BEST PRACTICES AND ADVANCING EDI IN TEAMWORK

Detailed report

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CentrEau
Centre québécois de recherche sur l'eau
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CENTRE INTERUNIVERSITAIRE DE RECHERCHE SUR LES RÉSEAUX D'ENTREPRISE LA LOGISTIQUE ET LE TRANSPORT

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RRecq
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Foreword

The purpose of this document is to synthesize preliminary research on best practices for teamwork. This mandate was carried out by Clara Alagy as part of a collaboration between CentrEau (Quebec Water Management Research Center), CIRRELT (University Research Centre on Enterprise Networks, Logistics and Transportation), GERAD (Group for Research in Decision Analysis) and RRECQ (Québec Circular Economy Research Network). It is part of a broader effort to integrate EDI (equity, diversity and inclusion) in the research community's practices. More specifically, it aims to improve the conditions for collaboration within and between research teams, and to encourage the multiplication and diversification of collaborations. This document focuses primarily on issues related to disciplinary diversity, methodological approaches in research, and academic backgrounds.

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Associated organizations

CentrEau, the Quebec Water Research Center, is a multisectoral research cluster bringing together Quebec-based researchers specializing in water management. It includes researchers and graduate students from 12 different institutions. It is funded by the Strategic Cluster program of the Fonds de recherche du Québec's Nature and technologies sector.

CIRRELT is the result of a merger between two renowned research centres, the Centre for Research on Transportation (CRT) and the Network Organization Technology Research Center (CENTOR), along with two research groups in logistics, the Polygistique research group and the NSERC Industrial Research Chair in Logistics Management at UQAM. Today, CIRRELT includes the vast majority of Quebec researchers who contribute to advancing knowledge in the fields of engineering and the management of logistic, enterprise and transportation networks.

GERAD is an interuniversity research centre founded in 1979, bringing together specialists in data and decision sciences, computer science, applied mathematics and mathematical engineering. Its mission is to make a significant impact on society through scientific innovation, the transfer of knowledge in key economic sectors, and the development of decision-support tools.

Created in 2021 by the Fonds de recherche du Québec (FRQ), RRECQ is the result of a consortium between HEC Montréal, École de technologie supérieure (ÉTS), Université Laval and Polytechnique Montréal, supported by CERIEC. Focused on practical applications and knowledge transfer to user communities, RRECQ stands at the intersection of research and society. It brings collaborative, concrete and sustainable solutions to organizations, communities and individuals through its research, training and transfer activities. Its activities revolve around four research axes: change and transition management, planning optimization, maximization of resources and products, and policy levers.

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Executive summary

This document summarizes the research conducted by four research networks about collaboration in research and teamwork. It is part of the networks' equity, diversity and inclusion (EDI) initiatives. These are defined as all the actions considered and taken to ensure that all people are given fair treatment and equal opportunity, that their diverse identities are understood and recognized, and that they have the same level of support, appreciation and respect. The research work is structured around three axes, each with recommendations for the research networks and their members.

Axis 1: Increasing and diversifying collaborations

The networks can explore the following means to foster research collaborations, especially those that are interdisciplinary or interuniversity:

In the short and medium term:

- Setting up specific funding for collaborative projects. Calls for proposals, grants and scholarships clearly highlighting the need for collaboration and its benefits;
- Organizing networking events for members to spark the creation of new research collaborations.

In the long term:

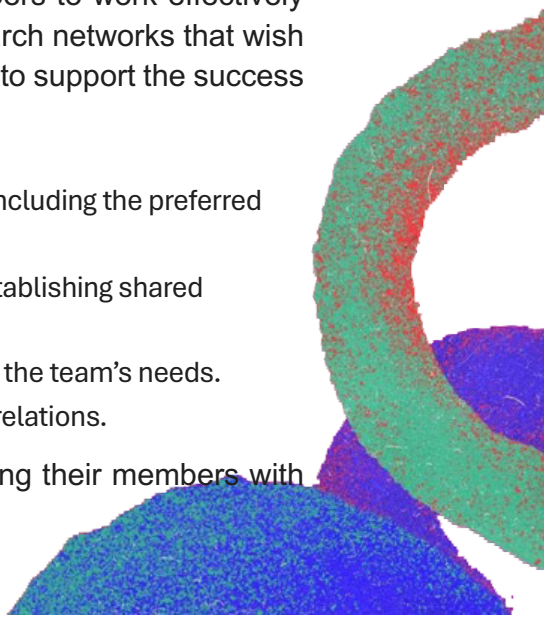
- Organizing knowledge-sharing events to enable all individuals involved in research to showcase their work and connect with peers;
- Promoting a culture that values collaboration and interdisciplinarity.

Axis 2: Best practices in collaborative work

Collaborative work involves many challenges. Enabling members to work effectively under the right conditions is a priority for universities and research networks that wish to encourage collaboration. Below are a few recommendations to support the success of such projects.

- Distributing the workload appropriately among members;
- Agreeing on goals and intended outcomes from the outset, including the preferred channels for the dissemination of knowledge;
- Respecting each group member’s area of expertise while establishing shared methodologies and a common vocabulary;
- Using communication and time management tools suited to the team’s needs.
- Maintaining regular communication and good interpersonal relations.

The research networks can support these practices by providing their members with toolkits that promote effective teamwork.



Axis 3: Member integration and sharing best practices

Members of the research ecosystem face many challenges, particularly when joining new networks, teams or universities. By focusing on member integration and sharing best practices, the research networks have the potential to create a culture that fosters diverse collaborations, information sharing and teamwork. Below are some suggested approaches to support successful member integration and sharing of EDI practices:

In the medium term:

- Organizing knowledge-sharing events dedicated to training and access to information. Establishing helpful processes that identify IT tools suited to facilitating smoother information sharing;
- Setting up a mentoring system between new members with more experienced ones.

In the long term:

- Cultivating a culture that values knowledge sharing. The networks can explore ways to recognize knowledge ownership while encouraging open dissemination.

Introduction

This document's goal is to summarize the preliminary research carried out under a mandate on best practices for teamwork. It stems from a collaboration between CentrEau (Quebec Water Management Research Center), CIRRELT (University Research Centre on Enterprise Networks, Logistics and Transportation), GERAD (Group for Research in Decision Analysis) and RRECQ (Québec Circular Economy Research Network). It is part of a broader effort to integrate EDI (equity, diversity and inclusion) in the research community's practices. More specifically, it aims to improve the conditions for collaboration within and between research teams, and to encourage the multiplication and diversification of such collaborations. This document focuses primarily on issues related to disciplinary diversity, methodological approaches in research, and academic backgrounds.

EDI refers to the following terms, as defined by the FRQ (Fonds de recherche du Québec, Jocelyn & Liette, 2021) :

"Equity is treating everyone fairly and giving them equal opportunity to fully realize their potential, leading to further advancement for all people. The pursuit of equity involves identifying and removing barriers to ensure the full participation of all individuals and groups."

"Diversity refers to the many characteristics that differentiate and distinguish individuals, groups or communities. Based on the understanding and acknowledgement that each person is unique, the dimensions of diversity include ethnic origin, gender identity and gender expression, sexual orientation, background (socio-economic status, immigration status or category), religion or belief, civil or marital status, family obligations (including pregnancy), age and disability."

"Inclusion means ensuring that all individuals are equally supported, valued and respected. This is best achieved by creating a research environment where everyone (students, faculty, staff, and visitors) feels welcome, safe, respected, valued, and supported, to enable full participation and contribution."

EDI also includes the concept of accessibility, sometimes referred to in the acronym EDIA. In this document, we will use the acronym EDI, in keeping with the names of the committees responsible for the project, while treating accessibility as an equally important concern alongside equity, diversity and inclusion. Accessibility is defined as follows:

"Accessibility is about providing the means to meet certain needs and preferences, and refers to the design of products, devices, services or environments for people with disabilities. The term can also be defined as "a range of solutions that enable the greatest number of people to participate in activities as effectively as possible".

This report combines information gathered from scientific literature, grey literature and the Web. The research process was not structured following a formal literature review methodology but instead combined a broad array of sources and databases. Through preliminary discussions, the four partner networks first identified key issues they felt were most relevant to collaboration in research. These issues were then grouped and synthesized into three axes, which structured the research and this report as follows:

Increasing and diversifying collaborations: promoting diverse backgrounds and experiences, fostering interdisciplinarity, and identifying means to support more collaborations;

Best practices in collaborative work: distributing the workload fairly, effective team communication, and managing challenges related to publishing and other forms of knowledge dissemination (conferences);

Member integration and sharing best practices: welcoming and supporting new faculty members, onboarding new student cohorts, sharing information and data, and ensuring equal opportunity in the networks.

This document is not intended to constitute an exhaustive list of solutions to the issues it raises. Rather, it serves as a starting point for developing concrete measures aligned with the EDI commitments of the participating research networks.

Axis 1: Increasing and diversifying collaborations

One of the concerns raised during discussions was how to foster research collaborations. The networks involved in this project are especially committed to developing collaborations that are interdisciplinary, interuniversity, and diverse. To that end, we aim to identify effective ways to encourage researchers to launch such projects.

The main strategies we identified are:

- Setting up funding (calls for proposals, grants, scholarships) for the types of projects we aim to promote;
- Establishing a culture that values collaboration and interdisciplinarity;
- Organizing networking events to connect researchers.

The first avenue we explored is the use of calls for proposals and grants. Since access to funding is critical to the success of research projects, this serves as a powerful tool.

By adjusting the project wording and evaluation criteria, it is possible to encourage the types of projects and collaborations we want to see more of.

First and foremost, interdisciplinarity should be assessed in project evaluations, when relevant to the subject matter. For calls aimed at fostering interdisciplinary projects, the need for multiple fields of expertise should be clearly stated. The aim should be to stipulate both the general benefits of interdisciplinarity and the specific contributions it could make to the projects that the networks wish to fund. Where possible and relevant, it can be useful to name the different disciplines to be mobilized in order to encourage new and innovative collaborations. A second approach is to reserve certain calls for proposals to interdisciplinary projects. While more restrictive, this approach is an effective way to encourage researchers to explore novel interdisciplinary collaborations. Whichever strategy is used, it is essential to use the networks to promote calls for proposals. It is also helpful to share examples of current or past interdisciplinary research projects or methods.

Beyond funding, it is vital for the research networks and academic institutions to cultivate a culture that embraces interdisciplinary projects. First, teaching and research institutions must be able to generate both specialized and interdisciplinary knowledge. Interdisciplinarity should be valued and rewarded in the same way as specialization. Universities could offer their members training or courses focused on interdisciplinarity and its management. For example, Université Laval and UQAM offer courses on methodological learning of interdisciplinarity. The research networks can play a role in encouraging institutions to offer these kinds of programs by offering incentives to do so. Closer ties between the research networks and these institutions can also help identify potential interdisciplinary collaborations. Researchers who are experienced with collaborative work can help in several ways: 1) recognizing relevant interdisciplinary collaborations between academics; 2) becoming better acquainted with existing collaborative networks; 3) initiating new interdisciplinary collaborations.

Finally, the research networks should encourage connections and communication between researchers. Maintaining social ties has proved effective in creating new partnerships and stimulating interdisciplinary collaborations. To foster and sustain these connections, the networks can organize networking events or informal social gatherings. Occasional conferences or lectures also help reinforce social ties. Other avenues could be explored, but they should always be considered through the lens of the EDI that takes into account the diverse realities of network members, such as socioeconomic backgrounds, geographical constraints, etc.

Axis 2: Best practices in collaborative work

A second key focus of this work is identifying best practices for effective teamwork. The goal is to ensure that members of collaborative projects can work under conditions that support the success of the project, especially when it involves multiple disciplines

or research methodologies. When forming work teams, it is important to encourage collaboration between people with different levels of experience and from different academic backgrounds. This type of diversity has multiple benefits. For instance, it sparks new ideas and approaches, supports the sharing and continuity of knowledge, and helps build more inclusive professional networks. While diversity is an asset when conducting research, it also needs to be taken into account when it comes to team management. This is why the challenges of publishing, distributing workload, and communicating effectively are discussed here with attention to differences in experience, field of study, and methodology.

The best practices identified through our research of scientific and grey literature and on the Web are:

- Agreeing on goals of the collaborative project and its intended outcomes from the outset;
- Establishing a plan for dividing tasks among members;
- Using management, communication and data-sharing tools that suit the team's context and objectives;
- Aligning methodologies and vocabularies, which may vary depending on the area of expertise;
- Respecting each member's authority in his or her area of expertise;
- Maintain good interpersonal relations between members.

A. Defining objectives and methodologies

The first step in a collaborative project is for team members to clearly define both individual and shared goals. Agreeing on objectives from the outset is essential to ensure their study's success. To do this, each person must express their expectations openly and work together to establish the project's aims. All team members need to be involved in this conversation, especially in interdisciplinary teams. Interests and priorities may differ between fields, so discussing and aligning them is key to defining the team's common goals.

When a multidisciplinary team is formed in accordance with funding requirements, early conversations should focus on identifying how each discipline and team member will contribute to the project. To make the most of interdisciplinarity in this context, the collective objectives should allow each team member to pursue some of their own goals while applying their disciplinary expertise.

Multidisciplinarity also brings together different methodologies. These coexist more effectively when multidisciplinary teams set up methodology meetings devoted solely to building common tools and approaches. The aim is to agree on the methodologies that will support the project's success and possibly to foster the emergence of innovative mixed methodologies. Schedule permitting, methodology meetings should be reserved for talking only about methods.

Throughout the research process, especially in interdisciplinary teams, it is essential to bear in mind that each person acts as the authority in their discipline. Clarifying areas of expertise at the start of the project makes it easier to identify members' areas of sovereignty. Therefore, each member of an interdisciplinary team has a duty to assert his or her expertise, and to respect that of others in their fields.

B. Workload distribution

Workload distribution is a common challenge, but it can be overcome by using certain project management tools. For example, it is helpful to establish a clear and structured division of roles among team members involved in conducting the research. Team members can agree, for instance, on the amount of time each person will dedicate to the project on a weekly basis. These “baseline agreements” serve as reference points that make it easier to recognize any imbalance or deviation from the planned roles over time.

Another useful tool is the “work distribution plan”. The first step is to take stock of the team’s skills and areas of expertise to draw a clear picture of its capabilities. This assessment can also include an estimate of the time each member is able to dedicate to the project. Next, based on the previously defined objectives, the team identifies the project’s stages, and the contributions expected from each discipline for different tasks. Teams can also estimate the amount of time needed to complete each task. Finally, tasks are assigned to team members according to their areas of expertise and the estimated time required. The initial distribution must match each person’s expectations and the time they are realistically able to commit. It is essential to regularly reassess the workload distribution to adjust for the actual time needed to complete project stages and to revise time estimates accordingly. This way, task distribution can also be modified among team members as the project progresses.

Generally speaking, diverse teams benefit from using time management tools in the distribution of workloads. For example, setting up a calendar with scheduled deadlines and using an online agenda can help ensure the project stays on track and considers members’ time commitments. Every team should choose management tools that are suited to their needs and that everyone in the group agrees to use to ensure their engagement.

However, it is also important to maintain a certain degree of flexibility, which necessarily depends on establishing effective communication within the team (see Section D).

C. Issues in knowledge dissemination activities

Multidisciplinary teams sometimes face challenges when it comes to disseminating their knowledge. Knowledge dissemination can take many forms, such as scientific

publishing, non-scientific publishing, conferences, and so on. The various challenges associated with scientific publishing share similarities with those encountered in other modes of dissemination. Therefore, we will specifically address the challenges associated with scientific publishing below, while noting that they also apply to other types of publishing.

First, publishing timelines and requirements vary significantly from one field of study to another. Therefore, it is important for each person to know the publishing requirements in their area of expertise. When starting a project, teams should take the time to communicate about these constraints so that all parties involved are aware of them.

Early discussions should also cover the team's goals in terms of publishing. What results would it want to highlight? Which field does it want to contribute to? What reach is it aiming for? What are the target publication modes or target journals? These may fall within one of the project's disciplines and/or be interdisciplinary. Depending on the answers to these questions, teams can clarify how each discipline will contribute to achieving the shared objectives.

It is also important to keep in mind that team members may be at different stages of their careers, which can lead to differing needs around publication types. More experienced researchers should therefore be attentive to these differences and provide guidance to junior researchers to support their publishing needs.

Throughout this process, it is particularly relevant to emphasize the interdependence between disciplines and team members, thus reinforcing the value of interdisciplinary collaboration. It is often appropriate to redefine or adjust publishing objectives over the course of the project—particularly following data collection—to account for unforeseen developments. These opportunities to refine objectives help maintain an adaptable framework that can better respond to the unpredictable nature of research.

D. Effective communication between disciplines

In interdisciplinary research teams, communication challenges can arise due to the diversity of fields involved. To facilitate communication, certain practices can be formalized. First, it is helpful to take some time to establish a shared vocabulary specific to the research team. In addition to strategically reinforcing team cohesion, developing common, unified terminology helps maintain smoother communication throughout the project. Sharing literature reviews can help the creation of this shared vocabulary and foster mutual understanding of discipline-specific terms.

Good communication within the team is also supported by using appropriate communication tools. To choose the right channels, teams can create a communication plan. This plan involves defining the team's communication needs and selecting appropriate tools for each need. It is recommended to use both synchronous

and asynchronous tools. Synchronous communication tools allow for real-time (or near-real-time) discussions, making exchanges faster and easier, but they tend to be less structured and make it more difficult to keep records. On the other hand, asynchronous communication tools allow for more formal exchanges and better record-keeping, but they can slow down the flow of information. Thus, the communication plan can segment different types of information exchanges by incorporating both synchronous tools (such as collaborative platforms, group chats, etc.) and asynchronous tools (email, etc.). The aim is to simplify communication—not to complicate it or create unnecessary constraints. This is why the plan should remain simple and tailored to the team's actual needs and the time available for the project. If a communication plan is adopted, it is important for everyone to follow it consistently to avoid confusion for other members.

To further facilitate communication and equitable information sharing among members, teams are encouraged to use data sharing tools. These promote the free flow of information, help build a climate of trust and accelerate the research process. In the same spirit, it is also recommended regular sharing of preliminary findings and updates. This can be done through meetings or via a previously agreed-upon communication channel.

Generally speaking, holding regular meetings promotes good communication. For example, the team can agree to schedule short at regular intervals which can be canceled if needed.

Building interpersonal relations outside of work is also encouraged. Within the collaboration, team members can make a habit of speaking in ways that value others. Recognition and encouragement at work strengthen team cohesion and collective engagement. Maintaining good interpersonal relations is essential in diverse research collaborations. If team members do not have the opportunity to forge personal connections outside of work, it becomes even more important for the team to create a work culture of recognition and positive feedback. If issues arise, teams may also consider team coaching, which can be particularly effective for teams comprising members with diverse experience and expertise.

Axis 3: Member integration and sharing best practices

To encourage diverse and relevant forms of teamwork and collaboration, we are exploring member integration and the sharing of best practices within the research networks. This theme is our third area of focus and is specifically centered around knowledge sharing, mentorship, and ensuring equal opportunity in the networks.

The relevant means recommended for supporting successful member integration and the dissemination of EDI practices are:

- Organizing events, workshops and/or spaces dedicated to training and access to information;

Encouraging the formalization of knowledge and practices ;
Using IT tools to facilitate and accelerate knowledge sharing;
Relying on mentorship to better integrate new members;
Using checklists to promote the application of EDI principles in calls for proposals;
Proposing measures to mitigate structural factors to research participation.

A. Improved knowledge sharing

Access to data and the free flow of knowledge are key challenges within research networks and institutions. Major barriers to information sharing include time constraints, a competitive environment, and the lack of appropriate tools. Yet knowledge creation requires interaction between various information sources and through diverse channels. Knowledge sharing is therefore an inherent driver of knowledge creation. In management sciences, the process of knowledge creation results from the interaction between explicit knowledge (formal, codified) and tacit knowledge (informal, uncodified). These interactions can occur in four ways: socialization (tacit to tacit), externalization or formalization of tacit knowledge (tacit to explicit), combination or articulation of different explicit knowledge (explicit to explicit), and internalization or learning (explicit to tacit). To stimulate knowledge production, it is essential to multiply the vectors of knowledge creation and, indeed, information sharing.

Internalization or learning can take place in training contexts (whether practical or theoretical, oral or written). Therefore, the research networks can benefit from organizing events and/or spaces (physical or digital) where members can engage in training activities, either individually or collaboratively. The combination of knowledge, meanwhile, is supported by the availability of formalized knowledge that can be articulated and connected. The networks and the researchers within them need to make the availability and diversity of information visible. Moreover, knowledge can only be combined if it has first been formalized. Formalizing tacit knowledge into explicit knowledge is therefore a key driver of new knowledge creation. While formalization may initially seem time-consuming, it ultimately leads to greater speed and accessibility. In fact, it enables lasting access to tacit knowledge and partly circumvents the limitations associated with socialization. However, socialization is also essential to information sharing and knowledge creation and should be encouraged by the research networks.

Lack of time is one of the main barriers to knowledge sharing. The networks could consider establishing processes that make knowledge sharing easier, drawing on the four types of interactions mentioned earlier. For example, communication about research results should not be limited to publishing. Another barrier identified in the literature is the lack of recognition for informal knowledge sharing or for dissemination outside of publishing. In competitive environments, maintaining ownership and

exclusivity over results can be a way for researchers to secure legitimacy and reputation among their peers. The networks therefore need to foster a culture of knowledge sharing while ensuring that researchers receive appropriate credit for the information they disclose.

In conclusion, to facilitate the free sharing of information within the networks, a few recommendations and possible avenues should be explored. First, implementing a quality assurance system for knowledge sharing, including formalized processes, can be useful in this context. Although sometimes seen as overly procedural, a quality assurance approach helps develop a culture of sharing, engages members who commit to it, and enables tracking and documenting the origin of knowledge production. Naturally, the introduction of a quality assurance system should be accompanied by training on its merits and explanations of how it will be implemented.

Next, it would be relevant to pursue and offer training on technological tools available for knowledge sharing. Several technological solutions (platforms, blogs, wikis, etc.) can be used for information sharing, each suited to different types of information to be disseminated. In this process, it is possible to rely on specialists trained in these areas to identify the most appropriate tools for the networks' specific needs. Another goal would be to create opportunities for professional meetings and informal social gatherings. Building interpersonal relations among researchers not only fosters the emergence of new collaborations but also encourages the free and informal sharing of information.

Finally, if collaborative initiatives and practices emerge within the networks, they should be encouraged and recognized to help strengthen the culture of sharing among members.

B. Mentorship and member integration

One possible avenue for sharing best practices within the networks and encouraging the equitable development of their members is the formal integration of new members. For example, providing a welcome session where existing best practices and resource persons are presented could make it easier for new members to navigate the complex research ecosystem.

This integration could also be combined with mentorship or peer sponsorship by more experienced members. These mentors should be able to guide, support, and connect less experienced individuals to help ease their way. This kind of mentoring system can rely on faculty members but also on the student community. For example, a doctoral candidate nearing the end of their program could mentor someone just starting out on a doctorate or a master's degree. For professors, sharing best practices in graduate advising could also be achieved through dual mentorship, for instance by jointly supervising a thesis between members with varying levels of experience.

Organizing workshops for the graduate student community, postdoctoral fellows, and new faculty cohorts is also a solution worth considering. These workshops can provide opportunities to share best practices for collaboration, among other things. They can also help guide members in their career choices. For example, at what point in their professional journey should they apply for what type of grant, and what are the advantages and disadvantages of different types of grants. The discussions and advice arising from these activities could be highly valuable.

Formalized integration, mentorship, and workshops are all concrete ways of sharing the research networks' practices and values, as well as creating and sustaining a culture of sharing and collaboration.

C. EDI and equal opportunity in the networks

Taking equity, diversity, inclusion and accessibility into account are a necessary part of implementing best practices for collaboration in the research networks. The goal is to identify strategies for forming diverse teams, integrating EDI principles into grant applications, ensuring equal opportunity in the networks, and mitigating the impact of structural barriers to participation. EDI is understood here not only in terms of interdisciplinary collaboration, but in a broader framework of promoting equity, inclusion, and accessibility for all sociodemographic, economic, and ethnocultural groups.

First, forming diverse teams can be supported by establishing a culture that values diversity in academic and socio-economic backgrounds within the research networks. Implementing training programs, recognizing and highlighting initiatives or work teams that reflect diversity can serve as important drivers for fostering this culture. Setting up scholarships for designated groups is also worth considering to help increase access to research opportunities for individuals from marginalized or underrepresented groups. However, this measure may raise certain challenges and should be well thought out to manage its potential impacts and outcomes.

We can also explore the implementation of specific measures in grant applications. For example, choosing to give priority to projects integrating people from diverse socioeconomic, sociodemographic, and ethnocultural backgrounds, and from varied academic and professional paths when allocating funding. In a more restrictive way, part of the project evaluation score could be related to EDI-related criteria. When it comes to integrating EDI into grant applications, applicants could, for instance, be asked to justify how their project directly contributes to EDI goals (or explain if this criterion does not apply) and to reflect on the anticipated EDI impacts of the project (or explain if this criterion does not apply). Even more restrictively, certain calls for proposals could be reserved solely for projects focused on EDI-centered research.

To guarantee, or at least facilitate, equal opportunity, certain measures can be put in place. First, the networks could offer training sessions (either optional or mandatory) to their members. In addition, they could develop a checklist to go through for each call for proposals: Is the posting period long enough? Is the posting accessible enough for anyone to see it? Do the criteria take into account the diverse realities of the members? Etc. Moreover, it is vital that the networks integrate EDI considerations in events and communications. Using inclusive writing systematically, for example, is a simple way to foster a culture of inclusion. Events should also be organized in a way that factors in the constraints faced by a wide range of participants. Finally, the networks can set up initiatives specially aimed at early-career researchers to ensure they have the information they need to access the same opportunities as senior members.

Lastly, research teams could implement measures to mitigate the impact of barriers to participation. For example, meeting times could be scheduled according to members' family constraints. Clear communication among team members about their respective constraints would be beneficial in this regard. When research involves individuals from outside the team, taking participation barriers into account can encourage the involvement of a greater diversity of people. Thinking about where, how and when data will be collected is essential to incorporate EDI principles into the research. Additionally, measures can be put in place to offset the impacts of participation, such as offering childcare services, providing financial compensation, distributing gift cards, and so on.

Tools and resources to consult

Here is a list of resources for the networks and their members to consult in order to learn about EDI issues in research and take action. While not exhaustive, it serves as a first step toward building EDI toolkits within the research networks.

A. EDI best practices in research

Guide for research groups in Canada to help implement an inclusive culture both inside and outside the laboratory:

Baker, J. et L. Vasseur (2021). *Inclusion, diversité, équité et accessibilité (IDEA) : pratiques exemplaires à l'intention des chercheurs,* [Fichier PDF], Commission canadienne pour l'UNESCO, Ottawa, Canada, 11 p. [https://frq.gouv.qc.ca/app/uploads/2022/03/guideidea.pdf]

Toolkit for research groups, offering EDI recommendations including some that are common across all sectors and some specific to each field:

Université de Sherbrooke (2020). *Recension des bonnes pratiques d'équité, diversité et inclusion en recherche,* [Fichier PDF], 30 p.

[https://www.usherbrooke.ca/saric/fileadmin/sites/saric/documents/7-coffre-outils/Recension_bonnes_pratiques.pdf].

Guide for research teams to assess and consider EDI-related challenges encountered in their work and implement an action plan:

Chaire pour les femmes en sciences et en génie au Québec et université de Sherbrooke (s. d.). *Guide pour repérer les défis reliés à l'équité, la diversité et l'inclusion vécus par les membres d'une équipe de recherche.* [Fichier PDF]. 24 p. [https://cfsg.espaceweb.usherbrooke.ca/download/5183/].

Reflection guide on unconscious bias and recruitment, containing a series of introspective questions on these themes:

Girier, D., Lamouri, J., et B. Pulido (s. d.). *Biais inconscients et recrutement,* [Fichier PDF], 12 p. [https://reseaucctt.ca/medias/documents/Feuillet_recrutement-UdeM-IVADO-OBVIA-RQEDI.pdf]

Questionnaire for people in decision-making roles, professors, human resources and research services staff, and recruitment committees, designed to help create an EDI overview of their environment as a preliminary step toward developing an action plan:

Chaire pour les femmes en sciences et en génie. (s. d.). *Portrait de mon milieu : Équité, diversité et inclusion,* [Fichier PDF], 14 p. [https://cfsg.espaceweb.usherbrooke.ca/formation-en-equite-diversite-et-inclusion/]

Toolkit on research principles in indigenous contexts:

CSSSPNQL, UQAT, UQO, et Réseau DIALOG (2021). *Éthique, respect, équité, réciprocité, collaboration et culture.* (3e édition). [Fichier PDF], Commission de la santé et des services sociaux du Québec et du Labrador, Université du Québec en Abitibi-Témiscamingue, Université du Québec en Outaouais et Réseau DIALOG, 416 p. [https://reseaudialog.ca/wp-content/uploads/2022/02/Boite_Outils_Principe_Recherche_Contexte_Autochtone_2021.pdf]

Self-assessment tool for organizations, focusing on issues related to disability:

CRISPESH et ROSEPH (2021). *Incluvis—Vers des pratiques inclusives en employabilité des personnes en situation de handicap,* [Fichier PDF], CRISPESH et ROSEPH, 29 p. [https://crispesh.ca/app/uploads/2022/02/Incluvis_OUTIL_2022-1.pdf].

B. Teamwork

Best practices guide for managers and members of diverse research teams:

Université de Sherbrooke (s.d.). *La gestion d'une équipe de recherche diversifiée,* [Fichier PDF], 5 p.

[https://www.usherbrooke.ca/saric/fileadmin/sites/saric/documents/7-coffre-outils/Gestion_equipe.pdf].

Best practices guide for research team managers to support the successful inclusion of members:

Université de Sherbrooke (s.d.). *L'inclusion au sein d'une équipe,* [Fichier PDF], 3 p. [https://www.usherbrooke.ca/saric/fileadmin/sites/saric/documents/7-coffre-outils/Inclusion.pdf]

C. Interdisciplinary collaboration

Strategies for interdisciplinarity in research:

Krishnan, A. (2009). *Five Strategies for Practising Interdisciplinarity.* ESRC National Centre for Research Methods, NCRM Working Paper Series (02/ 09), 1 11. [https://eprints.ncrm.ac.uk/id/eprint/782].

Four steps to managing an interdisciplinary project (blog post):

Konnikov, A., Rets, I., and K. D. Hugues (2023). *How to manage a major interdisciplinary research project in 4 steps,* [Article de blog], LSE Impact Blog, [https://blogs.lse.ac.uk/impactofsocialsciences/2023/04/13/how-to-manage-a-majorinterdisciplinary-research-project-in-4-steps/].

Three reflective tools for research collaboration. Each set of questions is intended for a particular stage and stakeholder in interdisciplinary research.

For researchers considering a collaborative research project:

SHAPE-ID (2021). *Reflective tool — considering collaboration,* [Fichier PDF], SHAPE-ID Toolkit, [https://www.shapeidtoolkit.eu/wp-content/uploads/2021/03/Reflective-Tool-Considering-Collaboration.pdf].

For researchers starting a collaborative research project:

SHAPE-ID (2021). *Reflective tool — beginning collaboration,* [Fichier PDF], SHAPE-ID Toolkit, [https://www.shapeidtoolkit.eu/wp-content/uploads/2021/02/Reflective-Tool-Beginning-Collaboration.pdf].

For organizations that fund research:

SHAPE-ID (2021). *Reflective tool — funding inter- or transdisciplinary research,* [Fichier PDF], SHAPE-ID Toolkit, [https://www.shapeidtoolkit.eu/wpcontent/uploads/2021/02/Reflective-Tool-Funding.pdf].

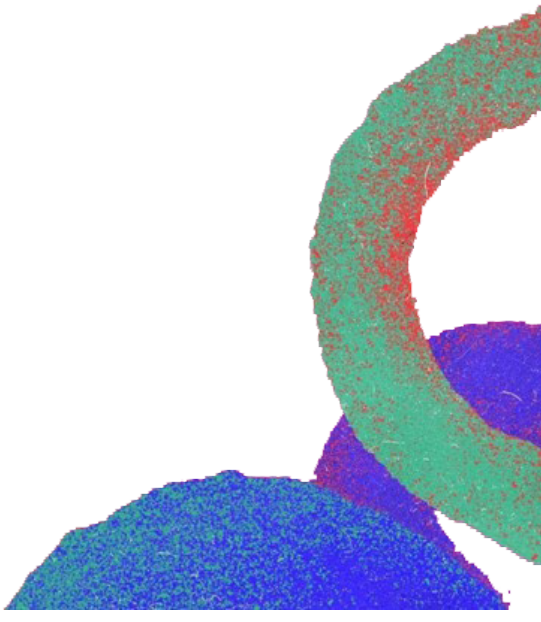
Conclusion

In conclusion, this preliminary exploration has provided a broad overview regarding the issues at stake. While it does not propose a concrete action plan, it opens up possible avenues for addressing the challenges identified by the participating research networks.

Overall, the use of calls for proposals, funding programs, and scholarships was repeatedly noted as a way to encourage diverse teamwork and the integration of EDI considerations in research.

The need to support network members through the development of an inclusive, cooperative, and collaborative culture was also highlighted, particularly with regard to information sharing.

This process can be accelerated by offering training on equity, diversity, inclusion and accessibility issues, best practices for working in multidisciplinary teams, information sharing and technological tools that facilitate collaboration, and the pooling of knowledge.



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