Transforming Climate Action

EDIA Action Plan

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EDIA Action Plan

While this template received from the Tri-Agency Institutional Programs Secretariat (TIPS) uses the term Equity, Diversity, and Inclusion (EDI), this submission intentionally uses Equity, Diversity, Inclusion, and Accessibility (EDIA) throughout. This reflects a commitment to ensuring that accessibility—particularly for disabled and multiply-marginalized communities—is treated as a core principle of inclusive policy and practice

1. Development of the EDI Action Plan

1.1 CFREF initiative's vision and key objectives

Explain the CFREF initiative's overall vision and key objectives to provide context to the Action Plan.

Unprecedented human-induced climate change increasingly impacts important ocean processes, such as the vital ocean carbon sink, which has absorbed 40 percent of human CO_2 emissions over the industrial era (Masson-Delmotte et al., 2021). However, in current climate policy and negotiations, the ocean is missing – the most significant miscalculation of climate policy by nations to date. This CFREF initiative unites four world-leading Canadian ocean universities to transform climate action through an interdisciplinary research focus on the Ocean-Climate-People nexus to address the missing ocean in the climate dialogue (Pörtner et al., 2019). The Transforming Climate Action (TCA) initiative will answer key ocean-related scientific questions and clarify ambiguities in ocean carbon cycle processes. The initiative's key objectives are: 1) reducing uncertainty about ocean carbon sequestration across the globe; 2) making Canada a global leader in the mitigation of carbon emissions; and 3) promoting just and equitable adaptation policies and tools. Considering communities as essential actors in these conversations, our detailed research program will be co-designed with impacted communities and will engage with rights-holders and stakeholders in exploring adaptation and mitigation solutions. TCA is committed to the principles of equity, diversity, inclusion, and accessibility (EDIA). The EDIA Action Plan will be an important tool for supporting respectful, appropriate, and meaningful engagement with people from equity-deserving groups (EDGs), including Indigenous communities. We will achieve our EDIA vision through education and training, capacity building, and research by and with the Indigenous communities in whose territories the work will occur.

1.2 Commitment to addressing systemic barriers

Systemic barriers include, but are not limited to oppression, injustice, violence, racism, discrimination, sexism, homophobia, transphobia, whiteness, ableism and disablism.

Outline the CFREF initiative's vision statement for addressing the systemic barriers faced by individuals from underrepresented groups (racialized individuals; African, Caribbean and Black individuals; Indigenous Peoples; persons with disabilities; women and individuals from 2SLGBTQIA+ communities) and contributing to greater EDI in its research disciplines and Canada's research ecosystem.

We envision universities as spaces that are open to everyone wishing to contribute to the development and knowledge of diversity in all its forms. To this end, we do not only apply EDIA principles to the TCA program, but we are also taking a leading role in transforming the way the research is done within the TCA partner institutions and beyond. We adhere to the principles of EDIA and consider EDIA a core component of the research, training, and administration of the TCA initiative. We aim to provide a diverse and discrimination-free program, with equitable access for all researchers, students, and highly qualified personnel (HQP) to all programs within TCA, and to ensure processes are in place to recruit and retain staff and appoint committee members that recognize and address long-term impacts of systemic discrimination and meet the 50-30 challenge (50 percent women or non-binary individuals and 30 percent other EDGs).

We have gathered, and will continue to gather information in various ways, including through meaningful engagement with EDGs, researchers, HQP, and staff to identify existing systemic barriers and challenges, ensuring that resulting action items specifically support the full participation from EDGs. By addressing these barriers, particularly as they relate to students and early career professionals, we aim to achieve a broadening of EDG members' representation in the Canadian ocean-climate research and policy ecosystem.

1.3 Preventing performativity and tokenism

Explain what measures will be taken to prevent performativity, and tokenism throughout the initiative's work.

Performativity is the practice of doing equity work for compliance or to make an organization 'look good' and increase its social capital as opposed to making genuine efforts to create substantive change. Tokenism, a type of performativity, is when inclusion or diversity are done in a perfunctory or symbolic fashion, particularly the recruitment of individuals from underrepresented groups to create an appearance of diversity without addressing underlying inequities (e.g., such as microaggressions, exclusion of the decision-making process, unequal access to information on career advancement). Examples of these include hiring someone in the team, inviting someone to be on a committee, or inviting someone to be on a research project as a partner/collaborator but not valuing their contributions, expertise or, knowledge; or making public commitment statements to EDI without appropriately funding the work in the organization, assigning the work to individuals with no expertise or lived experience, or shifting priorities away from EDI work when other organizational priorities surface or when public urgency due to an event subsides.

We will encourage EDGs to participate in the development and decision-making processes through various engagement strategies developed in consultation with these groups. Specific actions to support this include hiring staff from EDGs in strategic and influential roles, including an EDIA Specialist, EDIA Coordinator, Indigenous Research Advisor, and Research Programs Manager; reviewing all Terms of Reference for committees and programs to ensure inclusionary principles and strategies are embedded and recommending changes if necessary. For example, ensuring TCA members with lived experience have a leading role on governance committees and that EDIA principles are included in all activities, particularly in the evaluation criteria for all TCA research and training programs. To prevent tokenism, we will ensure that input, knowledge, and contributions from EDGs are valued and incorporated into decision-making. This will be achieved through equitable representation from EDGs on governance committees and by incorporating co-creation outcomes into policymaking. To support underrepresented groups in taking part in governance and decision-making in a meaningful way, two TCA advisory committees, each chaired by EDG members, will focus on supporting the participation of EDGs: the EDIA Advisory Committee and the Advisory Committee on Indigenous Engagement in Ocean Research. The two committees are separate to be able to focus specifically on their mandates. The highest level of governance for TCA, the TCA Executive Council, meets the 50-30 challenge in its voting member representation. We have established numerous goals to achieve equity, and we will focus on the impact and outcomes of specific EDIA actions in addition to increased diversity. By valuing impact, we can examine the effectiveness of our EDIA initiatives.

1.4 Equitable research excellence

Explain why EDI in the research discipline(s) of the CFREF initiative is important and how it leads to greater research excellence within Canada's research ecosystem.

The ocean-climate nexus impacts people living in coastal communities in Canada and beyond. The third research theme of the TCA research program, promoting just and equitable adaptation policies and tools, is explicitly intended to address these impacts. Those who live in areas most significantly impacted by climate change, such as Arctic and coastal communities, have significant knowledge of the impact and potential adaptation strategies – these communities often include Indigenous Peoples.

There is a need for innovative and bold research that encompasses EDIA principles and engages Indigenous Peoples on whose territories the TCA partner institutions are located and on whose territory the work will be done. From an intersectional perspective, climate change has a greater negative impact on Indigenous communities who live off the land in that it takes a growing toll, depleting food sources and affecting cultural practices, thus impairing their quality of life and health outcomes (Human Rights Watch, 2020).

For research to be truly inclusive and impactful, there is a need to incorporate EDIA principles to reflect the diverse experiences, needs, and concerns of each individual EDG, while also considering intersectionality. Different researchers and community members with various backgrounds, perspectives, and experiences can mobilize greater collective intelligence, which leads to a better ability to identify and tackle contemporary and complex ocean-climate issues with innovative solutions for mitigation and adaptation. A diversity of perspectives and knowledge engaged in tackling these issues will help Canada's ocean-climate research ecosystem to reach its full potential, as well as contribute to and influence policies and solutions where talented and diverse researchers are valued and supported (Francoeur et al., 2008; Woolley et al., 2011).

1.5 Equity, Diversity and Inclusion expertise

Equity work should be guided by equity expertise to meet its intended objectives and to mitigate potential harm to the communities it is meant to support. As a best practice, equity work should also be compensated. Ensure that you hire equity experts to support the development and implementation of the initiative's EDI Action Plan. While guided by experts, equity work is everyone's responsibility within the CFREF initiative. It is expected that all individuals that participate within the CFREF initiative (e.g., the research leaders, board members, staff, students) contribute to helping meet the EDI Action Plan's objectives.

1.5.1 Explain how equity expertise helped to inform the development of the EDI Action Plan and how it will continue to guide its implementation throughout the duration of the CFREF initiative.

1) A TCA EDIA Specialist and Coordinator were hired to lead the development of the EDIA Action Plan; 2) We have senior-level EDIA expertise from each partner institution on the EDIA Advisory Committee. The committee has helped inform the EDIA Action Plan's development by advising the EDIA Specialist on issues related to EDIA within all aspects of the CFREF program; 3) An EDIA Working Group, comprised of EDIA and anti-racism specialists from the four partner institutions meets bi-weekly, led by the EDIA Specialist, to discuss issues and provide support; 4) The CFREF EDIA Community of Practice (CoP) and associated working groups provide further equity expertise among CFREF-funded institutions; 5) Equity and anti-racism expertise on the TCA Executive Council ensures the highest level of decision-making within TCA provides accountability for the implementation of the EDIA Action Plan, including adequate budget supports to achieve the objectives and actions outlined.

1.5.2 Identify what strategies will be used to ensure strong EDI leadership and accountability at all levels within the initiative.

1) Prioritizing transparency; 2) Inviting feedback and encouraging two-way communication; 3) Ensuring all levels of governance include EDIA expertise; and 4) EDIA educational programs for TCA members. To foster transparency, the minutes and agendas of the TCA Executive Council meetings are available to all TCA members. We believe that part of decolonization is removing bureaucratic top-down practices. This would entail that TCA leaders receive feedback from others to inform required changes. We will foster two-way communication through 1) annual surveys offered to TCA members; and 2) coffee breaks. Coffee breaks, which will take place quarterly, are meetings that will allow TCA members to have genuine, real-time, two-way conversations with other team members, which can help foster trust and a sense of teamwork. Due to the interdisciplinarity of the TCA research program, across multiple faculties, buildings, and campuses, the physical location of coffee breaks will rotate to ensure all TCA members can participate. It will be especially important to communicate any findings with TCA leadership.

1.6 Intersectionality

The term "intersectionality" was coined by Kimberlé Crenshaw, a law professor, to explain how Black women face increased disadvantages and discrimination due to their overlapping identities of race and gender. The term has since been expanded to mean the multiple barriers and disadvantages that individuals with intersecting social identities, such as race, gender, sexuality, ability, disability, and class, face in society. For instance, Black or Indigenous women face both sexism and racism, while white women could face sexism, but also experience racial privilege. Using an intersectional approach is a best practice to identify, mitigate, and address systemic barriers and leads to better policy and decision making as it considers these overlapping and increased barriers.

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Explain how an intersectional lens was applied to the development of the EDI Action Plan and how it will continue to be applied in its implementation, monitoring, reporting and accountability activities.

To ensure fairness, we applied an intersectional lens at every stage of the development of this Action Plan. We focused mainly on how equity-deserving TCA members experience organizational and institutional policies and decisions differently, which can put them at a disadvantage; e.g., during the co-creation activities with TCA members, we prioritized asking questions that encouraged conversations around intersectionality. This informed many of the actions undertaken to address systemic barriers, while also considering intersectionality factors. We prioritized intersectional evidence in our literature review. We will continue to apply a critical intersectional lens in the implementation of the Action Plan by examining and monitoring the impacts of each action and their effect on each of the six underrepresented groups.

We will recruit people from EDGs to participate in all aspects of TCA and will accommodate and address their diverse needs as they arise. The EDIA Specialist established an accommodation statement now shared through various TCA channels (including governance committees). The TCA program will also address explicit and implicit biases by raising awareness about existing institutional policies and how they can be used to foster discrimination-free spaces. We will provide related training opportunities for TCA members.

Regarding reporting and accountability, the EDIA Specialist will develop and distribute briefing documents for the TCA Executive Council for discussions and decision-making. Briefing documents will speak to the EDIA Action Plan and work to ensure accountability around the consistent application of intersectionality on all levels of TCA.

1.7 Literature review

Action plans must be evidence-based. In addition to the evidence garnered from co-creation and engagement with individuals from underrepresented groups, a thorough review of the literature must be conducted to identify the systemic barriers that lead to the underrepresentation of individuals in the CFREF initiative's research disciplines for each of the underrepresented population groups addressed in the questions below. If evidence does not exist in the literature for one or more of the population groups for the specific research disciplines of the CFREF initiative, identify this in the section provided as it is an important finding. It could, for example, point to additional research or analysis being needed to help understand barriers, which could be included as part of the CFREF initiative's EDI Action Plan. For some groups (e.g., persons with disabilities), it may be necessary to look at barriers that exist in similar or other disciplines due to a lack of funding for research in that area. In some cases, it may also be necessary to look outside of mainstream research publications for evidence (e.g., commentaries, newspapers, organizational reports, social media, blogs), or in other sectors. Evidence of barriers will also be collected in the co-creation and engagement activities (see section 1.8). The evidence provided for each population group should be qualitative, quantitative, and intersectional where possible. If one or more types of evidence cannot be provided, this must be explained for each section.

1.7.1 Methodology

Explain the methodology taken in conducting the literature review and provide a bibliography of all references as an appendix (section 5) to the EDI Action Plan.

We prioritized using academic and peer-reviewed articles on ocean sciences, as well as science, technology, engineering, and mathematics (STEM) articles, to produce the literature review. Reports and website pages were also referenced. We utilized both quantitative and qualitative evidence from the literature to support our findings. However, there was insufficient quantitative data on STEM barriers, specifically in Canada, for Indigenous Peoples, racialized persons, 2SLGBTQIA+ members, and persons with disabilities. There was more abundant literature about STEM in the U.S., compared to Canada. Therefore, we consulted these resources on universal issues and barriers such as homophobia, transphobia, sexism, and anti-Black racism. There was a lack of variety in Canadian literature about Indigenous Peoples and racialized barriers in STEM. Barriers in post-secondary education were used in these cases.

1.7.2 Racialized individuals

In recognition that racialized individuals face historical and present-day marginalization, 1- explain what systemic barriers exist for racialized individuals in the research disciplines of the initiative and 2-what are their impacts on the individuals and the research ecosystem.

Although many Canadian universities recognize the importance of EDIA, recent research shows that racism and the lingering effects of colonialism continue to have devastating impacts on racialized academics, researchers, and students. Racialized individuals in academia continue to face systemic barriers such as racism, stereotypes, prejudice, tokenism, and a lack of adequate representation in ocean sciences and STEM fields (Beagan & Mohamed, 2019, p. 338; Henry et al., 2017; Johri et al., 2021).

According to many researchers, including Eduardo Bonilla-Silva, a professor of Sociology at Duke University, while racism has changed in form, it has not diminished as a phenomenon (Silva, 2006).

Racial microaggressions, which can be defined as statements, comments, or actions that implicitly express hostility, dislike, and prejudice toward racialized individuals, is commonplace in academia (Sue et al., 2007). Ryuko Kubota et al. (2023) interviewed international racialized students whose native language was not English to learn more about their experiences in a Canadian university and how they experienced double discrimination, such as being perceived as "linguistically deficient," while also experiencing racism at the same time. One example is from a racialized student who reported that an interviewer once made an unsolicited comment about their English being "so good," while dismissing the student's key competencies and qualifications. In addition, racialized individuals report being the only racialized academics in their department or university, which causes them to experience minority stress (Henry & Tator, 2012; Henry, 2017). As a result of the lack of adequate representation, many racialized academics also report feeling "tokenized" when hired for certain positions and especially when asked to take part in EDIA committees and activities.

The above-mentioned barriers have negative impacts on racialized academics, students, and researchers. According to Banerjee et al. (2022), racialized students in academia are more likely to report decreased levels of mental health due to racism. In terms of the impact on Canada's research ecosystem, because the overall institutional climate is unwelcoming to racialized individuals due to racism, this places restrictions on innovation in research, which requires a diversity of perspectives to be achieved (Hewlett et al., 2013).

1.7.3 African, Caribbean and Black individuals

In recognition that African, Caribbean, and Black individuals face historical and present-day marginalization tied to anti-Black racism and that they are particularly underrepresented in Canada's research ecosystem, explain what specific barriers exist for African, Caribbean and Black individuals in the research disciplines of the initiative and what are their impacts on the individuals and the research ecosystem.

While Canadian post-secondary institutions claim commitment to inclusion and anti-racism, systemic barriers for African, Caribbean, and Black people (ACB) persist in ocean sciences and STEM fields. These include anti-Black racism, ineffective institutional responses to anti-Black racism, isolation, and tokenism (de Vos et al., 2023; Spencer, 2021).). As a result, many consider leaving academia or do not enroll in the first place, which exacerbates their underrepresentation.

Numerous studies report that ACB individuals enrolled in STEM doctoral programs are disproportionately affected by institutional anti-Black racism, isolation, alienation, and unwelcoming academic environments (McGee & Martin, 2011; Spencer, 2021). From an intersectional perspective, Black men often experience misandry and racism simultaneously and are exposed to harmful and inaccurate stereotypes and prejudice. False ideas that Black men are dangerous, uneducated, destitute, and angry continue to negatively affect the overall college experience for Black men (Spencer, 2021). ACB individuals in STEM fields often face unwanted pressure to take part in EDIA initiatives. Many describe that pressure as "tiring." Furthermore, ACB individuals are often expected to be the spokespersons of their communities. Due to the 'token status,' many ACB individuals experience performance pressures that result in stress. At the same time, many report not feeling valued or supported and, therefore, experience decreased levels of belongingness in STEM fields (McGee & Martin, 2011).

The racial discrimination that ACB individuals experience within academia has substantial social and psychological impacts. Mental health challenges due to racism are not uncommon. Black individuals experience 'racial battle fatigue' caused by ineffective institutional responses to racism, isolation, and even self-doubt due to prejudice (Chancellor, 2019; Spencer, 2021). To cope with their experiences of debilitating racism and the 'token' status, many consider resigning. Black women face additional barriers in the sense that they must provide more evidence of competence than men to be perceived as equally competent (Williams et al., 2014). Canada's research ecosystem is also negatively affected. This is mainly because the overall academic and institutional climate is unwelcoming to ACB communities due to the abovementioned barriers, which restricts innovation through diversity of perspectives and backgrounds (Hewlett et al., 2013).

1.7.4 Indigenous Peoples

In recognition that Indigenous Peoples (First Nations, Inuit, and Métis peoples) face historical and present-day marginalization and that Indigenous researchers are particularly underrepresented in Canada's research ecosystem, explain the systemic barriers that exist in the research disciplines of the initiative and what are their impacts on the individuals and the research ecosystem.

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Indigenous Peoples are acutely underrepresented in STEM. Data from Statistics Canada shows that Indigenous individuals aged 25 to 64 were less likely than their non-Indigenous counterparts to be STEM degree holders (Arriagada, 2021). Canada's oppressive colonial history and present-day systemic marginalization of Indigenous Peoples have created significant barriers to Indigenous Peoples' access to and retention in higher education in a way that is equitable and sustainable. Major barriers include mental health challenges, financial constraints, Eurocentrism, and racism (Eisenberg et al., 2009; Hop Wo et al., 2019; Johri et al., 2021; Marmolejo et al., 2022).

Nearly all Indigenous Peoples in Canada today are influenced by the intergenerational trauma that resulted from Canada's mistreatment of Indigenous Peoples through forced assimilation efforts, systemic racism, and residential schools. Even those who have not suffered from these experiences directly still report being significantly affected and traumatized. Bombay et al. (2009) state that trauma can be transferred to younger generations through intergenerational trauma, e.g., a parent who suffered from psychological, sexual, and physical abuse while attending a residential school is likely to transfer their own trauma to their child. As a result, in post-secondary education, Indigenous students are far more likely to experience mental health challenges than non-Indigenous students, which creates a barrier to their full participation in academia (Hop Wo et al., 2019).

Another systemic barrier for Indigenous Peoples in STEM is that going to university can pose financial challenges since Indigenous Peoples often have a lower income than their white counterparts (Henning & Wheeler, 2021). As a result, they are more likely to lack the financial resources required to attend post-secondary education. There is also evidence that a lack of culturally appropriate curriculum that is in line with Indigenous cultures and ways of knowing is a factor that leads to lower levels of university persistence in higher education (Walton et al., 2020). Racism is not uncommon; Indigenous students experience microaggressions, stereotypes, and prejudice, including being doubted in their abilities and assumptions from peers that they are less likely to stay in university after the first year merely because of their Indigenous identity (Bailey, 2016). Indigenous women face increased barriers to entering STEM due to the intersection of gender and race; e.g., data shows that Indigenous men are generally more likely than Indigenous women to have studied engineering (Arriagada, 2021).

Regarding impact, similar to other equity-deserving groups mentioned above, Canada's research ecosystem is negatively affected by Indigenous underrepresentation in STEM, mainly because of the restrictions imposed on the mobilization of collective intelligence and innovation, which both require a diversity of perspectives, multiple sources of knowledge, and backgrounds, including the incorporation of Indigenous knowledge with Western science for successful climate adaptation (Makondo & Thomas, 2018). Due to Eurocentric curricula, Indigenous levels of persistence in post-secondary education are negatively affected, especially when combined with a lack of affordability and mental health challenges. In addition, numerous studies demonstrate that Indigenous students with poorer mental health tend to obtain lower grades and are more likely to leave college early (Eisenberg et al., 2009; Marmolejo et al., 2022).

1.7.5 Persons with disabilities/disabled people

In recognition that persons with disabilities/disabled people face historical and present-day marginalization tied to endemic ableism and disablism both in the research pipeline and in the academic job market, leading to significant underrepresentation in Canada's research ecosystem, explain what systemic barriers exist for persons with disabilities/disabled people in the research disciplines of the initiative and what are their impacts on the individuals and the research ecosystem. Address both visible and invisible disabilities and their differing impacts.

Studies show that persons with disabilities are still an underrepresented group in ocean sciences and STEM fields and face several barriers that limit their full participation. These barriers include 1) a lack of adequate access to technologies, fieldwork, and facilities; 2) a lack of resources and unfamiliarity with the process of receiving accommodations; and 3) attitudinal barriers such as prejudice and stigma (Bower et al., 2023; Prema & Dhand, 2019).

There is evidence of a lack of accessible laboratories in Canadian post-secondary institutions. For students with mobility-related conditions, labs are often equipped with inaccessible high workbenches and cabinets. This prevents students with special needs from fully participating in lab and classroom activities (Prema & Dhand, 2019). Fieldwork can be particularly inaccessible due to uneven terrain, long and strenuous trips, lack of flexible transportation options, and inaccessible washrooms (Nicholas, 2021).

Disabled students in STEM fields often lack the knowledge, resources, and awareness regarding the process of receiving accommodations due to the lack of availability of mentorship and support. This often renders the process of requesting accommodation challenging and unfamiliar.

In terms of the academic labour market, persons with disabilities continue to face discrimination to varying degrees. There is evidence that women with disabilities face increased challenges compared to their male counterparts with disabilities. Research on career development and transition for women also shows that female students with disabilities are often paid less and are more likely to be unemployed compared to male students with disabilities due to the intersection of gender and disability (Erten, 2011). Due to the lack of awareness about their rights, STEM students with disabilities continue to face stigma, which contributes to systemic marginalization. Nevertheless, there are differing impacts on the individual based on whether the disability is visible or invisible. The impacts of having a visible disability mainly revolve around being excluded from physical spaces, facilities, labs, and activities, and even dissuaded from pursuing or even enrolling in STEM fields in the first place (Marquis et al., 2016; Friedensen et al., 2021; Warhurst et al., 2009).

Regarding the effects on the research ecosystem, because of the discrimination that many individuals with disability face, this limits their ability to reach their full potential and be part of research processes. (Deloitte, 2010; Stein, 2023; Xie et al., 2020).

1.7.6 Women

In recognition of sexism and continued inequities experienced by women despite notable progress in terms of gender equity, explain what systemic barriers exist for women in the research disciplines of the initiative and what are their impacts on the individuals and the research ecosystem.

Women face unique barriers in ocean sciences and have fewer STEM university degrees than their male counterparts. Research shows that there are systemic barriers that exist for women in ocean sciences, including sexual harassment, bias, and caregiving obligations (de Vos et al., 2023; Johri et al., 2021; O'Connell et al., 2021).

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Sexual harassment persists in ocean sciences, including in workplaces, in classrooms, and in field work. At sea, women face sexual harassment due to male-dominated environments and the restricted space on ships and boats, which make it hard to avoid a harasser (Ackerman et al., 2023; Maia et al., 2024).

Bias continues to negatively impact women's overall experience in ocean sciences and STEM, and often results in a diminished sense of belonging. Compared to men, women are paid less than men in ocean sciences (Brooks & Déniz-González, 2021). Studies also demonstrate that women are often judged significantly more harshly in academia than men based on their gender. Women in STEM report they must work twice as hard as their male counterparts to prosper and be perceived as successful (O'Connell et al., 2021). Compared to men, women in ocean sciences face additional barriers related to parenting, including the lack of private space for lactation, and the lack of childcare on board research vessels (Johri et al., 2021).

Racialized women face additional challenges in STEM fields such as increased isolation due to the intersection of gender and race. For instance, in a study conducted in 2021, while white women described their teams in the engineering sector as "family," women of colour reported lower levels of belonging and expressed discomfort about 'standing out' (Doerr et al., 2021; William et al., 2014). As a result of bias and isolation, women report diminished confidence. (O'Connell et al., 2021). Sexual harassment leads many women to avoid pursuing careers in ocean sciences and STEM fields, resigning, and leaving STEM fields altogether ("Ending Sexual Harassment in STEM," n.d.). Furthermore, sexual harassment has devastating negative impacts on the safety and physical and mental well-being of women (Maia et al., 2024).

Because women positively contribute to innovation in research due to their role in offering various diverse ideas and perspectives, their underrepresentation is not only fundamentally unfair but can also pose challenges to research excellence and innovation which both require gender diversity (Xie et al., 2020).

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1.7.7 2SLGBTQIA+

In recognition of gender and sexual diversity-related marginalization, explain what systemic barriers exist for individuals from 2SLGBTQIA+ communities in the research disciplines of the initiative and what are their impacts on the individuals and the research ecosystem.

Despite the advancement in gender identity recognition and sexual orientation protections in many countries such as Canada, 2SLGBTQIA+ members face unique barriers in ocean sciences and STEM fields, including discrimination, hostility, and microaggressions (Cech & Waidzunas, 2021; Freeman, 2020 McMonigal et al., 2023).

Gender-diverse individuals remain particularly vulnerable to discriminatory behaviour from both peers and professors, mainly due to their visibility. The differential treatment they are subject to often interferes with their ability to learn and prosper in ocean sciences and STEM fields. This is further exacerbated by the fact that STEM fields have been historically dominated by white heterosexual men and characterized by hostility toward students whose identities do not align with the stereotype of a scientist. As a result, STEM fields remain unwelcoming of trans men and women, and nonbinary students, including by professors, e.g., Campbell-Montalvo et al., (2022) describe that a nonbinary student indicated during one class that their favourite professor mocked their choice of clothing as it was deemed "feminine" before being rejected and avoided by that professor for the rest of the day (Campbell-Montalvo et al., 2022).

Regarding microaggressions, 2SLGBTQIA+ individuals often face hostility and mistreatment from peers in ocean sciences; e.g., trans and nonbinary individuals experience being misgendered due to the dominant cis-heteronormative environment in classrooms and in the field. Trans and nonbinary students report being intentionally misgendered after disclosing their trans status (Campbell-Montalvo et al., 2022; McMonigal et al., 2023). Gay, bisexual, and queer individuals are subject to jokes, slurs, and stereotypes from peers, which can lead to low levels of social and mental well-being. Phrases such as "that's so gay" are commonplace in STEM environments. Gay men are often stereotyped as feminine by some, which is also perceived by others as a barrier to success in engineering (Campbell-Montalvo et al., 2022).

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The identified barriers mentioned above have devastating psychological, social, and academic impacts on the 2SLGBTQIA+ community; e.g., many members of 2SLGBGTQIA+ communities report mental health challenges due to systemic discrimination, including the risk of suicidal ideation. However, numerous studies demonstrate that trans people face an elevated risk of suicidal ideation and suicide attempts compared with the rest of the population due to transphobia and harassment (Mental Health Commission of Canada, 2019). Furthermore, unlike gay and bisexual cis members of the 2SLGBTQIA+ community, non-stealth trans individuals do not experience the cisgender privilege, which leads to a higher likelihood of victimization. In terms of intersectionality, racialized queers often face double discrimination; e.g., Black queers often report feeling 'othered' in both Black communities and 2SLGBTQIA+ groups on campus. This is because mainstream Black communities were described as homophobic by some Black queers, while 2SLGBTQIA+ groups were considered unsafe spaces to discuss issues such as racism (Leyva et al., 2022).

Numerous studies show that creating excellent, innovative, and impactful research requires diverse teams in terms of gender composition and a variety of perspectives and experiences to advance knowledge and respond to national and global challenges such as climate change. Therefore, 2SLGBTQIA's underrepresentation and the barriers in STEM can limit innovation and negatively affect Canada's research ecosystem (Cech & Waidzunas, 2021; Xie et al., 2020).

1.8 Co-creation – 'Nothing about us, without us'

'Nothing about us, without us' is an expression that came to prominence within disability activism and has since been adopted within other rights movements. The term reflects the principle that no policy, process, or program should be developed for individuals. These must be meaningfully co-created in leadership with the people that the work is meant to benefit as equal partners. This principle promotes agency, respect, accountability and prioritizes lived experience to inform the work to mitigate potential harm. It is expected that the CFREF initiative's Action Plan will be co-created with individuals from each of the population groups that the plan is meant to benefit to identify barriers and potential actions, including bold and innovative steps that could be taken to address them. To avoid over-burdening individuals from under-represented groups with engagement activities on systemic barriers, evidence collected in the creation of other institution-specific EDI Action Plans, including those for the Canada Research Chairs Program, the Canada Excellence Research Chairs Program, or the Dimensions Program may be used if appropriate.

Examples of co-creation best practices include but are not limited to: trauma-informed engagement, safeguarding privacy and confidentiality, consideration of power dynamics, equitable and safe meetings, proactive accessibility measures, the use of inclusive language, limiting unnecessary burden (i.e., limiting trauma mining).

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1.8.1 Explain what specific approaches were used and will continue to be used when co-creating with individuals from underrepresented groups during both the development and implementation of the Action Plan.

We adopted several approaches for the co-creation of the Action Plan, employing best practices and approaches. The TCA EDIA Specialist initiated contact with mental health professionals on campus with knowledge and expertise in trauma-informed engagement, safety planning, and crisis intervention to support co-creation participants as needed. Co-creation facilitators, including the EDIA Specialist, underwent training in facilitating small group discussions employing respect, empathy, and confidentiality. We offered respondents multiple formats to collaborate with us to co-create the Action Plan, including:

Anonymous survey: A survey was developed with open-ended questions, allowing participants to respond in their voice and to the extent of their comfort level. The survey was distributed to over 170 TCA researchers and committees and organizations specific to the six equity-deserving groups. The survey was distributed through newsletters and emails and sought interest from respondents to participate in one-on-one interviews or group/circle discussions.

Group/circle discussion: Survey respondents who expressed interest in participating in group activities were invited to in-person sessions with counselors present, to share their experiences through storytelling. Participants were also offered the chance to share further details in writing during the session, an alternative to sharing with the whole group.

One-on-one interviews: Respondents could choose more personalized storytelling through one-on-one conversations with trained facilitators, including EDIA representatives from each of the four TCA partner institutions

Throughout the Action Plan's implementation, we will continue to engage with people from EDGs by conducting co-creation sessions during major TCA events and conferences. Topics for these co-creation activities will be based on emerging issues during the implementation phase.

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This specific co-creation approach will help maximize efforts related to the continuous process of adjusting and improving the Action Plan and ensuring flexible policy and decision-making that actively incorporates the voices and lived experiences of EDGs in STEM, and particularly in ocean-climate research. Participants were offered to take part in consultation activities as an additional co-creation activity for anyone interested in providing EDIA session facilitators with more input. We emphasized that participation in consultation activities was voluntary to avoid over-burdening EDGs, and that they would be compensated according to CFREF and institutional guidelines. While individual interviews were structured in terms of the questions asked, consultation activity topics were selected according to the needs of the programs and barriers faced by EDGs.

Proactive accessibility measures were employed in all co-creation formats. Given that TCA has both English- and French-speaking researchers, staff, and HQP, participants could participate fully and comfortably in either language. All communications and materials associated with the co-creation activities were available in both languages, and the facilitators were bilingual. We also ensured that correspondence was accessible and readable by screen reader software for people with vision impairment. We assessed the accessibility of all locations selected for in-person sessions; e.g., wheelchair access, allowing service dogs, and gender-neutral washrooms. We created a checklist to provide examples of accommodations that may be provided to participants in co-creation activities. By sharing examples of accommodations, we helped participants articulate their needs and foster a climate of inclusion. We further ensured meetings were inclusive by taking proactive measures such as offering pronoun pins to participants; this measure helped create an environment of diversity and respect and discouraged cis-heteronormativity and misgendering, both of which are barriers faced by trans and nonbinary individuals as noted in the literature review.

Regarding power dynamics, we ensured some level of power distribution by allowing co-creation group activity participants to modify, add to, or change the responses they provide during the co-creation group activity. Following each group or individual activity, we shared our notes with participants to allow them to make changes if desired. Participants in all TCA co-creation activities have been and will be encouraged to offer solutions to barriers encountered as opposed to policymaking without input from EDGs.

In addition, co-creation facilitators requested permission of participants in co-creation activities to be contacted to provide them with updates on their proposed solutions and the status, as well as a copy of the TCA EDIA Action Plan. We have also ensured that we are employing trauma-informed engagement measures by inviting TCA EDIA specialists to talk about their experiences in leading group sessions where difficult conversations may take place.

While all EDIA specialists confirmed their level of comfort in handling difficult conversations in a group setting, we complemented that conversation by including the presence of a counselor with trauma-informed engagement experience during group sessions to manage potentially difficult conversations in a healthy and effective manner. The counselor was also invited to provide resources upon request.

All EDIA surveys and related information are kept confidential through various means explained in the data collection strategy section.

Examples of co-creation approaches include establishing equity committees, focus groups, surveys, one-on-one interviews, outreach to existing associations within the institution or partner institutions, engagement with community associations, and consideration of results of previous engagement activities conducted by the institution to identify barriers and potential solutions.

1.8.2 Explain what co-creation approaches were undertaken and with which specific underrepresented groups to identify barriers and potential solutions.

To initiate the promotion of our co-creation activities, we sent out consultation forms to employee associations formed by underrepresented groups across the four institutions. Each TCA partner institution had theme-based questions and a specific topic, as follows: 1) intergenerational relations and approaches in climate research and climate adaptation; 2) stereotypes and whether they had a positive or negative impact on STEM career choice or field of study for participants; and 3) comparing research career paths in education compared to marine science. In the forms, we asked respondents whether they preferred to participate in a group activity or an individual interview. We prioritized respondents' preferences as some may be more comfortable in an individual setting as opposed to a group setting.

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As bias and stereotypes have been identified as barriers to the full participation of EDGs in STEM, as indicated in the literature review and by previous engagement activities (such as the work done in the context of the Canada Research Chairs Institutional EDIA Action Plans), Dalhousie's co-creation theme focused on the topic of stereotypes and whether they had a positive or negative impact on STEM career choice or field of study for participants.

Laval's co-creation theme was designed to address questions related to climate science and adaptation. These questions were expected to be approached differently by research participants depending on age and the intersection of other aspects of their identity. For example, older generations can be affected directly by climate change; e.g., they may be more vulnerable to heat waves, but younger generations might suffer more from anxiety when considering the prospect of their future. Those variations, alongside other aspects of participants' diversity factors, including Indigenous identity or disability, will affect how EDGs invest in, approach, and interpret the research that will be conducted in the TCA initiative. By learning more about the intergenerational differences in addressing climate challenges, we can mitigate the barriers faced by various EDGs wishing to participate in TCA research.

UQAR's choice of topic aimed to inform the Action Plan by comparing the barriers faced by EDGs in education research and marine sciences. The topic was selected because TCA initiatives will lead to a significant increase in funding for education in marine science. Therefore, input from EDGs on barriers is important to mobilize collective intelligence and inform the needed actions for the EDIA Action Plan.

On June 19, 2024, the Indigenous Research Advisor hosted an in-person workshop with the Advisory Committee on Indigenous Engagement in Ocean Research (ACIEOR) and subject-matter experts in Indigenous research. During the workshop, the Indigenous Research Advisor engaged in conversations with invitees about barriers to Indigenous engagement in research. To ensure culturally appropriate Indigenous engagement, the Indigenous Research Advisor invited organic and open conversations rather than a structured agenda and co-creation questions. The discussions were informed by the report, Advancing Indigenous Partnerships in Ocean Science for Sustainability (AIPOSS), a UN Ocean Decade-endorsed project championed by Ken Paul of Pokiok Associates and supported by the Ocean Frontier Institute and alongside others.

The report summarized several barriers to Indigenous participation in research and provided recommendations, as follows: 1) asking Indigenous partners about what they desire to achieve in a partnership, rather than establishing for them the goals and asking them to work on them; and 2) ensuring partnerships are equal in decision-making. The conclusions from the workshop resulted in relationship building between rights-holders, organizations, and researchers, addressing concerns in Indigenous research, and what future research entails in terms of partnerships and knowledge sharing.

Other reports and applicable findings from previous co-creation activities undertaken at TCA partner institutions informed this EDIA Action Plan, including Dalhousie's Employment Equity Report, Indigenous Strategy, and Lord Dalhousie Report, to name a few.

1.8.3 Explain findings of co-creation approaches by outlining the systemic barriers identified in the co-creation approaches noted above. These may validate some of the barriers identified in the literature review and/or identify new barriers.

As mentioned above, we succeeded in gathering input from EDGs using different methods. Since the launch of the surveys in January 2024, we have received a considerable amount of input thanks to our outreach to many EDG associations, individual researchers, groups, and organizations. We believe our findings validate many of the barriers identified in the literature review and identify other barriers and different issues that must be addressed.

Sexual harassment: Female participants stated that male researchers and colleagues initiate inappropriate advances towards them, which in turn makes them feel uncomfortable and unsafe. A participant shared that STEM fields are male-dominated: "There were several instances where I ended up being made uncomfortable by men making advances and inappropriate comments and, therefore, I had to let go of opportunities." This finding was also identified in the literature review. It appears that sexual harassment in STEM is commonplace beyond on ships.

Sexism: Female participants stated that they believe their success is not as valued as that of men in their respective STEM fields and that they are often expected to work twice as hard to be recognized. They also shared that they are expected to manage a higher workload of administrative and under-valued tasks; e.g., placing orders, cleaning dishes in labs, organizing field equipment, etc., than their male counterparts. A female participant felt like she was judged on her appearance, to the point where others excluded her from decision-making meetings following weight gain resulting from pregnancy. Female participants stated that they struggle to be respected, heard, and taken seriously by others. They reported being often interrupted and spoken over by others in meetings.

A female researcher described that she faced harsh criticism and was even called "naïve" during an interview conducted by male interviewers. Similar to the barriers mentioned in the literature review, women report not being valued in STEM, and while the literature review identified that women report being judged more harshly than men, co-creation activities highlighted the potentially intersectional experiences of women based on body shape and gender. Challenges associated with maternity, e.g., the pressure to keep publishing during maternity leave and the challenges of childcare while having to maintain attendance to conferences, were also frequently mentioned by women participants. Female scientists also mentioned being harshly evaluated by students compared to their male counterparts.

Racism: Racialized faculty members noted they believe their contributions are not recognized and are undervalued compared to their white counterparts. One participant mentioned that some white people "avoid making eye contact" with racialized individuals. Although they felt like it was not intentional, they indicated that this gives the impression of implicit racism. Explicit racism against African, Caribbean and Black people was reported. A participant recalled when they were told not to tell the Black research chair "where the master keys to the department were kept." Racialized participants also indicated they often feel isolated due to being "the minority" in their respective departments. A participant noted that after receiving a teaching award in STEM, they missed out on a tenure position after self-identifying in the application and mentioned that they were labelled as having "inferior teaching skills" compared to the candidate who was successful.

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They added that they feel more comfortable speaking about EDIA issues now that they have tenure, having been dismissed before. The findings imply that racism can be explicit in addition to being implicit in STEM against African, Caribbean and Black individuals. In addition, minority stress is a recurring issue both in the literature review and co-creation activities. Being subject to retaliatory behaviour after self-identifying and thus being denied opportunities is an issue that was not identified through the literature review. Racialized individuals in French-language institutions also mentioned being additionally disadvantaged by the dual-language situation in research at these institutions. They mentioned the impact of learning French, which negatively affected their research productivity as well as the feeling of being "othered" during departmental activities and crucial decision-making that are conducted in French.

Transphobia: Racialized trans and nonbinary individuals reported feeling unsafe to share their preferred pronouns on campuses due to fear and the prospect of retaliation, shunning, and ostracization from cisgender counterparts, therefore, some are forced to live double lives. Others reported fears of discrimination and retaliation such as not being offered or losing opportunities upon being recognized by others as a trans person. The exclusion of trans and nonbinary individuals from medically necessary coverage in institutional health plans exacerbates the struggles of trans and nonbinary individuals since lack of access to these treatments leads to gender dysphoria, psychological distress, depression, and anxiety. It also makes them vulnerable to being "clocked" and harassed by others. This coverage exclusion in institutional health plans reportedly causes feelings of being erased, discriminated against, and undervalued in STEM research environments. Some noted a climate of cis-normativity and hostility merely due to their gender identity and expression, including being shunned and avoided by others. One participant reported feeling emotionally and mentally harmed by being stared at and whispered about constantly by cisgender counterparts, therefore feeling constantly "othered" and feeling like they are "an object of curiosity."

Ignorance about diverse populations: It was reported by a participant that because of their vision impairment, others would not understand their condition upon meeting them, thus they worry about others making assumptions and thinking they are "ignoring" them. As this affects them professionally, they reported worries when it comes to meeting new people who may be unaware of invisible disabilities and proposed delivering training on disability bias to help educate others about invisible disabilities.

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Lack of adequate accommodation; Disability and financial barriers: One person shared that they have vision impairment and are unable to study and conduct research in their home due to costs of acquiring and installing screen-reader software on their home computer which is available on university computers. On statutory holidays and when the campus is closed, they are unable to study or conduct research, which puts them at a disadvantage and contributes to lower grades. Their university indicated an unwillingness to provide financial support to purchase screen-reader software for their home computer.

Generational differences in STEM in relation to climate change: During the co-creation activity at Laval University, it was reported that youth suffered more anxiety about climate change, particularly how it will affect their careers and futures, therefore, they are more motivated to effect change to address climate change. On the other hand, because many youths are students, or early in their STEM careers, they are less likely to be a part of policymaking and governance, which limits their important voices. Participants suggested centering the younger generation's voices in decision-making throughout the TCA program. They recommended being remunerated for their time to alleviate financial stressors they face.

Mutually beneficial and respectful partnerships: During the ACIEOR workshop noted previously, Indigenous invitees stressed the importance of the separation between EDIA and Indigenous Peoples since the latter are rights-holders. Other important points emphasized by Indigenous participants include: 1) valuing all sources of knowledge; and 2) including Indigenous communities in all stages of the project. Due to the need for culturally appropriate partnerships, subsequent Indigenous co-creation activities will be conducted to investigate the barriers further.

1.9 Resistance to EDI

When efforts are made to address systemic barriers to substantively increase equity, these efforts are often met with resistance by those who may benefit from the status quo, those who do not understand or value EDI or are less comfortable with change.

1.9.1 Provide examples of potential resistance to EDIA that may be faced by individuals leading the Action Plan measures in the context of implementing your CFREF EDI Action Plan.

Due to tight CFREF project timelines, staff responsible for implementing the research and training initiatives are focused on launching the program as quickly as possible and may resist added time to ensure EDIA practices are put in place and adhered to. Researchers are also interested in moving their research forward and may resist the added steps and time to incorporate EDIA components or Indigenous engagement consistently throughout recruitment and research processes, activities, and in teams. Staff, researchers, and students may not understand that EDGs face harmful barriers in the context of carrying out this CFREF-funded research and training program and may therefore be dismissive of actions identified in the EDIA Action Plan. Some researchers may also ideologically oppose EDIA initiatives, viewing them as unnecessary interferences or as promoting "reverse discrimination."

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1.9.2 Describe what types of measures would be taken by your CFREF initiative's leadership and governance teams to mitigate resistance and address it when it occurs. Examples of such measures could include ensuring that the leaders of the initiative are fully committed to EDI and have received the necessary levels of training to acquire EDI competencies, that a communications plan or key messages are developed on the importance of EDI; effective training measures address privilege and oppression for all participants; addressing issues using better practices as they occur and a strong commitment to EDI within the initiative and consistent messaging by leadership and governance committees regarding values and expectations.

For resistance within TCA governance bodies and committees, we will engage in: 1) awareness campaigns on a variety of EDIA topics; 2) supporting a proactive EDIA role on all committees, including as voting members; and 3) meeting with governance committees to discuss resistance if needed. Regarding resistance on the part of TCA members, we will initiate one-on-one meetings to provide safe spaces to share their experiences and design several focus groups based on the identities of members. We have initiated staff training on negotiation and conflict resolution to help address challenges related to EDIA incorporation.

Measures already taken by TCA leadership and governance teams include: 1) hiring of key staff members through designated hiring; 2) ensuring all staff are valued and adequately resourced to develop and implement this EDIA Action Plan and to focus on Indigenous collaboration in research; 3) establishing governance advisory bodies and working groups to advise and work with EDIA leaders to develop and enact strategies that address resistance; 4) building EDIA considerations into all decisions on funding research projects. Resistance could result in funding being denied or reduced unless EDIA principles are adopted.

1.10 Additional sections – Optional

Add any additional information that is not addressed in the sections above, if applicable.

Due to word count restrictions, we used ACB as an abbreviation to describe African, Caribbean and Black groups; we emphasize that we acknowledge the unique experiences and barriers faced by each group within it.

In addition to recognizing, supporting, and collaborating with the Indigenous communities on whose land the TCA research program operates, we recognize the local equity-denied groups on the land where the four partner institutions are situated. These include but are not limited to: African Nova Scotians/Indigenous Blacks who are a distinct people descending from free and enslaved Black Planters, Black Loyalists, Black Refugees, Maroons, and other Black people who inhabited the original 52 land-based Black communities in that part of Mi'kma'ki known as Nova Scotia.

The TCA EDIA Specialist will work with the equity and human resources offices of the four partner institutions to develop targeted recruitment and equity strategies to support the inclusion of these groups.

1. Addressing systemic barriers in the administration, governance, and other activities of the initiative

All EDIA actions outlined in this section must be S.M.A.R.T. (specific, measurable, aligned with the wanted outcome, realistic, and timely). Specific actions should address the systemic barriers identified in the literature review and the cocreation and engagement activities that are outlined in the sections above. Each of the actions outlined in these sections will need to be added to the summary table in section 5.

2.1 The administration, governance and other activities of the CFREF Initiative

2.1.1 Provide an overview of how the CFREF initiative will be administered and how its governance will be structured as context to this section of the EDI Action Plan (e.g., Board of Directors, advisory boards, scientific committees and/or sub-committees).

The TCA program is administered by the four partner institutions through a robust governance structure that is diverse and inclusionary, including with respect to language, career stage, research discipline, EDG representation, and representation from partner institutions.

Executive Council (EC) is responsible for institutional oversight, financial accountability, equity, and governance, and includes as voting members senior leader representatives from across the four partner institutions including Dalhousie's Vice President Research and Innovation (VPRI); Vice-Presidents Research (VPR) from UQAR, Laval, and Memorial; the Vice-President Finance and Administration (Dalhousie) or delegate; a Vice-President Equity and Inclusion (rotates among the four institutions); two Indigenous leaders, one from Quebec and one from the Atlantic region. Ex-officio, non-voting members include the initiative's CEO/Scientific Director, Associate Scientific Director at each partner institution, EDIA Specialist, and Indigenous Research Advisor.

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Management Committee (MC) reports to EC and provides advice to the Scientific Directorate regarding responsible stewardship of funds, public accountability, managing conflict of interest, ensuring integration of inputs from the appropriate groups and committees, and maintaining administrative consistency of the CFREF program across the four partner institutions. Chaired by the Ocean Frontier Institute (OFI) Chief Administrative Officer, the MC includes the EDIA Specialist, Indigenous Research Advisor, and a VPR delegate from Dalhousie and each of the three partner institutions. The MC advises on the overall administration and operation of the initiative; provides advice on data/information collection and preparation of annual performance monitoring and annual reports; provides recommendations to the EC based on the performance reports, the financial performance of the initiative, knowledge mobilization, and partner engagement and training; and considers identified risks and mitigations.

Scientific Directorate/Executive Team (SD) includes the CEO/Scientific Director, EDIA Specialist, Chief Administrative Officer, Chief Innovation Officer, and Associate Scientific Director from each partner institution. The Scientific Directorate oversees the implementation plan and the scientific strategy through advice and direction from the advisory and standing committees. The Scientific Directorate works with the ACIEOR and the Indigenous Research Advisor to ensure the application of best practices in Indigenous research, and with the EDIA Advisory Committee and EDIA Specialist to advise on principles for incorporating EDIA into research project design and implementation. The decision-making of the Scientific Directorate is by consensus of members present at the meeting. High-impact decisions will require consensus by all members. If consensus cannot be reached, the EC will provide direction.

EDIA Advisory Committee (EDIAAC) is co-chaired by the CEO/Scientific Director and EDIA Specialist. It includes senior-level EDIA experts from each partner institution, researchers with EDIA expertise, and at least one graduate student and postdoctoral fellow. It supports TCA, advising and working with the EDIA Specialist and initiative staff on specific issues related to EDIA within all aspects of the CFREF program. Their mandate includes a review of and recommendations on the EDIA Action Plan during its development phase; oversight of the implementation of action items; and annual monitoring of progress and impact. The EDIA Advisory Committee supports the Scientific Directorate, with EDIA listed as a standing agenda item for all EC meetings.

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Advisory Committee on Indigenous Engagement in Ocean Research (ACIEOR) includes an Indigenous university administrator from each partner institution, members from Indigenous communities on whose territory this initiative operates, TCA's Indigenous Research Advisor, and TCA senior administrative leadership. ACIEOR advises the Scientific Directorate and guides engagement to help ensure strong linkages and meaningful dialogue between Indigenous communities, organizations, program leaders, and with CFREF-funded researchers in Atlantic Canada and Quebec. Indigenous engagement is a standing item for all EC meetings.

Research Advisory Committee (RAC) is responsible for aiding development and execution of research projects. The RAC includes scientists/researchers from Dalhousie, UQAR, Laval, and Memorial that span TCA research areas. To ensure inclusivity of opinions and manage potential conflicts of interest, membership includes natural, social, and applied sciences and humanities representation; established-, mid-, and early-career researchers; expertise in EDIA best practices in research design; an advisor for Indigenous research engagement; a postdoctoral fellow and graduate student representative. RAC provides input/feedback to researchers to refine or revise their large research project (LRP) proposals as required; assists in implementing rigorous peer-review of research proposals; and works with staff in developing CFREF annual and mid-term science reports.

Excellence, Impact and Engagement Committee (EIEC) is comprised of thought leaders from various partners and stakeholder groups to advise the governing councils of OFI-administered and managed research programs, including TCA, on strategy and the alignment and progress of research activities towards the mission, goals, and deliverables of TCA. The core values promoted by this advisory committee are engagement of rights-holders, stakeholders, and partners; impact of outcomes; scientific excellence of research; knowledge mobilization; and internationalization. EIEC will regularly review progress on scientific strategy in relation to adherence to the core values and ensure mechanisms are in place and progress against deliverables and research outcomes are being made, and where they have concerns or recommendations, to provide those to the governing councils.

Transformative Action Committee (TAC) is not yet established but is intended to represent all four accelerators and provide advice to the Scientific Directorate on promoting, developing, and facilitating the mobilization of knowledge from the research projects, including through co-creation activities, commercial and social enterprises, education and social transformation, data sharing and new data products, and informing policy. Membership will include the innovation and commercialization directors from each partner university, the Transformation Hub program manager, Data Management and MacEachen Institute (policy hub) representation, and a graduate student or postdoctoral fellow. The Chief Innovation Officer will chair the TAC and act as the main liaison with institutional technology transfer offices (Dalhousie OCIE, Memorial University RIO, Entrepreneuriat UQAR, and Axelys in Quebec for UQAR and Laval) and external experts such as industry partners, Canada's Ocean Supercluster (OSC), the Centre for Ocean Ventures and Entrepreneurship (COVE), Technopole maritime du Québec and Novarium, Memorial University Centre for Research and Innovation facility in Western Newfoundland with linkages to fisheries, and other commercialization spheres.

2.1.2 Explain who or what governance table will be specifically accountable for ensuring the successful implementation and monitoring of the EDI Action Plan within the CFREF initiative's governance structure. This item can be presented by using a visual support, such as a governance diagram or a governance table, if preferred.

The Executive Council is the highest level of TCA governance and has the ultimate responsibility for the successful development and implementation of the EDIA Action Plan. The Scientific Directorate, taking advice from the EDIA Advisory Committee and the ACIEOR, is accountable for management oversight, including ensuring that appropriate resources are in place, deadlines are met, deliverables are achieved, and major challenges are addressed. The Scientific Directorate will put the necessary resources (human and financial) in place to ensure the EDIA goals of TCA are achieved and the actions identified in this plan can be addressed. The EDIA Specialist serves on the Scientific Directorate to ensure the application of EDIA elements within decision making and monitoring mechanisms and to ensure all decisions are examined through an EDIA lens.

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2.1.3 Explain what actions will be implemented to mitigate and address systemic barriers to support the full participation of individuals from underrepresented groups within the administration and governance and other activities of the initiative (e.g., conferences, the evaluation processes used to provide funding within the initiative, meetings etc.)

Since the launch of TCA in March 2023, we have progressed in efforts to support the full participation of individuals from underrepresented groups within the administration, governance, and other activities of TCA. At Dalhousie, four newly hired TCA positions were designated for EDGs (EDIA Specialist, EDIA Coordinator, Research Programs Manager, Indigenous Research Advisor), meaning that only those with lived experience and who self-identified as a member of one or more EDGs could be hired into those positions. This helps to promote the inclusion of diverse experiences and perspectives in all work within TCA.

In the hiring of all other positions within TCA, steps have been added to the hiring process at the institutional level to remove systemic barriers, including : 1) inviting candidates to self-identify; 2) all members of interview panels must review institutional guidelines on Bias in Candidate Assessment and fair hiring practices and are provided information on screening for lived experience and transferable skills; 3) an interview question bank is provided to incorporate EDIA considerations; 4) the search committee must be inclusive in that it represents the candidate pool as much as possible; 5) explanation must be provided as to why an applicant who self-identified is not recommended to move to the interview stage; and 6) following interviews, out of the candidates who ranked equally, the candidate from an EDG must be offered the position.

To tackle inadequate representation, which is a systemic barrier identified in the literature review, and to support the full participation of individuals from underrepresented groups, we will continue to increase diversity on governance committees through application of the 50-30 challenge for membership on all governance committees. To date, we have met our 50-30 goal on four of the eight governance bodies and will continue our efforts to achieve the 50-30 challenge on all committees. A process for nominating new committee members upon conclusion of current term appointments that invites self-identification, has been developed to meet the 50-30 challenge on existing committees.

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The 50-30 challenge has helped with the incorporation of voices that have typically been marginalized within governance. We will facilitate focus groups and one-on-one interviews with individuals on committees who may be facing barriers. To date, we have already begun conducting interviews with committee members to address linguistic barriers.

As a practice that has proven to be effective, the EDIA Specialist will continue to meet with committee members upon request to address barriers that prohibit full participation in and access to committee meetings. An accommodation statement has been shared with all committee members to help raise awareness around receiving accommodation, especially because lack of resources and unfamiliarity with the process of receiving accommodations and available resources was an identified barrier in the literature review. Committee members will be given the option of one-on-one interviews or joining a focus group, based on the member's preference.

In terms of institutional barriers, the EDIA Specialist will work with committee members to help facilitate the provision of accommodation by referring committee members to institutional accommodation officers, while also tracking these barriers in cases where solutions may be considered for inclusion in the EDIA Action Plan. Most committee meetings are held online; however, in cases where meetings are held in person, the EDIA Specialist will ensure governance and committee meetings and conferences are accessible, e.g., hosting events in accessible locations. Participants in meetings will be offered options if special accommodation is required for their full participation. At the same time, hybrid participation will be encouraged in all meetings and conferences to mitigate accessibility barriers for those who consider online attendance to be more suitable.

Terms of Reference of all TCA governance committees include inclusionary measures, such as ensuring equitable representation from the four TCA partner institutions, inclusion of ECRs, HQP, and students, and employment of the 50-30 challenge. This will help address power imbalances within the TCA program.

2.2 Research practice - Composition of the research team(s), their management and the work environment

2.2.1 Explain what actions will be implemented to address the barriers identified in the literature review and co-creation activities to establish and maintain diverse research teams that include excellent students, trainees and early career researchers who are racialized; African, Caribbean and Black; Indigenous; persons with disabilities; women and individuals who are from the 2SLGBTQIA+ communities.

The lack of adequate representation from EDGs in STEM leads to isolation, particularly among women and racialized individuals, as identified in the literature review and co-creation activities. To address this, the EDIA Specialist will conduct outreach to EDGs and organizations to promote postdoctoral fellow and student opportunities in TCA. A standard level of EDIA training sessions on unconscious bias and equitable hiring for the TCA program and its governance committees will be implemented. PDF and student opportunities will be posted on various channels, including EDGs' organizations and associations, helping to ensure a diverse pool of candidates. The EDIA Specialist will work closely with the TCA Training and Early Career Development Program Manager to develop and implement programs directed at these audiences to further explore barriers and actions to address them.

We will promote Dalhousie's BIPOC Graduate Student Mentoring Academy to TCA Indigenous, racialized, African, Caribbean and Black graduate students. This program will allow racialized students to have a role model in their respective fields, which can provide a more positive experience. The EDIA Specialist will also work with the Associate Dean of Equity and Inclusion in the Faculty of Science at Dalhousie University to co-design additional strategies to recruit EDGs in TCA. We will co-design strategy with 2SLGBTQIA+ identifying TCA staff, HQP, students, and researchers which will consist of: 1) awareness campaigns; 2) training or courses on sexual orientation, gender diversity, gender identity, and expression in collaboration with Two-Spirit facilitators (facilitators who identify as Two-Spirit); and 3) creating 2SLGBTQIA+ physical or virtual spaces with a designated space for 2SLGBTQIA+ racialized members. Engaging Two-Spirit facilitators in 2SLGBTQIA+ training will offer a decolonized perspective on queerness and gender diversity.

To advance EDIA incorporation in the design of TCA LRPs, the EDIA Specialist created a research excellence tool and will assess LRPs based on team composition, evidence of understanding of Indigenous engagement, as well as the socio-political landscape around the project's site.

2.2.2 Explain what actions will be implemented to address the barriers identified in the literature review and co-creation activities to ensure equitable access to the training, development, and mentoring opportunities provided to the research teams.

According to the literature review, persons with disabilities and Indigenous Peoples face unique barriers to equitable access to fully participating in classroom activities, development, training, and mentoring opportunities due to: 1) financial barriers that limit their persistence and ability to thrive in STEM fields and 2) lack of fully accessible labs and fieldwork in which, for instance, training is provided, which poses major barriers to individuals with physical disabilities. We will promote existing Indigenous bursaries and scholarships offered across the four institutions for eligible Indigenous students and researchers to access professional development, training, and mentoring opportunities.

There is also evidence of a lack of accessible laboratories in Canadian post-secondary institutions. This prevents students with special needs from fully participating in lab and classroom activities, including development, training, and mentoring opportunities. We will connect individuals with special needs with the accommodation offices across the four institutions to assess accessibility and how it meets the needs of TCA researchers, staff, and HQP. We will continue to engage with these offices to develop innovative ways to address gaps.

The EDIA Specialist will continue working with knowledge mobilization staff in TCA to ensure EDIA incorporation in training initiatives and equitable access to training and professional development. In addition, promotion of online and hybrid training and mentorship opportunities will be ongoing throughout the TCA initiative to foster equitable access.

To advance EDIA incorporation in the design of TCA LRPs, the EDIA Specialist created a research excellence tool and will assess LRPs based on team composition, evidence of understanding of Indigenous engagement, as well as the socio-political landscape around the project's site.

2.2.3 Describe what equity competencies will be embedded as part of the initiative's training strategies (e.g., anti-racism, accessibility, Indigenous co-creation).

Based on the literature review findings and co-creation activities, equity competencies that will be part of the training strategies will focus on: 1) racism awareness; 2) sexual harassment prevention; 3) disability awareness and self-advocacy; 4) 2SLGBTQIA+ awareness; 5) microaggressions and bias training; and 6) physical and psychological safety planning training for female-identifying and gender-diverse researchers. All training will take place starting in winter 2025 throughout the TCA program's lifespan, will be offered in multiple formats, such as in person and on-line, and available to TCA participants at the four partner institutions. New training programs will be developed where needed to supplement existing offerings.

Racism awareness training sessions will focus on dismantling racist biases, behaviors, and prejudice directed at racialized, African, Caribbean and Black individuals. Sexual harassment prevention training sessions will discuss sexual harassment in research environments, on ships/at sea, and in the field with a goal to bring awareness to the issue, as well as to provide TCA members with the understanding and tools to identify and prevent sexual harassment. Disability awareness and self-advocacy training will shed light on the challenges faced by individuals with disabilities. It will also provide participants with the tools and resources needed for self-advocacy to ensure everyone in TCA reaches their full potential and has access to equitable and fair opportunities. A training session on sexual orientation, gender diversity, and gender identity and expression in collaboration with Two-Spirit People will be provided with the goal to bring awareness to the lived experiences of the 2SLGBTQIA+ communities, including vulnerability to discrimination, transphobia, biphobia, and homophobia. Bias and microaggressions training will bring awareness to issues such as unconscious bias, sexist, racist, transphobic, and homophobic microaggressions and will provide strategies to address and prevent them.

Physical and psychological safety planning training for female-identifying researchers and those interested in learning about mechanisms to prevent and/or deal with sexual harassment will also be offered.

2.2.4 Explain what actions will be implemented to address the barriers identified in the literature review and co-creation activities to establish and maintain safe and inclusive work environments for all individuals including those who are racialized; African, Caribbean, and Black; Indigenous; persons with disabilities; women and individuals who are from the 2SLGBTQIA+ communities.

To ensure a physically and psychologically safe and inclusive climate for all TCA researchers, staff, HQP, and students, several strategies will be adopted, including awareness campaigns and training. As noted in the literature review and co-creation activities, women in STEM may be subjected to sexual harassment, which compromises their safety and physical and mental well-being. Some require strategies to help avoid sexual harassment inflicted upon them by their male peers. Two types of training sessions will be provided. The first will be about sexual harassment awareness in STEM and the second will be to discuss safety planning for female-identifying researchers, staff, HQP, and those at risk of sexual harassment to help learn ways to prevent and/or deal with sexual harassment.

To provide a safe and inclusive environment for persons with disabilities, it is important to ensure all staff, students, and researchers are aware of their rights and the process for requesting accommodation within their respective institutions. We will provide training to help develop self-advocacy skills and understand their rights, while also informing them of the accommodation they can request and how to start the process. The training will also discuss stigma, and both visible and invisible disability, to help raise awareness. Surveys will be distributed to TCA members inviting them to respond anonymously to assess the overall climate within TCA, including accessibility. Climate surveys will inform required actions as they arise.

Training on sexist, homophobic, transphobic, and racist microaggressions and bias will also be provided to help foster a safe and inclusive environment by preventing the harmful effects of microaggressions, including a diminished sense of self-confidence and low levels of belonging in STEM due to protected characteristics. A calendar of all training sessions at the four institutions will be shared with TCA members through multiple means, including email and posting on the TCA website.

2.3 Research design and implementation

2.3.1 Explain what actions will be taken to ensure that GBA+ best practices are implemented within the CFREF-funded research, where applicable.

To implement Gender-based Analysis Plus (GBA+) best practices, we will support research teams in applying a critical intersectional EDIA lens by 1) providing resources on GBA+ best practices in research (including how these resources incorporate principles such as intersectionality in the planning of research and at each stage of the research process); and 2) providing ongoing counseling and support from the EDIA Specialist on how to consistently incorporate a GBA+ lens into research.

As part of the first action, we will advise on how to move beyond the descriptive; e.g., percentage of Indigenous students in STEM, and be intersectional by asking critical questions about history and power dynamics and how these factors contribute to economic and social disadvantage in Indigenous communities, and how the historical context such as colonization and Eurocentrism have led to reduced access to STEM fields.

As part of the guidance, we will stress the importance of using multiple sources of data such as a combination of qualitative and quantitative data. There will also be an emphasis on the disaggregation of data according to gender, age, ability, ethnicity, sexual orientation, or other relevant factors and how they interact and intersect. Where the best available evidence is missing, research teams will be encouraged to engage directly with communities potentially impacted by the research to collect data and document community issues.

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2.3.2 Explain what actions will be taken to co-create Indigenous research that is co-led by and with First Nations, Inuit and Métis peoples—as investigators, students, trainees, partners and collaborators.

The ACIEOR has representation from the Confederacy of Mainland Mi'kmaq, Atlantic Policy Congress of First Nations Chiefs Secretariat, Unama'ki Institute of Natural Resources, Qikiqtani Inuit Association (Nunavut), Gespe'gewa'gi Institute of Natural Understanding (Listiguj, Quebec), Fisheries and Oceans Canada, and other Indigenous delegates from regional ocean research institutions, such as Canada's Ocean Supercluster. The ACIEOR provides strategic advice and direction on the TCA Indigenous Engagement Strategy and all activities that involve Indigenous engagement. Under ACIEOR leadership, an Indigenous Engagement Guide for ocean researchers was developed collaboratively with Indigenous communities, organizations, governments, and researchers to facilitate and guide efforts toward respectful and meaningful engagement of researchers with Indigenous groups. Through ACIEOR leadership, an Indigenous cultural awareness training program for all OFI-affiliated (including TCA) researchers and staff was offered to provide learning opportunities that delve into First Nations, Inuit, and Métis histories and stories across Canada, supporting the Truth and Reconciliation Commission Calls to Action for Canadians to receive cultural competency training. This type of information and training helps to forge relationships and encourage respectful engagement.

All TCA researchers must include in their LRP proposals a roadmap on how they will engage with Indigenous communities. TCA is partnering with the Confederacy of Mainland Mi'kmaq to provide Indigenous engagement support including the secondment of an Indigenous Research Advisor who will work with a task force to assess TCA researchers' Indigenous community engagement plans/roadmap. Priority action for the Indigenous Research Advisor includes 1) developing a process for review of Indigenous engagement plans within LRP proposals; 2) co-creation of the terms of reference for a $7 million Indigenous-led research call (including identifying barriers and actions to address barriers to the success of an Indigenous-led research program, which will feed into the EDIA Action Plan), to be launched in spring 2026; 3) updating the existing Indigenous Engagement Guide to include information on Quebec Indigenous communities and protocols; and 4) developing an inventory of existing training programs at TCA partner institutions, and beyond, that would be helpful to TCA researchers in co-creation and collaborative research with Indigenous partners.

TCA's Transformation Hub has been in regular conversation with Indigenous organizations in Eastern Quebec and Nunavut to provide information about the TCA program and to discuss the interests these organizations may have related to TCA research. In addition, UQAR and Laval University engaged with Institut Ashukan, a consulting firm offering training, research, and strategic consulting services on Indigenous realities, to produce a report on Indigenous inclusion in the research ecosystem. This report is currently being carefully reviewed by the TCA EDIA Specialist in collaboration with the TCA Indigenous Research Advisor so that recommendations and actions from the report can be included within future versions of TCA EDIA Action Plan.

2.3.3 Explain how the initiative will value Indigenous ways of knowing, and how it will extend research knowledge in the field that is significant for Indigenous Peoples and communities and contribute to decolonization. For further guidance on co-creating research with Indigenous communities, refer to chapter 9 of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans – TCPS 2 (2018) as well as the OCAP principles of Ownership, Control, Access, and Possession on engagement with First Nations' data.

The TCA Indigenous Engagement Strategy was developed in collaboration with Indigenous groups. It is focused on: 1) meeting Indigenous communities where they are physically located; and 2) understanding their unique worldview and supporting opportunities to explore Indigenous Knowledge. Two staff members (at Dalhousie and Laval) have been hired to support implementation of the TCA Indigenous Engagement Strategy, working in collaboration with ACIEOR and institutional advisors and advisory bodies at the four partner institutions.

OFI's Scientific Director meets regularly with the Aboriginal Aquatic Resource and Oceans Management program members (AAROM) to discuss ongoing and new collaborative ocean research opportunities. The Dalhousie TCA Associate Scientific Director presented at a fall 2023 meeting of the Confederacy of Mainland Mi'kmaq meeting and to the Atlantic Policy Congress (APC) of First Nations Chiefs Secretariat in January 2024, attended by representatives from several APC Indigenous communities from the Atlantic region as well as Quebec.

OFI is a member of the Indigenous-led Advancing Indigenous Partnerships in Ocean Science for Sustainability (AIPOSS) project. The project's goal is to establish a clear path forward toward tangible Indigenous-led solutions to ocean sustainability and ocean change resilience, and to improve Indigenous knowledge inclusion in ocean science. The Indigenous-led research program will also help strengthen Indigenous ways of knowing into the TCA research program.

2.3.4 Explain how the CFREF partner institutions (i.e., other universities who have a leadership role in the CFREF initiative) will actively participate in the development and implementation of the EDI Action Plan.

In November 2023, a TCA EDIA working group was established that consists of representatives from each partner institution with the goals of: 1) supporting the EDIA Specialist with the Action Plan development and implementation; and 2) creating a space that fosters collective intelligence, critical thinking, and diverse perspectives to further improve the development of the Action Plan. We also established an EDIA Advisory Committee that includes senior-level EDIA expertise from each partner institution and researchers with EDIA expertise to support the project on specific issues related to EDIA within all aspects of the TCA Program. The committee's mandate will also include a review of the EDIA Action Plan, oversight of the implementation of action items, and annual monitoring of progress and impact. The Transformation Hub at UQAR, which pulls together researchers and staff from all four partner institutions, aims to facilitate the identification of synergies among disciplines within the TCA program. The Hub also offers a safe space for all researchers to foster dialogue and two-way learning between scientists and Indigenous communities. Laval and Memorial also provide expertise specific to Indigenous engagement through staff resources. Partner institution staff will also lead the implementation of EDIA initiatives at their institution as identified in the Action Plan.

UQAR's EDIA Research Agent provided seven months of mentoring for the new TCA EDIA Specialist to help them apply EDIA expertise in a university research environment. The UQAR EDIA Research Agent met weekly with the TCA EDIA Specialist to discuss action plan development.

All four institutional Vice-Presidents of Research are voting members of the TCA EC, which is the governance body ultimately responsible for the EDIA Action Plan development, oversight, and implementation, as well as the Indigenous Engagement Strategy. Each partner institution has committed significant TCA resources to the implementation of the EDIA Action Plan and Indigenous Engagement Strategy.

2.4 Research impact (mobilization and translation) CFREF initiatives are expected to promote and facilitate mobilization, translation and commercialization of their research to support economic growth and social innovation. There should be an effort to promote co-creation with partners of all sectors (academic, public, private, not-for-profit) to increase the uptake of research results for the benefit of all Canadians. CFREF initiatives should strive to fully meet their objectives and maximize the impact of their work within the funding period of the grant.

Explain what actions will be implemented to ensure EDI within the mobilization and knowledge translation strategy of the initiative

The TCA mobilization and knowledge translation strategy consists of four main accelerators: 1) Transformation Hub; 2) Innovation and Commercialization Accelerator; 3) Policy Hub Accelerator; and 4) Data Management Accelerator.

The Transformation Hub is a cross-disciplinary training platform for HQP and partners. The Hub will host discussions and training initiatives around EDIA topics to foster an overall climate of inclusion. Transformation Hub training initiatives are being designed to encourage dialogue and two-way learning between scientists and Indigenous communities. The training will help provide personnel with the necessary tools to develop and implement inspiring practices in Indigenous research.

The Innovation and Commercialization Accelerator is an ecosystem of training, collaboration, and partner-funded support that will create opportunities for researchers to enhance innovation and commercialization leading to knowledge translation.

2.5 Actions to address EDI in the CFREF's research disciplines

To address the persistence of systemic barriers in the CFREF initiative's research disciplines, actions that challenge the status quo and lead to substantive change, are needed.

Describe what actions, including bold and innovative actions, will be implemented to contribute to transforming the research disciplines of the initiative and influencing Canada's research ecosystem to help it become equitable, diverse and inclusive. Actions must address the specific barriers faced by individuals who are racialized; African, Caribbean, and Black; Indigenous; persons with disabilities or disabled persons; women and individuals who are from the 2SLGBTQIA+ communities that were identified in the literature review and the co-creation and engagement activities. Actions must be S.M.A.R.T. (specific, measurable, aligned with the wanted outcome, realistic, and timely).

Researchers on expeditions and long field trips undergo psychological stressors resulting from exposure to long periods of isolation, confinement, extreme weather conditions, and exacerbated mental health challenges (Palinkas & Suedfeld, 2008). Women face additional stressors, particularly related to their vulnerability to sexual harassment as indicated in the literature review.

To minimize the risk of sexual harassment against women on ships and field trips, and to provide a climate that is conducive to emotional and psychological safety, we intend to complement our training on safety planning and sexual harassment prevention with the provision of wellness check-ins conducted by a social worker or a mental health worker to support all researchers on ships and during field trips. This mental health support will benefit all researchers regardless of gender who may be facing isolation, confinement, or other stressors. Wellness check-ins are designed to supplement institutional programs such as Laval's Sentinel program, where identified employees are available within departments or research centres to provide counseling to staff members; and Dalhousie's Employee and Family Assistance Program available to all employees as a voluntary, confidential, short-term counselling and advisory service that connects employees and their eligible family members to a network of dedicated professionals.

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We also recognize the actions that have been put in place by Admundsen Science and Reformar/RQM on the Coriolis, the two main ships being used in the TCA program, towards addressing barriers to EDGs on their expedition activities. We will continue to work with these TCA partners as they implement their EDIA strategies.

A researcher-focused code of conduct will be established, and strict guidelines implemented to create a safe, respectful, and professional environment for all researchers, including for Indigenous community members who may be involved in research activities and on whose land research activities are conducted. Studies have shown that Indigenous communities have received little to no benefits from being involved in Western research. In many cases, harm was inflicted on them (Fournier et al., 2023). To prevent inflicting further harm on Indigenous communities, the code of conduct (which will be co-created with Indigenous communities), will serve as a tool to support respectful and appropriate inter-cultural communication. The code of conduct will contain rules around behaviour, as well as guidelines to prevent misconduct (including discrimination and microaggressions identified in co-creation activities and the literature review).

Another bold action we are working towards is meeting the 50-30 challenge on TCA governance committees. To date, we have met the 50-30 challenge on four of the eight governance bodies. We will continue to prioritize efforts to achieve this goal in all committees.

Research has shown that gender-affirming care is medically necessary, essential, and lifesaving (Padula et al., 2016). To date, except for the graduate student health plan at Laval University, no TCA partner institutional health plans offer inclusive coverage to support Two-Spirit, transgender, and nonbinary (2STNB) TCA researchers, staff, and HQP to access medical care currently not covered by provincial or institutional health plans.

Lack of access to medically necessary gender-affirming care can lead to severe psychological distress, depression, anxiety, vulnerability to bullying, emotional abuse from others, and death by suicide (Kingsbury et al., 2022). We believe it is essential to ensure accessibility for this equity-denied group through bold and innovative measures and address complex institutional barriers through mitigation and removal.

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The TCA EDIA Specialist has been working with senior leadership at Dalhousie to remove this barrier since September 2023, working closely with the TCA Chief Administrative Officer (CAO) and strongly supported by Laval's EDIA Advisor. TCA EDIA team members at the three partner institutions (UQAR, Laval, Memorial), have also engaged in conversations with their respective HR departments and students' associations. Expanding medical coverage is a complex issue and to date, this barrier persists and discussions with leadership continue. To prevent further harm, prolonged psychological distress, and mental decompensation, and to create an environment of inclusion where 2STNB TCA members can thrive free from discrimination, interim solutions are being considered until such time that health plans (institutional and/or provincial) are expanded to include this coverage.

The TCA EDIA Specialist is also engaging with the EDIA team in the Accelerating Community Energy Transformation CFREF initiative (University of Victoria) to explore the co-development of a Thrive Fund initiative which will be designed to facilitate the removal of barriers faced by EDGs. Possible examples of eligibility for this fund will include, but are not limited to, providing financial support to TCA members with disabilities, including those with vision impairment whose institutions' accommodation policy does not include providing personal screen-reader software. Consideration will also be given to having the Thrive Fund support, to some level, the gender-affirming care barrier described above.

Through the CFREF EDIA community of practice, further collaborations on new bold and innovative actions will continue to be explored among CFREF-funded institutions.

2.6 Additional sections

Our commitment to EDIA extends beyond Canadian borders. We stress the importance of the physical, emotional, and psychological safety of all TCA staff, students, researchers, and HQP. This is particularly important for members of the 2SLGBTQIA+ communities who may be invited to attend meetings, conferences, and events abroad where being their authentic selves is criminalized and where they can be at risk of being arrested, harassed, or even face the death penalty based on their gender identity, gender expression, or sexual orientation.

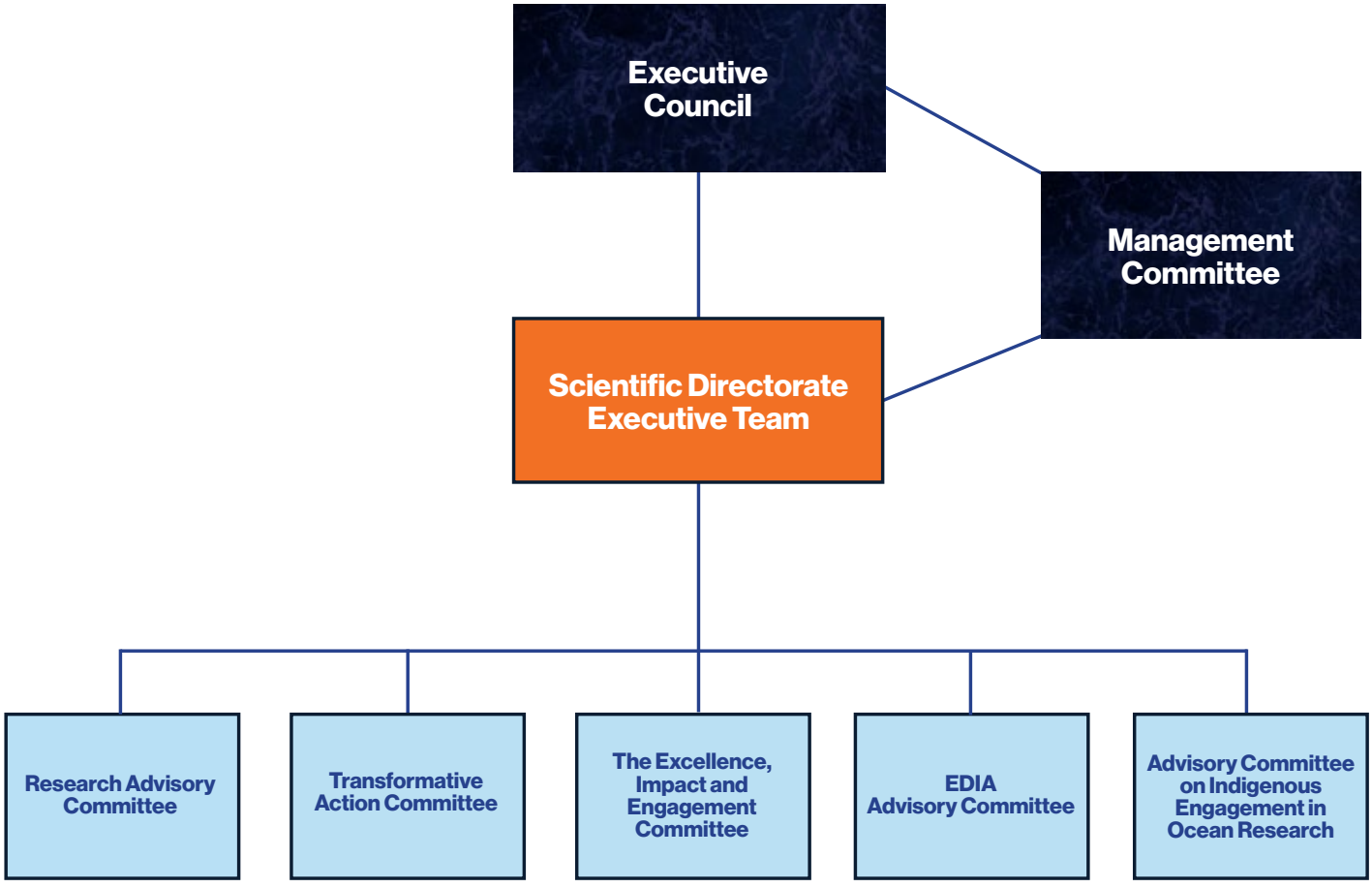
The TCA EDIA Specialist will conduct an assessment on the need to examine the status of 2SLGBTQIA+ rights in host countries, in addition to working with TCA administrative team members to initiate safety planning for vulnerable queer, Two-Spirit, trans, lesbian, and gay TCA members when travelling internationally to conferences and/or international organizations as part of the TCA partnership network. In addition, the EDIA Specialist will communicate with the TCA Chief Executive Officer/Scientific Director and collaborate with the OFI Director of Government Relations to work with Canadian government officials to raise awareness about EDIA issues abroad in ocean-climate sponsored activities.

While Indigenous participation in TCA encourages diversity, we recognize and acknowledge that Indigenous Peoples are not stakeholders, they are rights holders and the stewards of Turtle Island, whose rights are protected under the Constitution of Canada. Therefore, we emphasize the separation of EDIA and Indigenous-specific matters and commit to establishing mutually beneficial partnerships with Indigenous communities based on mutual respect and understanding.

The Ocean Frontier Institute (OFI) was established as a Dalhousie University Senate approved institute in 2015. OFI plays an integral role in the leadership, management, and administration of TCA, connecting researchers to a global community focused on climate-ocean science, policy, and advocacy. With the support of 40 national and international partners, including industry, research, government, and NGO partners, and deep institutional connections with Indigenous Peoples and communities in Atlantic Canada and Quebec, the partner institutions are uniquely prepared to bring a collective approach to climate action.

Transforming Climate Action

Committee Governance Structure



3. EDI Action Plan budget (Maximum: one page)

Provide a written summary of the planned expenses for the development and implementation of the EDI Action Plan and fill out the financial table provided below.

In total, the TCA budget will include $2.2M to support the development and implementation of the EDIA Action Plan. This includes $2.0M in funding for five EDIA positions that supported the development of the Action Plan and will be key to its implementation. The five positions, with a seven year budget, include: EDIA Specialist (Dalhousie), 1.0 FTE, $617K; EDIA Coordinator (Dalhousie), 1.0 FTE, $484K; EDIA research agent (UQAR), 0.5 FTE, $551K; EDIA Coordinator (Memorial University), 0.5 FTE, $214K and an EDI Advisor (Laval), $130K. In addition, Institut Ashukan in Quebec was hired as a consultant in years one and two to provide insights into Indigenous perspectives on EDIA, at a cost of $32K.

Training activities across the four TCA partner institutions include: 1) identified training initiatives, and 2) targeted training to meet TCA's needs as they arise. Six training initiatives have been identified to date, as outlined in section 2.2.3. A budget of $30K ($6K per initiative) is included to cover expenses related to hiring facilitators, language translation, IT support, and other hosting expenses depending on the training platform. A budget of $6K is available for additional targeted training if needs are identified not covered as part of the identified training.

No external consultant fees or costs are anticipated for data collection, as we anticipate collaborating with the existing institutional supports for this work. However, this may change as TCA progresses; e.g., the development, delivery, and results analysis of a climate survey which may not be able to be done in house.

Communications costs related to the Action Plan include language translation and awareness campaigns. Translation is estimated at $3K ($500 per year) and will include translation and interpretation between English and French and Indigenous languages when required. Awareness campaigns will include printed educational material for distribution at local and possibly key international conferences. A budget of $5K is included.

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The Project Implementation budget ($42K) includes four initiatives: 1) co-creation, $15K; 2) establishment of a 2SLGBTQIA+ strategy, $4K; 3) wellness check-ins, $8K (TBC); and 4) Thrive Fund $15K, a flexible fund to provide supports and benefits to TCA members (Faculty, staff, trainees) that are otherwise unavailable. Details of this Fund and its management are under discussion. Future co-creation activities are budgeted at $3K per year from Year two through Year six and will include one-on-one interviews and other activities. Co-creation expenses include compensation to participants in honorariums, travel expenses, and meeting expenses. The 2SLGBTQIA+ strategy budget of $4K will cover in-person and virtual focus groups, designing safe spaces for 2SLGBTQIA+ members of colour, designated spaces for 2STNB members, and developing a TCA web page/dedicated to this strategy with social media tracking capabilities. TCA is exploring offering wellness check-ins, which will include mental health support by connecting researchers with social workers. A budget of $8K is included in the budget to provide 30 hours of professional services. In addition, a Thrive Fund initiative is budgeted at $15K.

Other costs include $82K for professional development of the EDIA positions (~$4K per year, $27K total), travel budget to visit partner institutions and attend conferences annually (~$6K per year, total $41K), and miscellaneous expenditures (~$2K per year, total $14K).

In addition to the $2.2M TCA EDIA budget, employees funded by both TCA and institutional sources have contributed and will continue to contribute a significant amount of time and resources to the EDIA Action Plan. This includes members of the EDIA Advisory Committee, EDIA Working Group, the TCA Indigenous Research Advisor as well as employees specialized in research grant management, communications, administration, and finance.

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Expense Category	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
EDIA personnel (internal)	$87 599	$313 713	$305 945	$313 960	$322 104	$330 372	$323 100
EDIA personnel (external, such as consultants)	$16 042	$16 042	$0	$0	$0	$0	$0
Other staff with EDIA expertise (specify in budget summary)	$0	$6 000	$0	$0	$0	$0	$0
Training activities	$0	$0	$11 000	$11 000	$6 000	$1 000	$1 000
Data collection	$0	$500	$0	$0	$0	$0	$0
Communications	$0	$4 000	$1 500	$1 500	$1 500	$1 500	$1 500
Project Implementation	$0	$14 000	$8 500	$8 500	$8 500	$7 500	$4 500
Other staff with EDIA expertise (specify in budget summary)	$9 263	$14 000	$14 000	$14 000	$14 000	$9 000	$7 500
Total annual EDI budget	$112 904	$354 255	$340 945	$348 960	$352 104	$349 372	$337 600

4. Summary table of actions taken to address systemic barriers

4.1 Data collection strategy

4.1.1 Outline the strategy that will be used to collect the quantitative and qualitative data that will be necessary to allow accountability and effective monitoring of the impact of the EDI Action Plan's measures (i.e., the performance indicators outlined in the table below).

The Ocean Frontier Institute has an established annual reporting system in place, including a full-time Project Coordinator responsible for data gathering, compilation, and report preparation, that connects with researchers and institutional units to update achievements, gather current participant lists (HQP, faculty, collaborators, partners), and document performance metrics. This process will be expanded to collect up-to-date quantitative and qualitative information on EDIA strategies and metrics and will allow us to amalgamate all project information in a consistent way. Researchers will be asked to report on EDIA initiatives established and implemented at their research team level, including recruitment and retention practices that support EDIA-focused strategies, and on metrics such as the number of Indigenous collaborators and partners.

4.1.2 Describe the practices that will be used to protect privacy and confidentiality of the data, both quantitative and qualitative. All CFREF initiatives will be required to collect identification data from the participants of their various initiatives/projects. Teams are encouraged to use the Tri-Agency self-identification form for this data collection where feasible.

The EDIA Specialist stores all sensitive and confidential information in the Dalhousie institutional-supported Network Attached Storage (NAS), which is a file-storage space typically used for highly sensitive or confidential information. This methodology is approved by Dalhousie's Privacy Officer. Partner institutions also have robust privacy policies in place which TCA staff are bound by.

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4.1.3 Explain how self-identification data will be collected ensuring privacy and confidentiality of the data. Initiatives will be required to report aggregated data to the program as part of the reporting requirements on an annual basis (i.e., representation of individuals from underrepresented groups e.g., racialized individuals; African, Caribbean and Black individuals; Indigenous Peoples; persons with disabilities; women and individuals from 2SLGBTQIA+ communities.)

Self-identification data gathering is undertaken at the institutional level by the Dalhousie Planning and Analytics Office and through Memorial's Human Resources office as part of the Federal Government Contractors' Program. TCA will work with these offices for the provision of required self-identification information to TIPS. This process ensures data collection and management meet institutional security and privacy guidelines that are already in place. The institutional data gathering process emphasizes that data gathered from census surveys is used in aggregate form only.

As for specific self-identification surveys used to, for example, populate committees in line with the 50-30 challenge, a privacy statement will explain how data will be used and stored. Data collection will be anonymous, including climate surveys. Only secure platforms to protect data from being compromised will be used to prevent breaches. We note that based on Quebec Law 25, self-identification is legally reserved for employment processes in Quebec. As a result, this poses a challenge to our initiative in that we will not be able to ask TCA staff, HQP, and researchers from UQAR or Laval University to self-identify. A special community of practice has been set up that includes all CFREF institutions from Quebec and leads institutions with Quebec institutional partners to explore solutions to this barrier. To mitigate this barrier, TCA will conduct climate surveys aimed at TCA institutional participants to gather information on the sense of belonging and on barriers faced by TCA participants.

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4.1.4 Explain what strategy will be used to encourage self-identification by participants.

TCA members' trust is crucial to encourage self-identification. We will foster trust through transparency about what self-identification is and why it is important, including that it is conducive to ensuring fair access and variety of perspectives, and adds to research excellence. We will cite research that supports these statements. In addition, we will use culturally appropriate and inclusive language and ensure all questions are worded in a respectful way considering the sensitivities around EDIA topics.

4.2 Actions and deadlines

Actions that will be taken	System barrier(s) the action is meant to address	Lead individual or group accountable for implementing the action	Performance indicator(s) data that will be collected to measure progress	The deadline by which the measure is implemented
1) Create and share an accommodation statement with TCA governance committee members; 2) Facilitate focus groups to address systemic barriers in governance; 3) Ensure equitable access and representation on all TCA governance committees in line with the 50-30 challenge; 4) Outreach to graduate students and early-career researchers to encourage their membership on governance committees.	1) Access to necessary accommodations to allow full participation in meetings; 2) Voices of EDGs in identifying various barriers, including isolation; 3) Representation from EDGs in decision-making; 4) Lack of youth representation in governance and decision-making bodies.	1) EDIA Specialist, all TCA members leading meetings; 2) EDIA Specialist; 3) EDIA Specialist, CAO, Scientific Directorate (SD), Committee Chairs; 4) EDIA Specialist, Committee Chairs, Scientific Directorate..	1) Successful delivery of accommodation statement to all committees; 2) 90% success in implementing accommodations requested; 3) facilitation of a minimum of one focus group session per year; meeting the 50-30 challenge on all governance committees; 4) increase in the number of graduate students and ECRs on TCA governance committees.	1) Fall 2024 and regular sharing of the statement before meetings; 2) ongoing; 3) Winter 2027; 4) Ongoing as terms expire and students graduate.

EDIA Action Plan

Actions that will be taken	System barrier(s) the action is meant to address	Lead individual or group accountable for implementing the action	Performance indicator(s) data that will be collected to measure progress	The deadline by which the measure is implemented
1) Promote existing Indigenous bursaries and scholarships offered across the four institutions; 2) Provide support to researchers from the Indigenous Research Advisor and ACIEOR in developing their LRP Indigenous engagement strategies.	1) Lack of equitable access to education and training opportunities; 2) Racism, Eurocentrism	1) EDIA representatives from the four institutions, TCA Indigenous Research Advisor; 2) TCA Indigenous Research Advisor with support from ACIEOR representatives, Scientific Directorate.	1) Annual increase in bursary and scholarship awards to a maximum of 100% indicating access to financial resources available following promotional campaigns; 2) 100% approval by ACIEOR and Dalhousie Office of Research Services of LRP Indigenous engagement strategies allowing for full access to LRP funding.	1) annually; 2) fall 2024-spring 2025 (LRP Phase 1); spring 2026 (LRP Phase 2).
Distribute surveys to TCA staff, researchers, and HQP to invite anonymous feedback to assess the overall climate in TCA.	Lack of equitable access and various other barriers; Cis-normativity; exclusion of gender-diverse populations.	EDIA Specialist with support from institutional analytics office and possibly external contractor.	Implementation of the survey on schedule; response rate; development of plans to address and timeliness of addressing identified barriers; continuous learning through sharing the findings with human resources, accessibility offices, and EDIA offices across the four institutions to inform required changes.	Annually

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Actions that will be taken	System barrier(s) the action is meant to address	Lead individual or group accountable for implementing the action	Performance indicator(s) data that will be collected to measure progress	The deadline by which the measure is implemented
Collaborate with the administrative staff of 1) Policy Hub Accelerator; 2) Innovation and Commercialization Accelerator; 3) Transformation Hub; and 4) Data Management accelerator to ensure EDIA incorporation in programming.	Lack of diversity and EDGs representation in STEM environments.	EDIA Specialist, administrative staff of TCA accelerators, Scientific Directorate.	Year-over-year increase in EDG representation in all accelerator programming.	Ongoing
Provision of EDIA training on various topics including: 1) sexual harassment in STEM and particularly at sea and in the field research activities; 2) disability awareness and self-advocacy; 3) sexual orientation, gender diversity, gender identity and expression in collaboration with Two-Spirit facilitators; 4) microaggressions and bias; 5) racism awareness; 6) safety planning for female and gender-diverse researchers and those interested in learning about mechanisms to prevent and/or deal with sexual harassment.	Racism, anti-Black racism, transpho-bia, homophobia, ableism, sexual harassment, and sexism.	CAO, EDIA Specialist, EDIA Coordinator	Provision of all identified EDIA training in TCA with a target of two training opportunities per year; access to safety planning training for all TCA members, with a specific emphasis on those who identify as female.	Ongoing

EDIA Action Plan

Actions that will be taken	System barrier(s) the action is meant to address	Lead individual or group accountable for implementing the action	Performance indicator(s) data that will be collected to measure progress	The deadline by which the measure is implemented
Co-create a strategy with 2SLGBTQIA+ identifying TCA staff, HQP, students, and researchers consisting of: 1) awareness campaigns; 2) creating 2SLGBTQIA+ spaces with a designated space for 2SLGBTQIA+ racialized members and designated spaces for 2STNB members.	Transphobia, homophobia.	EDIA Specialist, CAO, Manager of Communications.	Formation and implementation of a 2SLGBTQIA+ strategy; the number of views and clicks of campaign content; the establishment of 2SLGBTQIA+ and 2STNB virtual and physical spaces in TCA.	Winter 2025
Establish a researcher-focused code of conduct and put in place guidelines to create a safe, respectful, and professional environment.	Various barriers, including but not limited to racism, sexual harassment, and Eurocentrism.	EDIA Specialist, EDIA Coordinator, Research Advisory Committee, Scientific Directorate.	Establishment and delivery of a researcher code of conduct; researchers report understanding of the code of conduct in climate surveys.	Fall 2025
Conduct outreach to equity-deserving groups and organizations to promote visiting fellow, post-doctoral fellow, and student opportunities in TCA.	Underrepresentation from EDGs.	EDIA Specialist, EDIA Coordinator, Training and Early Career Development Program Manager.	Adequate representation from EDGs in line with the 50-30 challenge.	When IPDF calls or OGEN calls are issued; as hiring processes commence.

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Actions that will be taken	System barrier(s) the action is meant to address	Lead individual or group accountable for implementing the action	Performance indicator(s) data that will be collected to measure progress	The deadline by which the measure is implemented
Explore the creation of a Thrive fund, or alternative ways to address identified systemic barriers where institutional funded benefits are not available or not equitable; e.g., provision of screen readers for employee home computers; provision of equitable health plans and benefits including medically necessary gender affirming coverage for 2STNB TCA members.	Lack of adequate and equitable institutional accommodations and benefits, cis-heteronormativity, discrimination against trans people.	Human Resources Offices at partner institutions, TCA EDIA Specialist, institutional EDIA Advisors, other internal or external stakeholders as required.	Ongoing	Removal of the barrier.

5. Appendices

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5.2 Definitions

African Nova Scotian – Constitutes the largest black community in Canada whose ancestors date back to the colonial United States as enslaved people, black loyalists, and freemen (Canadian Museum of History, n.d.).

Cisgender– describing a person whose gender identity aligns with the sex registered at their birth (Ferguson, 2023).

Cis-heteronormative -The assumption that heterosexuality and being cis-gender are the norm, which plays out in interpersonal interactions and society and furthers the marginalization of queer and gender-diverse people (Welcoming Schools , 2020).

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Cisgender privilege– Unearned benefits that result from gender identity aligning with the sex assigned at birth (Hofmann, 2019). Examples include: the ability to use public spaces such as bathrooms and gyms without fear of being abused, the ability to blend in with others without constantly being stared at, one's identity not being considered a mental pathology, etc.

Clocking – Refers to when a transgender person trying to blend in with others is identified as trans when they would prefer not to be seen as anything other than the gender they are presenting (Ennis, 2016).

Eurocentrism – Refers to viewing the West as the centre of culture and history to the exclusion of other cultures and world views (Sundberg, 2009).

Mi'kmaq – Indigenous peoples who are among the original inhabitants of Atlantic Canada (The Canadian Encyclopedia, 2008).

Minority stress- Minority stress is distinguished from general stress by its connection to prejudice and stigma. e.g. losing one's job can be both a general and minority stressor depending on whether the loss was influenced by stigma against a gender minority individual or due to general economic downturns (Frost & Meyer, 2023)

Misandry – Refers to hatred or prejudice against men and boys (Kort, 2016).

Nonbinary – Describing a person who does not identify exclusively as a man or woman (Groth, 2023).

Non-stealth – Opposite of stealth, referring to trans people who do not actively keep their trans history a secret (Gender Minorities Aotearoa, 2023).

Othering – A phenomenon in which some individuals are defined as not fitting in with the norm (Cherry, 2023).

Stealth - Referring to trans people who pass as the gender they are presenting and who keep their trans history private (Gender Minorities Aotearoa, 2023).

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