

Inclusion, Diversity, Equity & Accessibility (IDEA)

Good Practices for Researchers



A reflection paper prepared for the
Canadian Commission for UNESCO
By Jocelyn Baker and Liette Vasseur
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For further reading, see:

The Non-Linear Paths of Women in STEM: The Barriers in the Current System of Professional Training (2018) by Liette Vasseur and Heather VanVolkenburg

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Preamble

Underrepresented, marginalized, racialized, and minority are adjectives that have been used in the literature to describe disenfranchised groups. There is a growing dialogue about the use of these terms and how they perpetuate a culture of discrimination and racism as opposed to working to dismantle it. For this paper, the term historically excluded has been chosen to refer to the people and groups that have been traditionally excluded from the full rights, privileges, and opportunities in Canadian society and includes women, racialized persons, LGBTQ2S+ persons, Indigenous Peoples, and people living with disabilities.

Introduction

Diversity is known to increase objectivity, creativity, innovation, and fiscal responsibility in research [1,2]. It can also foster a deeper respect and appreciation for different perspectives, merits, and skills [1,3]. How should this be implemented in Canadian research laboratories or teams?

One in five people in Canada's population identifies as a non-white minority group [4]. This correlates with increasing representation of equity-seeking groups at Canadian universities (Table 1). With one of the most diverse and culturally rich global populations, it is not surprising to see universities across Canada committed to strengthen equity, diversity, and inclusion (EDI) programs to promote an inclusive university community. However, it is important to note that a lot of work needs to be done, especially with respect to Indigenous Peoples.

Table 1: Canadian University Community Equity Seeking Groups Representation

	Women (%)	Persons with disabilities (%)	Visible minorities/ Racialized people (%)	Indigenous Peoples (%)
Full-time faculty	41	22	21	1
Student enrollment - undergraduate	57	22	40	3
Student enrollment – graduate	55	6	45	4

Source: [5,4].

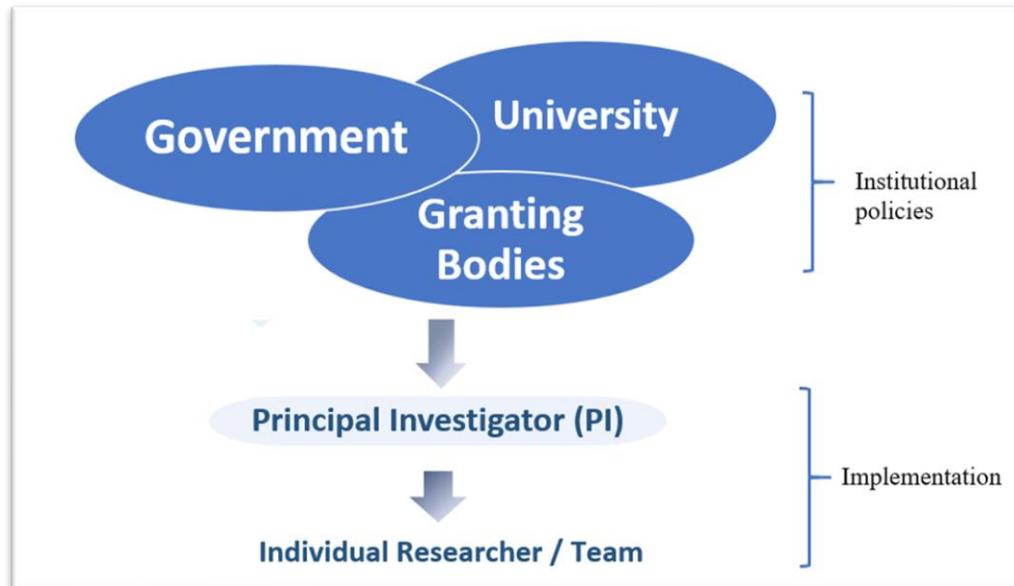
Canadian universities play a key role in fostering Canada's intellectual assets, administering some of the world's best educational programs, while also providing some of the highest paid academic positions worldwide [6,7]. Yet, the reality is that historically excluded groups have different lived experiences at Canadian universities; this is true for both students and faculty [8]. Discrimination, racism, stereotyping, conscious (explicit) and unconscious (implicit) biases are well-documented issues faced by people from historically excluded groups due to complex social, cultural, economic, institutional, and political factors [8,9]. Despite the increase in equity policies since the 1980's, Canadian institutional EDI practices continue to be ineffective and in fact perpetuate the denial of racism, discrimination, and the lack of equity [8].

The Canadian government and the Tri-Council (the Canadian Institutes of Health Research, the Natural Sciences and Engineering Research Council, and the Social Sciences and Humanities Research Council) are committed to excellence in research but recognize that challenges remain in achieving the full participation of equity-seeking groups. For example, few people from historically excluded groups were nominated for Canada Research Chairs (CRC) and the Canada Excellence Research Chairs programs since their creation in 2000. It is the same for many other major national and international prizes and awards.

In 2017, to address this issue within universities, granting councils, and the wider research community, the Minister of Science required that in order to be eligible to apply for CRC positions, a university needed to develop a strategic plan for the implementation of EDI policies. While some institutions

(government, granting bodies, universities) published EDI good practices, most pertained only to institutional policies (e.g. harassment, violence, labour / hiring practices) without providing guidance for implementation in research laboratories (Figure 1). In addition, institutional EDI policies typically do not include accessibility considerations, further perpetuating equity barriers within research enterprises.

Figure 1: Trickle down effect - institutional policies don't always translate into implementation at the level of research laboratories.



From EDI to IDEA

To remedy the gaps between institutional policy and research laboratory implementation of EDI, and the omission of accessibility from EDI discourse, this paper reconfigures EDI to include accessibility (A) and will be referred to as an all-encompassing IDEA – inclusion, diversity, equity and accessibility. This proposal originated from a symposium organized by the Canadian Science Policy Centre (2019) entitled “Acting for Equity, Diversity, and Inclusion in Canadian Science and Research,” where the discussion highlighted that in many cases a person may not fit into an EDI category but may still have accessibility issues, such as a white man being visually impaired (see Box 1 for definitions).

This reflection paper acknowledges that IDEA is a multifaceted, complex, and often confusing discourse. Universities struggle to develop constantly evolving IDEA principles that can be easily implemented in laboratories and research groups, with many faculty members unsure how to turn IDEA policies into practice in the different aspects of their work (e.g. grant applications, recruitment of highly qualified personnel, the research work environment, collaborations, publications, etc.).

It investigates what types of systems, structures, and resources can better support faculty members and research groups to implement IDEA policies. While it mainly focuses on achieving a balanced IDEA approach for research laboratories and enterprises, many of the good practices can be applied to other institutions and organizations.

Box 1: IDEA Definitions

Inclusion

Inclusion is ensuring all individuals are equally supported, valued, and respected. This is best achieved by creating a research environment in which all individuals (students, faculty, staff, and visitors) feel welcomed, safe, respected, valued, and are supported to enable full participation and contribution. An inclusive and welcoming research culture embraces differences of opinions and perspectives while fostering a learning ecosystem underpinned by respect by all and for all.

Diversity

Diversity is the wide range of attributes within an individual, group, or community that makes them distinctive. Dimensions of diversity consider that each person is unique and recognizes individual differences [10] including:

- ethnic or national origin,
- gender, gender identity, and gender expression,
- sexual orientation,
- background (socio-economic status, immigration status or class),
- religion or belief (including absence of),
- civil or marital status,
- family and caretaker obligations (i.e., pregnancy, elderly),
- age, and
- disability.

Equity

Equity is the fair treatment and access to equal opportunity (justice) that allows the unlocking of one's potential, leading to the further advancement of all peoples. The pursuit of equity is about the identification and removal of barriers to ensure the full participation of all people and groups.

Accessibility

Accessibility is the provision of flexibility to accommodate needs and preferences, and refers to the design of products, devices, services, or environments for people who experience disabilities. "We can look at this as a set of solutions that empower the greatest number of people to participate in the activities in question in the most effective ways possible" [11, para.8].

IDEA inside the laboratory

First, the research group or laboratory should undertake a comprehensive environmental scan in order to fully understand, acknowledge and address IDEA barriers. The environmental scan should identify the specific obstacles (e.g. name and accent barriers) that could be preventing all voices from being heard and limiting the diversity of perspectives from being utilized and supported. Identifying IDEA barriers should not be confused with identifying management issues, although they intersect. Adequately addressing barriers goes deeper than managing people and expectations, it is about improved awareness to enhance workplace IDEA cultures.

Box 2: Common Barriers

Race

The division (classification) of humans into groups based on physical traits (e.g. skin colour) regarded as common among people of shared cultural origin [13].

Racism

The “belief that race is a fundamental determinant of human traits and capacities and that racial differences produce an inherent superiority of a particular race, including the systemic oppression of a racial group to the social, economic, and political advantage of another” [13].

Stereotyping

A generalized belief (to be true) about the characteristics, abilities, or qualities of certain groups (categories) of people.

Discrimination

The practice (causing harm) of being treated unfairly, unequally, or differently based on a personal characteristic or trait such as gender or ethnicity.

Conscious (explicit) bias

The intentional (made with awareness) assumptions, attitudes, and beliefs about a person or group.

Unconscious (implicit) bias

The automatic (without thinking) assumptions, attitudes, and beliefs made about a person or group which can affect actions and outcomes. Unconscious biases are problematic, as they occur under the surface of conscious awareness, with little self-awareness of occurrence and consequence [1].

Affinity bias

The tendency for people to seek out those who are like themselves, as well as the preference for favouring people, credentials and experiences that more closely resemble oneself (likeness, sameness).

Groupthink

The failure “to consider alternatives to the dominant view when making decisions” [14]. Groupthink inhibits individual thinking because decision-making becomes a group exercise focused on conformity and consensus as opposed to independent critical thinking. Groupthink discourages the creativity and innovation that comes with individual thinking, it also decreases critical reasoning and evaluation because it takes away individual responsibility [14].

The environmental scan should be led by the principal investigator or whoever has administrative control or management over the laboratory or research group, and it should involve the entire research team. Each laboratory will have its unique circumstances and will require an individual assessment to be fully informed in their IDEA decision-making approaches. The scan should involve the following steps:

- i. All team members complete IDEA training, including evaluation, to ensure robust IDEA understanding;
- ii. Identify who is not being included, what barriers could be causing this exclusion, and what can be done differently to ensure everyone’s full participation [12];
- iii. Ensure that all team members feel comfortable approaching the principal investigator about any issue;

- iv. Repeat this process annually or when significant staffing (leadership) or program changes occur.

The following considerations (identified from the scholarly research and grey literature) can provide a foundation for barrier identification and remedies for step ii of the environmental scan.

1. Education and awareness

Improve team awareness about the role bias (conscious and unconscious), discrimination, stereotypes, and racism play in day-to-day conduct and decision-making.

In academic research enterprises, many of the barriers faced by people from historically excluded groups (including racism, stereotyping, discrimination, and biases including conscious (explicit) bias, unconscious (implicit) bias, affinity bias and groupthink (see Box 2) can intersect (the overlapping of multiple systems of oppression i.e., race, class, gender, age), aggravated by their cumulative effect and consequences [9].

The role that biases play in day-to-day conduct and decision-making is significantly underestimated. For example, the consequences of unconscious bias are far-reaching for women researchers and has helped entrench the “culturally held belief that women’s scholarly efforts are less important than those of men” [15, p.312]. The additive effects of biases, discrimination, racism, and stereotyping -- if left unchecked -- become “widely shared, culturally ingrained assumptions” about the nature of historically excluded groups and contribute to unintentional inequity [16, p.685]. Improved awareness through IDEA training, and evaluation can help individuals uncover their personal biases and identify systemic barriers in the laboratory.

2. Recruitment barriers – the start of the academic pipeline

Advocate for better academic outreach processes to ensure that people from historically excluded groups feel included.

Undervaluing academic credentials, experience, and contributions because they look different than the status quo is an important area of discrimination to acknowledge in the research laboratory. Henry et al. [8, p.266] state that “there is a pattern of professors responding more frequently and favourably to prospective white male students than any other demographic group”. The response rate for white male students who reach out to professors as part of academic reconnaissance is 87% while for all other demographics (including white women) the response rate is 62% or below [8]. Chinese and Indian students receive the fewest responses from both male and female professors, with the most significant disadvantage seen between white male professors and Chinese female students [8]. Kang et al. [17] report that résumés containing racial cues such as international credentials or minority associated names lead to 30-50% fewer career opportunity responses. For many students (especially international), credential bias becomes further aggravated when foreign name bias, accent bias and experience bias are layered in. White men, for example, receive greater networking and engagement opportunities and are more likely than other genders to be sought out for early university admission, scholarships, prizes, and fellowships [18]. IDEA training should therefore raise awareness of disparities between groups within academic outreach processes.

3. Gendered language in job announcements, applications, nominations, evaluations and letters of recommendation

Create fair and equitable processes by removing gendered language from job announcements, applications, nominations, letters of recommendations, and evaluation processes.

Gendered language is language that is characteristic or associated with a particular sex or social gender [19]. Gendered language, although subtle, can have negative consequences on people from historically excluded groups, especially within competitive landscapes. For women, gendered language can elicit bias through the use of communal and interpersonally oriented language (“kind”, “caring”) that is more commonly used to describe women. Men are more likely to be characterized with descriptive language (masculine) that is associated with leadership and agency [20]. The use of masculine language (“risk-taker”, “strong”, “leader”) in opportunity descriptions has been found to discourage women from applying for jobs, grants, and scholarships, thereby giving men an advantage [19,20,1].

Research also shows the substantial use of gendered language within letters of recommendation [16]. Gender bias incited by gendered language is particularly pervasive in academic processes where women’s letters of recommendation tend to be brief (shorter in length when compared to men’s) and contain emotionally toned language such as “she is being thoughtful and conscientious” [21]. Alternatively, men receive longer letters of recommendation with high impact statements about character including language descriptors as “exceptional”, “outstanding”, and “excellent” [21]. Applications and calls for nomination should contain instruction and information around the impact of gender bias to create a fair and equitable process. Letters of recommendation should follow uniform structures addressing specific solicited questions, as opposed to ambiguous open-ended essays [19]. The Canada Research Chairs [guidelines and best practices for reference letter writing](#) and [limiting unconscious bias](#) in letters of reference are excellent resources for guidance.

4. Retention barriers - Mentors, sponsors, and champions

Diversify mentorship programs by using a range of faculty to better match the growing diversity of university community populations.

It can be challenging to find “faculty who are available to teach with authority about the issues and concerns that are fundamental to racialized and Indigenous Peoples” [8, p.7], and this “raises a number of issues concerning what kinds of research and teaching occurs, and who is available to provide mentoring” [8, p.31). Representation matters: “you can’t be what you can’t see” and “seeing is believing” are common everyday expressions rooted in this axiom. The lack of diversity within the Canadian professorship requires creative programming solutions such as expanding mentorship programs beyond faculty to the broader research community, including alumni, government, and private sector networks.

5. Tokenism, cultural taxation, service work, and workload

Acknowledge tokenism, service work, and workload as placing additional burdens on already historically excluded students and faculty

As their number is usually limited, historically excluded faculty and students are often targeted to participate in service work (including mentoring, and committee and panel membership), placing

additional burdens on historically excluded students and faculty. The implications of increased workload can distract from research production, negatively impacting academic achievement and career opportunities [22]. In some cases, the motivation behind their involvement is tokenism, i.e. efforts to create an appearance of inclusion and diversity [23]. Increasing diversity can “conceal whiteness by providing an organization with colour” [24, p.12]. The intent of increasing diversity can further perpetuate inequities through the marginalization or “[cultural taxation](#)” of already historically excluded groups [8, p.315].

IDEA outside the laboratory

6. Field work and community research

Extend IDEA adherence through training and discussions beyond the laboratory during field work, outreach, and engagement forums.

Research happens not only inside the laboratory, but also in the field and communities. This expanded learning ecosystem beyond the walls of academic institutions comes with additional risk and complexities with maintaining expected IDEA based practices and codes of conduct [23]. High incidences of breaches of EDI codes of conduct and policies, including harassment, violence, and failure to accommodate, can occur during field work [25,26]. “Fieldwork in certain geographic areas and/or working alone has led many researchers to feel uncomfortable, frightened and/or threatened by local community members and/or their scientific colleagues” [26, p.1]. In terms of equity, research has shown that men are more often allocated field research resources (financial and equipment) than female researchers, with much equipment designed for men only [27,28].

Students should be made aware of potential field risks through risk assessments and mitigation strategies. This will include determining who is at heightened risk due to any aspect of identity and ability that could be perceived as different from the general community in which the research is taking place. Having clearly assigned responsibility roles and ensuring all team members are trained on health, safety, and accessibility protocols should be a priority. Cultural intelligence and sensitivity training can also promote improved field safety. Clear procedures accompanied by training for reporting threats (including breaches) are essential. Adherence to field research health and safety should be mandatory and will help ensure an on-going inclusive, respectful, and diverse research and learning ecosystem.

7. Mobilizing knowledge

Improved awareness of bias, discrimination, stereotyping, and racism in spaces of research, knowledge translation, mobilization, and dissemination.

Most academics share their research (knowledge mobilization) through conferences, workshops, and delivering presentations. These opportunities for knowledge mobilization are important for peer review, collaboration, fellowship opportunities, and networking. “Women and racialized minorities encounter different kinds of biases and barriers in spaces of knowledge translation and research dissemination” [8, p.271]. Research shows white men are more likely than any other race and gender to be invited to speak at conferences, especially as presenters, keynote speakers, and as moderators.

Women, especially non-white women become further disadvantaged given that during a typical conversation, men interrupt women over 33% of the time [29]. In the research enterprise, women are

interrupted, talked over or completely ignored by men with great frequency [8]. Men dominate as much as 75% of networking conversations and speaking opportunities including question and answer periods at conferences and other spaces of knowledge mobilization, with the speaking disparity even greater in male dominated fields such as science, technology, engineering, and math (STEM) [29,30,8]. Principal investigators need to be aware of such male dominated networks, and behaviours, and monitor / modify practices accordingly. All students should be made aware of how gender, race, ability, ways of knowing, and differing cultures can influence communications and knowledge sharing. Self awareness, especially for men, of the role gender plays in knowledge mobilization dynamics is a key component to mitigating this barrier.

8. Curriculum decolonization

Increase awareness of how curriculum is dominated by, and caters, to the Western colonialist way of knowing.

Curriculum transformation can lead to a more inclusive way of thinking, collaborating, and knowing. Among the Truth and Reconciliation Commission (TRC) Calls to Action, there is a call to decolonize the current way of teaching and the material that is taught. Canadian universities' curricula are dominated by white, Eurocentric, and colonial scholarship, further perpetuating biases for people from historically excluded groups, as other cultural ways of knowing tend to remain invisible [31,32].

In addition, most textbooks and teaching materials tend to only use white men as examples. This lack of representation and diversity within curricula further perpetuates biases against women, Indigenous and racialized students [31,8]. To elicit meaningful IDEA change, revisiting program core teachings and teaching materials may require complete program deconstructions -- as opposed to 'window dressing' pervasive issues by adding new flashy teaching components that can distract from the real barriers. Such transformations require human and financial resources, and care must be taken not to unduly burden historically excluded groups with decolonizing the curriculum.

9. Grant applications

Include a diversity of collaborators in grant applications to ensure all team members are able to fully participate equitably in research undertakings.

For new grant applications, principal investigators can expect to be asked how they will promote IDEA to foster a more diverse research team and consider how the research could impact all people. For example, the principal investigator should expect to provide a description of the IDEA context and composition of the research team. It is not only a question of stating the number of women in a laboratory or research team -- this is not enough to demonstrate that EDI is promoted. Instead, the description should include how the principal investigator and the team will minimize barriers to promote inclusion, diversity, equity, and accessibility. Proposed IDEA training, policies and evaluations will need to be specified, including how the principal investigator and research team will guard against bias (conscious and unconscious). Principal investigators should also attempt to integrate commitments to the Truth and Reconciliation Commission (TRC) [Calls to Action](#) when possible, especially for research that may link directly or indirectly to Indigenous cultures or knowledge systems.

10. Selection committees and evaluation

Improve committee decision-making governance by increasing diversity with at least 30% of the committee represented by a diversity of people (age, race, skill set, experience) with a goal of gender parity for men and women; reduce member bias and discrimination through training.

As student bodies within Canadian universities become more diverse, so too must the voices and decision-making structures that represent and support those students. Yet, the reality is that white men tend to dominate selection committees, especially on hiring or grant selection committees [1,33]. Because white men dominate committees, groupthink and affinity bias is overwhelmingly responsible for (white) men receiving higher considerations over people from historically excluded groups, especially in the evaluation processes [8]. Education and training regarding the role of unconscious bias, stereotypes, and discrimination (especially in subtle forms) should be mandatory and on-going. Committee membership should often be refreshed to prevent groupthink from creeping in. In addition, when comes to the EDI section in applications, members of the selection committee should consider how well the principal investigator is engaged with IDEA.

Improve evaluation processes with specific and measurable evaluation criteria, assessing merit based on necessary skills, qualifications, impacts, and current accomplishments.

Multiple studies have shown that when uncertainty exists within evaluation processes, such as those related to research proposals, funding, grants, prizes, and thesis defence, white men are viewed (by all genders) as being more competent and credible than other races and genders [3,8,15,34]. Academic evaluation processes tend to employ antiquated criteria to assess excellence, including for example, the high-risk impact of proposed research, the amount of work published, and citations it is likely to receive [35,36]. This traditional way of assessing achievement heavily favours men, giving them a verified advantage over people from historically excluded groups [34]. For many Indigenous scholars, their research is often in the sphere of Indigenous studies, primarily within their own communities, so their research may not be widely known or cited [37].

To select the best qualified researchers, evaluation processes need to move away from these historical measures of excellence. Evaluations should be based on merit that is not solely aligned to high impact factor publications but also aligned to social or other impacts, including contributions to the discipline, and in accordance with the capacity of the person (i.e., a woman who has had children during her tenure process, or someone who works part-time as a result of a disability). Criteria should be clearly defined, specific, and measurable, looking at actual achievements. Another equitable way of accurately assessing talent is by combining an evaluation of academic achievements with service to community (including volunteer work).

Summary

For Canadian academic institutions, Henry et al. [8, p.283] argue equity and diversity policies “do not work because they seem to focus more on risk management and protection of institutional reputation rather than the pursuit of race and gender justice”. The good news is that there are effective ways to shape research enterprises and program specific administration processes to help close the equity gap. IDEA policy development and training should not be viewed as an exercise in checking boxes, but rather as powerful tools to help ensure fair and equitable processes. A combination of IDEA remedies with built-in milestones for accountability will yield the highest justice and equity returns.

Until IDEA thinking is embedded as status quo, the good practices and considerations discussed in this paper can help change the established ways of doing things, and lead to the bold equity and diversity changes needed to bring a better-informed IDEA research enterprise. By making changes even in the small spaces such as individual research laboratories, this bottom-up approach can eventually transform departments and institutions as a whole [38,39].

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