

Fonds de recherche du Québec

Nature et Technologies Santé Société et Culture



Deconstructing excellence: plurality, diversity, and evaluation issues

Intersectoral Student Committee

June 2022

The Intersectoral Student Committee

The Intersectoral Student Committee (CIE) is a statutory committee common to the boards of directors of the Fonds de recherche du Québec (FRQ) – Nature et technologies, Santé, and Société et culture. The committee’s mandate is to advise the Chief Scientist of Québec and the boards of directors of the FRQ by identifying strategies to promote the accessibility of research funding, optimize the potential of the next generation of researchers, and enhance their influence and impact on society.

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Acknowledgement

The CIE would like to thank Annie Montpetit, a former member of the CIE, for her important contribution on this subject and to the writing of this report

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List of Acronyms

CAPRES	Consortium d'animation sur la persévérance et la réussite en enseignement supérieur
CIE	Intersectoral Student Committee
CNRTL	Centre national de ressources textuelles et lexicales
SSHRC	Social Sciences and Humanities Research Council of Canada
NSERC	Natural Sciences and Engineering Research Council
CSE	Conseil supérieur de l'éducation
SPE	Science & Policy Exchange
EDI	Equity, diversity and inclusion
FGS	First-generation students
CIHR	Canadian Institutes of Health Research
FRQ	Fonds de recherche du Québec
FRQNT	Fonds de recherche du Québec Nature et technologies
FRQS	Fonds de recherche du Québec Santé
FRQSC	Fonds de recherche du Québec Société et culture
LGBTQ2S+	Lesbian, gay, bisexual, transgender, queer or questioning, two-spirit
RCAAQ	Regroupement des centres d'amitié autochtones du Québec (Québec association of Native Friendship Centres)
NCE	Networks of Centres of Excellence
RoRI	Research on Research Institute

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INTRODUCTION

The general profile of next generation researchers¹ has changed in recent years to become much more diverse. This transformation goes hand in hand with the increasing attention that is now being paid to issues of equity, diversity and inclusion (EDI) in the academic community. It is for these reasons that the Intersectoral Student Committee (CIE) of the Fonds de recherche du Québec (FRQ) has produced this report examining the concept of research excellence and the relationship between the evaluation of excellence and the plurality of student profiles and backgrounds. More specifically, the CIE looks at the impact of certain criteria for evaluating research excellence on the accessibility of excellence awards for certain groups of next generation researchers.

The conceptualization of research excellence has been a recurring issue in the consultations and work conducted by the CIE in recent years. In 2015, the committee discussed this notion in its report entitled [*La recherche étudiante au Québec : accessibilité, excellence, rayonnement*](#). A number of issues were identified at that time, including the imprecise definition of research excellence and the challenges related to the establishment of inclusive criteria to measure it.

The present report proposes a reflection on the definition of research excellence, its operationalization, and its evaluation. More specifically, it examines the relationship between the plurality of next generation researcher profiles and the evaluation of a certain idea of excellence. The overall message that emerges from the report is that it would be beneficial to improve our understanding of research excellence in all its complexity and apprehend its assessment from a perspective that is more sensitive to issues related to EDI.

With a view to furthering reflections around research excellence, the CIE wishes to provide next generation researchers with a better understanding of the conceptual dimensions related to the notion of excellence and its evaluation. To that end, this report is divided into three sections. The first section presents the concept of research excellence and the debates it has raised. The second section highlights some of the barriers to equity, diversity and inclusion that are imposed by a standardized assessment of excellence, and then discusses in more detail some systemic inequities affecting specific student groups:

¹ For the purposes of this report, the notion of “next generation researchers” is taken in a broad sense to mean college and undergraduate students as well as graduate students (master’s, doctorate). It also includes postdoctoral fellows.

women, Indigenous students, racialized groups, LGBTQ2S+ communities, international students, and first-generation students. The third section addresses the challenges associated with the operationalization of research excellence. It suggests a critical reflection on the criteria and indicators that are commonly used.

1. Understanding research excellence

Perceptions of what constitutes a “good” research record strongly inform the evaluation of research, especially by peers and granting agency review committees. These perceptions influence, and even determine, who gets funded and, in turn, facilitate the academic path of funding recipients, thus providing them with the winning conditions to further improve their research record. The evaluation of research also lends a *de facto* advantage to certain specific traditions, epistemological positions, disciplinary cultures and methodological approaches to the detriment of others. Moreover, in a competitive research environment, a “good” research record is no longer sufficient to stand out: it must be excellent. In addition, the emphasis on research excellence is so great that it has taken precedence over the more fundamental and underlying notion of “research quality”². In fact, excellence is now the dominant paradigm across the entire research ecosystem, including universities and granting agencies. This notion guides the choice of activities performed by researchers, such as scientific communication, teaching, knowledge translation, and research management³. But what is excellence? How do we measure the research excellence of a student profile? What components (criteria and indicators) can be used to evaluate the quality of research? Are these components inclusive and do they take into consideration the diversity of student profiles?

1.1 Excellence: a consensual concept?

The debates in the research community surrounding excellence focus on the ambiguous nature of the notion and the difficulties inherent in its evaluation. From a lexicographical point of view, in France, the Centre national de ressources textuelles et lexicales (CNRTL) defines excellence as the “character of a thing or person that corresponds, almost perfectly, to the ideal representation of its nature or function or that manifests a very clear superiority in a particular area”⁴. The CNRTL further specifies that the term is used when “implicitly comparing the components or qualities of a thing or person with those of another [...] in a way that highlights a given component or quality in a predominant manner, essentially above all else”⁵. For its part, the Larousse dictionary defines

² Erika Kraemer-Mbula, Robert Tijssen, Matthew L. Wallace and Robert McLean (2021). *Transforming Research Excellence: New Ideas from the Global South*. Halfa and African Minds. Copy of the book available for free download via this [link](#).

³ *Ibid*, p.2.

⁴ N.D. (2012). *Excellence* in Centre national de ressources textuelles et lexicales under Portail Lexical : Lexicographie. France. Online at <https://www.cnrtl.fr/definition/excellence>

⁵ *Ibid*.

excellence as the “supreme degree of quality or value of a person or thing”⁶. Tijssen⁷ adopts this common meaning in relation to research excellence, in that it refers to that which reaches a superior standard in research.

But what is a “superior standard”? And who defines what might constitute one? Ferretti *et al.*⁸ conclude that excellence is an “essentially contested concept”. In general, there is a relative consensus on its meaning, but not on its concrete manifestations. Indeed, excellence cannot be defined objectively or given a single meaning because of its open and normative nature. Hence the numerous debates sparked by the notion of excellence.

Some reflection is therefore in order: in the absence of a consensual definition of excellence, and in a context where funding for research is limited, how should we define research excellence in order to properly evaluate it? This reflection goes beyond discipline-specific issues and concerns the research community as a whole. There are a number of discussions on this subject in the literature, most of which deal with the different conceptual dimensions of research excellence. Although there is no consensus on these different dimensions, many agree that research quality and impacts should be included in the conceptualization of excellence⁹. In addition, it is important to mention that the indicators inherent to the scientific nature of a research project can be evaluated in all disciplines, which is consistent with an inclusive vision of excellence. For example, the International Development Research Centre distinguishes six conceptual elements that emerge over the course of the research process: scientific merit of the research design, ethics of the research methods, originality of the data collection, relevance of the data analysis, validity of the research objectives and findings, and impacts of the project¹⁰. In short, excellence is a multidimensional and polysemic concept that does not have a consensus definition in the literature.

1.2 Diversifying to excel

Along with finding a definition for research excellence, reflection is also needed on the systemic factors that contribute to the excellence of the research community. In other

⁶ Larousse. *Excellence*. (Page visited October 5, 2021). Online at <https://www.larousse.fr/dictionnaires/francais/excellence/31964>

⁷ Robert Tijssen (2003). *Scoreboards of Research Excellence*. *Research Evaluation*, 12(2), p. 91-103.

⁸ Federico Ferretti, Angela Guimaraes Pereira, Daniel Vértesy and Sjoerd Hardeman (2018). *Research excellence indicators: time to reimagine the 'making of'?*. *Science and Public Policy*, 45(5), p. 731-741.

⁹ Jonathan Grant *et al.* (2010). *Capturing Research Impacts: A review of international practice*. RAND Corporation. Online at https://www.rand.org/pubs/documented_briefings/DB578.html

¹⁰ Ethel Mendez (ND). *Evaluating Research Excellence: Main Debates*. International Development Research Centre. Online at <https://www.idrc.ca/sites/default/files/2021-04/Brief-Final-English.pdf>

words, it is important to understand that the excellence of the research ecosystem does not depend solely on the excellence of the individuals that make it up. In this regard, the works of Schwartz *et al.*¹¹, Powell¹² and Hofstra *et al.*¹³ are unanimous: diversity acts as a real driving force for excellence, particularly by stimulating innovation. In research, this diversity is expressed in several ways. First there is diversity of individuals, implying the presence of a variety of profiles within a group, whether through different backgrounds, different identities, or different experiences. These individuals will have acquired different skills and will thus express different points of view. Then there is diversity of research topics, both between disciplinary fields and within a single discipline. There is also diversity of research perspectives including, for example, different epistemological positions, different research approaches, and different data collection and analysis methods.

The literature demonstrates the benefits of diverse research teams: they create better knowledge, are cited more often, generate a broader range of new ideas, and better represent society¹⁴. When they deny themselves this variety of perspectives, research teams become less creative, have more difficulty innovating, and may have more difficulty questioning their research practices.

Inspired by the practices of large private companies, Nivet¹⁵ proposes a framework for the evolution of diversity and inclusion practices within academic institutions. He notes that today's current emerging phase reflects a growing understanding of the positive impact of diversity on organizations and the need to couple efforts to promote diversity with the development of a culture of inclusion. Kraemer-Mbula describes this phase as "an essential step forward in building inclusive research systems"¹⁶. Reflection on the benefits of diversity for the academic and research communities is therefore well underway. This reflection must lead to criteria for evaluating excellence that are inclusive,

¹¹ Talia Schwartz, Ann-Gel S. Palermo, Sandra K. Masur, and Judith A. Aberg (2019). *The Science and Value of Diversity: Closing the Gaps in Our Understanding of Inclusion and Diversity*. *The Journal of Infectious Diseases*, 220 (2)2. p.S33–S41.

¹² Kendall Powell (2018). *The Power of Diversity*. *Nature*, 558. p.19-22.

¹³ Bas Hofstra *et al.* (2020). *The Diversity – Innovation Paradox in Science*. *PNAS*, 117 :17. p. 9284-9291.

¹⁴ The Editors of the Lancet Group (2019). *The Lancet Group's commitment to gender equity and diversity*. 394. p. 452-453. Online at [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(19\)31797-0/fulltext#articleInformation](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(19)31797-0/fulltext#articleInformation)

¹⁵ Marc A. Nivet (2011). *Diversity 3.0: A necessary systems upgrade*. *Academic Medicine*, 86(12). p. 1487–1489. Online at https://journals.lww.com/academicmedicine/Fulltext/2011/12000/Commentary_Diversity_3_0_A_Necessary_Systems.7.aspx

¹⁶ Erika Kraemer-Mbula (2021). "Gender diversity and the transformation of research excellence". In Kraemer-Mbula *et al.* (2021), *op. cit.*, p.104.

i.e., that allow each individual to put forward the aspects of his or her identity, background, skills and experiences that she or he considers relevant to the research. Such a reflection must also translate into practices for evaluating research excellence that are equitable for different individuals and that truly measure their research potential. As this report will show, a culture change is needed since some groups are unduly disadvantaged by some of the criteria currently used to evaluate excellence in the research community.

1.3 A need for culture change

A culture change across the entire research ecosystem is essential if we want to achieve inclusive and equitable evaluation of research excellence. Several initiatives have already made great strides through the development of standards and practices that lead to better consideration of EDI issues in the research community. Examples are the [Athena Swan](#) charter framework and the [SAGA](#) project (UNESCO). The former gives positive recognition to universities for their good practices in EDI. In Canada, the [Dimensions](#) program (SSHRC, CIHR, NSERC) invites Canadian educational institutions to take part in a “post-secondary transformation to increase EDI and help drive deeper cultural change within the research ecosystem”. This program addresses barriers faced by, but not limited to, women, Indigenous people, persons with disabilities, members of visible minorities or racialized groups, and members of lesbian, gay, bisexual, transgender, queer or questioning, and two-spirit (LGBTQ2S+) communities. In the manner of Athena Swan, on which it is based, the Dimensions program provides public recognition for institutions committed to achieving increased EDI.

For their part, the Networks of Centres of Excellence (NCE) emphasize that “the participation of all qualified individuals, inclusive of members of under-represented groups, is essential to mobilize Canada's best research, development and entrepreneurial expertise to create excellent, innovative and impactful results”¹⁷. The NCE thus expects the organizations it funds to adopt the principles of EDI. As for the FRQ, the 2018-2022 strategic plan of each of the three agencies include a commitment to strengthening EDI in research. This commitment led to the development of the [FRQ Equity, Diversity and Inclusion Strategy](#). Their vision includes the creation of a research ecosystem based on “diverse and inclusive models of excellence that make Québec research stand out for its quality, relevance, creativity and impact”.

¹⁷ Networks of Centres of Excellence (2017). *NCE Statement on Equity, Diversity and Inclusion*. Online at https://www.nce-rce.gc.ca/About-APropos/EDI-EDI_eng.asp

In sum, discussions of diversity and excellence are central to reflection on the evaluation of research. Over the past decade, the international research community has increasingly focused on issues surrounding research funding as well as on practices that can make research cultures more open and inclusive¹⁸.

¹⁸ Stephen Curry *et al.* (2019), *op cit.*

2. The plurality of next generation researcher profiles

The profiles of next generation researchers have changed in recent years in Québec. According to a report published by the Conseil supérieur de l'éducation (CSE)¹⁹ in 2013, several factors mark the academic paths of next generation researchers in Québec. For example, holding a job while studying, balancing school and family, going back to school, part-time studies, and an irregular academic background, to name just a few, do not correspond to the so-called linear path of people who complete successive degrees before starting a career. The literature generally refers to these non-linear trajectories as “atypical paths” despite the fact that they are quite common among the emerging generation.

2.1 Atypical paths

As previously mentioned, next generation researchers have diverse educational trajectories. These are the result of a combination of individual choices and institutional dynamics²⁰. In particular, there are a range of family, personal or professional reasons that can lead a student to interrupt his or her studies or change study program. These reasons are not related to the student's academic ability or research potential, but such choices are often perceived negatively when assessing a person's excellence. Indeed, atypical paths are incompatible with several current indicators for evaluating research excellence (See 3. Operationalizing excellence: what criteria?). For example, having to work while studying to support one's family can prolong the length of schooling, impact academic grades, and reduce research productivity.

Prejudices and biases towards atypical paths persist. Indeed, trajectories that “deviate” from the regular path are viewed as reflecting a “lack of determination, commitment and enthusiasm.”²¹ Yet the empirical evidence belies these prejudices. For example, Vasseur

¹⁹ Conseil supérieur de l'éducation (2013). *Parce que les façons de réaliser un projet d'études universitaires ont changé...* Online at http://www.specs-csn.qc.ca/site/publications/divers/Conseil-superieur-education/2013-06_projet-etudes-universitaires.pdf

²⁰ Pierre Canisius Kamanzi, Annie Pilote, Morgane Uzenat and Sandrine Gris (2019). *La démocratisation des études supérieures à l'aune de la différenciation et de l'individualisation des parcours scolaires au Québec*. L'orientation scolaire et professionnelle, 46(4).

²¹ Tina Gruosso (2018). *Universities should embrace women's non-linear career paths*. University Affairs, In My Opinion Section. Online at <https://www.universityaffairs.ca/opinion/in-my-opinion/universities-should-embrace-womens-non-linear-career-paths/>

and Van Volkenburg²², who studied the non-linear career paths of women aged 30 and over in science, technology, engineering and mathematics (STEM), show that their graduation rates are three times higher than those of their younger counterparts.

The plurality of next generation researcher profiles does not stop with atypical paths but is also found on several other levels. Socio-economic status, parental education level, region of origin, migration path, special needs, or Indigenous identity are just a few examples of structural factors that can advantage or disadvantage one person over another. These realities influence persistence and success in university studies²³, as well as the ability to excel, and therefore to obtain excellence scholarships, regardless of the person's skills or research potential

2.2 Barriers to EDI related to standardized evaluation

According to the CSE, issues of access to higher education affect different groups. “Students from disadvantaged backgrounds, first-generation students, students from the regions, Indigenous students, students with special needs, and international students often face realities distinct from those of individuals with a more linear path and require special attention from teaching institutions and decision-makers”²⁴. It is therefore worth taking a closer look at the particularities of certain groups in order to understand, at least in part, how the barriers affecting their ability to meet certain evaluation criteria for excellence can arise.

The following sections do not pretend to provide an exhaustive portrait of all the barriers to EDI—individual or mutually constructed—within the academic research community. Rather, they are intended as an overview of certain groups that are traditionally under-represented in research²⁵ and the inequities that these groups face in the standardized

²² Liette Vasseur and Heather Vanvolkenburg (2018). *The Non-Linear Paths of Women in STEM: The Barriers in the Current System of Professional Training*, the Canadian Commission for UNESCO's IdeaLab, May 2018. Online at

<https://en.ccunesco.ca/-/media/Files/Unesco/Resources/2018/05/NonLinearPathsOfWomenInSTEM.pdf>

²³ Conseil supérieur de l'éducation (2019). *Les réussites, les enjeux et les défis en matière de formation universitaire au Québec : Avis au ministre de l'Éducation et de l'Enseignement supérieur*, Conseil supérieur de l'éducation : Québec. Online at <https://www.cse.gouv.qc.ca/wp-content/uploads/2019/12/50-0521-avis-reussites-enjeux-defis-universitaire.pdf>

²⁴ Conseil supérieur de l'éducation (2019), *op. cit.*, p. 11.

²⁵ Mirijam Fines-Neuschild and Bibiana Pulido (2021). *Rethinking university scholarships to improve equity, diversity and inclusion among winners*. University Affairs, In My Opinion Section. Online at <https://www.universityaffairs.ca/opinion/in-my-opinion/rethinking-university-scholarships-to-improve-equity-diversity-and-inclusion-among-winners/>

evaluation of excellence. As such, we hope that pointing out certain iniquities will contribute to the discussion on the definition of research excellence and make it more open and inclusive, so that the success of next generation researchers does not depend on whether or not they belong to so-called marginalized populations.

Intersectionality

First, it is necessary to introduce the concept of intersectionality, which can affect all groups of next generation researchers and is of particular interest in the context of this report. Various works by African American feminists (such as Patricia H. Collins and Kimberlé W. Crenshaw) address the issue of discrimination, pointing out that the feminism of white middle-class women does not resonate with some black women, despite the fact that both groups are composed of women. Their findings can be attributed to other factors (e.g., age, gender, sexual orientation, disability) that may lead to other forms of discrimination. It is therefore possible to be part of the same group (e.g., women) or set of people (e.g., the middle class), but to experience a different reality because of the simultaneous influence of another element (e.g., sexual orientation or disability) that is indissociable from the others. It is the combination of these factors that builds an individual's unique identity and affects how he or she experiences a shared reality. The different factors interact with each other, despite being independent. Thus, the notion of intersectionality makes it impossible to apprehend the reality of a next generation researcher based solely on his or her belonging to a single group.

Women

A bibliometric analysis²⁶ highlights certain disparities between men and women while identifying biases that could explain these differences. The study notes that, over the course of their career, women publish fewer papers than men and are about half as likely to be first author. Furthermore, it was found that papers on which women were listed as sole author, first author or last author received fewer citations. This citation disadvantage has a direct impact on women's careers, given that the number of publications and citations are indicators that are generally used to evaluate research impact. This situation is a concern in academia, where women account for almost half (48%) of assistant professors, but only 27% of full professors²⁷.

²⁶ Vincent Larivière et al. (2013). *Bibliometrics: Global gender disparities in science*. Nature, 504, p.211-213.

²⁷ Canadian Association of University Teachers (2018). *Underrepresented & Underpaid: Diversity & Equity Among Canada's Post-Secondary Education Teachers*. CAUT Report. Online at https://www.caut.ca/sites/default/files/caut_equity_report_2018-04final.pdf

The observed disparities between men and women can be explained by several factors that have been raised in the literature. Among these, women have academic career paths that are more frequently interrupted or put on hold due to motherhood, in addition to usually assuming a greater share of childcare and childrearing responsibilities^{28,29}. Furthermore, when looking at past research grants, women received on average less funding than men³⁰, which impacts recruitment, productivity, and research exposure (e.g., conference participation). In addition, there are unconscious gender biases, which are difficult to quantify, but which appear to have an impact on the acceptance rate of publications written by women³¹.

In the same vein, from March to April 2020, the first months of the COVID-19 pandemic, women's submission rates decreased compared to the same period the previous year³². This finding was also observed among men, but to a lesser extent than for women³³. A more detailed examination of these statistics revealed that this decrease was much more significant for women with first-author positions than their last-author counterparts. Given that many disciplines customarily assign first authorship to a more junior scholar and last authorship to a senior scholar, this suggests that the pandemic had a greater impact on early-career female researchers. The greater decline in research production among women during the pandemic is linked, in part, to an increase in family responsibilities, which were exacerbated by lockdowns in many countries. The promotion of individuals based primarily and exclusively on quantitative indicators (e.g., number of articles and citations, number of conferences) thus appears to contribute to the reinforcement of gender inequalities in the research community. This model also limits academia's capacity to embrace a broad diversity of individuals and excellence that could enhance its performance.

²⁸ Phyllis L. Carr *et al.* (1998). *Relation of Family Responsibilities and Gender to the Productivity and Career Satisfaction of Medical Faculty*. *Ann Intern Med.*, 129, p.532-538. Online at <https://www.acpjournals.org/doi/abs/10.7326/0003-4819-129-7-199810010-00004>

²⁹ Elissa Z. Cameron, Angela M. White and Meeghan E. Gray (2016). *Solving the Productivity and Impact Puzzle: Do Men Outperform Women, or are Metrics Biased?*. *BioScience*, 66(3), p.245-252.

³⁰ Jordi Duch *et al.* (2012). *The Possible Role of Resource Requirements and Academic Career-Choice Risk on Gender Differences in Publication Rate and Impact*. *PLoS ONE*, 7(12), e51332.

³¹ Robyn M. Borsuk *et al.* (2009). *To Name or Not to Name: The Effect of Changing Author Gender on Peer Review*. *BioScience*, 59(11), p.985-989.

³² Philippe Vincent-Lamarre, Cassidy R. Sugimoto and Vincent Larivière (2020). *The decline of women's research production during the coronavirus pandemic*. *Nature Index*. Online at <https://www.natureindex.com/news-blog/decline-women-scientist-research-publishing-production-coronavirus-pandemic>

³³ *Ibid.*

Indigenous students

The Regroupement des centres d'amitié autochtones du Québec (RCAAQ) has identified some of the barriers experienced by Indigenous students³⁴. While not all Indigenous student populations necessarily face all of the identified barriers³⁵, each of them still faces their own challenges. These challenges may also be combined with other vulnerability factors, such as gender and sexual orientation (e.g., two-spirit). It is important to mention that Indigenous students face a myriad of difficult social, economic and geographic circumstances, both financial and non-financial, not only in accessing higher education, but also throughout their postsecondary journey, such as adequate financial support, geographical distance, linguistic and cultural differences, and personal challenges^{36,37}. In Québec, equitable access to postsecondary public education services for Indigenous people is a significant issue when it comes to overcoming historical inequalities between Indigenous and non-Indigenous people, particularly in terms of graduation rates.

In addition, it is essential to emphasize the importance of the decolonization of postsecondary institutions in overcoming historical inequalities in graduation rates between Indigenous and non-Indigenous people³⁸. To this end, it is necessary to promote autonomy and self-determination of Indigenous people in Indigenous education, as well as taking concrete actions to decolonize educational institutions³⁹. These needs must be understood and considered in order to effectively address the socio-economic, structural and institutional barriers that hinder Indigenous students' success in higher education and thus their competitiveness in excellence-based scholarship programs.

It is important to emphasize the factor of separation from the community that must be faced by many Indigenous students in order to pursue university studies in an urban

³⁴ Regroupement des centres d'amitié autochtones du Québec (RCAAQ) (2020). *Fostering Indigenous Students' Postsecondary Perseverance and Educational Success*. Wendake, RCAAQ.

³⁵ For example, in the case of the Wendat community, the barrier of separation from the community is less present, given its proximity to postsecondary institutions. That being said, this community, like many others, also faces systemic issues.

³⁶ Jing Tian (2012). *Barriers to postsecondary education facing Aboriginal peoples in the North: Spotting the knowledge gaps*.

³⁷ Regroupement des centres d'amitié autochtones du Québec (RCAAQ) (2020). *Op cit*.

³⁸ Commissions of inquiry, such as the Truth and Reconciliation Commission, the National Inquiry into Missing and Murdered Indigenous Women and Girls, and the Commission of Inquiry on Relations Between Indigenous Peoples and Certain Public Services, as well as the most recent report of the RCAAQ, have underscored the need to decolonize the education system through changes to institutional policies, practices and curricula. See RCAAQ (2020). *Op cit*.

³⁹ Carole Lévesque *et al.* (2015). *Une synthèse des connaissances sur la réussite et la persévérance scolaires des élèves autochtones au Québec et dans les autres provinces canadiennes*. Cahier Dialog.

environment. Arriving in an urban environment is a culture shock that can lead to fear and anxiety⁴⁰. Moreover, moving to the city leads to the loss of community touchstones and support⁴¹. The RCAAQ has identified four issues associated with the move to a new city: integration in a new sociocultural environment, prejudice and racism, isolation from the family network, and the risk of loss of identity and language.

In addition to geographical distance, the Consortium d'animation sur la persévérance et la réussite en enseignement supérieur (CAPRES) identified lack of support and intergenerational shock⁴²⁴³ as potential barriers. While these barriers affect access to postsecondary institutions and therefore to higher education, this in turn affects access to excellence scholarships. These barriers are therefore a significant impediment to the achievement of the performance indicators associated with research excellence such as grades and number of publications. Finally, without making a gross generalization, Indigenous postsecondary students often have academic backgrounds that are considered atypical (e.g., first-generation students), primarily as a result of the barriers mentioned above⁴⁴, which can add to the challenge of meeting standardized criteria and indicators of excellence.

Racialized individuals and groups

Barriers to EDI faced by racialized individuals and groups include representation of these populations in the university and research communities, disparities in working conditions, and issues related to discrimination. As noted in the Université de Montréal EDI analysis report⁴⁵ published in 2020, it is essential to be familiar with the student population attending a university in order to identify the causes of under-representation of certain

⁴⁰ *Ibid.*

⁴¹ *Ibid.*

⁴² Conseil supérieur de l'éducation (2019), *op. cit.*

⁴³ Like separation from their communities, residential schools had a major impact on Indigenous communities that cannot be ignored. As mentioned by Guay and Grammond, "residential schools failed to assimilate Indigenous children and to provide them with an education that would foster their integration into a non-Indigenous society. Furthermore, the living conditions were severely deficient, resulting in the illness and death of many children. Finally, it has recently come to light that residential schools were the site of widespread physical, psychological and sexual abuse. The residential school experience did not only affect those who attended them [...] Entire communities were affected, over several generations" (p.102). See Christiane Guay and Sébastien Grammond (2010). *À l'écoute des peuples autochtones ? Le processus d'adoption de la "loi 125"*. *Nouvelles pratiques sociales*, 23(1).

⁴⁴ Regroupement des centres d'amitié autochtones du Québec (2020), *op. cit.*

⁴⁵ Marie McAndrew *et al.* (2020). *Équité, diversité et inclusion à l'Université de Montréal : Diagnostic*. Montréal. Online at https://www.umontreal.ca/public/www/images/diversite/documents/EDI-Diagnostic_avril_2020.pdf

groups. However, in the case of racialized individuals and groups⁴⁶, data collected at the time of admission is often fragmented, which is a major limitation to understanding the issues experienced by this population. Nevertheless, racialized individuals make up a significant portion of the overall student body in Canada. Indeed, according to a 2019 Universities Canada report⁴⁷, racialized people account for 40% of the Canadian student body (both undergraduate and graduate). Similarly, Statistics Canada's *Survey of Postsecondary Faculty and Researchers, 2019*⁴⁸ showed that 39% of PhD students in Canada, and 36% of PhD students in Québec, identified as belonging to groups designated as "visible minorities". This survey also showed that while this is a higher proportion than in the general population (22% in Canada and 13% in Québec), the proportion of visible minorities is significantly lower among faculty than among postsecondary students.

There are publications that directly address the issues associated with discrimination in university and research communities. The University of Ottawa's *2019-2020 Equity, Diversity and Inclusion Committee (EDIC) Report* states that "evidence indicates that racism is prevalent in recruitment, promotion and pay at universities. Specifically, Black faculty remain substantially underrepresented relative to equally qualified white people"⁴⁹. This claim is supported by the fact that there are disparities in working conditions: Black faculty have lower than average salaries (-12%) and more precarious positions, as indicated by an unemployment rate (11%) that is the highest of any population group⁵⁰. At the student level, a master's thesis produced in Québec has also shown that students from racialized groups experience racism and microaggressions throughout their university career⁵¹.

⁴⁶ Racialization is a process by which a group comes to be understood to be a "biological race". See Adam Hochman (2019). *Racialization: a defense of the concept*. *Ethnic and Racial Studies*, 42(8). p.1245–1262. Despite their differences, the "racialized individuals and groups" category is often equated to the "visible minorities" category proposed by Statistics Canada.

⁴⁷ Universities Canada (2019). *Equity, diversity and inclusion at Canadian universities: Report on the 2019 national survey*. Online at <https://www.univcan.ca/wp-content/uploads/2019/11/Equity-diversity-and-inclusion-at-Canadian-universities-report-on-the-2019-national-survey-Nov-2019-1.pdf>

⁴⁸ Statistics Canada (2019, updated in 2020). *Survey of Postsecondary Faculty and Researchers, 2019*. The Daily. Online at <https://www150.statcan.gc.ca/n1/daily-quotidien/200922/dq200922a-eng.htm>

⁴⁹ APUO-University of Ottawa Committee on Equity, Diversity and Inclusion (2020). *2019-2020 Equity, Diversity and Inclusion Committee (EDIC) Report*. Ottawa. p. 3-4. Online at https://www2.uottawa.ca/about-us/sites/g/files/bhrsdk336/files/2021-11/2019-2020_edic_report_eng.pdf

⁵⁰ Canadian Association of University Teachers (2018). *Underrepresented & Underpaid: Diversity & Equity Among Canada's Post-Secondary Education Teachers*. CAUT Report. Online at https://www.caut.ca/sites/default/files/caut_equity_report_2018-04final.pdf

⁵¹ Véronique Valade (2020). *Parcours d'étudiants racisés à l'université au Québec : le cas d'étudiants montréalais d'origine haïtienne*. Master's thesis, Université de Montréal, Faculty of Educational Sciences.

Individuals who identify as LGBTQ2S+

Statistics Canada's 2019 Survey of postsecondary faculty and researchers showed that 13% of PhD students identified as gay, lesbian, bisexual, pansexual or other sexual minorities⁵². Yet, barriers to accessing excellence scholarships for members of LGBTQ2S+⁵³ communities are not easy to document due to the paucity of data and research on the subject. Nonetheless, the Université de Montréal EDI analysis⁵⁴ highlights the importance of tailoring academic support services to the needs of those members of the student population who identify with sexual and gender diversity groups. The report points out that beyond institutional actions aimed at recognizing diversity (use of pronouns, gender-neutral washrooms), "knowledge and consideration of their specific needs in services offered to students still appear limited"⁵⁵. The underlying objective of such consideration is much broader and is specifically aimed at promoting the attraction, retention and success of LGBTQ2S+ students with academic, personal or social vulnerability factors. The vulnerability factors identified in the report include mental health issues, which are a higher risk for this population. These vulnerability factors may thus pose an additional challenge to achieving metrics of excellence based on quantitative indicators. Microaggressions can also negatively impact overall performance and, by extension, academic persistence.

International students

Another factor affecting the changing academic profile of next generation researchers is the increasing presence of international students. According to Statistics Canada⁵⁶, in 2017-2018, international students made up nearly 15% of the student population of Canadian universities. In Québec, their numbers have increased by more than 150% across all universities (Figure 1) in the last two decades. International students obviously do not have a homogeneous profile, and some may also have followed atypical paths.

Online at

https://papyrus.bib.umontreal.ca/xmlui/bitstream/handle/1866/25701/Valade_Veronique_2020_memoire.pdf?sequence=8&isAllowed=y

⁵² Statistics Canada, *op. cit.*

⁵³ Lesbian, gay, bisexual, transgender, queer or questioning, two-spirit.

⁵⁴ Marie McAndrew *et al.* (2020), *op. cit.*

⁵⁵ Université de Montréal (2020), *op. cit.*, p.24.

⁵⁶ Marc Frenette, Youjin Choi and April Doreleyers (2020). International Student Enrolment in Postsecondary Education Programs Prior to COVID-19. Statistics Canada. Online at <https://www150.statcan.gc.ca/n1/pub/11-626-x/11-626-x2020003-eng.htm>

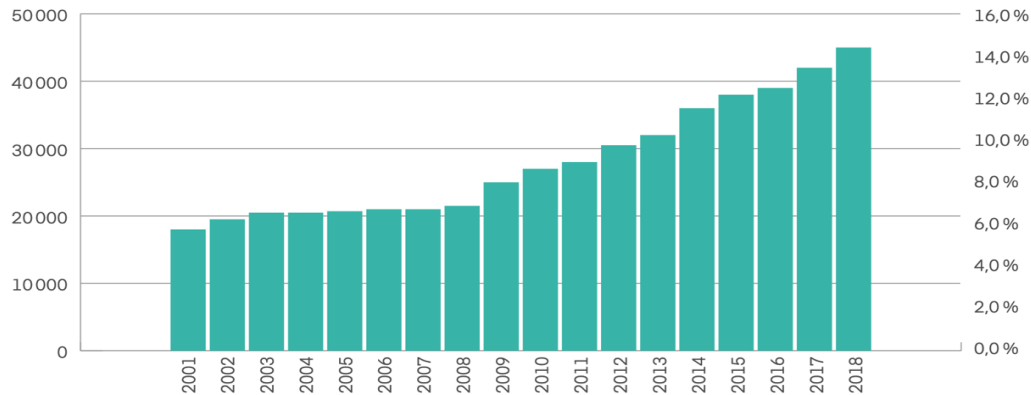


Figure 1. Number and percentage of international students enrolled in the Québec university system in the fall of 2001-2008⁵⁷

As documented in a report produced by the Science & Policy Exchange (SPE)⁵⁸, arriving in a new country provides new experiences, but also brings its own set of challenges. While international students may be eligible, under certain conditions, for Canadian excellence scholarships, the fact remains that funding is difficult to obtain. Indeed, the Université de Montréal EDI analysis⁵⁹ shows that international students are in a more difficult financial situation, as reported in focus groups. According to the SPE report, “cultural differences and language barriers can make it difficult to integrate into research teams, establish relationships with peers or research departments, and understand the mechanisms of university administration”. These difficulties add further stress for international students, who, in addition to the challenges inherent in integrating into a new context, must also contend with the competitiveness of funding competitions. A common challenge is the way in which funding application evaluators assess degrees and transcripts from universities that have a different grading system than Québec and Canadian universities⁶⁰. Indeed, there are many differences between scientific and academic cultures from one country to another and it is crucial that evaluators be aware of these differences.

First-generation students

A first-generation student (FGS) is a student whose father and mother did not attend a higher education institution. For FGS, quantifiable indicators such as publications,

⁵⁷ Conseil supérieur de l'éducation (2019), *op. cit.*

⁵⁸ Science & Policy Exchange (2021). *Mental Health: How can academia do better?* SPE Cafe held on January 24, 2021 in Montréal. Online at https://95323b55-8978-495d-94dd-ed077c2bade4.filesusr.com/ugd/7fd26f_96b8b527ba624ba1a90dc7b52ff948c2.pdf

⁵⁹ Marie McAndrew *et al.* (2020), *op. cit.*

⁶⁰ The FRQ program management teams have access to equivalency tables for different grading systems.

transcripts or duration of studies (time required to graduate from a program) are barriers to accessing excellence scholarships. In their report, Bonin and her colleagues⁶¹ cite several studies that show that students from families with low social capital, which include FGS but also Indigenous students, low-income families and disabled persons, are under-represented in graduate studies and face more difficult study conditions, which can jeopardize their education. Table 1 presents some of the findings of three Québec surveys on students at higher education institutions in three regions of Québec⁶².

Table 1. Characteristics of the study conditions experienced by first-generation students (FGS) and higher-generation students

Characteristics	FGS⁶³	Other
Receive family financial support	35%	56%
Live with a family member during their studies	26%	39%
Hold a job while attending university	74%	66%
Work more than 21 hours per week	46%	30%
Have family responsibilities	23%	10%
Interrupted their studies (took a break before entering university)	27%	18%
Were influenced by their job in selecting their study project (interest in a program because of a job)	26%	18%
Graduation rate after 5 years of undergraduate studies	72%	72%

The conditions listed in Table 1 may impact the ability to achieve quantitative indicators of excellence like good grades or number of publications. For example, a person who works more than 21 hours a week and receives no family financial support has less time available to study.

In sum, this section shows that members of the different groups identified above (women, Indigenous students, racialized groups, LGBTQ2S+ communities, international students, and FGS) are at a disadvantage when it comes to the excellence criteria currently in place. It is important to consider these barriers as they mask the fact that these individuals may have the skills and potential to pursue a successful research career. Indeed, they may have developed complementary skills that are highly relevant to the pursuit of a research career, which a person who has not faced such barriers is less likely to have.

⁶¹ Sylvie Bonin, Sophie Duchaine and Marco Gaudreault (2015). *Portrait socioéducatif des étudiants de première génération*. Projet interordres sur l'accès et la persévérance aux études supérieures des étudiants de première génération. Québec.

⁶² *Ibid.*

⁶³ FGS attending a university.

3. Operationalizing excellence: what criteria?

Several milestones have been reached in raising awareness in the research ecosystem of the need to adopt a diverse and inclusive vision of excellence. To further this reflection, it is essential to look at the criteria and indicators of excellence for next generation researchers. The idea is not to conduct an exhaustive analyse of excellence scholarship programs and their evaluation criteria, but rather to discuss some of the changes made in recent years by the federal and provincial granting agencies in order to make evaluation criteria consistent with a diverse and inclusive vision of research excellence.

3.1 Standardized methods for evaluating research excellence

A report by the *Research on Research Institute (RoRI)*⁶⁴ analyzing responsible research evaluation practices highlights four major issues that persist in the research community, all of which are related to research evaluation methods:

1. First, narrow criteria and indicators of research quality or impact are misapplied in ways that distort the original financial incentives (to produce quality research, for example), create unsustainable pressure on researchers, and exacerbate problems with research integrity and reproducibility;
2. Second, the narrowing of assessment criteria and indicators has reduced the diversity of research missions and objectives, leading institutions and researchers to adopt similar strategic priorities, or to focus on lower-risk, incremental work;
3. Third, systemic biases against researchers who do not meet—or choose not to prioritize—narrow assessment criteria and indicators, or to conform to expected career pathways (e.g., aiming for an academic career), have reduced the diversity, and hence the legitimacy, of the research community (which is not representative of the general population);
4. Finally, research assessment policies have gradually shifted their attention to things that can be measured, at the expense of less tangible or quantifiable qualities, a trend exacerbated by the rise in university rankings based on equally biased criteria and indicators.

The analysis presented in the report points out that quantifiable indicators such as transcript quality and publication outputs, which are supposed to measure academic and

⁶⁴ Stephen Curry *et al.* (2020). *The changing role of funders in responsible research assessment: progress, obstacles and the way ahead*. Research on Research Institute. Online at https://rori.figshare.com/articles/report/The_changing_role_of_funders_in_responsible_research_assessment_progress_obstacles_and_the_way_ahead/13227914/1

research potential, induce performance pressure that is not necessarily related to research quality. For example, an indicator that is often used to evaluate research impact is number of publications. However, not all publications are equal in terms of scientific rigour, and there are other ways of disseminating knowledge that are better suited to certain types of research. This pressure to publish is widespread in the field of research, as reflected in the adage *publish or perish*. It constitutes a major barrier to EDI—think of women who generally publish less than men—as the number of publications does not reflect an individual’s research potential. This criterion undervalues individuals who do not conform to it, as evidenced by its importance in the hiring and promotion process.

As noted by Kramer-Mbula *et al.*⁶⁵, the assessment of excellence is “closely linked to journal impact factors, H-index, sources of funding and university rankings, each of these being highly contested” (p.5). They refer to the “standardized, global excellence paradigm” in reference to standardization in the assessment of research quality through the use of quantitative metrics. However, these metrics do not directly measure the quality of research, thus calling into question the relevance of these indicators for assessing research excellence.

Neylon adds that the evaluation of excellence “drives instrumental, rather than values-based and normative, behaviour and is at the centre of almost every problem facing the western academy, from issues of diversity, inclusion and bias, to the rise in fraud and malpractice”⁶⁶ These reflections highlight issues such as open access to research data⁶⁷, ethics and integrity⁶⁸, and interdisciplinarity and collaborative research⁶⁹. Efforts to address these issues are evolving around the idea of responsible research assessment and standardized assessment.

At the same time, the pluralism of excellence implies that each excellence scholarship competition must be transparent regarding both its vision of excellence and its objectives⁷⁰. It is therefore important to clarify whether an assessment seeks to reward

⁶⁵ Erika Kraemer-Mbula *et al.* (2021), *op cit.*

⁶⁶ Cameron Neylon (2021). “Research excellence is a neo-colonial agenda (and what might be done about it)”. In Erika Kraemer-Mbula *et al.* (2021), *op. cit.*, p.108.

⁶⁷ Mark Hahnel Hook and Ian Calvert (2019). *The Ascent of Open Access*. Digital Science. Online at https://digitalscience.figshare.com/articles/report/The_Ascent_of_Open_Access/7618751

⁶⁸ Janet Metcalfe *et al.* (2020). *Research integrity: a landscape study*. The Careers Research and Advisory Centre. Online at <https://www.ukri.org/wp-content/uploads/2020/10/UKRI-020920-ResearchIntegrityLandscapeStudy.pdf>

⁶⁹ Jonathan Adams (2013). *The fourth age of research*. Nature, 497. p. 557-560.

⁷⁰ Kraemer-Mbula *et al.* (2021), *op cit.*

the best results, or to showcase new ideas, or to prioritize research that addresses urgent societal or environmental challenges”⁷¹.

The Leiden Manifesto⁷² for research metrics proposes 10 principles to guide indicator-based research evaluation. These principles include moving away from practices such as the use of the “h-index”, which ranks publications according to number of peer citations, and reducing the emphasis on the journal impact factor. In fact, the Leiden Manifesto was created out of a need to better guide the use of bibliometric indicators, understand the systemic impacts of these indicators on the research community, and re-evaluate them regularly to ensure that they continue to evolve. These principles can be used to help direct the paradigm shift towards a more inclusive, equitable and transparent research evaluation process. These principles include protecting excellence in locally relevant research and accounting for variation by field in publication and citation practices.

3.2 More inclusive evaluation criteria

The harmonized criteria used by the three federal councils and the FRQ to evaluate doctoral scholarship applications essentially assess the potential of the applicant as well as the quality, benefits and impacts of the proposed research. These criteria are designed to provide a holistic view of the applicant, without placing too much emphasis on any one indicator. Thus, the weighting of each evaluation criterion allows for the consideration of a range of sub-criteria in assessing the applicant. The evaluation criteria tables for the 2022-2023 federal and provincial doctoral scholarship competitions are included in Appendix 1 and 2 as a reference.

The situation in Québec

The FRQ evaluation table focuses on four criteria: academic record, research project, social mobilization, and general presentation of the application. One of the most useful ways to assess application diversity is through the “integrated presentation of the applicant’s background” sub-criterion. The Information Guide⁷³ for the new evaluation criteria indicates that this sub-criterion aims to highlight the links between the proposed research and the applicant’s experience, interests and academic background. It therefore serves to show how the applicant’s academic, professional and personal experiences have

⁷¹ *Ibid.*, p. 293.

⁷² Diana Hicks, Paul Wouters, Ludo Waltman, Sarah de Rijcke and Ismael Rafols (2015). “Bibliometrics: The Leiden Manifesto”, *Nature*, 520 : 429-431, online at <https://www.nature.com/articles/520429a>

⁷³ FRQ (2021). *Information Guide. Training award programs: New evaluation criteria*. Online at https://frqnet.frq.gouv.qc.ca/Documents/Guide_ODD_EN.pdf

enriched his or her intellectual experience and will enhance the research project. This sub-criterion is part of the general “academic record” criterion, which is worth 30% of the final score. Its inclusion ensures that quantitative indicators of academic performance, such as transcripts and number of publications, are considered from a global perspective, in relation to the qualitative characteristics of the applicant’s background. There is thus explicit recognition of the contribution that a background considered “atypical” can make to research.

The FRQ evaluation table also considers social mobilization activities, allowing applicants to present a wide range of experiences, ranging from science popularization activities to community, social or civic engagement. The temporal aspect of the evaluation is important from an EDI perspective. For example, applicants are asked to describe activities they have already carried out or intend to carry out in the first year of funding. As previously mentioned, first generation students (FGS), which includes several under-represented groups, work more hours on average than non-FGS, which may limit their capacity for engagement or their availability to carry out science popularization activities. By recognizing anticipated activities, people who face a greater challenge balancing work and studies can present the engagement activities they intend to carry out if they receive funding, i.e., once their study conditions improve. This notion of intent is therefore essential from the point of view of EDI.

The inclusion of the social mobilization criterion in the FRQ evaluation table is consistent with the implementation of funding programs designed to provide next generation researchers with opportunities to become familiar with the research community or practice science popularization, or that reward entrepreneurial initiatives. The FRQ’s [Dialogue](#) program and the Mitacs [Accelerate Entrepreneur](#) program are just two examples of this type of initiative. These programs provide students with multiple professional skills that can be put to good use in an academic or non-academic career. Next generation researchers are thus encouraged to acquire a range of skills and experiences in addition to the mandatory “good grades”, suggesting a broader vision of excellence and its evaluation criteria. Hence the relevance of including this criterion in the scholarship application evaluation table.

The situation in Canada

Applications for federal doctoral scholarships are evaluated based on two criteria: research ability and potential and relevant experiences and achievements obtained within and beyond academia. Research ability and potential are assessed by means of a list of eight indicators that include, among others, responsible and ethical research

conduct. The diversity of applicants' knowledge systems is also considered. Like the FRQ, the federal granting agencies consider professional, academic, and extracurricular activities in assessing relevant experiences and achievements. On a different note, the federal granting agencies allow institutions to recommend applications from Indigenous students beyond their application quota under the scholarship competition. As there is a maximum number of applications an institution can forward to each agency's national competition, this ensures that all applications from Indigenous students are considered.

4. Conclusion

This report highlights the non-consensual nature of the notion of excellence, as well as certain shortcomings in the way this concept is applied in the evaluation of research. The findings show that barriers to accessing excellence scholarships exist for several sub-groups of next generation researchers. As diversity promotes excellence in the research ecosystem and accelerates innovation within research teams, it is clearly important to work to reduce these barriers to access and to make the process for evaluating excellence more inclusive and equitable.

In order to evaluate research excellence in a more responsible manner, current analytical frameworks based on a one-dimensional view of research that focuses primarily on quantitative indicators need to be reviewed. Given the ever-changing and multidimensional nature of excellence, systemic approaches must be used to assess it⁷⁴. To achieve this, evaluation criteria must be put in place that are open, transparent and equitable⁷⁵ and that allow all individuals to present the elements that they consider pertinent to demonstrate the excellence of their application.

⁷⁴ *Ibid.*

⁷⁵ Robert Tijssen (2021). "Re-valuing research excellence: from excellentism to responsible assessment". In Kraemer-Mbula *et al.* (2021), *op. cit.*

Appendix 1. Fonds de recherche du Québec harmonized evaluation criteria for doctoral scholarships – competitions launched in 2022-2023

CRITERIA	SUB-CRITERIA
ACADEMIC RECORD (30 POINTS)	<ul style="list-style-type: none"> · Transcripts and honours; · Relevant experience; · Ability to present his/her background in an integrated manner.
RESEARCH PROJECT (45 POINTS)	<ul style="list-style-type: none"> · Originality of the project and contribution to the advancement of knowledge; · Clarity and coherence of the research problem; · Relevance of the methodology; · Feasibility.
SOCIAL MOBILIZATION (20 POINTS)	<p>Capacity to facilitate dialogue between science and society; Capacity for engagement; Consideration of the United Nations Sustainable Development Goals, including equity, diversity and inclusion.</p>
GENERAL PRESENTATION OF THE APPLICATION (5 POINTS)	

Appendix 2. Federal granting agencies harmonized evaluation criteria for doctoral scholarships – 2022-2023 competition

Criteria	Description
<p>Research ability and potential (50%)</p>	<p>Indicators of research ability and potential:</p> <ul style="list-style-type: none"> ● Quality of research proposal <ul style="list-style-type: none"> ○ Specific, focused, and feasible research question(s) and objective(s) ○ Clear description of the proposed methodology ○ Significance and expected contributions to research ● Relevant training; such as academic training, lived experience, and traditional teachings; ● Research experience and achievements relative to the applicant's stage of study, lived experience, and knowledge systems; ● Quality of contributions and extent to which they advance the field of research. Contributions may include: publications, patents, reports, posters, abstracts, monographs, presentations, creative outputs, knowledge translation outputs, community products, etc.; ● Demonstration of sound judgment and ability to think critically; ● Demonstration of responsible and ethical research conduct, including honest and thoughtful inquiry, rigorous analysis, commitment to safety and to the dissemination of research results, and adherence to the use of professional standards; ● Enthusiasm for research, originality, initiative, autonomy, relevant community involvement and outreach; ● The ability or potential to communicate theoretical, technical and/or scientific concepts clearly and logically in written and oral formats.
<p>Relevant experiences and achievements obtained within and beyond academia (50%)</p>	<p>Indicators of relevant experiences and achievements obtained within and beyond academia:</p> <ul style="list-style-type: none"> ● Scholarships, awards and distinctions (amount, duration, and prestige) ● Academic record: <ul style="list-style-type: none"> ○ Transcripts ○ Duration of previous studies ○ Program requirements and courses pursued ○ Course load ○ Relative standing in program (if available) ● Professional, academic, and extracurricular activities as well as collaborations with supervisors, colleagues, peers, students, and members of the community such as: <ul style="list-style-type: none"> ○ Teaching, mentoring, supervising, and/or coaching ○ Managing projects ○ Participating in science and/or research promotion ○ Participating in community outreach, volunteer work and/or civic engagement ○ Chairing committees and/or organizing conferences and meetings ○ Participating in departmental or institutional organizations, associations, societies, and/or clubs

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