Discovery Grants Merit Indicators

The Merit indicators should be used in conjunction with the Peer Review Manual, which outlines how reviewers arrive at a rating.

<table>
<thead>
<tr>
<th>Exceptional</th>
<th>Outstanding</th>
<th>Very Strong</th>
<th>Strong</th>
<th>Moderate</th>
<th>Insufficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledged as a leader in terms of research excellence, accomplishments, and service. Contributions presented in the application have the highest level of quality. Impact and importance of the work is clearly evident and groundbreaking.</td>
<td>Research excellence, accomplishments, and service are superior to others. Contributions presented in the application are of high quality. Impact and importance of the work is clearly evident and influential.</td>
<td>Research excellence, accomplishments, and service are superior to others. Contributions presented in the application are above average in quality. Impact and importance of the work is evident.</td>
<td>Research excellence, accomplishments, and service are significant. Contributions presented in the application are of good quality. Impact and importance of the work is evident.</td>
<td>Research excellence, accomplishments, and service are reasonable. Contributions presented in the application are of acceptable quality. Impact and importance of the work is not clearly evident.</td>
<td>Research excellence, accomplishment, and service are below an acceptable level. Contributions presented in the application are limited in quality. Impact and importance of the work is not clearly evident.</td>
</tr>
<tr>
<td>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 strategies that adds socio-economic or environmental needs. Long-term and short-term objectives are clearly defined. The methodology is clearly defined and appropriate.</td>
<td>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 well planned. The methodology is clearly defined and appropriate.</td>
<td>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 and short-term objectives are described. The methodology is described and/or appropriate.</td>
<td>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.</td>
<td>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.</td>
<td>The methodology is not clearly described and/or appropriate.</td>
</tr>
<tr>
<td>Past training is at the highest level in terms of the research training environment provided and HQP contributions to research.</td>
<td>Past training is superior to other applicants in terms of the research training environment provided and HQP contributions to research.</td>
<td>Past training is superior to other applicants in terms of the research training environment provided and HQP contributions to research.</td>
<td>Past training is modestly related to other applicants in terms of the research training environment provided and HQP contributions to research.</td>
<td>Past training is below an acceptable level in terms of the research training environment provided and HQP contributions to research.</td>
<td>The application does not clearly demonstrate how the research activities to be supported are distinct from those funded (or applied for) by other sources.</td>
</tr>
</tbody>
</table>
| 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 high quality results in terms of the overall approach and specific projects for HQP. Challenges related to equity, diversity and inclusion specific to the institution and field of research are clearly described. Specific actions to support the recruitment of a diverse group of HQP and an inclusive research training environment are clearly defined. | 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 high quality results in terms of the overall approach and specific projects for HQP. Challenges related to equity, diversity and inclusion specific to the institution and field of research are described. Specific actions to support the recruitment of a diverse group of HQP and an inclusive research training environment are defined. | 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. Training philosophy and research training plans are partially appropriate and not clearly defined in terms of the overall approach and specific projects for HQP. Challenges related to equity, diversity and inclusion specific to the institution and field of research are partially described. Specific actions to support the recruitment of a diverse group of HQP and an inclusive research training environment are partially defined. | Some HQP move on to positions that require skills gained through the training received. Training philosophy and research training plans are partially appropriate and not clearly defined in terms of the overall approach and specific projects for HQP. Challenges related to equity, diversity and inclusion specific to the institution and field of research are not clearly described. Specific actions to support the recruitment of a diverse group of HQP and an inclusive research training environment are not appropria}
“Describe the planned approach to promoting participation from a diverse group of HQP, taking into account equity and inclusion in recruitment practices, mentorship approaches, and initiatives aimed at ensuring an inclusive research and training environment and trainee growth.”
EDI in Selection Criteria
Research Teams

Where applicable, teams should strive for a diverse group of co-applicants, including balanced gender representation. Equity, diversity and inclusion considerations should be reflected in the rationale for the team composition and, where applicable, in the designated roles within the team.

Moreover, where applicable, the applicants should describe how they have implemented and/or will implement policies and practices to support equity, diversity and inclusion within the team (e.g., recruitment of team members, management of the team, mentorship).

Subatomic Physics Grants Selection Criteria, 2019. Similar requirements are in many NSERC programs.
EDI in Selection Criteria
Research Teams

...the applicants should describe how they have and/or will implement policies and practices to support equity, diversity and inclusion within the team (e.g., recruitment of team members, management of the team, mentorship).

Equity, diversity and inclusion considerations should be reflected in the rationale of the Program Committee composition and in the designated roles within the PC.

CREATE Application Instructions, 2019. *Similar requirements are in many NSERC programs.*
Diversity is a fact,

inclusion is a choice.
EDI in Selection Criteria
Research Excellence

Discovery Grants

• Excellence of the Researcher
  • Applicants are asked to describe *past contributions* to the promotion of equity, diversity and inclusion in the research enterprise (*if applicable*).

  ...impact does not refer to quantitative indicators* such as the impact factor of journals or h-index, but on the influence that results have had on other researchers, on the specific field, the discipline as a whole, or on other disciplines....

Impact can be seen as, but is not limited to, advancing knowledge, developing technology, addressing socio-economic or environmental needs, or contributing to increased diversity and gender equity in research....
When the measure becomes the target, it is no longer a reliable measure (Goodhart’s Law)

*Over-optimization of academic publishing metrics: observing Goodhart’s Law in action*, Michael Fire, Carlos Guestrin *GigaScience*, Volume 8, Issue 6, June 2019
Delays in research

Applicants should provide start and end dates of any significant delays and explain impact on the research activity or in the dissemination of research results.

Reviewers recognize delays and assess the quality of research activity during the researcher’s active period.

NSERC recognizes that research productivity and contributions to the training of HQP may also be disrupted due to delays incurred either by the applicant or by HQP.
NSERC support during leave

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 12 months of paid maternity / parental leave.
• The leave supplement will be paid by NSERC.
Promoting the integration of EDI-related considerations in research design and practices
EDI in Selection Criteria
Research Design

Discovery Grants

• Merit of the Proposal
  • Applicants are expected to describe consideration of sex, gender and diversity in the research design (if applicable to the field of research).

The inclusion of sex (biological), gender (socio-cultural) and diversity considerations in research design makes research more ethically sound, rigorous and useful. Describe the rationale for including sex, gender and diversity considerations, and how these aspects will be addressed in the research design, if applicable.

For more information, refer to the Guide for Applicants: Considering equity, diversity and inclusion in your application (questions 5 to 7).

Discovery Grants Application Instructions, 2019.
Similar requirements are in many NSERC programs.
EDI in Selection Criteria
Research Design

Example of its importance

• Absence of pregnant crash test dummies: motor vehicle crashes are leading cause of fetal death related to maternal trauma

Source: Gendered Innovations
EDI in Selection Criteria
Research Design

How Sex, Gender and other Factors Interact in Brain Development

- Sex (genes, chromosomes, hormones, etc.) converges with gender (parental stimuli, media, education, etc.) across an individual's life to influence brain development.

Source: Gendered Innovations
EDII in Selection Criteria
Research Design

How Sex and Gender Interact in Animal Research
Resources for applicants
NSERC’s EDI webpage:
https://www.nserc-crsng.gc.ca/NSERC-CRSNG/EDI-EDI/

Guide for Applicants: Considering equity, diversity and inclusion in your application

Best Practices in Equity, Diversity and Inclusion in Research

A Guide for the New Frontiers in Research Fund
Questions to consider and best practices for:

• Team composition and recruitment processes
• Training and development opportunities
• Inclusion
• Design of the research project

Equity, Diversity and Inclusion: A Best Practices Guide for Recruitment, Hiring and Retention

A Guide for the Canada Research Chairs program

Best practices can also apply to recruitment of trainees and creation of an inclusive training environment.

Gender Diversity in STEM
A briefing on women in science and engineering

Toward a New Normal
Equity, Diversity and Inclusion as Integral to Research and Innovation Excellence: Models for Success
Outcomes from Gender Summit 11 North America
Montreal
November 6–8, 2017

The EQUITY MYTH
Racialization and Indigeneity at Canadian Universities
FRANCES HENRY, ENAKSHI DUA, CARL E. JAMES, AUREY KOBAYASHI, PETER LI, HOWARD RAMOS, and MALINDA S. SMITH
Thank you!

Merci!

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