Highlighting the potential of peer-led workshops in training early career researchers for conducting research with Indigenous communities

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ABSTRACT

For decades, Indigenous voices have called for research practices that are more collaborative and inclusive. At the same time, researchers are becoming aware of the importance of community-collaborative research. However, in Canada, many researchers receive little formal training on how to collaboratively conduct research with Indigenous communities. This is particularly problematic for early-career researchers (ECRs) whose fieldwork often involves interacting with communities. To address this lack of training, two peer-led workshops for Canadian ECRs were organized in 2016 and 2017 with the following objectives: (a) to cultivate awareness about Indigenous cultures, histories and languages; (b) to promote sharing of Indigenous and non-Indigenous ways of knowing; and (c) to foster approaches and explore tools for conducting community collaborative research. Here we present these peer-led Intercultural Indigenous Workshops and discuss workshop outcomes according to five themes: scope and interdisciplinarity, Indigenous representation, workshop environment, skillful moderation and workshop outcomes. We show that peer-led workshops are an effective way for ECRs to cultivate cultural awareness, learn about diverse ways of knowing, and share collaborative research tools and approaches. Developing this skill set is important for ECRs aiming to conduct community-collaborative research, however broader efforts are needed to shift toward more inclusive research paradigms in Canada.

Key words: early-career researchers, collaborative research, Indigenous communities, peer-led training; workshop evaluation; cultural awareness.

PLAIN LANGUAGE SUMMARY

This paper highlights the potential of peer-led workshops in training early career researchers for conducting collaborative research with Indigenous communities. Two peer-led workshops called the "Intercultural Indigenous Workshops" were held in 2016 and 2017 in Montréal, Canada, and this paper describes and discusses the workshop experiences of participants, facilitators, and organizers. Based on their experiences during fieldwork up North, the early career researchers who made up the organizing committees felt there was an urgent need for community-collaborative research training among their peers in the natural sciences.

The goals of the workshops were to: (a) cultivate awareness about Indigenous cultures, histories and languages, (b) promote sharing of Indigenous and non-Indigenous ways of knowing; and (c) foster approaches and explore tools for conducting community-collaborative research. Both workshops were well-attended by participants from many research disciplines and attendees showed a high degree of satisfaction with workshop activities. Our analysis of feedback from the workshop showed that a successful formula for meeting the workshop objectives was to a) have a specific target audience (e.g. ECRs in similar fields), b) ensure a diversity of facilitators (both Indigenous and non-Indigenous) and c) focus on relationship building with one or a few Indigenous groups. Achieving a safe and inclusive environment where participants felt comfortable sharing perspectives was also integral to the positive learning experience of participants and facilitators at these workshops.

Even though the workshops featured cross-cultural elements, future workshops could be improved by opting for a venue located in an Indigenous community, setting-up

rooms in a more culturally appropriate way, and incorporating more Indigenous teaching methods, such as storytelling. We found that these workshops were an effective way for ECRs to learn about tools and approaches for community-collaborative research, while building cultural awareness and sharing Indigenous and non-Indigenous perspectives. However, peer-led workshops are an important but insufficient step towards more collaborative research practices in Canada. Having ongoing, accessible, and academically-recognized training for all researchers that brings Indigenous and non-Indigenous participants together can help make fundamental changes to how we conduct research in Canada.

INTRODUCTION

For decades, Indigenous voices have been calling for changes to current research paradigms in Canada and for the inclusion of Indigenous teachings and languages in post-secondary education. Research in Canada involving Indigenous communities has been primarily carried out by non-Indigenous researchers, and many communities have been asking for a greater say in decisions about research priorities, ethical methodologies, as well as data storage, interpretation, and sharing (Hall 2005, NRI and ITK 2007; Wilson 2008; Kovach 2009; GC 2014; INQ 2017; ITK 2018). In this context, awareness on the importance of collaborative approaches to research with Indigenous communities is increasing within many Canadian research institutions (Castleden et al. 2012, Adams et al. 2014; Johnson et al. 2015). Indeed, a paradigm shift is reshaping Canada's research landscape, moving away from conducting research *on* or *in* Indigenous communities to conducting research *with* communities (Tobias et al. 2013; Vogel 2015). A fundamental step toward integrating collaborative approaches into mainstream research is training university-based researchers to work with Indigenous communities in Canada.

Community-collaborative research can be defined as an overarching term that includes a continuum of different research approaches, which "involves engaging local communities and individuals in the research process with the goal of sharing or co-generating knowledge to understand complex problems" (Tondu et al. 2014). This continuum of involvement includes science communication and outreach, community consultation, community-based monitoring, community-engaged research, and participatory research with co-production of knowledge. The nature and extent of appropriate community participation can vary depending on several factors, including the

97 research question and goals, as “not all types of northern research will require, or inspire,
98 the same level of community involvement” (NRI and ITK 2007). Collaborative
99 methodologies remain under-represented in some natural science disciplines (Brunet et
100 al. 2014a; Johnson et al. 2015), as there are projects that may offer fewer opportunities
101 for local involvement, such as studies in locations far from communities using remote
102 data loggers or focusing on non-charismatic species like lichen (NRI and ITK 2007;
103 Gagnon and Berteaux 2009).

104 Collaborative research has been shown to have positive outcomes for researchers
105 across disciplines as well as for Indigenous communities, including improved quality and
106 legitimacy of research, capacity and trust building, and respectful integration of local
107 knowledge (Jack et al. 2010; Ford et al. 2013; Tobias et al. 2013; Brunet et al. 2014a;
108 Mantyka-Pringle et al. 2017). However, developing and implementing long-term and
109 meaningful community engagement can be difficult. Challenges include limited funding
110 and time, insufficient professional recognition for the efforts involved in developing
111 collaborations, and the need for developing skills in cross-cultural engagement (Tobias et
112 al. 2013; Adams et al. 2014; Brunet et al. 2014b). Differences in knowledge systems and
113 worldviews between Indigenous community members and non-Indigenous researchers
114 often yield divergent approaches to, and expectations of, research (Adams et al. 2014;
115 Johnson et al. 2015). Finally, some researchers – especially in the natural sciences –
116 receive little-to-no formal training on how to conduct collaborative research with
117 Indigenous communities (Bousquet 2012; Tondu et al. 2014).

118 Early career researchers (ECRs) face additional challenges than those faced by
119 more established researchers. ECRs need to be productive and publish within the time

120 span of a graduate degree (2-5 years) and may be required to do so with smaller research
121 budgets and more personal financial insecurity (Tondu et al. 2014). When resources,
122 support, and incentives are lacking, ECRs may engage with Indigenous communities
123 chiefly as a result of personal ethics and values (Brunet et al. 2014b). While useful ethical
124 guidelines for conducting community-collaborative work do exist (NRI and ITK 2007;
125 INQ 2017; ITK 2018), ECRs may be limited in their ability to apply these
126 recommendations as they typically conduct their research as part of pre-established
127 projects. For instance, OCAP™ (Ownership, Control, Access and Possession) is a
128 broadly recognized standard for issues of access and ownership of research data with
129 First Nations in Canada (First Nations Information Governance Centre 2014). However,
130 ECRs cannot always address issues around data ownership when they are working as part
131 of pre-established projects where they have limited control over study design and data
132 sharing. Many ECRs in the natural sciences are also not aware of these existing ethical
133 guidelines, as training on conducting community-collaborative research with Indigenous
134 communities is rarely included in natural science curricula.

135 Without formal training, many ECRs are self-taught and learn through trial-and-
136 error when carrying out collaborative research with Indigenous communities. In 2018, an
137 informal poll conducted on social media found that 62% of northern ECRs reported
138 receiving no training on best practices for working with Indigenous communities before
139 starting their fieldwork (N = 43 researchers self-identifying as northern ECRs; M.
140 Falardeau and G. MacMillan, pers. comm.). Opportunities do currently exist for Canadian
141 researchers (including ECRs) who want to develop skills for working with Indigenous
142 communities, including massive online courses (MOOCs) and courses on research ethics,

such as the Carleton University Institute on the Ethics of Research with Indigenous peoples (CUIERIP). However, formal training for students is rare and courses offered outside universities can be prohibitively expensive for ECRs. As Indigenous communities call for a greater say in research, it is essential to improve training that provides tools and approaches for working collaboratively with Indigenous partners to the future generation of researchers (Tondu et al. 2014).

Peer-led workshops can be part of the solution, as they are an effective training technique that enhances interactivity, engagement, motivation and student learning (Preszler 2009; Deakin et al. 2012; Ouellet Dallaire et al. 2018). Here, we present two peer-led workshops entitled "Intercultural Indigenous Workshops" which were held in 2016 and 2017 in Montréal, Canada, with the aim of preparing ECRs to work together with Indigenous communities. Specific workshop objectives were to: (a) cultivate awareness about Indigenous cultures, histories and languages, (b) promote sharing of Indigenous and non-Indigenous ways of knowing; and (c) foster approaches and explore tools for conducting community-collaborative research. In this paper, we discuss the design, implementation, and outcomes of our peer-led workshops in relation to the three objectives described above. We also explore challenges and ways of improving this type of training for ECRs conducting collaborative research with Indigenous communities.

POSITIONALITY OF AUTHORS AND DEFINITIONS

The authors of this paper all identify as early-career researchers (ECRs). ECRs are defined here as undergraduate and graduate students, post-doctoral fellows, and new principal investigators. The authors include six workshop organizers and a government-

166 based researcher who participated in the 2016 workshop as an invited speaker and
167 provided mentorship to the organizers (D. Henri). All authors identify as female
168 researchers; two are Métis and the others are non-Indigenous. We acknowledge that our
169 own perspectives and worldviews will have influenced the interpretations presented here.

170 In referring to researchers working *with* Indigenous communities in this article,
171 we include researchers who work directly with Indigenous partners, as well as those
172 whose projects take place in (or near) Indigenous communities. This article seeks to
173 address issues in training for ECRs whose projects are situated all along a continuum of
174 community involvement in research, from science outreach to participatory research.
175 *Indigenous community* is used here to describe a group of people with a shared cultural
176 identity, traditions, and ways of life, which has the capacity to act or express itself as a
177 collective (GC 2014). Indigenous communities can be territorial, organizational or a
178 community of interest (ACUNS 1982).

179

180 ## THE INTERCULTURAL INDIGENOUS WORKSHOPS

181 In this section, we describe the two Intercultural Indigenous Workshops held in
182 2016 and 2017. These two workshops were organized by volunteer committees composed
183 of five to six ECRs in the natural sciences and one university employee (representing
184 three universities in Québec, Canada). The committees organized the workshops due to a
185 perceived lack of training for both themselves and their peers on conducting community-
186 collaborative research. The workshops were focused on ECRs because they are typically
187 more involved in fieldwork and in the day-to day interactions with Indigenous
188 communities than senior researchers. Faculty members aided in securing funding but

were not directly involved in the workshop organization. Both events were publicized using departmental and research-group mailing lists, posters at universities, word-of-mouth, and social media. Funding was obtained from research grants and participant registration fees. The section will provide a brief description of the workshops and a quantitative analysis of workshop participation. More details on workshop schedules and budgets (SM1), round table discussion structure and questions (SM2), a summary of the 2016 participatory research interactive activity (SM3), and post-workshop survey questions (SM4) are provided in the Supplementary Materials.

In April 2016, a one-day workshop entitled "*Atelier autochtone interculturel: Savoirs scientifiques et locaux en recherche nordique*" (translation: "Intercultural Indigenous Workshop: scientific and local knowledge in northern research") was held in French at the Université de Montréal. The morning consisted of hour-long presentations by invited facilitators who discussed: (1) how to foster collaboration between researchers and Indigenous community members in Québec; (2) an Inuit perspective on the history of researchers working in the North; and (3) Indigenous cultures and languages in Canada. The afternoon consisted of a round-table discussion on how to encourage cooperation, knowledge transfer, and the sharing of perspectives between scientific and northern communities. Round-table participants included two university professors, two university students, and one postdoctoral fellow; one of whom identified as Indigenous. After the round-table discussion, an interactive activity consisting of small group discussions on participatory research was facilitated by a government researcher. This session led to the creation of a document summarizing the group discussions and providing resources for ECRs (SM3: Summary: Group Discussions on Participatory Research in the North). The

workshop ended with an evening networking event featuring traditional food tasting and a performance by Inuit throat singers.

In November 2017, a two-day workshop entitled "Intercultural Indigenous Workshop: Sharing perspectives and experiences of research in Canada's North" was held at McGill University. The first day consisted of a full-day workshop on building cultural awareness of Indigenous cultures and was led by an Indigenous facilitator. Canada's historic relationships with First Nations, Inuit, and Métis were explored during this first day. In the evening, a public event was organized that included two keynote presentations and a round-table discussion. The keynote facilitators, one of whom identified as Indigenous, spoke about merging traditional and scientific ecological knowledge and about the importance of youth education in Indigenous communities. The theme for the round-table discussion was "Sharing perspectives and experiences of research in Canada's North." Round-table participants included a university professor, a postdoctoral fellow, a special advisor on Aboriginal initiatives, an Indigenous artist, the co-founder of an NGO, and a doctoral student; three of these participants identified as Indigenous. The round-table discussion was followed by a networking event that included food from a local Indigenous caterer, an Inuit throat singing performance, and jewellery sold by Indigenous artisans. The second day of the workshop was an interactive, arts-based, experiential workshop focused more specifically on the history of First Nations and led by an Indigenous facilitator. The goal of the experiential workshop was to explore First Nations' historical, political, and social issues by re-enacting historical scenarios and by using theatrical techniques. An Indigenous Elder was present to offer guidance.

The 2016 workshop brought together 32 participants from eight fields of research who were affiliated with nine different universities in the province of Québec, Canada (Table 1). The majority of participants were female graduate students in the natural sciences (>60%, Table 2). In 2017, the first full-day workshop involved 48 participants from 24 disciplines who were affiliated with 10 Canadian universities, as well as representatives from the federal government and an NGO (Tables 1 and 2). Overall, the participants came from a greater diversity of research fields and institutions in 2017. The 2017 public evening event attracted 92 people, with an additional 23 people registered via webinar. The experiential workshop in 2017 had 15 participants (14 female) who were also mostly in the natural sciences. Similar to 2016, the dominant group of participants in 2017 were female graduate students in the natural sciences (~40%, Table 2). Fewer participants stated that they had previous experience working in northern research in 2017 compared to 2016 (33% had worked in northern research in 2017 vs. 53% in 2016).

WORKSHOP ASSESSMENT METHODS

After each workshop, the organizing committees collected feedback through a variety of methods from participants, facilitators and organizers on the workshop design, implementation, and overall impressions. Quantitative data was compiled from attendance records for participants on the following topics: (a) affiliation to university/department or other organization; (b) role within university/department or other organization (e.g., student, faculty, employee); and (c) gender. Gender was assigned based on first names and verified with gender name lists by country (Larivière et al. 2013). Members of the organizing committees (n = 13) provided oral and/or written

feedback (via email) on their overall impressions of the workshops. Facilitators were sent questions via email (n = 8) or asked questions via semi-structured, oral interviews which were transcribed afterwards (n = 1) (see SM4 for interview questions).

After the workshops, all participants received email invitations to anonymously complete a workshop evaluation survey, which included ten multiple-choice and short answer questions. The overall aim was to evaluate the strengths and weaknesses of the workshops (see SM4 for participant survey questions). We received 19 responses in 2016 and 18 in 2017. Categorical and open-ended questions covered participant opinions on various aspects of the workshops, including: schedule, workshop themes, presentations, and networking events. Categorical questions included two different scales to measure appreciation: (1) "Very Poor", "Poor", "Average", "Good" and "Very Good", and (2) "Not useful", "Somewhat Useful", "Useful" or "Very Useful." In total, 100% of organizers, 35% of participants, and 53% of facilitators provided feedback.

We used mixed methods to describe and discuss perspectives from participants, facilitators, and organizers on their workshop experiences. We adapted a framework from Cervero (1984) to use four evaluation categories for the workshops: (1) workshop design and implementation; (2) learner participation; (3) learner satisfaction; and (4) workshop outcomes. Learner participation was evaluated using descriptive statistics and qualitative description (Sandelowski 2000); all other categories were explored using qualitative description. For each category, two authors independently coded qualitative data available (i.e., interview transcripts, surveys, emails, debriefing notes), and then organized these into themes that reflected the ideas raised by the participants, facilitators and organizers in the surveys. This paper reflects on five themes associated with

281 workshop delivery and outcomes: (1) scope and interdisciplinarity, (2) Indigenous
282 representation, (3) workshop environment (4) skillful moderation, and (5) workshop
283 outcomes (Fig. 1). The discussion below explores how each theme contributed to
284 workshop success, which was evaluated based on the three workshop objectives.

285

286 **DISCUSSION**

287 *"I never had the chance to attend a training day like this and I wish that I could*
288 *have, as it would have helped me a lot. I am very happy to see that there are now*
289 *resources like this being developed for the new generation of researchers… this means*
290 *that times are changing."*

291 - Workshop facilitator in 2016

292 For the most part, the workshops were effectively implemented and well-received
293 by participants and facilitators. There was an overall high degree of satisfaction; the
294 majority of survey participants rated their overall workshop appreciation as either
295 "Good" or "Very Good" (100% in 2016, 90% in 2017). Most survey participants also
296 reported that the workshops were either "Very Useful" or "Useful" to their research (72%
297 in 2016 and 67% in 2017). Adjectives frequently used to describe the workshop by
298 participants included "excellent", "well-organized", "interesting", "pertinent", and
299 "useful." All invited facilitators who provided feedback shared their appreciation for the
300 workshops and agreed to participate in future editions. One non-Indigenous facilitator in
301 2016 acknowledged the historical lack of training on these subjects and highlighted the
302 current need for such workshops (see above quote). While general appreciation was high

for both workshops, participant satisfaction for some activities was mixed. In this discussion, we describe the five fundamental and interrelated themes that emerged from the thematic analysis and relate them back to the three workshop objectives. These objectives were to support ECR training for conducting research with Indigenous communities by: (a) cultivating awareness of Indigenous cultures, histories, and languages; (b) promoting sharing of Indigenous and non-Indigenous ways of knowing; and (c) fostering approaches and explore tools for conducting collaborative research with Indigenous communities.

SCOPE AND INTERDISCIPLINARITY

"The workshop showed me how social sciences play an important role in the field, and also how social sciences are complementary with 'pure' sciences to determine, with local communities, how to use a collaborative approach and to decolonize relationships."

- Workshop participant in 2016

One of the major challenges associated with organizing workshops that addressed complex issues around researcher/Indigenous collaborations was determining the scope of the workshops. The organizing committees put a great deal of thought into this: Should the workshops focus on a specific scientific field (e.g., natural sciences, social sciences, or both)? Should they be targeted to northern researchers or to all researchers? Should workshops emphasize relationship building with one Indigenous group or with Indigenous peoples in Canada more broadly? Our thematic analysis revealed that the

effectiveness of the workshop activities in meeting the workshop objectives depended on decisions made about scope and interdisciplinarity.

Both narrowly- and broadly-targeted workshops proved successful in cultivating cultural awareness of Indigenous cultures, histories and languages. The 2016 edition had a narrower scope, focusing on northern Indigenous communities, in particular Inuit, while the 2017 edition focused on First Nations, Inuit, and Métis. Survey participants in 2016 commented that learning facts about Inuit culture and ways of life was a highlight of the workshop. In 2017, one participant stated that the workshop was "eye-opening" and an important reminder of the context and history of Indigenous peoples in Canada. While some participants felt that the 2017 workshop was too broad and not targeted to researchers, another thought that researchers would still keep in mind the workshop messages when working with Indigenous groups, despite the broader scope.

The target audience shifted from the first to the second workshop - from a narrower to a broader audience - and this helped promote interdisciplinary discussions and the sharing of diverse perspectives. Based on participant feedback, the organizers broadened the target audience of the second workshop (2017) to include the social and health sciences, as well as to participants beyond academia. Having a greater diversity of disciplines among workshop participants, facilitators, and organizers, can help foster interdisciplinary thinking, openness, and collaboration (Bridle et al. 2013). The sharing of perspectives was encouraged at both workshops by incorporating time for discussion and reflection at social events. Despite more homogeneous participant profiles in 2016 (75% in the natural sciences), workshop facilitators were from diverse backgrounds which allowed for interdisciplinary encounters. One 2016 facilitator stated: "My general

impression was that students in the 'hard' sciences were very receptive to knowledge from the social sciences. They wanted to know more." For both workshops, stimulating interdisciplinary discussions was key to sharing ways of knowing across Indigenous and non-Indigenous knowledge systems.

Although both workshops were effective at achieving the first two objectives of the workshops, the third objective of fostering approaches and exploring specific tools for conducting collaborative research was better served by the narrower workshop scope in 2016. Participants appreciated content that was clearly related to their own research practice; they were less satisfied in 2017 when the applicability of workshop content to their research was less clear. A narrower scope in 2016 also enabled participants to build interest around a common theme (Bridle et al. 2013), which enabled discussions on field-specific methodologies for conducting collaborative research. Overall, our analysis showed that a successful formula for meeting the workshop objectives was to a) have a specific target audience, b) ensure a diversity of facilitators to engage with workshop participants, and c) focus on relationship building with one or a few Indigenous groups. We therefore recommend organizing multiple, specialized workshops tailored to specific groups in order to promote community-collaborative research approaches, while also building cultural awareness and sharing perspectives.

INDIGENOUS REPRESENTATION

"Simply that this event was organized was a high point for me. Indigenous peoples are often forgotten in research and this type of event can help build better relationships."

371 - Workshop facilitator in 2017

372 An essential aspect of these two peer-led intercultural workshops was the
373 inclusion of a diversity of cultural identities and experiences. At both workshops,
374 Indigenous representation was a key way of raising awareness about Indigenous cultures,
375 histories and languages, and for promoting both Indigenous and non-Indigenous ways of
376 knowing. These workshop objectives could not have been achieved without Indigenous
377 facilitation, as indigenizing research and training requires close collaboration between
378 researchers and Indigenous peoples (Kitchen and Raynor 2013). Significant effort was
379 put into having diverse facilitators who came from Inuit, Métis, Lakota, and Mohawk
380 nations/communities. Survey participants often reported that their preferred workshop
381 activities were those led by Indigenous facilitators. Although some participants requested
382 more Indigenous representation - including suggestions for an all-Indigenous speaker
383 program - the organizers found that effectively sharing perspectives required a balance
384 between Indigenous and non-Indigenous guests. Diverse facilitators were able to draw on
385 different experiences and to contextualize the world of collaborative research for ECRs.
386 For instance, many of the Indigenous facilitators had not conducted research (although
387 some had been research participants), and the non-Indigenous researchers were uniquely
388 positioned to provide insights into the specifics of collaborative research approaches at
389 these workshops. We concluded that the ideal scenario for these workshops was balanced
390 representation where participants could learn from both Indigenous and non-Indigenous
391 facilitators.

392 Integrating a diversity of Indigenous facilitators at these workshops was not
393 without some challenges. It was not easy to identify appropriate facilitators within the

(sometimes limited) professional networks of ECRs in the natural sciences, and many facilitators were already highly sought-after for this type of training. Feedback from some facilitators suggested addressing this challenge by increasing Indigenous participation on the organizing committees or partnering with Indigenous organizations to plan future events. However, workshop organization was time-consuming and organizing committee members were all volunteers, which made the recruitment of new organizers challenging. Soliciting the participation of non-academic guests was also difficult, as participating in this type of workshop is not usually part of non-academic professional responsibilities. Ensuring enough funding to recruit diverse members for the organizing committees and to provide compensation for non-academic guests would help address these challenges.

In addition, the workshops did not have sufficient funding to pay for facilitators to fly down from northern communities, restricting recruitment to facilitators who lived near Montréal. Future workshops could use virtual communication technology (e.g., Skype) to connect Indigenous facilitators from remote places - such as Canada's northern territories - with participants. These methods have been shown to be an effective way to connect learners across geographical barriers (Mercier and Leonard 2000). However, virtual discussions may be less effective than in-person meetings for relationship building. Many of these challenges are typical of peer- or ECR-led workshops, and more extensive professional networks and greater access to funding would likely have increased the effectiveness of the workshops' objectives. Our experience highlights that, despite the challenges, ensuring a diversity of Indigenous facilitators at these workshops was an effective way of cultivating cultural awareness and sharing different ways of knowing.

WORKSHOP ENVIRONMENT

"Perhaps consider booking out space in the Kahnawake Mohawk Territory to do the workshop and presentation there. Context matters!"

- Workshop facilitator in 2017

Our analysis found important connections between the physical environments of the workshops and the participants' experience, especially in an intercultural context. Both workshops were held on university grounds and in settings that were typical of academic conferences (Fig. 2). This environment is likely comfortable for university students and faculty members, but may be less so for non-academics and Indigenous participants. On the one hand, hosting these peer-led workshops on university grounds encouraged student participation and meant that the venues were easy to reserve for student committees. On the other hand, many of the Indigenous facilitators emphasized that the physical space was not conducive to intercultural learning. For instance, it was not possible to host a smudging ceremony (which involves burning of medicinal herbs) at one workshop because of university building regulations. One Indigenous facilitator also commented on the importance of geographical location (see above quote). Some facilitators suggested that the room configuration - for instance, a rectangular table on an elevated stage for the inaccurately named "roundtable" discussion - did not promote cultural awareness and the sharing of perspectives. Although territorial acknowledgements were conducted at the beginning of each workshop, the overall academic context and room configurations may have created a disconnect between the workshop experience and its objectives. Opting for a venue located in an Indigenous community, setting-up rooms in a culturally appropriate way, and incorporating more

Indigenous teaching methods, such as storytelling, would have been a more effective way of sharing Indigenous ways of knowing at these workshops (Kovach 2009; Castleden et al. 2013).

The importance of the workshop environments to achieving workshop objectives also extended beyond the physical space. The use of diverse learning techniques, the inclusion of socio-cultural activities and the type of food served influenced the success of the workshops. At the Intercultural Indigenous Workshops, activities ranged from lectures, to roundtable discussions, to interactive activities involving talking circles and role-play. Participants frequently reported that the variety of activities was a highlight. The Indigenous catering and socio-cultural activities (throat singing, Indigenous artisans) were also highly appreciated and were seen as opportunities to build awareness about Indigenous cultures. One organizer reported that: "We managed to create space for exchanges between students, researchers and Indigenous peoples through different formats […], but we also broke down academic barriers by offering opportunities for informal exchanges through having [Indigenous] artists sell their crafts and food sharing." Overall, our analysis found that experiential learning and socio-cultural activities significantly contributed to raising cultural awareness at these workshops (Castleden et al. 2013).

SKILLFUL MODERATION

"Leading this kind of activity is quite challenging to pull off in my eyes, because the issues raised reach deep into the psychological realm and personal experiences of participants."

- Workshop organizer in 2017

Another theme that emerged from our analysis was the need for skillful moderation at the workshops. Skillful moderation was not only needed for logistical aspects, such as staying on schedule and managing the flow of the activities, but also to ensure that participants had sufficient time and space to reflect on workshop content. Although participants may have enrolled in our workshops to receive professional training, the experiential learning activities brought some participants on a more personal journey. In-depth and experiential learning activities focused on the history of colonization and the current realities of Indigenous peoples in Canada fostered personal reflections (Castleden et al. 2013) and evoked feelings of vulnerability and sadness in participants. As one organizer from 2017 stated: "Participating in this kind of experience for the first time can be intense and traumatic; and how participant reactions are received and dealt with is extremely important." The need for sufficient time for reflection and emotional guidance (e.g. from an Elder) was reiterated by many participants as important while learning about emotionally difficult information, including teachings on colonial history for participants self-identifying as settlers. Skillful moderation was thus an essential component for raising awareness about Indigenous histories, cultures, and realities. Future workshops should try and ensure that time is set aside for participants to process information on difficult subjects, for example by allowing multiple breaks during which facilitators remain available to talk with participants.

Despite the challenges of navigating complex issues in a cross-cultural environment, moderation of the workshops was rated as generally successful. Workshops organizers recognized the importance of moderation beforehand and provided

participants with space (e.g., breakout discussions) and emotional guidance (e.g., Elders and experienced Indigenous facilitators) to encourage reflection. Feedback from attendees suggested that many were able to find space to reflect upon their experiences in a safe environment. Peer-led moderation may have contributed to fostering a safe environment that promoted communication and cooperative learning among participants (Johnson et al. 1998; Preszler 2009). In fact, the non-hierarchical structure of a peer-led workshop that can help promote knowledge-sharing and including activities with facilitators or guides, as opposed to teachers or experts, may have allowed for safer sharing and a deeper connection among participants (Castleden et al. 2013). One participant reported: "I felt that I was able to listen and hear what other people were doing. It was great to hear about people's struggles, but that they were seeking out like-minded people and eager to help find solutions." Achieving a safe and inclusive environment where participants felt comfortable sharing perspectives was integral to the positive learning experience of participants and facilitators at these workshops.

WORKSHOP OUTCOMES

"A nice opportunity for students to improve their knowledge of Indigenous contexts, to exchange, and to share their concerns."

- Workshop facilitator in 2016

Our discussion showed that the workshops were successful in cultivating cultural awareness among participants, as well as in promoting the sharing of Indigenous and non-Indigenous ways of knowing. In particular, the four aspects discussed in previous

sections (scope and interdisciplinarity, Indigenous representation, workshop environment, and skillful moderation) were instrumental in achieving the workshop objectives. Overall, the interdisciplinary and participatory nature of the peer-led Indigenous Intercultural Workshops, and the presence of Indigenous representatives, provided a safe environment where participants could exchange freely and reflect on important issues related to research in Canada. We suggest that this type of training for ECRs can influence approaches to research, as represented in Figure 3. This figure illustrates the circular relationship between researcher training (on the bottom half) and the potential impacts of their training on research practices with Indigenous communities (on the top half). People are at the heart of this learning process where our understanding deepens with every turn, and where community members and researchers work together towards shifting the research paradigm.

In addition, the workshop organizers - all ECRs - learned how to host peer-led workshops. This outcome contributed to the ongoing process of developing and improving training for ECRs working with Indigenous communities. Skills developed by organizers during the workshops ranged from identifying and inviting facilitators, to managing logistics (e.g., writing funding proposals, budgeting, travel expenses), to moderating activities which included challenging content on colonial history. Workshop organizers learned a lot "by doing," seeking advice whenever possible, and keeping track of recommendations for hosting future workshops. After the workshops, many of the workshop organizers were solicited to help organize similarly-themed workshops, indicating that the knowledge developed through organizing these peer-led workshops will likely contribute to helping other groups host workshops in the future.

The positive outcomes discussed here highlight the potential of the Intercultural Indigenous Workshops in increasing cultural awareness, intercultural knowledge, and ECRs' capacity to conduct collaborative research. It was difficult, however, to evaluate how the workshops contributed to changing how participants actually conduct their research. To evaluate this, the organizers would have had to assess if participants' research evolved toward increased integration of community-collaborative approaches as a direct result of the workshops (Cervero 1984). This type of analysis was not possible in this paper, however it could contribute greatly to our understanding of the impact of peer-led training on ECRs approaches to research with Indigenous communities. Nonetheless, the fact that these workshops drew broad participation and high general appreciation may be indicative of a shift in mainstream approaches to research, especially among ECRs. In-depth discussions between workshop attendees have also continued since the workshops and suggest that the workshops sparked important conversations about community-collaborative research and the need for improving ECR training.

CONCLUSION

"Efficient? No. One workshop cannot be enough. You would need many more workshops, spread over a year or at least a semester."

- Workshop facilitator in 2016

Although peer-led learning is not a substitute for formal teaching methods, it can be an effective tool to help ECRs develop "reflective practice and critical self-awareness" while being a pragmatic response to limited resources at universities (Boud 2001). We

propose that peer-led workshops integrating increased Indigenous representation, interdisciplinary discussions, cultural awareness, safe physical and cultural spaces, skillful moderation, emotional guidance and personal reflection can be useful to ECRs who work with Indigenous communities. These initiatives support Indigenous calls for inclusive and collaborative research practices and, ultimately, for the decolonization of research (Fig. 3), providing ECRs with a place to reflect meaningfully on the way research is conducted in Canada.

One important question remains after our analysis of the Intercultural Indigenous Workshops: can raising cultural awareness, promoting the sharing of diverse perspectives, and teaching collaborative research approaches lead to measurable change in research practices? As expressed in the above quote, attending a one or two-day event may not be sufficient to meaningfully change the way ECRs conduct their research. It is likely that regardless of intentions, ECRs will still struggle to implement behavioural changes when faced with academic demands that make engagement with Indigenous communities challenging (Beagan 2003). Peer-led workshops are therefore an important but insufficient step towards more collaborative research practices in Canada. Having ongoing, accessible, and academically-recognized training for all researchers that brings Indigenous and non-Indigenous participants together can help us challenge current perspectives and make fundamental changes to how we conduct research in Canada. Although it may be unsettling, ECRs and other researchers, must let down their guard and learn from different ways of knowing - for the betterment of research processes in Canada.

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598

599 **Conflict of Interest.** The authors have no conflict of interest.

600

601 **Ethical Approval.** For this type of workshop discussion and evaluation, ethics approval
602 was not required.

603

604 **Informed Consent.** Even though formal consent was not required for this article, we
605 sought informed consent from all facilitators before incorporating their feedback.
606 Participating facilitators were informed that the goal of the semi-structured interviews
607 was to collect feedback about their workshop experience to be used in this manuscript.
608 All interviewed facilitators gave written or oral consent for their feedback (and quotes) to
609 be used in this paper. We did not obtain formal consent from workshop participants as we
610 could not retroactively seek their consent from anonymous survey responses. After
611 consultation with two university research ethics boards (Université de Montréal and
612 McGill University) we incorporated anonymous participant feedback in this article given
613 that this is not a research article and the purpose of this paper is to determine workshop
614 success and ways forward for workshop improvement.

615

616 **Supplementary Material** contains 4 sections and provides details on the workshops
617 (SM1: Workshop Schedule and Details, SM2: Round Table Discussion Structure and
618 Questions, SM3: Summary: Group Discussions on Participatory Research in the North,
619 SM4: Participant Survey and Facilitator Interview Questions).

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Table captions

TABLE 1: Affiliation of workshop participants by year. Individual participants can be counted in multiple categories.

TABLE 2: Workshop participants' fields of study, degree level, and gender by year.

Figure captions

FIGURE 1: Diagram of workshop evaluation method using quantitative data, qualitative description, and workshop evaluation categories from the framework in Cervero (1984). The diagram shows the five discussion themes which reflect key ideas raised by workshop participants, facilitators and organizers.

FIGURE 2: Photo mosaic showing the workshop environment of the Intercultural Indigenous Workshops, as well as some of the interactive activities.

FIGURE 3: This diagram shows an iterative approach to training and research which can move us towards a new research paradigm. The diagram cycle starts with increased Indigenous representation (on the right side) and moves from right to left, with our understanding of research with Indigenous communities deepening at each turn. People are found at the center of this process. The training section on the bottom half shows the key themes from our analysis of the Intercultural Indigenous Workshops and the top half shows the larger context of research shifting toward collaborative approaches.

Tables

TABLE 1

Participant Affiliation	2016 (n = 32)	2017 (n = 48)
University/Academic	32	46
Government of Canada	--	2
Non-Governmental Organization	--	1
Number of Academic Institutions	9	12
Number of Academic Departments	8	24

TABLE 2

2016	Total Participants	n	%	Field of Study	n	%	Degree	n	%	Gender	n	%
	Day 1: Actual/Registered	32/43	74	Natural Sciences	24	75	Bachelor's Student	7	22	Female	21	65
				Social Sciences	5	15	Master's Student	10	31	Male	11	35
				Health Sciences	3	10	PhD Student	12	38			
							Post-Doc	3	9			
							Other	0	--			
2017	Total Participants	n	%	Field of Study	n	%	Degree	n	%	Gender	n	%
	Day 1: Actual/Registered	48/59	81	Natural Sciences	23	48	Bachelor's Student	4	8	Female	37	77
	Day 2: Actual/Registered	15/30	50	Social Sciences	14	29	Master's Student	19	40	Male	11	23
	Webinar	23	--	Health Sciences	10	21	PhD Student	15	31			
	Networking	92	--	Other	1	2	Post-Doc	9	19			
							Other	1	2			

Figures

FIGURE 1

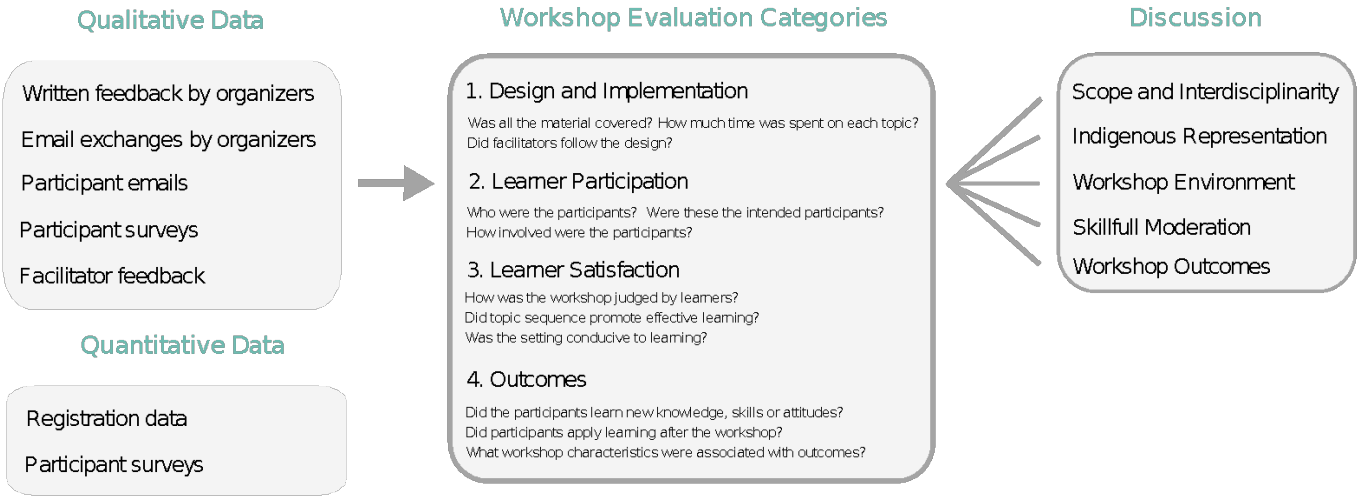
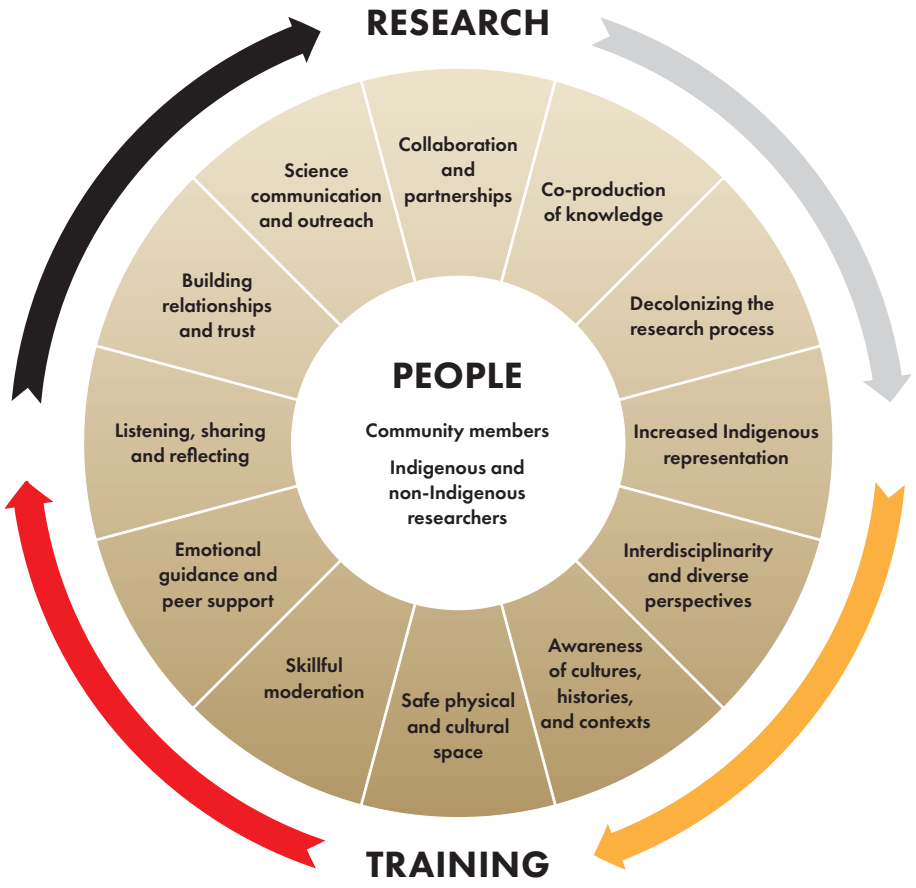


FIGURE 2 : See attached Image Files

FIGURE 3



«Just organizing something like this is a powerful thing. Indigenous peoples are often forgotten in research and it's events like these that move us closer to better relationships»