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Canadian Meteorological and Oceanographic Society (CMOS) Report on Equity, Diversity, Inclusion and Accessibility (EDIA) Initiative



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Executive Summary

This report reviews the Canadian Meteorological and Oceanographic Society's (CMOS) Equity, Diversity, Inclusivity and Accessibility (EDIA) Initiative funded by Environment and Climate Change Canada (ECCC), and supported by project partners: Black Environmental Initiative (BEI), Canadian Water Resources Association (CWRA) and the Marine Environmental Observation, Prediction and Response Network (MEOPAR). This report provides the preliminary research and knowledge-gathering needed for CMOS to begin to address EDIA within all facets of their society, and lays the groundwork for future action within CMOS, and the greater weather, water and climate (WWC) enterprise. A one page summary poster is provided in Appendix A.

The overall objective of this project is to identify gaps, barriers, and initiatives; as well as recommended actions to enable a more inclusive, diverse and accessible workforce for increased representation from Black, Indigenous, and people living with disabilities. The secondary objective is to assess and reshape specific programs and initiatives offered by project partners, to ensure that gaps are identified and opportunities are promoted and supported in an ongoing manner for membership, as well as government, private sector and academic partners with a focus on student, education and outreach initiatives to enhance interest in STEM (Science, Technology, Engineering & Mathematics) from underrepresented communities, while offering resources for teachers and practitioners.

After providing an overview of the CMOS EDIA journey, the contributing and additional partnerships, both research and community-based, with implications for the greater WWC enterprise, the report goes in depth with an analysis of equity, diversity, inclusion and accessibility (EDIA) best practices that can be implemented by CMOS. The analysis covers membership landscape, governance, communications, EDIA training, education and professional development, mentoring and networking, awards, prizes, fellowships and scholarships, annual congress meetings, advocacy within the WWC enterprise, and assistance with EDIA. Resources are provided at the end of the document, and a summary of the recommendations outlined in this report are included in Appendices E and F, which can be scaled and modified for other organizations within the WWC and beyond.

Acknowledgements

CMOS is grateful to the University of Toronto Scarborough EDI office for its review of an initial draft of the demographic survey, and to the participants who completed the various surveys and interviews that informed this project and report. Extended thanks to all our partners and affiliates who engaged in meetings and consultations to support this initiative. This includes the American Meteorological Society (AMS), the AMS Board on Representation, Accessibility, Inclusion, and Diversity (BRAID), ArcticNet, the Black Environmental Initiative (BEI), the Canadian Geophysical Union (CGU), the Canadian Ice Service, the Canadian Water Resource Association (CWRA), the CWRA Student and Young Professional (SYP) program, the Marine Environmental Observation, Prediction and Response Network (MEOPAR), and the Meteorological Service of Canada. CMOS would also like to thank Environment and Climate Change Canada for their leadership and financial support.



1 Introduction

The Canadian Meteorological and Oceanographic Society (CMOS) is the national society of individuals and organizations dedicated to advancing atmospheric and oceanic sciences and related environmental disciplines in Canada. The Society aims to promote meteorology and oceanography in Canada, and it is a major non-governmental organization serving the interests of meteorologists, climatologists, oceanographers, limnologists, hydrologists and cryospheric scientists in Canada.

In 2020, social justice movements like the Black Lives Matter (BLM) movement made a resurgence in Canada and the United States after a series of traumatic events, including the tragic death of George Floyd and uncovering of over 4000 unmarked childrens' graves from seven residential schools (Silverstein, 2021; Supernat, 2022). These events daylighted the ongoing issue of police brutality, misuse of authority, continued racism and discrimination against marginalized communities, reminding all of us of the systemic injustices faced by marginalized communities. A number of scientific societies, including CMOS, issued a formal [Statement on racism](#).

CMOS reminded all members to consider these issues, to condemn racism, to support members of Black, Indigenous and racialized communities, and to work towards creating an equitable and inclusive culture, both within CMOS and in Canadian society. Subsequently, a [Membership Code of Conduct](#) was developed and approved which requires members "to act with respect, responsibility, fairness, honesty and integrity". These values are critical in addressing racism, and maintaining the reputation and stature of CMOS as an active and positive member of the community of Canadian scientific societies.

Then for the first time in its more than 50 year history, the [2021-2024 CMOS Strategic Plan](#) included a strategic priority on equity, diversity and inclusion (EDI). At the time, the CMOS Vice-President was on the Advisory Board of the Black Environmental Initiative (BEI), and was a member of the Education and Training Working Group within the Canadian Coalition for Environmental and Climate Justice (CCECJ). BEI provided advice to CMOS on an action plan to implement the EDI components of the strategic plan:

- Research, data and knowledge creation to understand and predict the potential negative impacts of climate change on marginalized communities;
- Youth education and youth opportunities in climate science and STEM;
- Engagement of diverse members of CMOS and highlighting their perspectives.

During regular discussions with members of the management team from the Meteorological Service of Canada (MSC) of Environment and Climate Change Canada (ECCC), we shared our respective Equity, Diversity, Inclusion and Accessibility (EDIA) priorities. CMOS was invited to develop a Grant & Contribution proposal related to EDIA to ECCC. Leveraging our existing partnership with the Canadian Water Resources Association (CWRA) Project WET youth education program and our new relationship with BEI, a proposal was developed and accepted by MSC-ECCC.

The overall objective of this project was to start identifying gaps, barriers, and initiatives, as well as recommended actions to enable a more equitable, diverse and inclusive workforce (e.g. increased representation from Black, Indigenous, and people with health conditions and impairments) within the weather, water and climate enterprise in Canada. While this project focused on EDI, accessibility considerations are also included where relevant, as it is related to inclusion; however, further explicit consideration should be given as CMOS continues this work.

A second objective, which is ongoing, is to assess and reshape specific programs and initiatives offered by CMOS and CWRA to ensure that diversity and inclusion gaps are addressed and that opportunities are ongoingly supported for our membership, as well as government, private sector and academic partners. An important



component of this objective is to focus the Student, Education and Outreach initiatives within the partnership, such as Project WET Canada, on enhancing the interest in STEM (Science, Technology, Engineering & Mathematics) along with an appreciation of systemic issues like Environmental Racism by teachers and students from underrepresented communities.

This report documents CMOS's progress, thus far, towards achieving these objectives and should be viewed as a beginning of the process to address EDIA, not an end. Recent CMOS initiatives to improve inclusivity and accessibility, such as free student memberships and rotating hybrid and virtual congresses are important developments, but much more action is needed. As CMOS continues this work, outreach and engagement of the membership and broader weather, water and climate community is vital. Recommendations and feedback from the community are key to helping shape initiatives that CMOS can undertake going forward.

2 Project Partnerships: BEI and CWRA - Project WET Canada

Partnerships are essential in facilitating collaboration and knowledge mobilization across the Canadian weather, water and climate enterprise. Partners are better able to align initiatives with each other and to implement best practices towards EDIA when information and lessons learned are shared efficiently. Successful initiatives, activities, and operational changes can be scaled and modified to suit other organizations, where partnerships provide space for such knowledge exchange to occur in order to realize EDIA within the weather, water and climate enterprise. Recognizing this, CMOS partnered with the Black Environmental Initiative (BEI) and the Canadian Water Resources Association (CWRA).

2.1 The Black Environmental Initiative (BEI)

The [Black Environmental Initiative \(BEI\)](#) is a not-for-profit organization whose mission is to “promote the environmental engagement of Black communities and the environmental protection of all people, especially low-income communities.” BEI's efforts focus on fighting environmental racism and advocating for greater access to environmental education and green jobs and investments within racialized communities. Specifically, [BEI's programs](#) include:

- “An awareness-raising program dedicated to educating people on environmental issues and solutions by using digital communications campaigns, in-person training and events. This program includes environmental education led by Black people as a way to challenge stereotypes on what it means to be Black in society.
- A green job promotion program dedicated to fostering more green job opportunities for Black and diverse professionals in multiple sectors like environmental policy, green construction and green stems This program is also meant to promote green entrepreneurship.
- A community energy program meant to help diverse communities develop renewable energy initiatives.

BEI partnered with CMOS and CWRA to better understand the barriers to greater diversity in the weather, water and climate (WWC) sciences in Canada and to develop materials to promote diversity and fight racism. BEI's contributions to this project included:

- I. **Study of the Systemic Barriers to Representation in the WWC enterprise** conducted. BEI developed and launched two surveys to investigate the extent to which Black and Indigenous professionals are underrepresented in the WWC sciences in Canada and the role of systemic barriers along the WWC education and professional pipeline. The first survey targeted diverse professionals in the WWC sciences and examined their educational and workplace experiences in the sciences; the second survey targeted Black and Indigenous youth and examined their perspectives on the sciences and careers in science (see Section 4 for a summary of the survey findings).



- II. [Diversity Video Project](#) was created by BEI to promote diversity in the WWC sciences by showcasing successful atmospheric sciences professionals from underrepresented groups.
- III. **Environmental Racism Curriculum** is under development by BEI in collaboration with the CMOS School and Public Education Committee and Project WET Canada. This curriculum involves an interactive activity for middle school students on air pollution and environmental racism and is in the design phases. This curriculum will be pilot tested in the next phase of this project as part of environmental engagement activities in Black and immigrant communities and Project WET Canada workshops (see Appendix B).

2.2 CWRA - Project WET Canada

The Canadian Water Resource Association (CWRA) is a voluntary, not-for-profit, charitable organization headquartered in Lethbridge, Alberta, Canada, with branches in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, and Quebec and an Atlantic Branch that includes members from Newfoundland and Labrador, Nova Scotia, New Brunswick, and Prince Edward Island. CWRA is a national association of individuals and organizations from the public, private, and academic sectors committed to raising awareness of the value of water and promoting responsible and effective water resource management in Canada. Membership consists of water users and water resource professionals including managers, administrators, scientists, academics, students, and young professionals.

CWRA's strategic direction is guided by the following:

- Mission: Promoting effective water management.
- Vision: Water resources are managed with a commitment to environmental, economic, and social sustainability.
- Objectives: To stimulate awareness and understanding of Canada's water resources; to encourage recognition of the high priority and value of water; to provide a forum for the exchange of information and opinion relating to the management of Canada's water; and, to participate with appropriate agencies in international water management activities.

The [Project WET Program](#) (Water Education for Today) is the official youth education program of the CWRA. The Project WET program is a national, curricular linked, science-based, youth education program that provides classroom-ready science lessons complete with peer-reviewed resources and tools that make it easier for educators to teach the science of water, its role in social, economic, and environmental sustainability, and to foster a stewardship ethic.

Project WET Canada delivers professional development workshops with supplementary instructional resource materials (the Project WET Educators' Guides) to both formal educators, (in-service teachers in the pre-Kindergarten – Grade 12 system and pre-service teachers) and to informal environmental educators, such as staff at nature interpretive centres. The program is designed for educators, by educators and water resource professionals, to promote teaching youth effectively about water in our environment.

The Project WET program inspires interest and motivates students to study science, technology, engineering, and math (STEM), and engage in outdoor environmental learning experiences. The program does this by delivering world-class water science resources and expertise through professional development workshops for educators to improve their knowledge, skills, tools, and enthusiasm for teaching water science and environmental sustainability to youth.

Under the ECCC grant funding for 2022-2023, CWRA Project WET Canada developed and delivered three pilot Project WET Climate, Water and Resilience workshops, to Project WET coordinators and facilitators. The summary of activities completed are:



- I. **Atlantic Science Teachers Conference - Project WET 2.0 *Water, Weather and Climate*** workshop for the science teachers delivered on Oct. 28, 2022 with 16 Atlantic Science teachers certified in Project WET 2.0 with a Water News Article published in the CWRA Newsletter.
- II. **Climate, Water and Resilience (CWR) Canadian Supplements** were completed with Canadian content added to student copy pages and an *Understanding Climate* PowerPoint with Canadian content developed. A cross reference table of Project WET 1.0 and 2.0 activities related to and supporting CWR activities was developed.
- III. **Virtual Leadership Certification Workshops** were developed and delivered. Session 1 and Session 3 delivered through Zoom and Session 2 was an asynchronous view of the *Understanding Climate* PowerPoint by workshop participants. Three CWR workshops were delivered with 15 Project WET educators certified. The educators included representation of Black, Indigenous, and other people of color (BIPOC). Forty-seven percent of participants identified their main audience as BIPOC, as mixed BIPOC and White, and with differentiated abilities.
- IV. **Science curriculum cross-reference to CWR** program for Ontario's new science curricula was completed. The Ontario science curriculum cross-reference added to the previously completed curriculum cross-references for British Columbia's grades 6 to 12, Nunavut's graded 10 to 12, Saskatchewan's grades 10 to 11, Manitoba's grade 6 to 12, Nova Scotia's grade 6 to 12, and New Brunswick's grade 6 to 12 science curricula. The curricular cross-references are posted on: [Project WET Resources - Canadian Water Resources Association \(cwra.org\)](https://www.cwra.org/Project-WET-Resources-Canadian-Water-Resources-Association)

3 Additional Partnership Opportunities

Although the work of developing new collaborations and partnerships is in its early stages, CMOS has been actively consulting with various research and community-based organizations and networks, in addition to our project partners, CWRA and BEI, within Canada and abroad including:

- Marine Environmental Observation Prediction and Response Network (MEOPAR)
- ArcticNet
- The American Meteorological Society (AMS)
- Imhotep Legacy Academy (ILA)
- Indigenous Climate Action (ICA)

3.1 Research and Scientific Partners

3.1.1 MEOPAR

MEOPAR launched their [four-fold Equity, Diversity, Inclusion and Accessibility \(EDIA\) Action Plan](#) in September 2022 to accomplish three main goals:

1. Build capacity to initiate change within the ocean sector by mobilizing EDIA knowledge and supporting marginalized communities, like BIPOC and LGBTQIA2S+, through internal and external training opportunities (i.e. e-learning courses and workshops);
2. Build and improve MEOPAR's operations and programming through critical evaluation (i.e. formal recognition as a [Rainbow Registered Organization](#), [accredited by Canada's LGBT+ Chamber of Commerce \(CGLCC\)](#)) and retrospectives/lessons learned;
3. Foster a welcoming and safe working and learning environment for all through engaging the ocean community and building partnerships.



In learning of the organization's respective EDIA initiatives, MEOPAR partnered with CMOS to apply their comprehensive understanding of EDIA best practices in augmenting final products associated with this initiative (i.e. report, infographics, policy briefs, posters, ect.), and beyond. Added benefits of this partnership include learning from their programming, policies and procedures; access to other training opportunities; and sharing knowledge in real time.

This partnership will act as a catalyst for future action and programming as the group collectively learns more over time. MEOPAR intends to foster this ongoing collaboration, mutually supporting achieving the recommendations outlined in this report through continued knowledge sharing and collaboration. For example, this initiative will help set the stage for an engaging EDIA Session at the CMOS Congress taking place on May 31, 2023, which will include a short presentation by Dr. Karen Smith, Project Manager, and the discussion will be moderated by MEOPAR's Training Program Manager, Alexa Goodman. Moving forward, if MEOPAR is successful with their application to the Strategic Science Fund, they will be initiating an EDIA Task Team as a method to enable knowledge transfer, and hope to include representation from CMOS.

3.1.2 ArcticNet

CMOS has several strong links to ArcticNet, including through its Arctic Special Interest Group. ArcticNet prepared an EDI report in October 2020, which supported the development of their existing [Equity, Diversity and Inclusion Strategy](#). Their strategy sets a working, evolving framework for continuous improvement that amplifies the contribution and improves the experiences of diverse members of the network. Furthermore, they have developed Key Performance Indicators to track and measure their EDI commitments.

3.1.3 American Meteorological Society (AMS)

The Canadian Meteorological and Oceanographic Society (CMOS) and the American Meteorological Society (AMS) signed a Memorandum of Understanding (MOU) for mutually beneficial interaction on October 31, 2014. The AMS and CMOS are closely aligned, and CMOS is well positioned to partner with the AMS on EDI.

The AMS has a number of Boards and Committees. Their Board on Representation, Accessibility, Inclusion & Diversity (BRAID) strives to create a platform of leadership, advocacy, and networking for individuals from underrepresented groups in the atmospheric, oceanic, and hydrologic sciences. This includes identifying workplace issues, providing professional development and educational opportunities, and supporting inclusive mentoring by establishing committees within the Board that represent the various social and professional identities of AMS members.

CMOS has met with the Chairperson of BRAID and the EDI Lead employee within the AMS to initiate the collaborative process. The CMOS President is a member of the newest Committee within BRAID (COSMOS-Committee on Spirituality, Multi-Faith, Outreach and Science). Joint activities related to bridging with Indigenous knowledge systems is one of the current areas of collaboration.

At the January 2023 AMS Annual Meeting, BRAID organized the Fourth Symposium on Diversity, Equity, and Inclusion. The CMOS President attended this Symposium and delivered a presentation outlining our EDI Project (Improving Diversity and Inclusion in Canada's Weather, Water and Climate Workforce) at the session on Creating and Nurturing an Inclusive and Equitable Weather, Water, and Climate Enterprise.

A summary of the Symposium is included in Appendix C.

CMOS will for the first time organize a special session on EDIA at our Congress in May 2023. As well, there will be a presentation on the EDIA Initiative at the Canadian Water Resources Association Conference in June.



3.2 Potential Community Partners

CMOS recognizes that advancing many of its EDIA related initiatives requires the development of relationships with organizations within underrepresented communities. For example, encouraging participation of youth and professionals in the surveys (details in Sections 4 and 5) was facilitated by established partnerships. Therefore, future initiatives will benefit from the development of these kinds of relationships (examples below).

3.2.1 Imhotep Legacy Academy (ILA)

[ILA](#) is a partnership that mobilizes university/college students, faculty and community leaders to help improve student success and bridge the achievement gap for Grades 6-12 students of African heritage in Nova Scotia. ILA provides its participants with an enriching blend of real-world learning projects, skill-building and leadership development activities as well as tutoring support. The outcome builds self-confidence, self-discipline and the mastery of concepts related to scientific, technical, engineering, and mathematics (STEM) fields.

The CMOS Halifax Centre initially developed a relationship with ILA. There are no local Black professionals from the weather, water and climate science community to participate in ILA leadership activities. ILA worked with CMOS Halifax to organize a virtual Career Day. CMOS raised funds to offer the first \$5K scholarship to a Black/Indigenous Grade 12 student to support their university studies in meteorology or oceanography. Given CMOS's relationship with ILA, they assisted the EDIA Initiative by recruiting students to participate in the survey, and by providing input on the gaps and barriers contributing to the under-representation of Black scientists.

3.2.2 Indigenous Climate Action (ICA)

[ICA](#) is an Indigenous-led organization guided by knowledge keepers, water protectors and land defenders from across the country who believe that Indigenous Peoples' rights and knowledge systems are critical to developing solutions to the climate crisis and achieving climate justice. In 2018, Eriel Deranger, the Executive Director of ICA, was an invited plenary speaker and chaired a special session on climate change and indigenous communities at the Annual CMOS Congress in Halifax. ICA is also a member of the Canadian Coalition on Environmental and Climate Justice. As part of the EDIA Initiative, we met with team members from ICA to share details and garner their interest in further collaborations.

4 Systemic Barriers to BIPOC Representation within the Weather, Water and Climate Enterprise

BEI's investigation of the extent to which Black and Indigenous professionals are underrepresented in WWC sciences in Canada is presented in the following section. It also provides details of systemic barriers along the WWC education and professional pipeline.

4.1 Reality Check: Lack of Black and Indigenous Representation within the Canadian WWC enterprise

The WWC sciences are crucial to understanding the Earth's climate, weather patterns, water resources and how these affect and are affected by human societies. As a result of systemic barriers, such as lack of resources, support, mentorship, and recognition of their contributions, there is little diversity in the WWC sciences in North America. Scientific advancement is negatively impacted by this lack of diversity because fewer perspectives and experiences are available to inform research (King et al., 2018).



Similarly, BEI conducted its own investigation of Black and Indigenous representation in the WWC sciences. The results of BEI's investigation were informed by a survey (33 questions) and semi-structured interviews of 17 diverse professionals from the WWC sciences sector (hereafter, the "professional survey"), and a survey (36 questions) of 52 Black and diverse youth (hereafter, the "youth survey") addressing the following research questions/objectives:

- What do current diverse professionals in the WWC from underrepresented groups think about the level of diversity in their sector, and the barriers and opportunities?
- What belief systems do black and indigenous youth have around careers in the WWC sciences?¹

Consistent with previous studies, the professional survey concluded that respondents view both indigenous and black professionals as extremely underrepresented within the WWC enterprise, with indigenous professionals being viewed as more underrepresented. The survey and interview questions can be found in Appendix D.

4.2 Root Causes: Why are black and indigenous people underrepresented in Canadian WWC sciences?

As part of both surveys, an examination of the potential causes of this lack of representation was conducted by testing the following hypotheses:

1. Is the lack of representation a function of the scarcity of Black and Indigenous peoples' exposure to science at an early age?
2. Is the gap in representation explained by Black and Indigenous people's lack of interest in science?
3. Is the gap in representation a function of negative stereotypes about Black and Indigenous people in society?

4.2.1 The "lack of exposure to science at an early stage" hypothesis

Research suggests that without early and culturally relevant exposure to science, Black and Indigenous youth are less likely to pursue careers in STEM fields, including the WWC sciences, which perpetuates the lack of diversity in STEM (Bryant et al., 2006; Chang et al., 2014; Jiminex et al., 2019).

The BEI professional survey aimed to assess the extent of early exposure to science education by asking: "How old were you when you were first exposed to science education?" A total of 61% of respondents were introduced to science in elementary school between the ages of 5 and 8. Another 39% were introduced to science in high school between the ages of 15 and 18. Family background, cultural influences, education level, and personal interests can all affect this.

In the youth survey, BEI also asked the same question. Approximately 54% of them were first exposed to science between the ages of 5 and 10; 32% were first exposed to science between the ages of 10 and 15; 9% between 15 and 20; and 5% between 20 to 25.

The results suggest that lack of early exposure to science alone cannot explain the low representation of Black and Indigenous people in STEM fields. However, the quality, frequency, and cultural relevance of exposure to science are likely also important factors that were not assessed. For example, Black students in the United States are more likely to attend high-poverty schools with fewer experienced teachers and less advanced coursework (NCES, 2022). Discrimination and bias can also contribute significantly to lower academic achievement and

¹ It is important to recognize that there is likely a confirmation bias present in the youth survey as youth who are interested in STEM may have been more likely to respond to a survey related to STEM.



disengagement among Black students in North America (CRRF, 2018). Musau (2017) notes that educational outcomes for Black people raised in Africa vary widely depending on the country and region in which they grew up (Musau, 2017). Although some African countries have made significant strides in expanding access to education in recent years, others face significant challenges due to poverty, political instability, and inadequate education infrastructure.

4.2.2 The “lack of interest in science” hypothesis

Developing career interests begins in early childhood (Bryant, Zvonkovic, & Reynolds, 2006) and is further shaped by socialization, educational experiences, extracurricular activities, and other environmental influences (Savickas & Spokane, 1999). Respondents were asked to rate the following statement from "strongly disagree" to "strongly agree": "Science has always been my favorite subject in school". Among 13 respondents, only two disagreed. Science has always been their preferred subject in school, according to the rest. Science interest may predict success in science careers.

Among Black or Indigenous youth, the survey provides some insights into their interest in science:

- A majority of respondents were interested in science.
- 79% of our youth respondents confirmed that they had access to very good science education, despite the quality of science education being suggested as a potential barrier.
- Families and friends encourage an interest in science in 75% of respondents.
- Approximately 75% of respondents agreed with the statement that science is useful.

There is a relatively even distribution of interest in science careers among diverse youth across a variety of scientific disciplines (Figure 1). It is noteworthy, however, that interest in meteorology and hydrology is relatively lower.

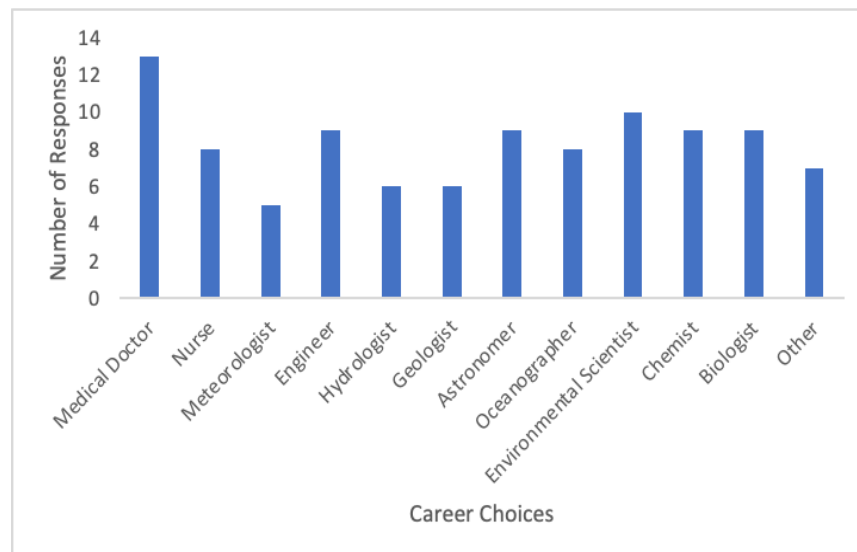


Figure 1: Relative interest in different science careers among diverse youth participating in the BEI’s youth survey (see Appendix D).

Literature also confirms that diverse youth are very interested in the sciences. Black high school students in America are highly interested in science, technology, engineering, and mathematics (STEM) fields, according to a study published in the *Journal of Negro Education* (Palmer et al., 2011). Black students are more likely to express interest in STEM careers than their white peers, according to a report published by the National Science



Foundation (2018). A lack of interest in science among Black and Indigenous youth may not result in underrepresentation in STEM careers, according to the survey results. Data from professionals confirms a positive correlation between interest in science and a successful career, which remains an important priority when it comes to promoting greater interest in science.

4.2.3 The “impact of stereotypes” hypothesis

Negative stereotypes and biases often affect Black and Indigenous people in STEM fields. Despite similar grades and test scores, Black students are less likely to be recommended for advanced science classes, and Black people in STEM fields are often stereotyped as less competent than white peers (Johnson, Larkin & Harrison, 1996). The stereotype can negatively affect evaluations, salaries, and advancement opportunities. Similar stereotypes and biases limit Indigenous people's opportunities in STEM fields (Cech et al., 2019; Von Vacano et al., 2022). There is a perception that Indigenous people are less capable and less interested in STEM fields, resulting in lower participation.

To test whether stereotypes affect careers in science, we asked WWC professionals to agree or disagree with the following statement: "Black, Brown and Indigenous people are naturally gifted in sciences". This statement was neutral for most respondents. When we asked the same question to the youth, 72% strongly agreed. We then asked if they agreed or disagreed with the following statement: "Most people think that Black, Brown, and Indigenous people are naturally gifted in sciences". In contrast, 60% of earth science professionals disagreed with this statement, suggesting that Black, brown, and indigenous people have a negative stereotype in society.

A similar question was asked to the youth. They were asked if they agreed or disagreed with the following statement: "It is widely believed that Black, Brown and Indigenous people are not naturally gifted in sciences". According to the youth, 58% agree, 42% disagree. We then asked the WWC professionals a direct question about how race impacts their career: "Do you feel that your race is/was a barrier to accessing internships, and employment with training opportunities within the science/weather science sector?". According to 58% of respondents, race played a role in their careers. Similarly, 53% of professionals confirmed that race was a barrier to their opportunities in the atmospheric sciences, including internships and jobs.

We also collected some key comments from survey respondents. One professional supported the idea that stereotypes play a critical role in accessing opportunities: "I believe that there are stereotypes that certain types of people do not succeed at certain parts of our industry. I have heard a speaker at a water conference say that women do not make good water operators, I have heard teachers in university say that women need to change their voices, I know of an environmental engineering company that has, for a reason unknown to me, only hired the men that have applied to their company. I have no experience with factors affecting Black or Indigenous scientists because I have never met another one (other than me) in my field." As the comment suggests, gender stereotypes can also hinder the career potential of diverse professionals in addition to racial stereotypes. Another respondent said: "It's not a very popular career in my culture so that played a part. It's also intimidating to go into the outdoor/environmental space, as many diverse people did not grow up having access to such space and as a result are excluded."

The survey results support the hypothesis that negative stereotypes contribute to the under-representation of Black and Indigenous professionals in WWC sciences. It is likely that stereotypes have an underestimated impact on career advancement in STEM, even though most people recognize the negative impact they have. It is therefore imperative to limit the negative impact of stereotypes on Black and Indigenous communities in any effort to increase representation in WWC sciences.



4.3 Recommendations Addressing Systemic Barriers

The survey results highlight the need to promote diversity and inclusion in WWC sciences. By providing more mentorship and support to underrepresented groups, we can address stereotyping, discrimination and bias. In order to address the underrepresentation of Black and Indigenous people in science, multifaceted approaches will be necessary. A summary of the recommendations outlined in this section can be found in Appendix E.

RECOMMENDATION 4.3.1: Engage school guidance professionals in your EDIA journey

North American education relies heavily on the concept of "skills" development and guidance provided by school counselors, teachers, and professors. Even if a student is inclined towards science, school professionals may not provide sufficient guidance and support. The bias or discrimination may be unconscious or conscious on the part of these professionals towards such a student. One of the WWC professionals we interviewed said: "Speaking just from my experience on black boys, one idea is to stop having their high-school teachers tell them that their main contribution and pathway to the world is their athletic ability. When I was maybe 17, I read a book about ~100 careers that would be in demand over the next 50 years. Environmental engineering was one of them and it helped me choose that. Having some more exposure to a large variety of different in-demand careers when students are around 17 and need to make high school course decisions might be helpful".

CMOS and Environment and Climate Change Canada should engage high school guidance counselors and teachers in advancing EDIA in STEM.

RECOMMENDATION 4.3.2: Expand science career opportunities for BIPOC youth

The following are recommendations from the professional survey respondents with respect to actions that educational institutions and those working within them can take:

- Distribute STEM promotional materials to BIPOC high school students highlighting successful, BIPOC professionals across a diversity of STEM fields.
- Seek out partnerships with organizations that promote diversity in the science field and offer educational and career guidance to students and invite for school visits (e.g. "Scientists in Schools", The Canadian Black Scientists Network)
- Hire diverse teachers and professors that look like the students.
- Create opportunities to showcase contributions of BIPOC scientists. Include these opportunities within the core teaching plan and not as a specialized or elective course or just during certain times of year (e.g. Black history month). Focus on the positive scientific contributions of these scientists, not just the hardships they had to overcome.
- Create more paid opportunities in STEM for youth (e.g., scholarships, internships, entrepreneurial accelerators, etc.).
- Establish direct institutional intervention to break down the barriers to becoming a successful scientist for people from BIPOC backgrounds (e.g. EDIA-targeted hiring, unconscious bias training, etc.)
- Enable access to STEM extracurricular youth programs and science fairs through schools, community and recreation centres.

The above list is not exhaustive, but highlights areas in which investments aimed at increasing diversity in STEM will not only benefit BIPOC youth, but everyone in the community.

**RECOMMENDATION 4.3.3:** Change societal standards with the "Black and Indigenous scientist" narrative

Raising standards is one of the best ways to accelerate systemic change. Generally, "standards" refer to what society considers acceptable. We often succeed in changing systems for generations when we raise standards. Governments and institutions should prioritize investing in organizations, initiatives, or projects that create a positive association between Black and Indigenous people of all genders, and the sciences. This would create a new standard in society where no one would be considered less capable in the sciences.

Through investments in education and creative modalities of exposure, it may be possible to change the outcomes of Indigenous and marginalized communities for generations by creating a more inclusive narrative of the "Black and Indigenous scientist". As an example, when the Black Environmental Initiative launches the Environmental Racism and Air Pollution activity in Black communities (see Appendix B for activity details), they will also broadcast images of Black youth working on a scientific project.

Stereotypes are powerful. The first step towards reversing the lack of representation of Black and Indigenous people in the WWC sciences is to reject negative stereotypes. In the words of one of our youth survey respondents: "Support BIPOC youths and clear the thought that we are not gifted in sciences." Instead, we need to convince others that Black and Indigenous people are equally as gifted in the sciences as other demographics. This objective can be accomplished through story-telling, public education, and funding organizations dedicated to this cause.

RECOMMENDATION 4.3.4: Invest in gender-informed initiatives that are inclusive

In order to increase access to successful science careers for diverse communities, it is imperative to consider gender and move beyond an explicit binary (Knaier, 2019). It is possible to gain a holistic understanding of the challenges trans, non-binary, and two-spirited individuals face in STEM when viewed from an intersectional and diverse gender perspective, especially when combined with other factors such as race (Knaier, 2019). Generally speaking, women are underrepresented in the sciences, and this is even more true for racialized female-identifying individuals (NSF, 2019).

Due to unique barriers, anti-Black racism affects black youth (especially boys and girls) differently in black communities. Institutions have either launched initiatives that target both genders equally or prioritized interventions targeting one gender group over the other in the past. For the enhancement of diversity in WWC sciences, it is necessary to take into account all genders and their respective and collective outcomes for outreach and initiatives.

RECOMMENDATION 4.3.5: Address diversity within the "leaky pipeline"

The "leaky pipeline" metaphor has been used to describe the progressive decreasing representation of women and minorities in STEM as they move through the career "pipeline" from high school to undergraduate and graduate studies to early career scientist roles to senior professional or academic roles. "The pipeline is described as "leaky" because attrition among prospective professionals and academics is disproportionately high for these groups" (Plante et al., 2022).

A substantial "leak" occurs between high school and university for Black and Indigenous youth because of unconscious and conscious negative stereotypes. As a result, support, resources, and mentorship are lacking. Additionally, negative stereotypes contribute to "leaks" further down the pipeline, influencing performance evaluations, salaries, and advancement opportunities.



There is a different type of "leak" that occurs in the pipeline in Canada at the stage of early career scientists. According to research, graduate students in computer, mathematics, and physical sciences, which include WWC sciences, often leave Canada to seek employment in the United States (Desjardins & King, 2011). Employers and institutions should create more opportunities to retain talented early career scientists, including diverse scientists. It is crucial for professional societies to foster a supportive and inclusive environment in order to improve the retention of diverse scientists. Furthermore, they can enable networking, mentorship, and collaboration between diverse scientists and recognize and highlight their scientific achievements. EDIA's recommendations and best practices for CMOS are outlined in the following section.

5 Investigation of EDIA Best Practices and Recommendations for CMOS

5.1 Introduction

Here, preliminary research on EDIA best practices are summarized and organized into a set of recommendations. These recommendations are not exhaustive, and input from the CMOS membership and broader WWC community should be sought to address gaps in this report and to help prioritize actions that CMOS can undertake given the availability of volunteers and resources. This section begins with a view inward; an assessment of the role of scientific professional societies in advancing EDIA and what CMOS can do to be a more active ally. This section concludes with a view outward; recommendations on how CMOS can advocate for change across the broader WWC enterprise. A summary of the recommendations outlined in this section can be found in Appendix F. Resources referenced in this document have been included in Section 6.

5.2 Membership Landscape

A demographic survey is an important initial step to help an organization understand the current diversity of its membership. By repeating the survey at regular intervals, an organization can better understand the evolving identities of its members and develop initiatives to support the diverse communities within the organization. A demographic survey should be followed-up by a more comprehensive survey (e.g. an Equity Assessment) to assess community attitudes around EDIA and solicit feedback from the community on how the organization can better support its members (see below).

The 2023 CMOS demographic survey was developed by consulting the University of Toronto Scarborough Student Equity Assessment, the Survey of Postsecondary Faculty and Researchers in Canadian Geoscience, the Canadian Association of Physics 2020 Diversity survey, and the 2022-23 Canada Public Service Employee Survey. CMOS launched its first demographic survey of the membership, collecting approximately 290 responses from February 7 to March 3, 2023. The survey was anonymously completed on a voluntary basis by the membership (977 members total; 28% response rate), and it consisted of approximately 15 self-identification questions (see Appendix G); Preliminary results are presented in Appendix H. A brief overview will be presented at the 2023 Annual Congress and a more in-depth analysis will be published in the CMOS bulletin at a later date.

RECOMMENDATION 5.2.1: Demographic Data Collection

In order to operationalize the collection of demographic data, it is suggested that the collection of demographic data be integrated into the membership renewal process, which occurs at the start of each new year. In this way, CMOS will be able to better understand the evolution of the diversity of its membership over time. Feedback from the most recent demographic survey will be used to improve the data collection process.



RECOMMENDATION 5.2.2: EDIA Survey

A demographic survey is essential, but not sufficient. It is recommended to add EDIA-related questions to the survey or conduct a separate EDIA-focused survey to get an indication of the EDIA attitudes and needs of the CMOS membership. It is imperative that the content of the EDIA-related questions to be included is considered very carefully. Thus, it is recommended that organizations such as CMOS get the assistance of a third-party, independent EDIA professional or ethics specialist. The American Geophysical Union presents some suggested topics of inquiry in its 2018 [Diversity and Inclusion Strategic Plan](#).

The American Meteorological Society is developing an equity assessment and it is recommended that CMOS explore a potential partnership.

RECOMMENDATION 5.2.3: Communicate Results

CMOS should also be transparent about the results of its membership surveys and commit to reporting them on the CMOS website. If possible, it is recommended to have a special link on the homepage to go to a dedicated page for displaying the diversity data. The summarized information should be clearly presented in tables, diagrams, and graphics. If possible, it may be helpful to compare it to national data for context.

5.3 Governance

Historically excluded groups need to be able to see that there is a place for them within CMOS. Specifically, it is important that all members have equal access to leadership opportunities within the society. It is not enough to aspire for greater diversity within leadership roles; the culture and environment must be welcoming and supportive, which requires dedication and a long-term commitment across the society. CMOS should keep EDIA at the forefront of their work and the survey of the committees shows that CMOS is on the right trajectory.

RECOMMENDATION 5.3.1: EDIA Committee

In the 2021-2024 Strategic Plan, CMOS committed to making equity, diversity, and inclusion a priority objective. As a logical next step, it is therefore recommended that CMOS establish an EDIA Committee. This action was also recommended in the [Implementation Plan](#). Nominations for a chair of the EDIA committee should be solicited from the CMOS membership. If there is more than one nomination, an election may be required. The chair can then solicit nominations for committee members. The EDI Committee should have a diverse membership and the committee members themselves should be interested and knowledgeable about diversity and inclusion matters. The members need to be comfortable advocating for equity and inclusion since they will be responsible for keeping EDIA at the forefront of all CMOS's endeavours.

Several CMOS committees report that they are undergoing a period of renewal of their efforts. They are looking for guidance on how to incorporate EDIA considerations into their Terms of Reference, their committee membership, and their work. The CMOS EDIA Committee should provide this guidance to the committees after their governance review.

The EDIA Committee should review the recommendations presented herein, in addition to generating their own recommendations, and determine priorities, feasibility and the timeline for implementation in accordance with CMOS's resources. The committee may also wish to develop metrics, evaluation measures, or key performance indicators (KPIs) to assess the effectiveness of various actions. Although not adequately addressed in this report, the committee will also be responsible for exploring and incorporating accessibility considerations into all facets of programming and operations. Finally, since EDIA best or preferred practices and CMOS organizational needs



will evolve and change over time, the committee should commit to updating its goals, strategy and its slate of members at regular intervals.

RECOMMENDATION 5.3.2: Governance review

It is recommended that the new CMOS EDIA Committee undertake a review of CMOS governance through the lens of equity, diversity, inclusion, and accessibility (EDIA). For example, the EDIA Committee may consider the extent to which the CMOS Council should transition from committee chair appointments process to a committee chair nominations and elections process to allow for greater inclusivity and transparency. The EDIA committee should also consider whether it should recommend that a certain number of seats on the CMOS Council be allocated to underrepresented groups. Another area to examine is how to include EDIA in the Terms of Reference of the various committees. The EDIA Committee could support the various CMOS committees in updating their Terms of Reference and ensuring that Terms of Reference related to EDIA are consistent across the society.

5.4 Communication

It is vital that CMOS share information widely, transparently, and effectively with its membership as well as externally, beyond the society. CMOS should promote the work it is doing to cultivate a culture in the WWC enterprise that embraces equity, diversity and inclusion and to improve access to the WWC field for underrepresented communities. It is also vital that CMOS members feel that their contributions to the society and the broader WWC enterprise are being recognized and communicated. Developing a communications strategy and “promoting modern, effective Society publications” is part of the CMOS implementation plan. But above all, it is vital that CMOS members feel that they are being heard and that there are clear and dedicated channels for communication between members and the volunteers within the society.

RECOMMENDATION 5.4.1: EDIA Content on Website

In 2020, CMOS improved the inclusivity and accessibility of its website by updating the website and maintaining a mirror website in French. It is recommended that the next website update be an EDIA page where CMOS can highlight the work of this EDI initiative and the subsequent actions taken by the society. Other content for this page could include a summary from the 2023 demographic survey and a link to the recording of the EDIA panel at the 2023 Annual Congress. The EDIA webpage should provide information and links about EDIA training, speakers, and webinars offered nationally, as well as information about EDIA events at the local chapters. CMOS can also add other useful EDIA content such as a list of diversity and inclusion resources or a list of articles. See, for example, the [AGU Journals Special Collection](#) on diversity, equity, and inclusion, or the EDI collection in [FACETS](#), or, from *Nature*, the [Decolonizing science toolkit](#) and the [Disability and ableism in science careers series](#).

RECOMMENDATION 5.4.2: EDIA Content in Publications

As part of its commitment to promote the importance of EDIA, and in support of minority scientists, it is recommended that CMOS examine including more EDIA content in its publications. For example, the *Wave*, the *Bulletin*, or *Atmosphere-Ocean* could commit to publishing EDIA-related articles at regular intervals or to devoting a special collection to EDIA. This could include profiles of or research articles by minority or early career scientists. BIPOC and Indigenous scientists and the work they do has traditionally gone unrecognized, and leveraging CMOS publications is one way to increase their visibility so everyone can learn about the work they do, and so other minority student and early career scientists can see themselves represented in the WWC space (Núñez et al, 2020).

Other societies and journals have devoted entire issues to EDI and/or racism: see, for example, [Physics in Canada Vol 77 No 1](#) (2021), [Nature Vol 610 No 7932](#) (2022), or the [Journal of Chemical Education Vol 99 No 1](#) (2022). In



December 2023, the journal *Oceanography* will publish an EDI issue and the journal, *Arctic Science*, is assembling a special collection on [Indigenous Approaches to Arctic Environmental Sciences](#). CMOS could invite guest editors with expertise in EDIA for a special issue, an approach taken by other journals.

RECOMMENDATION 5.4.3: EDIA-Related Feedback Mechanism

It is recommended that CMOS have a mechanism for members to provide input on EDIA-related matters. This feedback mechanism can serve multiple purposes. First, members can use it to submit their own EDIA priorities for the society since, for example, “Professional societies should not assume what people of colour need” (Morris & Washington, 2017). Second, such a mechanism can provide a forum for feedback and constructive comments about CMOS initiatives and events. Third, it gives members a place to voice their EDIA-related complaints / grievances and have them heard and potentially addressed by the society.

If implemented for this last purpose, it is important to note that in many situations CMOS does not have the authority to respond directly, i.e. many of these complaints can only serve as data-points for measuring how the society is faring with respect to bullying, discrimination, and other forms of unfair treatment. The society can, however, listen to the membership and use the complaints information to identify common themes and guide future EDIA initiatives or to highlight problem areas within the society. As a pilot project, CMOS has investigated using a reporting tool from [HearU](#) for exactly this purpose at the 2023 Congress. Members can anonymously report incidents on the app and HearU will provide a report at the end of the Congress. The resultant report will help CMOS in its work toward fostering a more inclusive environment. This pilot project will give CMOS a chance to assess the effectiveness of this type of product.

In some situations, however, CMOS may have authority to respond to complaints/grievances (e.g., expelling a member(s) from the Congress for violating the Membership Code of Conduct). How and when to respond should be considered on a case-by-case basis and informed by the Membership Code of Conduct.

5.5 EDIA Training, Education, and Professional Development Workshops

On its own, diversity training will not reverse prejudice (Paluck et al, 2021). However, EDIA training can play a part in a broader effort to reduce bias and change workplace culture (Dobbin & Kalev, 2018). In keeping with their traditional function of establishing professional standards, scientific societies have a duty to raise awareness of EDIA issues and to provide education and training (Marin-Spiotta et al, 2020). While many CMOS members have participated in some workplace EDI training (see Appendix H), many have not; and those that have may need to refresh or update their training.

RECOMMENDATION 5.5.1: EDIA Training and Education

As noted by K. Dutt in *Nature Geoscience* (2020), “people who don’t experience a certain type of inequity tend to dismiss it more easily.” Education and training provide a gateway to understanding how others have been thwarted in their efforts to thrive and succeed (Ali et al, 2021). CMOS should consider offering seminars or e-modules to learn about the realities and barriers faced by BIPOC and traditionally marginalized communities. In addition to offering traditional educational and training materials, CMOS should also provide opportunities for sharing and co-production around EDIA; to engage meaningfully with diverse communities to understand their differing priorities and knowledge (Tipton et al, 2022). Care must be taken in both these examples that the speakers are not put in a position of defending their lived experience, only sharing it, to avoid further microaggressions, and speakers should be reasonably compensated for their sharing.



CMOS should consult its members to discern what type of EDIA training would be useful. For example, in response to the January CMOS committee survey, the Student Committee indicated that broad basic EDIA training would be useful to students; but the University and Professional Education Committee pointed out that it would not be helpful to replicate the EDIA training many professionals already receive at their workplace. Some specialty topics in EDIA training will likely emerge as being a priority for specific committees or for the members at large. For example, the Private Sector Committee states that it would be helpful to have training on how to incorporate EDIA in their terms of reference. A needs assessment survey may be helpful in determining what types of EDIA training are of interest, and how to leverage existing training opportunities.

Harassment, discrimination, and interpersonal mistreatment are well-documented as serious problems in the geosciences (Marin-Spiotta et al, 2020). CMOS should look for ways to advocate against such hostile behaviours. For example, CMOS could promote the [training resources](#) available from the ADVANCEGeo Partnership, which is funded by the National Science Foundation ADVANCE program or from the [Unlearning Racism in the Geosciences \(URGE\) program](#). CMOS itself could offer a virtual workshop on [bystander intervention training](#) offered by the ADVANCEGeo Partnership or another source deemed appropriate.

The one area where CMOS should consider mandating training is for its Council members and for its Prizes and Awards and Fellows Committee members. As gatekeepers to the organization and its professional rewards, it is necessary that CMOS leadership understand the role unconscious bias may play in their decisions and choices.

RECOMMENDATION 5.5.2: Professional Development Workshops

Sometimes the barriers to full participation in the discipline are due to a lack of access to professional skills development and career guidance. Therefore, it is recommended that CMOS periodically offer professional development workshops or webinars. As a first step, the 2023 CMOS Congress will host an instructional workshop on how to tailor a CV for a job in government versus research versus industry. CMOS could also consider hosting a grant-writing workshop, an initiative that the Canadian Geophysical Union is launching at their annual meeting this year. A further recommendation is to provide an instructional session on navigating the Government of Canada interview process with insights from the points of view of both the interviewer and the interviewee.

With respect to career guidance, CMOS should consider dedicating part of the website to career resources. BIPOC and other traditionally marginalized groups often lack the networks to acquire valuable information passed along informally, which then can lead to career stagnation (Ali and Prasad, 2021), thus, providing great access to career guidance should be a priority. Such information could include a list of funding or scholarship sources and deadlines, information on how to find student research opportunities, guidance on public sector career pathways or international collaborative possibilities. As an example, the CMOS Student Committee has championed compiling and maintaining a list of Canadian universities with WWC undergraduate and graduate programs, which is [now posted on the CMOS website](#).

5.6 Mentoring and Networking

Professional societies can be an important gateway for students and early career scientists to get to know the people in their field as they seek opportunities and develop careers within their field (Morris & Washington, 2017). At their best, they also provide a forum for the exchange of ideas to advance science and a venue for professional and social networking through local chapters or nationally at the annual meeting. In order to enhance access to the networks that professional societies offer, both CMOS and CWRA have eliminated membership fees for students. By removing this barrier to inclusion, CMOS and CWRA hope to broaden their reach and encourage a more diverse membership. Providing students and early career scientists with more structured mentoring and networking opportunities is also key to fostering a supportive community within the WWC enterprise.



RECOMMENDATION 5.6.1: Early Career Mentoring

Effective mentorship from a senior scientist can be invaluable to a student or an early career scientist. The experienced scientist can help set the early career scientist up for career success by passing along their thoughtful guidance and knowledge. A successful mentor will help a mentee feel welcome and connected to the field. Mentors must be mindful of the potential for a power imbalance in the relationship, and they need to continually strive to create a trusting relationship with the mentee (Callahan et al, 2015). The National Academies [The Science of Effective Mentoring in STEMM](#) project offers a podcast, guide, publications, and events in its ongoing study of the topic.

CMOS has partnered with the AGU to participate in their [Mentoring365 online mentoring platform](#). Mentoring365 matches senior and mid-career mentors within the partner professional societies with mentees, typically students and early career scientists, based on common scientific backgrounds, interests and goals. The online platform provides the opportunity for mentor/mentee matches that are not restricted by geography and it also allows for user-friendly options for scheduling meeting times, goal-setting and progress tracking. CMOS' engagement with Mentoring365 is in its early stages, and a formal launch of the initiative is planned for one month before the 2023 Congress.

CWRA offers an annual free national mentoring program that is designed to support diversity. Newcomers to Canada with international experience in water resources fields who are looking for work in water in Canada are encouraged to apply, as are Canadian undergraduate and graduate students (particularly first-generation university students) looking for information on applying for jobs and early-career development. The mentoring program emphasizes building connections, and group meetings support the development of a broad network that includes both mentees and CWRA mentors. One of the recommendations going forward is that CWRA work closely with its SYP Chapters located at universities across Canada to identify a sub-category of students who might not be aware of the mentoring program.

RECOMMENDATION 5.6.2: Networking

Often in STEM fields, women and minority groups lack a feeling of belonging and feel like they are professionally isolated (Callahan et al, 2015). To develop social inclusion, a professional society can sponsor networks or member resource groups where scientists who share common identities can create a community of support and advocacy (Marin-Spiotta et al, 2023). For example, the Chemical Institute of Canada has a [CWIC Network](#) (Canadians Working for Inclusivity in Chemical Sciences, Engineering, and Technology) which promotes EDI in the chemical sciences across Canada by providing a community for women and other underrepresented groups. A community such as this that takes into account the intersectionality of one's social identities is recommended (Núñez et al, 2020). It is recommended that CMOS consult its members to determine what specialized communities the members think would be valuable.

A potential model for CMOS is the Student and Young Professionals (SYP) Chapters established by the CWRA. The local SYP chapters have the support of a supervisor at the national level and a written handbook to help them get started. It is understood that there is room for improvement. The SYP chapters of mostly students in university settings would benefit from stronger professor connections to provide continuity and advice. The chapters with mostly young professionals could benefit from having increased funds for events and with having someone moderate and encourage conversations on their Slack channel to keep it active and engaging on the national level.

Annual meetings are the primary point of contact for members of professional societies. As such, it is helpful for professional societies to hold a social event at or near the beginning of their annual meetings so that students,



early career scientists, or minority groups can meet others or get reacquainted. The American Meteorological Society has held a Women in Atmospheric Science lunch for over 17 years at its annual meeting. AMS has also held the Coriolis reception for LGBTQ+ friends and allies at its annual meeting for over 12 years.

CMOS and CWRA both hold early career and networking events at or near the start of their annual meetings. Both societies are aware of the issues in centering such an event solely around alcohol (Forrester, 2021), and thus their networking events incorporate an alcohol-free portion to them. In 2023 CMOS is having a hike, a beach clean-up, and a board games cafe night. In 2022 CWRA held a scavenger hunt. Pubs can also be an issue for accessibility since they are often filled with high-top tables (Forrester, 2021).

Given how important networking is to people at meetings, one must not forget to include a networking event for a hybrid meeting (Plackett, 2022). Although it is hard to replicate the experience of face-to-face conversation, there are more and more software apps available each year that can make online networking more enjoyable. Since professional societies like CMOS are likely to continue to hold hybrid conferences for the foreseeable future, they should make sure not to neglect the sphere of networking for its online attendees. CWRA held an online game-playing session and CMOS will use “[Gather Town](#)” at the 2023 Congress.

5.7 Awards, Prizes, Fellowships and Scholarships

Prizes, awards, and scholarships are one of the ways that scientific organizations recognize individuals who have distinguished themselves in their field for their research excellence and their life-long contributions. Besides the appreciation of being recognized with an award from one’s peers, awards can be beneficial to the professional advancement of early-career scientists (Mason et al, 2014). In recent years, scientific organizations have been examining gender and racial/ethnic diversity in past award nominations and winners and endeavoring to improve representation (McFadden, 2018; Myles, 2023).

CMOS offers [eleven awards](#) in three categories for its prizes, awards, and scholarships. Seven of these are named for white male scientists. The Tertia M.C. Hughes Graduate Student Prize honours a female scientist and the other awards have generic names such as the President’s Prize or the CMOS Undergraduate Scholarship. The named awards are all for Anglophone scientists, except for the François J. Saucier Prize in Applied Oceanography. The Weather Network Undergraduate Scholarship is designated to be awarded to a female student. CMOS also accepts nominations for the appointment of fellows of the society.

CWRA offers six annual scholarships. One of them, the Harker/Cameron Women in Water scholarship which is named after two long-serving women members, has existed for several years. In 2022, CWRA established the Golder scholarship for an indigenous student in water resources.

RECOMMENDATION 5.7.1: Types and Names of Awards

CMOS should consider expanding the number of named honours or renaming some of the existing honours to better reflect the diversity of those who have made contributions to the meteorology, oceanography, and hydrology fields in Canada. Clear procedures will need to be stated for retiring an award or establishing a new award. CMOS should also consider establishing a prize or scholarship to be awarded to a member of an underrepresented population and guaranteeing some support for travel to the annual Congress to receive the award. However, CMOS should be careful that the creation of such an award does not decrease the pressure to increase the diversity of nominations for all the other awards.



Prizes and Awards committees play an important role in encouraging a diversity of nominations and ensuring that the selection process is fair and transparent. Based on CMOS archival information, a review of the gender balance² of CMOS award winners from the past 15 years (2007-2021) is presented in Figure 2. The President's Prize shows a relatively equal gender balance due to a shift from male awardees to female awardees around the year 2014; however, for the discipline-specific prizes, awards and medals, less than 10% of the winners are women. This is well below the proportion of female members of CMOS. In terms of winners of graduate student and early career scientist prizes and awards, gender balance is roughly reflective of the overall CMOS membership demographics.

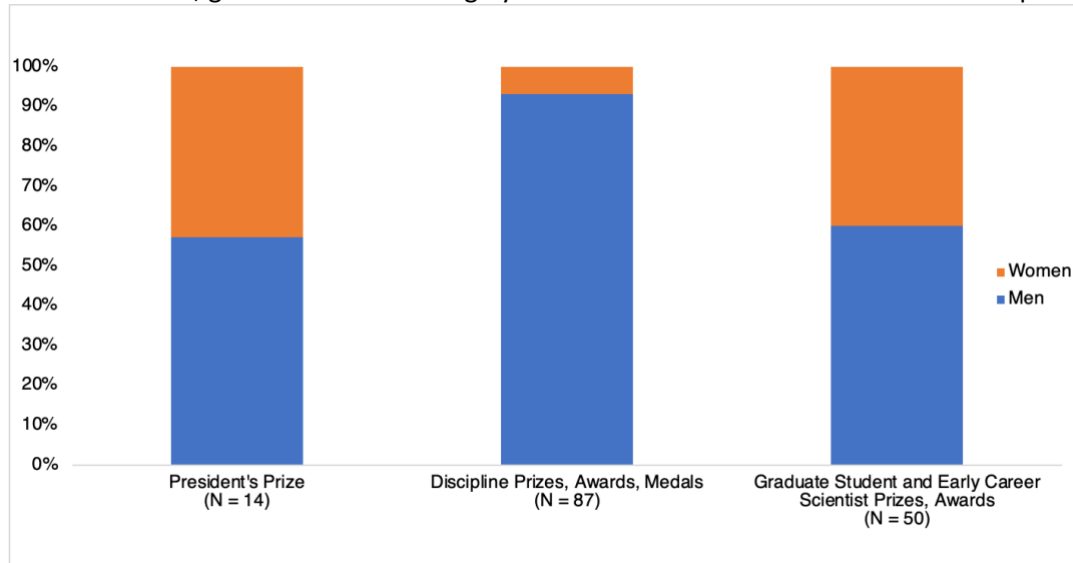


Figure 2: Binary gender balance of CMOS prizes, award and medal winners from 2007-2021.

RECOMMENDATION 5.7.2: Scholarships, Prizes and Awards and Fellows Committee Procedures

The CMOS Prizes and Awards Committee and the Scientific Committee (that administers scholarships) should commit to regularly reviewing its procedures with respect to prize descriptions and criteria, the nomination process, award publicity, and the selection process (Muller-Karger et al., 2022). For example, it is recommended that the Prizes and Awards Committee update its procedures to include considerations of professional ethics, aligned with the Member Code of Conduct (e.g. the [AMS Honours and Awards Policy](#) explicitly refers to the issue of professional ethics) and prepare a set of guidelines for committee members (see the [AMS Guidelines for Awards](#)). Policies and guidelines should be integrated into the committee terms of reference and should be easily accessible on the CMOS website. The committee membership should be diverse and inclusive in composition and have explicit rules about how the committee is formed. In addition, the Prizes and Awards Committee members should be required to complete unconscious bias training (e.g., the [NSERC Canada Research Chairs Unconscious Bias Training Module](#)). This training could be open to any CMOS member for participation. The above recommendations are also relevant to the Fellows Committee.

Another helpful resource is the document published in October 2019 by the AGU Honours and Recognition Committee: [Leading Practices for AGU Honors and Recognition Program](#). In this document, AGU is transparent about how the committee is formed, the process for selecting the award winners, and the professional conduct expected of the committee members.

² The gender was determined from the CMOS archives based on the pronouns that were used to describe the winners. We note that the pronouns used in the archival descriptions may not accurately reflect the winner's gender identity.



In addition, the Prizes and Awards Committee and Fellows Committee should consider requesting that nominations speak to a candidate's contributions to advancing EDIA, if appropriate. For example, the [AMS Guidelines for Submitting an Effective Award Nomination](#) suggest speaking to how the “candidate has modeled the principles of diversity, equity and inclusion and anti-racism, if appropriate”. Moreover, the Fellows Committee should consider an additional explicit evaluation criteria around EDIA. For example, the AMS has added an EDI criterion to their list of [Fellows evaluations criteria](#). Furthermore, many organizations and institutions use key performance indicators (KPIs) in their EDIA efforts, which may be an approach that the Prizes and Awards Committee and Fellows Committee could consider.

RECOMMENDATION 5.7.3: Nomination Publicity and Communications

CMOS members should be encouraged to put forth more BIPOC nominations. A barrier to nomination can occur because racialized people may not have the broad network of connections required to receive nomination support (Ali et al, 2021). CMOS should try to help overcome this barrier by improving publicity and communications and reaching out to networks such as the Canadian Black Scientists Network. Allowing for self-nomination can also increase diversity in the pool of award nominees (Bazner et al, 2021).

It has been suggested that organizations could benefit from a separate canvassing committee as part of the awards process (Holmes et al, 2020). Indeed, AGU has adopted this recommendation in their Honors and Recognition Committee. A canvassing committee operates separately from the selection committee and works to broaden the pool of deserving candidates nominated for the awards. Their accountability must be made clear at the outset.

The Prizes and Awards committee should review the language of the award criteria and the appeal of the announcement. The committee could state they will consider all experience rather than just traditional career-path work and that they will consider how a nominee has modelled the principles of diversity, equity, and inclusion and anti-racism, if appropriate.

Since some awards are Open Prizes and not restricted to CMOS members, the committee should ensure these are well-advertised outside of CMOS to a broader audience. Utilizing a variety of methods, not just email, would help reach more scientists. CMOS should leverage existing and emerging EDIA related partnerships to assist in disseminating opportunities for Prizes, Awards, and Scholarships. If nominations include an answer to the question “How did you hear of this award?”, CMOS could learn which methods are working for getting the award announcements out and which need further effort (Holmes et al, 2020).

With respect to student scholarships, applications from underrepresented communities should be actively encouraged. For example, AMS includes the following language for its student scholarships: *“The Society encourages applications from women, minorities, and disabled students, traditionally underrepresented in the atmospheric and related oceanic and hydrologic sciences.”*

RECOMMENDATION 5.7.4: EDIA Analysis and Reporting

It is often difficult to directly measure progress towards equity, diversity, and inclusivity, but with prizes, awards, and scholarships, scientific organizations can track progress over time by reporting on the gender and racial/ethnic representation of winners.

CMOS should conduct regular analysis and transparent reporting of the gender and racial/ethnic representation of prize, award, scholarship and fellowship winners. Analysis and reporting should be formalized in the Prizes and Awards Committees procedures.



5.8 Annual Congress

Whether in person, virtual, or in a hybrid format, the annual Congress is the main CMOS event at which members from across the country assemble to learn, exchange ideas, and socialize. Scientific meetings are a chance to make new professional connections for knowledge exchange or career development and to reconnect with colleagues from other organizations. Since this scientific meeting is so important to the success of its members, it is vital for the CMOS Congress to be inclusive, accessible, and welcoming to everyone.

RECOMMENDATION 5.8.1: Congress Guidelines

The Congress Committee should regularly revise and maintain the Congress Guideline document so as to include the current best practices in organizing inclusive and accessible meetings. A comprehensive document that can serve as an excellent reference is the 2023 version of the guide to [Inclusive Scientific Meetings: where to begin](#) (Jack-Scott et al, 2023). A Canadian resource is the Editorial in FACETS “So, you want to host an inclusive and accessible conference?” (Barrows et al, 2021). The Congress Committee must act intentionally to ensure issues of equity, diversity, and inclusion are considered through all phases and aspects of the event planning.

RECOMMENDATION 5.8.2: Hybrid Event

The Covid-19 pandemic forced institutions to pivot to online modes of conference delivery. Virtual sessions mean that members who cannot travel for reasons of cost, disability, scheduling conflicts, etc. are still able to engage with the event. However, relationships grow stronger and build trust when people are able to meet face-to-face. This can be especially important for those from marginalized communities who often struggle in isolation and thus are excluded from developing valuable social capital, that is, the career benefits of membership in a professional social group (Callahan et al, 2015). Hybrid events offer participants the choice to attend virtually or in-person. While in upcoming years the Congress will alternate between hybrid and virtual format, CMOS Centres are encouraged to schedule regular in-person and hybrid learning and networking events throughout the year.

RECOMMENDATION 5.8.3: Prioritize Diversity and Accessibility

The Congress Committee should commit to prioritizing diversity and accessibility. From the makeup of the planning committee itself, to the session speakers, to the invited session moderators, the Congress Committee should ensure that there is diverse participation from people of all racialized backgrounds, from differing stages of their careers, and, if known, members of the LGBTQ+ community and persons with disabilities. The annual Congress provides an opportunity for CMOS to highlight the science of marginalized communities.

Effective outreach is also essential. For example, exploring new channels for event promotion that already have a diverse network will help to improve inclusivity. This will also help in building network connections. Effective outreach will also aid in attracting and recruiting members, while fostering a safe environment to make everyone feel welcome, leading to greater success in improving diversity, and repairing the 'leaky' pipeline within STEM (Calhoun et al., 2022).

To help demonstrate CMOS's commitment to equity, diversity, inclusivity, and accessibility there should be an EDIA-focused event at the Congress. This can take the form of a plenary, workshop, or discussion session. CMOS is already planning an EDIA event for the 2023 Congress.

CMOS should outline a budget that will allow it to prioritize diversity, inclusion, and accessibility at the Congress (Barrows et al, 2021). Such expenses may include, for example, sign language interpreters, real-time translators,



note takers, or keynote speaker honoraria, travel, and accommodation. It might be helpful to some attendees if childcare or nursing rooms are available, in addition to quiet spaces for people sensitive to stimuli. CMOS should include requests for accommodations in the Congress registration process.

To assist their commitment to improving diversity, CWRA partnered with the [Urban Society for Aboriginal Youth \(USAY\)](#) and ECCC to support the participation of 36 members of Indigenous communities to attend the 75th Annual CWRA National Conference. Participation in the conference allowed these communities to share their water management project experiences, network with other communities and floodplain mapping professionals, and build technical capacity to address climate impacts on flooding, including inland flooding and sea level rise and coastal erosion in their communities. This support for participation was invaluable in allowing increased dialogue around Indigenous perspectives, need, and expertise on water at the conference. Many attendees noted in the conference evaluation that they found the increased discussion of water from an Indigenous perspective and dedicated sessions valuable.

RECOMMENDATION 5.8.4: Event Feedback

After the annual Congress, feedback about the EDIA session and the Congress in general should be obtained to be able to evaluate successes and identify areas for improvement. The assessment survey should be designed in advance so it can be distributed in a timely manner. The guide to *Inclusive Scientific Meetings* has suggested survey questions. Since shorter surveys are more likely to be completed, the Congress committee could create different surveys for targeted groups at the Congress (new attendees, speakers, audience; etc.) and/or different events at the Congress (EDIA session; mentoring event; etc.) (Barrett, 2020).

RECOMMENDATION 5.8.5: Code of Conduct for Congress

CMOS has a Membership Code of Conduct that was adopted in June 2020. The Congress Committee should develop a supplemental Congress Code of Conduct and ensure it is displayed prominently on the website and in printed materials, if appropriate (Barrows et al, 2021). Congress attendees acknowledge their acceptance of the code of conduct at the time of registration. If there are complaints at the Congress, the Congress Committee should have a plan in place regarding how to respond. See Favaro et al (2016) and Jack-Scott et al (2023) for guidance on what to include in a conference code of conduct and how to incorporate a Safety Officer or other specially trained individual.

5.9 Advocacy in the WWC Enterprise

CMOS has a responsibility to not only enhance EDIA actions within its own society, but also to advocate for EDIA across the broader WWC enterprise.

RECOMMENDATION 5.9.1: Undergraduate Research

The more a student identifies with their STEM field, the more likely they are to continue in it. Research experience as an undergraduate has been shown to be one of the most significant contributors to remaining in a STEM field (Chang et al, 2014; Espinosa, 2011). Sexual minority students are even more likely than heterosexual students to participate in undergraduate research (Hughes, 2018). Thus, CMOS should advocate for universities and research institutes to provide undergraduate research opportunities for BIPOC and 2SLGBT+ students.

**RECOMMENDATION 5.9.2:** Government of Canada-funded Internships

The public sector is a significant employer within the WWC sector and Government of Canada-funded undergraduate and graduate internships are one of the key mechanisms that allow students to transition into a career in the public sector. However, barriers to Government of Canada-funded internships should be addressed to increase the accessibility of these valuable internships to students from underrepresented communities. In particular, the Government of Canada internship eligibility criteria can often be a barrier. For example, eligibility for internships often requires that students be registered in a full-time academic program. Many students, particularly those from racialized communities, need to work part-time to offset university tuition costs. These part-time students may be just as qualified for a particular internship position as full-time students, but they are excluded from applying. The CMOS University and Professional Education Committee should advocate for the removal of such eligibility criteria for student internships.

RECOMMENDATION 5.9.3: Professional Credit for EDIA Contributions

Having been historically excluded for so long, scientists from marginalized groups are now being overburdened with the work of improving the culture of scientific communities. Working on diversity initiatives, mentoring students and early-career scientists, and sitting on various committees as the minority voice are all time-consuming efforts being taken on by minority scientists in addition to their already busy jobs. CMOS should advocate that professional credit or compensation be given to acknowledge the contribution and effort of these individuals to make things better for the future.

RECOMMENDATION 5.9.4: Funding for EDIA Research and Programs

CMOS has been fortunate to receive funding from ECCC to support the activities and research that contributed to this report. However, the short timeline to complete this phase of the project is such that the scope of work has been limited. EDIA research and programs require time for hiring, community consultation, implementation and iteration. In addition, funding for these programs should recognize the evolving nature of this work and allow for flexibility. CMOS should advocate for greater support from funding agencies for EDIA-related research and programs in STEM.

RECOMMENDATION 5.9.5: Indigenous Collaborations and Partnerships

As part of reconciliation, Canadian research funding agencies encourage collaborations and partnerships between researchers and Indigenous communities. Knowledge co-production is a shift in research methodology that results in an exchange of knowledge and skills instead of a one-way transfer of information (Harris et al, 2021). Examples of helpful resources that explain knowledge co-production are [National Inuit Strategy on Research](#) (Inuit Tapiriit Kanatami, 2018), [Setting New Directions to Support Indigenous Research and Research Training in Canada](#) (Government of Canada, 2019), [Towards Reconciliation: 10 Calls to Action to natural scientists working in Canada](#) (Wong et al, 2020), and [Circumpolar Inuit Protocols for Equitable and Ethical Engagement](#) (Inuit Circumpolar Council, 2022).

As climate change progresses, effective and culturally-appropriate adaptation must recognize the importance of partnerships with Indigenous communities and knowledge co-production. Indigenous communities are disproportionately affected by climate change and extreme weather. Given that Arctic regions are warming at a rate of about four times the global average (Rantanen et al. 2022), impacts to Northern infrastructure and traditional hunting, fishing and gathering in Inuit communities are particularly severe. In addition, changes in weather patterns, snow and ice cover are affecting the safety of travel.



Given this context, ArcticNet has developed a [five year research project](#) to understand Inuit community uses and needs for weather, water, ice and climate information and services. The automation of weather and climate observing networks has reduced the presence of trained weather specialists in the North, furthering the need for this research. CMOS has been exposed to this and other Arctic research activities through its involvement with the [Year of Polar Prediction Summit](#) as well as the CMOS Arctic Special Interest Group. In 2022, for the first time, CMOS named two indigenous researchers as Tour Speakers. Robert Way (Queen's University) and Eric Oliver (Dalhousie University) are both of Inuit descent from Labrador (Nunatsiavut). Part of their research includes the bridging of scientific and Inuit knowledge systems. CMOS should work with partner scientific organizations such as ArcticNet and Indigenous partners like ICA to help weather, water, climate (WWC) researchers to develop meaningful partnerships with Indigenous communities and respectfully engage in knowledge co-production.

Environment and Climate Change Canada (ECCC) has created an Indigenous Science Division (the first in the Government of Canada) to assist their scientists in applying an Indigenous lens to science, policy and program activities. CMOS should explore opportunities for guidance and collaboration with the Indigenous Science Division and Dr. Myrle Ballard who is leading this initiative.

CMOS should also put an Indigenous lens on its own activities and explore ways in which CMOS can help bridge knowledge systems and communities. For example, CMOS can encourage the use of Indigenous place names in addition to the Western names, host seminars to educate its membership on Indigenous science, history and rights and showcase examples of successful research outcomes where both sides benefited from knowledge co-production. Furthermore, CMOS has a limited presence in the North and should explore ways to engage Northerners in its programs and partnerships.

CWRA is also increasing the relevance of its work to Indigenous communities addressing water issues by building partnerships with Indigenous-led organizations and looking for ways to provide value to Indigenous members. Increasing Indigenous participation at the largest annual CWRA events, national conferences, is a priority for the CWRA.

5.10 Assistance with EDIA

The work on equity, diversity, and inclusivity is challenging and long-term. This is important for CMOS to recognize going forward given that it is predominantly run by volunteers who donate their time despite often being already stretched to meet the obligations to their own professional positions. Moreover, EDIA work is emotional work for marginalized people to be involved in, and they are often requested to undertake a much greater share of the work (Jimenez et al, 2019). Thus, while it is imperative to include diverse voices within all of CMOS' activities, CMOS must also be mindful not place undue burden on its minority members by over-relying on them to do all the work on a voluntary basis.

RECOMMENDATION 5.10.1: Professional Assistance

CMOS Council and the CMOS EDIA Committee should consider whether a particular EDIA measure they plan to pursue could be completed by a CMOS member on a volunteer basis or if it would be better to engage the help of an external EDIA consultant. Working with professionals alleviates adding 'invisible workloads' onto marginalized members or individuals without compensation. When hiring external professionals, additional consideration should be given to ensuring that they are from diverse backgrounds and groups. This is an effective way of putting EDIA into practice at multiple levels.



An EDIA consultant would be most qualified to review all governance documents and provide suggestions on how to make all CMOS committee policies and decision-making processes more inclusive. An EDIA consultant could assist with preparation of a complete EDIA survey (see Recommendation 5.2.2). An EDIA consultant can help the EDIA Committee identify CMOS's EDIA priorities and develop a timeline for implementing new initiatives. CMOS should pursue additional funding to continue advancing EDIA within the society and across the WWC enterprise.

RECOMMENDATION 5.10.2: Existing EDIA Resources

Where appropriate, CMOS should leverage programs that are already in existence to help associations and scientists increase diversity. For example, Mentoring365 was mentioned above as an initiative by AGU in which CMOS members can participate. CMOS should also explore avenues of partnership with the American Meteorological Society. For example, AMS is developing an Equity Assessment that will include an EDI culture survey to examine the climate of the organization. Other potential resources are, for example, the AGU Landing: Community of Practice, URGE (Unlearning Racism in Geoscience), and the Canadian Centre for Diversity and Inclusion. A list of resources for CMOS follows.

6 Resources

This section summarises the resources mentioned in this report and provides additional helpful resources related to advancing EDIA in the WWC enterprise.

6.1 Guidelines, Administrative & Operational Documents

- [AGU *Diversity and Inclusion Strategic Plan* \(2018\)](#)
- [Leading Practices for AGU Honors and Recognition Program \(2019\)](#)
- [AGU honors and recognition program policies](#)
- [AMS Additional Nomination Resources](#)
- AMS [Framework](#) for the Advancement of Inclusion, Equity, and Justice in the Weather, Water, and Climate Enterprise
- [Circumpolar Inuit Protocols for Equitable and Ethical Engagement](#) (Inuit Circumpolar Council, 2022)
- [CMOS Strategic Plan 2021 - 2024](#)
- [National Inuit Strategy on Research](#) (Inuit Tapiriit Kanatami, 2018)
- [Hosting an inclusive and accessible conference](#) (Barrows et al., 2021)
- [The Ultimate Guide to Conference and Event Surveys](#) (Barrett, 2020)

6.2 Online Resources & Toolkits from Groups Addressing EDIA

- [ADVANCEGeo Partnership](#): Empowering (geo)scientists to improve workplace climate by developing bystander intervention education for department heads, chairs, faculty and grad students to appropriately respond to and prevent harassment, bullying and other exclusionary behaviors in research environments.
- [AGU Landing: Community of Practice](#): Virtual platform that provides opportunities for a broad community of current and aspiring DEI champions to engage in conversation, share resources, build networks, and participate in professional development.
- [Canadian Centre for Diversity and Inclusion](#): Forward-looking social organization with research and learning woven into their operations and programming, tracing how people identify alongside demographic trends within the Canadian workplace to move employers from diversity to inclusion. They help partners be inclusive, free of prejudice and discrimination – and to generate the awareness, dialogue and action for people to recognize diversity as an asset and not an obstacle, with access to various resources on their website.



- Chemical Institute of Canada: [Member Resource Groups](#) provide an opportunity for networking and knowledge mobilization to improve inclusion of underrepresented groups.
- *Nature*: [Decolonizing science toolkit](#)
- [URGE \(Unlearning Racism in Geoscience\)](#): Deepen the Geoscience community’s knowledge of the effects of racism on the participation and retention of People of Color in the discipline; Draw on existing literature, expert opinions, and personal experiences to develop anti-racist policies and resources; Share, discuss, and modify anti-racist policies and resources within a dynamic community network and on a national stage; Implement and assess anti-racist policies and resources within Geoscience workplaces.
- The National Academies: [The Science of Effective Mentoring in STEMM](#) committee systematically compiled and analyzed current research on the characteristics, competencies, and behaviors of effective mentors and mentees in STEMM and developed a practical resource guide for mentoring practitioners to create and support viable, sustainable mentoring support systems.
- [Setting New Directions to Support Indigenous Research and Research Training in Canada](#) (Government of Canada, 2019)
- [Towards Reconciliation: 10 Calls to Action to natural scientists working in Canada](#) (Wong et al, 2020)

6.3 Journals Dedicated to EDI

- [AGU Special Collection of DEI articles](#)
- [FACETS: Collection on EDI](#)
- [Journal of Chemical Education Vol 99, No 1 \(2022\)](#)
- [Physics in Canada Vol 77, No 1 \(2021\)](#)
- [Nature Vol 610, No 7932 \(2022\)](#)

6.4 Platforms & Applications

- [HearU](#): Anonymous feedback mechanism
- [Mentoring365](#)

6.5 Training

- [NSERC Canada Research Chairs Unconscious Bias Training Module](#)

7 Conclusion

The overall objective of this project was to identify gaps, barriers, and initiatives as well as recommended actions to enable a more equitable, diverse and inclusive weather, water and climate enterprise. While many of the recommendations in this Report are directed towards CMOS, it is recognized that CMOS as a professional society comprises members and partners from the various sectors of the “Enterprise”, including government, private sector, academia and the media. It is also recognized that the advancement of weather, water and climate sciences is accomplished through public engagement and a priority focus on youth, students and Early career Scientists.

While this report summarizes the efforts of CMOS as Lead over the six months of this project, this work could not have been completed without the previously established relationships and partnerships with the Project Team, including the Black Environmental Initiative, Canadian Water Resources Association, and most recently, MEOPAR. Furthermore, the partners learned that six months is insufficient time to develop new relationships. The progress made was undoubtedly aided by existing relationships between scientists, environmental justice groups, and organizations supporting underrepresented communities. A substantial amount of volunteer support enabled this work as well.



Finally, the recommendations made as a result of this initiative make it clear that the work is only beginning. Fulfilling the stated objectives will require an ongoing effort by CMOS and the members of the weather, water, and climate enterprise, working with existing partners, developing new relationships and consulting with community members. As a result of this project, we are collectively better positioned to take advantage of future opportunities and to implement recommended actions to advance EDIA.

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Appendices

Appendix A – Visual Report Summary Poster

CMOS
Canadian Meteorological and
Oceanographic Society
SCMO
Société canadienne de météorologie
et d'océanographie

Improving equity, diversity, inclusion, and accessibility (EDIA) in the Canadian weather, water, and climate (WWC) workforce

Goal
Establish the foundation for future action in CMOS and the wider WWC by providing the research and knowledge needed.

Objectives

- 1 Assess gaps, barriers, and initiatives, to make recommendations for improving diversity, inclusion and accessibility of the workforce.
- 2 Enhance interest in STEM by assessing and refining programs and initiatives offered by project partners.

The Report Covers

- CMOS' EDIA Journey
- Research & Community-Based Partner Contributions
- Analysis of EDIA Best Practices
- Actionable Recommendations & Resources

Landscape Analysis
Systemic barriers identified through BEI's BIPOC survey and interviews with:

- 17 early career professionals
- 53 youth participants

CMOS Demographic Survey

- 293 responses = 28% of membership
- Mostly heterosexual (88%) men (69%)
- 14% identified as racialized
- 7% have disabilities
- Around 50% have had EDIA training

Why are Black and Indigenous people underrepresented in the Canadian WWC?

- Lacking exposure to science in early years
- Lacking reflective role models in STEM careers
- Access to opportunities (i.e. scholarships and internships)
- Inequities in eligibility criteria
- Stereotypes and unconscious bias

Recommended Action Areas
Over 50 detailed recommendations for multiple (stakeholders (government, non-profits / societies, educators, institutions) to address EDIA, covering:

- Membership Landscape
- Governance
- Communications
- EDIA Training, Education & Professional Development
- Awards, Prizes, Fellowships & Scholarships
- Mentoring & Networking
- Annual Meetings
- Advocacy within the WWC

Addressing systemic barriers requires:

- More training, especially on unconscious bias
- Expanding science career opportunities for BIPOC youth
- New narrative and standards supporting BIPOC scientists

Read it here:

Next Steps for CMOS

- Establish EDIA Committee
- Mentoring365 Launch
- CWRA Project WET Teacher Training Module
- Relationship building

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Project Partners & Contributors

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Note this poster is subject to minor revisions.



Appendix B - Draft Lesson Plan: Exploring Environmental Racism using an Air Quality Investigation Activity

Context: Poor air quality is a major threat to human health and disproportionately affects racialized communities and developing nations. According to the [World Health Organization](#), “the combined effects of ambient air pollution and household air pollution is associated with 7 million premature deaths annually.” One of the key contributors to poor air quality is particulate matter (PM). PM is harmful to human health because of its ability to breach the body's physical defenses. When inhaled PM10 is able to reach the lungs and PM2.5 can even enter the bloodstream.

Goal: In this activity, students will learn about the sources and types of air pollution, use the PocketLab Air instrument to measure PM and draw connections between air quality and socio-demographics.

Learning Objectives: After this lesson students will be able to:

- Identify the names of different atmospheric pollutants, their common sources, and their associated negative health effects,
- Describe the air quality index and how it relates to atmospheric pollutants, including PM,
- Use an air quality sensor to produce their own data under different conditions,
- Compare their local findings to broader geographical locations,
- Examine the relationship between demographics, socio-economics and air quality across neighbourhoods in their city to learn about environmental racism and injustice.

Introduction: The following resources provide an introduction to the topic of environmental racism, but may not be appropriate for all ages and require varying amounts of time:

- [What is Environmental Racism and How Can We Fight It](#), *World Economic Forum* (if you are time-limited, there is a very short video (2min) on this website)
- [Environmental Racism in Canada](#), *The Canadian Encyclopedia* (multiple case studies)
- [What is Environmental Justice?](#) (4min), *The Centre for Earth Energy and Democracy* (this video only has music, so it's a nice option to be able to talk over and guide a discussion about what the students are seeing in the video).
- [What is Indigenous Environmental Injustice?](#) (5min), *The IEJ Project* (this video provides an Indigenous perspective)
- Show the documentary “There’s Something in the Water” , 2020 (available on Netflix, 1hr 13min, [Link to Trailer](#))
- VICE News documentary [Canada’s Toxic Chemical Valley](#), 2013 (33min)

Materials Required:

- Information to present on common pollutants (e.g. [Let’s Talk Science](#), [The Canadian Encyclopaedia](#), [ClimateBits](#), [PocketLab Notebook](#))
- PocketLab Air sensor(s) – the teacher should ensure the sensors are fully charged in advance of the activity so that the circuit boards are not warm at the start since that could affect the temperature sensing
- Data sheet tables to record supplementary information about testing conditions or testing locations
- Container with a sealable gasket if simulating conditions within the classroom itself (e.g. ones by [Sterlite](#))
- If air sensors are not available, data from publicly available air quality measurements can be examined (e.g. The [Ontario Air Quality Health Index](#))



Activity: The lesson should begin with an explanation of the chemical components of the atmosphere. Then the teacher should explain what the common atmospheric pollutants are and what it means to hear a forecast for “good” or “bad” air quality. Students should be asked to contribute their ideas on the common sources of these pollutants with a focus here on point sources (e.g. factories) and mobile sources (e.g. vehicles) rather than natural sources (e.g. gas seeps or wetlands). The teacher should explain about particle size (PM 10 vs PM 2.5 vs PM 1.0) and why that is important in air quality measurements. Students should learn about the associated health concerns from exposure to pollutants so as to understand the importance of good air quality.

The teacher should then review with the students how to use the PocketLab Air device, which sensor measurements will be recorded, and how the data is displayed and collected. For this activity, the data from the following sensors will be of interest: carbon dioxide, particulate matter, ozone, air quality index, temperature, humidity. The teacher should remind students to make sure they give the sensor adequate time (a few minutes) to settle to ambient conditions before recording the data under each new condition. The PocketLab Air gives data in instant readings and as a running, 10-minute average. The students should be reminded to press “record” and “save” to be able to use and review the data later. As a quick intro to the device and how it functions, students can breathe on the sensor and watch the resultant data quickly respond.

If the activity must take place entirely within the classroom, students can discover how air quality is affected by using the following conditions:

- Indoors with the windows closed
- Indoors with the windows open
- Breathing on the device or, even better, a deep breath into a sealable box with the PocketLab Air sensor placed inside
- Lighting a candle, tealight, or splint in a sealable box and then blowing it out just before quickly closing the lid with the PocketLab Air sensor placed inside
- Spraying an aerosol -- nearby and not directly on the device – such as bug spray, sunscreen, hair spray, or room deodorizer
- Disturbing dust from the carpet or on a bookcase or from chalk

If able to leave the classroom for this activity, then the students should decide where they would like to take measurements with the air sensors to try to get different readings. Suggested locations around the school that students could be guided to include are:

- inside the classroom itself with the windows closed
- inside the classroom itself with the windows open
- inside the kitchen area of the cafeteria
- inside the boiler or furnace room of the school
- outside near the school bus bay or near the street, especially if there is car traffic or it is at drop-off/pickup time
- outside on asphalt
- outside on grass
- outside on loose dry soil (if available)

Once the testing conditions or testing locations have been decided, and before any measurements are taken, the students should be asked to predict the order of the air quality readings from best to worst.

When taking air sensor readings and while waiting for the sensor to adjust to each new ambient condition, students should record the relevant conditions at each location. For example: the number of students in the



classroom, the weather conditions including wind levels and cloud cover, the time of day and date, observations of other nearby activity (leaf-blowers, cars idling, etc).

After the measurements have been collected, the students should compile the results and examine the differences amongst the testing conditions or locations. They should compare the results with their predictions. The students can also look up current local professional air quality measurements to compare with their data.

The teacher should try to put the measurements into context. The teacher can do this by explaining what actions should be taken based on different air quality index measurements (enjoy the outdoors or avoid outdoor activities, etc). Then the teacher can relate the air quality measurements shown on the PocketLab Air measurements to the Canadian national [Air Quality Health Index](#). Also the teacher can show the students a 1kg weight and compare how long it would take to breathe out that much carbon dioxide vs how long it takes a car or a plane to produce that much mass.

The students can be shown other public air quality measurements from around Canada and the world as collected and provided online by each province through the ECCC [National Air Pollution Surveillance program](#) and the provincial airsheds, or via citizen science data collections such as the [PurpleAir Map](#), or the [Local Haze app](#), or the [Plume Labs app](#), etc. Ask what the students notice about air quality in other regions of Canada or in other countries. The teacher should lead a discussion on other factors that can affect air quality such as air turbulence, the seasons, weather, humidity, and physical geography.

Depending on the age of the students, the teacher can then explore the topic of environmental racism and injustice to varying degrees by showing students geographic data related to socio-economics and comparing that with the location of major sources of pollution. The [HealthyDesign.city](#) app provides some spatial socio-demographic information for a selection of Canadian cities. The teacher can then lead the students in a discussion about this injustice and explore students' ideas for rectifying the imbalance or strategies for mitigating the pollution effects.

Ideas for extending the activity:

- Repeat the measurements over a series of days or even weeks
- Repeat the measurements at different times of the day
- Choose different geographic locations off school property where pollution levels are likely to be higher than at school and take measurements at these places; for example: near a highway, a factory or other industrial site, a construction site, a plowed field, etc.
- Share stories of racially diverse scientists who work in the area of air quality or environmental injustice (e.g. Ingrid Waldon, Robert Bullard)
- Share photos of the racially diverse students performing these science activities to inspire others



Appendix C - Summary of the Fourth Symposium on EDIA at the AMS Annual Meeting

The American Meteorological Society's Annual Meeting was held in Denver, CO, from 8-12 January. The meeting was hybrid, with many sessions recorded for remote access. There were several high profile Presidential Sessions (hosted by AMS President) with an EDIA theme, especially Session 3: Indigenous and Earth Systems Science Partnerships for Co-Creating Knowledge. There was noticeable diversity amongst the speakers and moderators in the sessions attended by CMOS. Furthermore, there were a number of other [considerations](#) related to Equity, Diversity, Inclusion and Accessibility, including:

- All attendees must adhere to the [Code of Conduct](#)
- Facilities: accessible to people with disabilities; all gender washrooms; special rooms such for lactation, meditation or prayer
- Badge options that include pronouns and languages spoken
- Advice to presenters to make presentations more accessible
- A variety of networking events for underrepresented communities

The Symposium featured at least two dozen events, including plenary panel discussions, oral and poster presentations, workshops, and social/networking activities. Attendance and subsequent access to the recorded sessions were helpful for identifying issues, best practices, and recommendations. A broad range of themes were discussed, and an overview of relevant events follows.

Data and Knowledge Systems

There was an interesting discussion about the relationship between data (unanalyzed), information (processed data), knowledge (developed from experience and information), and wisdom (human judgments based on knowledge). The wisdom of indigenous knowledge keepers is based on generations of observations and experiences. A combination of locally sourced indigenous knowledge and remotely sensed information provides a rich source of information. Recognizing and respecting indigenous knowledge is important, and sometimes it is sacred. NASA is leading a government wide initiative to Transform to Open Science ([TOPS](#)). There is a significant EDIA dimension to this initiative to ensure underrepresented communities are engaged, and science is Findable, Accessible, Inter-Operable, and Re-Usable. The objective is to ensure transparency, equity and integrity of research reviews; and to ensure that Open Science is accounted for in evaluations of researchers.

Indigenous collaboration

Several conversations were had regarding relationship building, which requires mutual trust and respect. The support of community partnerships requires both time and funding. The time and cost associated with the development of these collaborations must be respected and supported by institutions. In addition, research initiatives should take into account indigenous peoples' priorities, and the process should be co-governed.

An Equitable Weather, Water and Climate Enterprise

This topic was discussed in at least three sessions, and themes included:

- Accessibility (testimonials of initiatives and reasonable accommodations that facilitate job application, job performance, and job satisfaction).
- Initiatives like “Buddy” and Mentoring programs.
- Analyzing factors that affect retention of underrepresented employees, such as:
 - Work-life balance & shift work
 - Environment can be toxic and discriminatory, and more flexible positions are difficult to find
 - Lack of support & not feeling valued by supervisors
- Programs to improve service delivery (including weather warnings) to vulnerable and marginalized communities.



Appendix D - BEI Survey and Interview Questions (BIPOC Youth and Professionals)

BEI Youth Survey

1. Which origin(s) do you closely identify with?
 - African
 - Caribbean
 - Black
 - First nations
 - Inuit
 - Indigenous
 - Native American
 - Mixed Ethnicities
 - Asian
 - Other (non-white)

2. How old are you?

3. What gender do you identify yourself as?
 - Male
 - Female
 - Trans - female to male
 - Trans - male to female
 - Intersex
 - Prefer not to say

4. Where are you located? (City and Neighbourhood)

5. What's your current employment status? Select all that apply.
 - Employed
 - Unemployed
 - Seeking Opportunities
 - Intern
 - Student
 - Other

6. What is the highest degree or level of education you have completed?
 - Middle school
 - High school
 - Bachelor's Degree (e.g., BA, BSc, BEng, etc.)
 - Master's degree
 - Training program
 - Other (please specify)

7. How old were you when you were first exposed to education in sciences?
 - 5-10
 - 10-15
 - 15-20
 - 20-25



8. Science has always been my preferred subject in school?

- Strongly agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree

9. Why? Explain your answer to question 8.

10. I have had access to good science education in my life.

- Strongly agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree

11. People in my network (friends and family) have encouraged me to be interested in careers in sciences.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

12. Black, brown and Indigenous people are naturally gifted in sciences. Strongly agree

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

13. Why is it your opinion that BIPOC people are less naturally gifted in sciences?

14. It is widely believed in society that Black, Brown and Indigenous people are not naturally gifted in sciences.

- Yes
- No

15. I think sciences are useful to my community.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree



16. Which of the following science careers have you ever considered... or would consider?

- Medical doctor
- Nurse
- Meteorologist
- Engineer
- Hydrologist
- Geologist
- Astronomer
- Oceanographer
- Environmental scientist
- Chemist
- Biologist
- Other

17. Why? Explain your answer to question 16.

18. Weather, water and climate sciences are some of the coolest science disciplines.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

19. I find sciences to be a very difficult topic. It's not for me.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

20. I understand what Weather, water and climate sciences are.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

21. I think I can pursue a career in sciences.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

22. I think I can pursue a career in weather, water and climate sciences.

- Yes
- No

23. Why? Explain your answer to question 22.



24. I am interested in a career in water, weather and climate sciences.
- Strongly agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
25. I can name at least 3 Black, Brown or Indigenous scientists (without googling).
- Yes
 - No
26. I am often exposed to scientists who look like me.
- Yes
 - No
27. My school did enough to better prepare me for a career in sciences.
- Strongly agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
28. Do you think that race could be a barrier to accessing internships, and employment with training opportunities within the science sector?
29. What do you think schools should do to help improve or better the opportunities for BIPOC people to engage in sciences?
30. What do you think the government and educational institutions should do to help improve or better the opportunities for BIPOC people in sciences?
31. What do you think BIPOC communities should do to have more people in sciences?
32. What do you think society as a whole should do to increase diversity in sciences?
33. Please provide any details like links to social media accounts to help us verify that you are truly a BIPOC youth in Canada.
34. Please confirm your email for a chance at winning a \$30 gift card.
35. Please indicate how you heard of this survey. If you were referred by a partner organization, please list their names below.



BEI Survey of BIPOC professionals in STEMS, Weather, Water and Climate Sciences

The results of this survey will directly inform the development of new programs, projects and initiatives by the Canadian meteorological and oceanographic society, the Canadian Water Resources Association, the Black Environmental Initiative and Environment and Climate Change Canada.

1. Where are you located? (city)
2. Which city did you grow up in?
3. Which origin(s) do you closely identify with?
 - Asian
 - African
 - Caribbean
 - Black
 - Indigenous
 - First Nations
 - Inuit
 - Native American
 - Mixed Ethnicities
 - South Asian
 - Other
4. Indigenous professionals are underrepresented in my sector.
 - Strongly agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
5. Black professionals are underrepresented in my sector.
 - Strongly agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
6. How old were you when you were first exposed to education in sciences?
7. Science has always been my preferred subject in school?
 - Strongly agree
 - Agree
 - Neither Agree nor Disagree
 - Disagree
 - Strongly Disagree
8. I have had access to good science education in my life.
 - Strongly agree
 - Agree
 - Neither Agree nor Disagree
 - Disagree
 - Strongly Disagree



9. People in my network (friends and family) have encouraged me to be interested in careers in sciences.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

10. Black, brown and Indigenous people are naturally gifted in sciences. Strongly agree

- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

11. Most people think that Black, Brown and Indigenous people are naturally gifted in sciences (including weather, water and climate science).

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

12. I think sciences (especially weather, water and climate sciences) are useful to society.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

13. I think sciences (especially weather, water and climate sciences) are useful to my community.

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

14. I have always found sciences to be a very difficult discipline

- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly Disagree



15. I have always found weather, water and climate sciences to be a really cool discipline.
- Strongly agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
16. I have always thought I could pursue a career in sciences.
- Strongly agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
17. I always wanted to pursue a career in sciences (especially in weather, water and climate sciences).
- Strongly agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
18. I can name at least 3 Black, Brown or Indigenous scientists (without googling).
- Yes
 - No
19. I am often exposed to scientists who look like me.
- Strongly agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
20. My school could have done better prepare me for a career in sciences.
- Strongly agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
21. The government could have done better prepare me for a career in sciences.
- Strongly agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree



22. Which science discipline best describes your area of specialization?

- STEM (Science, technology, engineering, mathematics)
- Weather, water, and climate sciences
- Environmental Sciences

23. In a few words, could you express why your particular discipline in science became of interest to you?

24. Do you feel that race is a barrier to accessing internships, and employment with training opportunities within the science sector?

- Yes, it is a barrier
- No, Not a barrier
- I don't know
- I don't care

25. Do you feel that your gender is/was a barrier to accessing internships, and employment with training opportunities within the science sector?

- Yes, it is a barrier
- No, Not a barrier
- I don't know
- I don't care

26. Are there factors in the science (including weather, water and climate science) industry that are making it harder for diverse people to succeed?

27. What do you think schools should do to help improve or better the opportunities for BIPOC people in sciences?

28. What do you think the government should do to help improve or better the opportunities for BIPOC people in sciences?

29. What do you think industry should do to help improve or better the opportunities for BIPOC people in sciences?

30. What do you think BIPOC communities should do to have more people in sciences?

31. What do you think society as a whole should do to increase diversity in sciences?

32. Please enter details on your contact information (city, email) below if you would be interested in offering a video testimonial.

33. Do you have any important comments you should not share in previous comments?



Appendix E - Recommendations Addressing Systemic Barriers

Domain	Recommendation	Action
Education Guidance	Engage school guidance professionals	Focus on unconscious bias training for guidance counselors and teachers in high schools who are involved in advancing EDIA in STEM.
		Promote unconscious bias training for post-secondary guidance counselors, administrators, and support staff.
Educational/Academic Institutions & Employees	Expand science career opportunities for BIPOC youth	Distribute STEM promotional materials to BIPOC high school students highlighting successful, BIPOC professionals across a diversity of STEM fields.
		Seek out partnerships with organizations that promote diversity in the science field and offer educational and career guidance to students and invite for school visits (e.g. "Scientists in Schools", The Canadian Black Scientists Network)
		Hire diverse teachers and professors that look like the students.
		Create opportunities to showcase contributions of BIPOC scientists. Include these opportunities within the core teaching plan and not as a specialized or elective course or just during certain times of year (e.g. Black history month). Focus on the positive scientific contributions of these scientists, not just the hardships they had to overcome.
		Create more paid opportunities in STEM for youth (e.g., scholarships, internships, entrepreneurial accelerators, etc.).
Government, Academic Institutions & Society	Change societal standards with the "Black and Indigenous scientist" narrative	Invest in organizations, initiatives, or projects that create a positive association between Black and Indigenous people of all genders, and the sciences.
		Invest in education and creative modalities of exposure
		Reject negative stereotypes; Black and Indigenous people are equally as gifted in the sciences as other demographics; use story-telling, public education, and fund organizations dedicated to this cause.
	Invest in inclusive gender-informed initiatives	Move beyond the gender binary (i.e. men and women)
		Take into account all genders and their respective and collective outcomes for outreach and initiatives.
Researchers	Address diversity within the "leaky pipeline"	Create more opportunities to retain all talented early career scientists; foster a supportive and inclusive environment to improve retention; enable networking, mentorship, and collaboration between diverse scientists and recognize and highlight their scientific achievements.



Appendix F - Recommendations for CMOS and Similar Groups

Domain	Recommendation	Action
Membership Landscape	Demographic Survey	Integrate collection of demographic data in membership renewal process.
	EDI(A) Survey	Integrate EDIA questions into membership renewal process / survey, or conduct survey to understand attitudes towards EDIA and needs of the CMOS membership.
	Communicate Results	Ensure transparency of membership by clearly communicating results and making data available online.
Governance	EDIA Committee	Establish a qualified and balanced EDIA committee to: review and implement recommendations; determine priorities and feasibility based on available resources; develop evaluation metrics, measures and key performance indicators (KPIs); regularly update EDIA strategy; advise governance review within and outside of CMOS.
	Governance Review	Conduct a governance review focused on EDIA, including assessing CMOS council appointments, composition, and ToR.
Communication	Website	Uphold French translation of website; add EDIA webpage to highlight initiative and related actions, demographic survey results, EDIA resources (i.e. training opportunities, guideline reports / documents and literature / articles) and events (i.e. webinars).
	Publications	Include EDIA content in CMOS publications; publicize special EDIA issues in other journal publications; highlight profiles of minority and early career scientists in the CMOS bulletin to leverage their profiles.
	Feedback Mechanism	Use a mechanism, like HearU, to anonymously intake EDIA related feedback from CMOS members to submit suggestions, comments and complaints. Grievances should be reported and can serve as measures of performance overtime.
EDIA Training, Education & Professional Development Workshops	EDIA Training & Education	Offer seminars, e-modules and engagement opportunities to learn about systemic inequities faced by marginalized communities, ensuring speakers are compensated and protected against microaggressions.; consult membership on training EDIA needs via survey; leverage existing training opportunities to avoid duplication of efforts; mandate council members and review committees in 'gatekeeper' positions to have unconscious bias training.
	Professional Development Workshops	Offer professional development workshops and webinars focused on addressing known barriers (i.e. tailoring CVs; grant writing; navigating interviews); share information about career resources and opportunities with members, including funding and scholarship information, research and collaboration opportunities.
Mentoring & Networking	Early Career Mentoring	Match senior and mid-career scientists with early career scientists and students to provide mentorship, using platforms like Mentoring365; remove membership fees for students; participate in outreach to recruit diverse voices into the society.
	Networking	Sponsor networks or member resource groups to grow community networks; participate in Student and Young Professional (SYP) Chapters to grow or forge connections and provide access to funding opportunities; engage with SYP on Slack; hold social events for students, ECR and minority groups can network; provide alcohol-free networking events (i.e. hike, games, non-alcoholic beverages); host hybrid and virtual networking opportunities using innovative platforms (i.e. Gather).
Awards, Prizes, Fellowships & Scholarships	Types & Names of Awards	Diversify names of awards to reflect diversity of contributions in the WWC; establish procedures for retiring or establishing a new award; establish a prize or scholarship specifically for members of underrepresented groups.
	Prizes and Awards & Fellows Committee	Ensure prize and award review committees have fair and transparent selection processes, regularly reviewing procedures to ensure balance among diversity in award recipients; Ensure committee is diverse and qualified by completing unconscious bias training; request



	Procedures	nominations speak to candidate's contributions to advancing EDIA; standardize evaluation criteria with explicit criteria for EDIA.
	Nomination Publicity & Communications	Advertise and promote opportunities with networks outside of membership to attract a more diverse pool of candidates; consider a canvassing committee as part of the award process; allow for self-nominations; review language and criteria to consider all experience and how the nominee has modeled principles of EDIA.
	EDIA Analysis & Reporting	Conduct regular analysis and transparent reporting of genres and racial/ethnic representation among prize, award and scholarship fellowship winners.
Annual Congress	Congress Guidelines	Regularly revise and update Congress Guidelines according to EDIA best practices.
	Hybrid Event	Host Congress as a hybrid event for both in-person and virtual participation.
	Prioritize Diversity & Accessibility	Ensure diversity and accessibility are incorporated into the makeup of the planning committee, session speakers, moderators, and participation; host EDIA focused event at the Congress (i.e. plenary, workshop or discussion) and highlight science from marginalized communities; allocate budget for sign language interpreters, real-time translators, note takers, speaker honoraria, travel and accommodations; provide childcare and quiet spaces; incorporate accommodation considerations at the time of registration.
	Event Feedback	Collect feedback on EDIA session, and in general, to evaluate success and areas of improvement in a timely manner.
	Code of Conduct	Develop Code of Conduct for the Congress following the Member's Code of Conduct; ensure participants are informed of the CoC, requiring signature at the time of registration; develop a plan on how to address grievances during the conference with incorporation of a Safety Officer or specially trained individual.
Advocacy in the WWC Enterprise	Undergraduate Research	Advocate for universities and research institutes to provide undergraduate research opportunities for BIPOC and 2SLGBTQ+ students.
	Government of Canada-Funded Initiatives	Reevaluate eligibility criteria for Federal internships addressing barriers like full-time enrolment in an academic program full-time; CMOS University and Professional Education Committee should advocate for the removal of such eligibility criteria for student internships.
	Professional Credit for EDIA Contributions	Advocate that professional credit or compensation is given to acknowledge the contribution and effort of individuals working to improve EDIA in the future.
	Funding for EDIA Research & Programs	Provide adequate time, funding, and flexibility for EDIA research; CMOS should advocate for greater support from funding agencies for EDIA-related research and programs in STEM.
	Indigenous Collaboration & Partnerships	Partner with scientific organizations such as ArcticNet and indigenous partners like ICA to build working partnerships with Indigenous communities and respectfully engage in knowledge co-production; explore collaboration with the Indigenous Science Division of Environment and Climate Change Canada; apply an indigenous lens on activities to bridge knowledge systems and engage with Northern communities in programming and partnerships; encourage the use of Indigenous place names in addition to Western names; showcase successful examples of co-producing research and their outcomes; ensure early dialogue and how to share knowledge in meaningful ways.
Assistance with EDIA	Professional Assistance	Engage professional EDIA experts (i.e. consultants) where appropriate to reduce over-relying on members or volunteers; pursue additional funding to compensate individuals doing this work and to advance this initiative.
	Existing EDIA Resources	Leverage existing programs; explore new partnerships; provide access to relevant resources.



Appendix G – CMOS Demographic Survey Questions (English and French versions)

Introduction

The advancement of equity, diversity, and inclusion (EDI) in the weather, water, and climate enterprise is key to “ensuring that everyone everywhere is able to participate in and benefit from the science and services of the enterprise”¹. The Canadian Meteorological and Oceanographic Society (CMOS) has recognized the importance of promoting EDI in its recent [strategic plan](#) and is currently undertaking a review of its policies and practices related to EDI. As a first step, CMOS is seeking to better understand the diversity of its membership through a voluntary and anonymous survey.

The purpose of this survey is to establish the demographics of the CMOS membership. The responses you provide will assist CMOS in prioritizing EDI initiatives and assessing progress towards greater diversity within the weather, water, and climate enterprise.

The survey is comprised of about 15 questions that will take approximately 5 minutes or less to complete. As stated above, your participation in this survey is voluntary and anonymous. Should you wish to remove your consent while completing the survey, simply shut the browser tab or window and your responses will not be included.

The survey results will be made available to the CMOS membership in a future report. The survey results may be published in a professional journal and may be presented at scientific meetings. Repetition and expansion of the survey in future years will aid in evaluating the effectiveness of various efforts CMOS makes to improve the diversity of its membership.

Data Privacy and Confidentiality Statement:

[CMOS Privacy Policy](#)

[Momentive Privacy Notice](#) states that any personal data collected from this survey may be transferred to various countries, including the United States and other locations Momentive has offices.

¹Tipton, E., L. White, and P. Higgins, 2022: Framework for the Advancement of Inclusion, Equity, and Justice in the Weather, Water, and Climate Enterprise. An AMS Policy Program Study. The American Meteorological Society, Washington, D.C.

*Do you consent to take part in this survey?

- Yes
- No

*Are you currently a member of CMOS?

- Yes
- No

Section I: Work and Education

In which province or territory do you primarily live?

- | | |
|---|--|
| <input type="radio"/> Alberta | <input type="radio"/> Ontario |
| <input type="radio"/> British Columbia | <input type="radio"/> Prince Edward Island |
| <input type="radio"/> Manitoba | <input type="radio"/> Quebec |
| <input type="radio"/> New Brunswick | <input type="radio"/> Saskatchewan |
| <input type="radio"/> Newfoundland and Labrador | <input type="radio"/> Yukon |
| <input type="radio"/> Northwest Territories | <input type="radio"/> Outside of Canada |
| <input type="radio"/> Nova Scotia | <input type="radio"/> Prefer not to answer |
| <input type="radio"/> Nunavut | |



Which of the following best describes your current primary position or the one you had within the last three months?

- Undergraduate student
- Graduate student
- Postdoctoral researcher
- Professor
- Professor Emeritus
- Sessional or Adjunct Instructor
- High school, CEGEP, or college teacher/professor
- Government or public service employee
- Research institute employee
- Industry employee
- Media employee
- Not-for-profit employee
- Self-employed
- Retired from employment
- Unemployed
- Other (please specify)
- Prefer not to answer

Which field most closely describes your area of work?

- Meteorology
- Oceanography
- Hydrology
- Prefer not to answer

Which of the following describes your specific interests in Meteorology? Select all that apply.

- Agricultural & forest meteorology
- Air Quality
- Arctic
- Aviation
- Atmospheric Chemistry
- Climate
- General
- Global
- High atmosphere
- Hydrometeorology
- Ice
- Mesoscale meteorology
- Operational meteorology
- Physical
- Presentation
- Satellite
- Other (please specify)
- Prefer not to answer

Which of the following describes your specific interests in Oceanography? Select all that apply.

- Biologic
- Climate
- Coastal
- Fish
- Ice
- General
- Global
- Physical
- Other (please specify)
- Prefer not to answer

Which of the following describe your specific interests in hydrology? Select all that apply.

- General hydrology
- Other (please specify)
- Prefer not to answer



What is the highest level of education that you have completed?

- Graduated high school or earned a GED
- Attended College/CEGEP but did not earn a certificate, diploma, or degree
- Attended University but did not earn a degree
- Completed a College/CEGEP certificate or diploma
- Bachelor's Degree (e.g., BA, BSc, BEng, etc.)
- Professional degree (e.g., Medicine, Law, etc.)
- Master's degree
- Doctoral Degree
- Post-doctoral training
- Other (please specify)
- Prefer not to answer

In which country did you obtain this certificate, diploma, degree, or training?

In what year did you receive this certificate, diploma, or degree?

Section II: Demographics

In which age range are you?

- 18-24
- 25-34
- 34-44
- 45-54
- 55-64
- 65+
- Prefer not to answer

Which of the following terms best describes your gender identity? Select all that apply.

The following definitions are taken from the [Government of Canada Gender and sexual diversity glossary](#).

- Genderfluid** – Referring to a person whose gender identity or expression changes or shifts along the gender spectrum
- Genderqueer** – Referring to a person who challenges social norms regarding gender with their identity, their gender expression and their sexual practices
- Man** (cisgender, trans) – Cisgender refers to a person whose gender identity aligns with their sex assigned at birth. Trans refers to transgender people, transexual people and gender-diverse people
- Nonbinary** – Referring to a person whose gender identity does not align with a binary understanding of gender such as man or woman
- Questioning** – Referring to a person who is uncertain of their own gender identity or sexual orientation
- Two-Spirit** – Referring to a North American Indigenous person who embodies both female and male spirits or whose gender identity, sexual orientation or spiritual identity is not limited by the male/female dichotomy
- Woman** (cisgender, trans) – Cisgender refers to a person whose gender identity aligns with their sex assigned at birth. Trans refers to transgender people, transexual people and gender-diverse people
- Prefer to self-describe
- Prefer not to answer



Do you identify as trans or consider yourself to be a part of a trans community?

- Yes
- No
- Not sure
- Prefer not to answer

Which of the following terms best describe your sexual orientation? Select all that apply.

- | | |
|---|---|
| <input type="radio"/> Asexual | <input type="radio"/> Queer |
| <input type="radio"/> Bisexual | <input type="radio"/> Questioning |
| <input type="radio"/> Gay | <input type="radio"/> Two-Spirit |
| <input type="radio"/> Heterosexual / Straight | <input type="radio"/> Prefer to self-describe |
| <input type="radio"/> Lesbian | <input type="radio"/> Prefer not to answer |
| <input type="radio"/> Pansexual | |

Do you identify as a racialized person / person of colour?

The Ontario Human Rights Commission defines racialization as a process by which societies construct races as real, different, and unequal in ways that matter and affect economic, political, and social life.

- Yes
- No
- Not sure
- Prefer not to answer

Please indicate which of the following terms best describe your racial identity. Select all that apply.

The definitions of Race and Ethnic Groups are from the Government of Ontario Anti-Racism Directorate “Data Standards for the Identification and Monitoring of Systemic Racism.”

- Black (e.g., African, Afro-Caribbean, African-Canadian descent)
- East Asian (Chinese, Korean, Japanese, Taiwanese descent)
- Southeast Asian (Filipino, Vietnamese, Cambodian, Thai, Indonesian, other Southeast Asian descent)
- South Asian (e.g., East Indian, Pakistani, Bangladeshi, Sri Lankan, Indo-Caribbean, etc.)
- Indigenous (First Nations, Métis, Inuit descent)
- Latino/a/x (Latin American, Hispanic descent)
- Middle Eastern (Arab, Persian, West Asian descent, e.g. Afghan, Egyptian, Iranian, Lebanese, Turkish, Kurdish, etc.)
- White (European descent)
- Prefer to self-describe
- Prefer not to answer

Do you identify as a person with a disability?

Persons with disabilities include those who may experience barriers to full participation in society as a result of long-term, temporary, or episodic physical, mental/emotional, sensory, or learning disabilities, including those caused by chronic health conditions. It should also be noted that the social model of disability recognizes that disability is not created by any medical or physical condition, but rather by societal barriers. A disability may be evident or non-evident.

- Yes
- No
- Prefer not to answer



Please indicate which of the following best describe your disability/ies. Select all that apply.

- Attention deficit and hyperactivity disorder (ADHD)
- Autism spectrum disorder (ASD)
- Chronic health condition (e.g., Auto-immune conditions, Crohn's disease, diabetes, cancer, etc.)
- Concussion / head injury
- Learning disability (LD)
- Mental health condition (e.g., schizophrenia, depression, anxiety disorder, bipolar disorder, PTSD, etc.)
- Mobility or functional disability
- Sensory disability (e.g., vision or hearing)
- Temporary disability/injury (e.g., broken bone)
- A disability not listed (please specify)
- Prefer not to answer

Have you received training on equity, diversity, and/or inclusion at your work or study place?

- No, it is offered but I haven't been able to participate
- No, nothing is offered
- Unsure
- Prefer not to answer
- Yes, I have participated (please describe in brief)

Thank you for participating in this survey for CMOS. If you have recommendations on how to improve this survey to collect accurate and inclusive demographic information, please use the textbox below for your comments.

Étude démographique de la SCMO 2023

Introduction

La promotion de l'équité, de la diversité et de l'inclusion (EDI) dans l'entreprise de la météorologie, de l'eau et du climat est essentielle pour « s'assurer que tout le monde, ou qu'il soit, est en mesure de participer à la science et aux services de l'entreprise et d'en bénéficier ». La Société canadienne de météorologie et d'océanographie (SCMO) a reconnu l'importance de promouvoir l'EDI dans son récent [plan stratégique](#) et entreprend actuellement un examen de ses politiques et pratiques liées à l'EDI. Dans un premier temps, la SCMO cherche à mieux comprendre la diversité de ses membres au moyen d'un sondage volontaire et anonyme.

Le but de ce sondage est d'établir les données démographiques des membres de la SCMO. Les réponses que vous fournirez aideront la SCMO à prioriser les initiatives d'EDI et à évaluer les progrès vers une plus grande diversité au sein de l'entreprise de la météorologie, de l'eau et du climat.

Le sondage comprend une quinzaine de questions auxquelles il faudra environ 5 minutes ou moins pour répondre. Comme indiqué ci-dessus, votre participation à ce sondage est volontaire et anonyme. Si vous souhaitez retirer votre consentement pendant que vous répondez au sondage, il vous suffit de fermer l'onglet ou la fenêtre du navigateur et vos réponses ne seront pas prises en compte.

Les résultats du sondage seront mis à la disposition des membres de la SCMO dans un prochain rapport. Les résultats du sondage pourraient être publiés dans une revue professionnelle et être présentés lors de réunions scientifiques. La répétition et l'élargissement du sondage dans les années à venir permettront d'évaluer l'efficacité des divers efforts déployés par la SCMO pour améliorer la diversité de ses membres.



Déclaration de confidentialité et de protection des données

[Politique sur la protection des renseignements personnels de la SCMO](#)

L'[avis de confidentialité de Momentive](#) indique que les données personnelles recueillies dans le cadre de cette enquête peuvent être transférées dans différents pays, y compris aux États-Unis et dans d'autres pays où Momentive possède des bureaux.

¹Tipton, E., L. White, and P. Higgins, 2022: Framework for the Advancement of Inclusion, Equity, and Justice in the Weather, Water, and Climate Enterprise. An AMS Policy Program Study. The American Meteorological Society, Washington, D.C.

* Consentez-vous à participer à ce sondage?

- Oui
- Non

* Êtes-vous actuellement membre de la SCMO?

- Oui
- Non

Section I: Travail et études

Dans quelle province ou territoire habitez-vous principalement?

- | | |
|---|---|
| <input type="radio"/> L'Alberta | <input type="radio"/> Le Québec |
| <input type="radio"/> La Colombie-Britannique | <input type="radio"/> La Saskatchewan |
| <input type="radio"/> L'Île-du-Prince-Édouard | <input type="radio"/> Terre-Neuve-et-Labrador |
| <input type="radio"/> Le Manitoba | <input type="radio"/> Les Territoires du Nord-Ouest |
| <input type="radio"/> Le Nouveau-Brunswick | <input type="radio"/> Le Yukon |
| <input type="radio"/> La Nouvelle-Écosse | <input type="radio"/> À l'extérieur du Canada |
| <input type="radio"/> Le Nunavut | <input type="radio"/> Préfère ne pas répondre |
| <input type="radio"/> L'Ontario | |

Lequel des énoncés suivants décrit le mieux votre poste principal actuel ou celui que vous avez occupé au cours des trois derniers mois?

- | | |
|--|--|
| <input type="radio"/> Étudiant de premier cycle | <input type="radio"/> Employé d'un institut de recherche |
| <input type="radio"/> Étudiant diplômé | <input type="radio"/> Employé de l'industrie |
| <input type="radio"/> Chercheur postdoctoral | <input type="radio"/> Employé des médias |
| <input type="radio"/> Professeur | <input type="radio"/> Employé d'un organisme sans but lucratif |
| <input type="radio"/> Professeur émérite | <input type="radio"/> Travailleur autonome |
| <input type="radio"/> Enseignant à temps partiel ou auxiliaire | <input type="radio"/> Retraité |
| <input type="radio"/> Enseignant/professeur au secondaire, au cégep ou au collègue | <input type="radio"/> Sans emploi |
| <input type="radio"/> Employé du gouvernement ou de la fonction publique | <input type="radio"/> Autre (veuillez préciser) |
| | <input type="radio"/> Préfère ne pas répondre |

Quel domaine décrit le mieux votre champ d'activité?

- Météorologie
- Océanographie
- Hydrologie
- Préfère ne pas répondre



Lequel des énoncés suivants décrit vos intérêts spécifiques en météorologie?

Sélectionnez toutes les réponses qui s'appliquent.

- | | |
|---|---|
| <input type="radio"/> Météorologie agricole et forestière | <input type="radio"/> Glace |
| <input type="radio"/> Qualité de l'air | <input type="radio"/> Météorologie à méso-échelle |
| <input type="radio"/> Arctique | <input type="radio"/> Météorologie opérationnelle |
| <input type="radio"/> Aviation | <input type="radio"/> Physique |
| <input type="radio"/> Chimie atmosphérique | <input type="radio"/> Présentation |
| <input type="radio"/> Climat | <input type="radio"/> Satellite |
| <input type="radio"/> Général | <input type="radio"/> Préfère ne pas répondre |
| <input type="radio"/> Global | <input type="radio"/> Autre (veuillez préciser) |
| <input type="radio"/> Haute atmosphère | |
| <input type="radio"/> Hydrométéorologie | |

Lequel des énoncés suivants décrit vos intérêts spécifiques en océanographie?

Sélectionnez toutes les réponses qui s'appliquent.

- | | |
|---|---|
| <input type="radio"/> Biologie | <input type="radio"/> Général |
| <input type="radio"/> Climat | <input type="radio"/> Global |
| <input type="radio"/> Océanographie côtière | <input type="radio"/> Physique |
| <input type="radio"/> Poisson | <input type="radio"/> Préfère ne pas répondre |
| <input type="radio"/> Glace | <input type="radio"/> Autre (veuillez préciser) |

Lequel des énoncés suivants décrit vos intérêts spécifiques en hydrologie? Sélectionnez toutes les réponses qui s'appliquent.

- Hydrologie générale
- Préfère ne pas répondre
- Autre (veuillez préciser)

Quel est le niveau d'études le plus élevé que vous ayez atteint?

- Obtenu un diplôme d'études secondaires ou de formation générale (FG)
- Fréquenté un collège ou un cégep, mais n'ai pas obtenu de certificat, de diplôme ou de grade
- Fréquenté une université mais n'ai pas obtenu de diplôme
- Obtenu un certificat ou diplôme d'un collège ou d'un cégep
- Baccalauréat (p. ex. B.A., B. Sc., B. Sc. ing, etc.)
- Diplôme professionnel (p. ex. médecine, droit, etc.)
- Maîtrise
- Doctorat
- Formation post-doctorale
- Préfère ne pas répondre
- Autre (veuillez préciser)

Dans quel pays avez-vous obtenu ce certificat, diplôme, grade ou formation?

En quelle année avez-vous obtenu ce certificat, diplôme ou grade?



Section II: Données démographiques

Dans quelle tranche d'âge vous situez-vous?

- 18-24
- 25-34
- 34-44
- 45-54
- 55-64
- 65+
- Préfère ne pas répondre

Lequel des termes suivants décrit le mieux votre identité de genre? Sélectionnez toutes les réponses qui s'appliquent.

Les définitions suivantes sont fournies par [le gouvernement du Canada - Lexique sur la diversité sexuelle et de genre](#)

- De genre fluide** - Se dit d'une personne dont l'identité ou l'expression de genre se déplace le long du spectre du genre
- De genre queer** - Se dit d'une personne qui, par le biais de son identité, de son expression de genre et de ses pratiques sexuelles, remet en cause les normes sociales en matière de genre
- Homme** (cisgenre, trans) - Cisgenre désigne une personne dont l'identité de genre correspond au sexe qui lui a été attribué à la naissance. Trans désigne les personnes transgenres, les personnes transsexuelles et les personnes ayant une diversité de genre.
- Personne non binaire** - Se dit d'une personne dont l'identité de genre se situe en dehors du modèle de genre binaire homme ou femme
- En questionnement** - Se dit d'une personne qui s'interroge quant à son identité de genre ou à son orientation sexuelle
- Personne bispirituelle** - Se dit d'une personne autochtone d'Amérique du Nord qui incarne à la fois un esprit féminin et un esprit masculin ou dont l'identité de genre, l'orientation sexuelle ou l'identité spirituelle n'est pas limitée par la dichotomie masculin/féminin
- Femme** (cisgenre, trans) - Cisgenre désigne une personne dont l'identité de genre correspond au sexe qui lui a été attribué à la naissance. Trans désigne les personnes transgenres, les personnes transexuelles et les personnes ayant une diversité de genre.
- Préfère ne pas répondre
- Préfère l'autodescription

Vous identifiez-vous comme trans ou vous considérez-vous comme faisant partie d'une communauté trans?

- Oui
- Non
- Pas certain(e)
- Préfère ne pas répondre



Parmi les termes suivants, lesquels décrivent le mieux votre orientation sexuelle?

Sélectionnez toutes les réponses qui s'appliquent.

- Personne asexuelle
- Personne bisexuelle
- Gai
- Personne hétérosexuelle / Hétéro
- Lesbienne
- Personne pansexuelle
- Queer
- En questionnement
- Personne bispirituelle
- Préfère ne pas répondre
- Préfère l'autodescription

Vous identifiez-vous comme une personne racialisée ou une personne de couleur?

La Commission ontarienne des droits de la personne définit la racialisation comme un processus par lequel les sociétés considèrent les races comme réelles, différentes et inégales, d'une manière qui a une incidence sur la vie économique, politique et sociale.

- Oui
- Non
- Pas certain(e)
- Préfère ne pas répondre

Veillez indiquer lequel des termes suivants décrit le mieux votre identité raciale. Sélectionnez toutes les réponses qui s'appliquent.

Les définitions de la race et des groupes ethniques sont tirées du document « Normes relatives aux données en vue de repérer et de surveiller le racisme systémique » de la Direction générale de l'action contre le racisme du gouvernement de l'Ontario.

- Noir (p. ex. d'origine africaine, afro-caribéenne ou afro-canadienne)
- Asiatique de l'Est (d'origine chinoise, coréenne, japonaise, taiwanaise)
- Asiatique du Sud-Est (Philippin, Vietnamien, Cambodgien, Thaïlandais, Indonésien, autres origines d'Asie du Sud-Est)
- Asiatique du Sud (p. ex. Indien de l'Est, Pakistanais, Bangladais, Sri Lankais, Indo-Caribéen, etc.)
- Autochtone (Première Nation, Métis, Inuit)
- Latino/a/x (latino-américain, d'origine hispanique)
- Moyen-oriental (origine arabe, perse ou ouest-asiatique, p. ex. afghane, égyptienne, iranienne, libanaise, turque, kurde, etc.)
- Blanc (d'origine européenne)
- Préfère ne pas répondre
- Préfère l'autodescription

Vous identifiez-vous comme étant une personne handicapée?

Les personnes handicapées comprennent celles qui peuvent être confrontées à des obstacles à leur pleine participation à la société en raison d'incapacités physiques, mentales/émotionnelles, sensorielles ou d'apprentissage à long terme, temporaires ou épisodiques, y compris celles causées par des problèmes de santé chroniques. Il convient également de noter que le modèle social d'incapacité reconnaît que l'incapacité n'est pas créée par tout problème de santé ou état physique, mais plutôt par des barrières sociétales. Une incapacité peut être évidente ou non.

- Oui
- Non
- Préfère ne pas répondre

Veillez indiquer lequel des énoncés suivants décrit le mieux votre ou vos incapacités.

Sélectionnez toutes les réponses qui s'appliquent.

- Trouble déficitaire de l'attention et hyperactivité (TDAH)
- Trouble du spectre autistique (TSA)
- État de santé chronique (p. ex. maladies auto-immunes, maladie de Crohn, diabète, cancer, etc.)



- Commotion cérébrale / blessure à la tête
- Trouble de l'apprentissage (TA)
- Trouble mental (p. ex. schizophrénie, dépression, trouble anxieux, trouble bipolaire, SSPT, etc.)
- Mobilité ou handicap fonctionnel
- Handicap sensoriel (p. ex. vision ou audition)
- Incapacité/blessure temporaire (p. ex. os cassé)
- Préfère ne pas répondre
- Une incapacité non répertoriée (veuillez préciser)

Avez-vous reçu une formation sur l'équité, la diversité et/ou l'inclusion sur votre lieu de travail ou d'études?

- Non, la formation est proposée mais je n'ai pas pu y participer
- Non, rien n'est proposé
- Pas certain(e)
- Préfère ne pas répondre
- Oui, j'y ai participé (veuillez décrire brièvement)

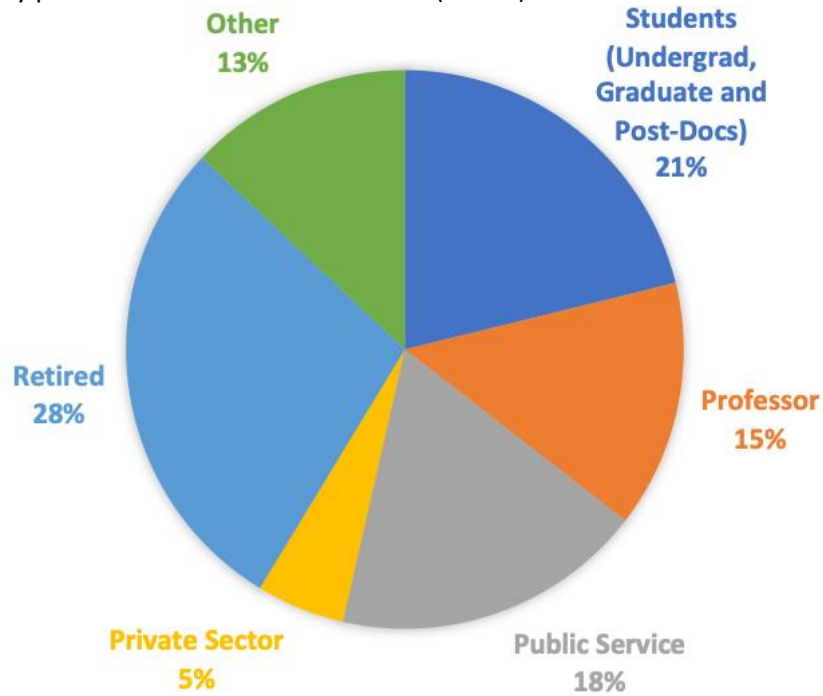
Merci d'avoir répondu à ce sondage pour la SCMO. Si vous avez des recommandations sur la façon d'améliorer ce sondage pour recueillir des données démographiques précises et inclusives, veuillez utiliser la zone de texte ci-dessous pour vos commentaires.



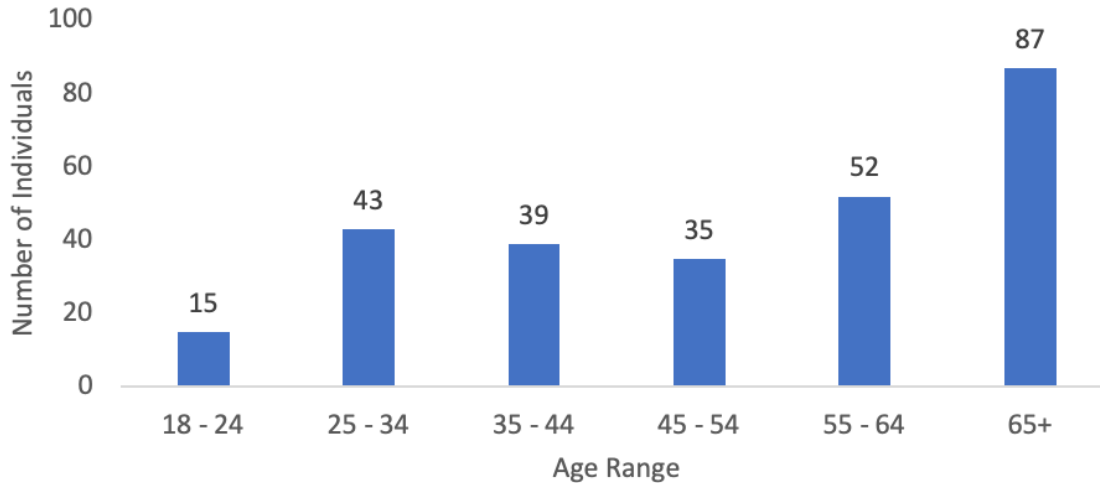
Appendix H - CMOS 2023 EDIA Demographic Survey Results Summary

CMOS launched its first demographic survey of the membership from February 7 to March 3, 2023. The survey was anonymously completed on a voluntary basis by the membership, with a total sample size of 293 individuals. However respondents were able to skip specific questions, therefore, total responses are provided for each question. In the summary data presented below, some categories for some questions have been combined in order to maintain anonymity due to the low number of respondents for these categories.

1. Current primary position within the last 3 months (n=293)

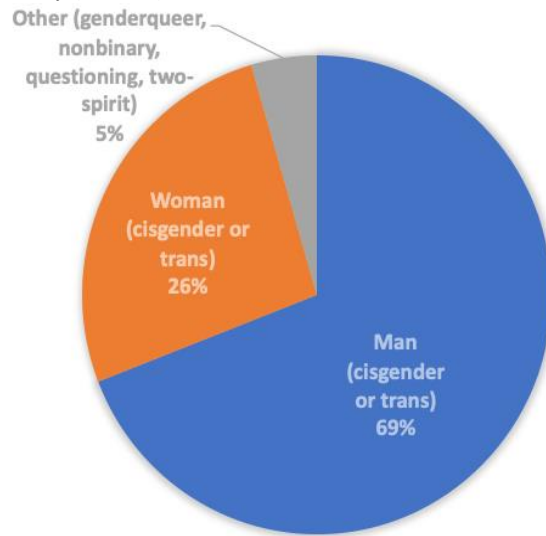


2. Respondents' Age (n=276)

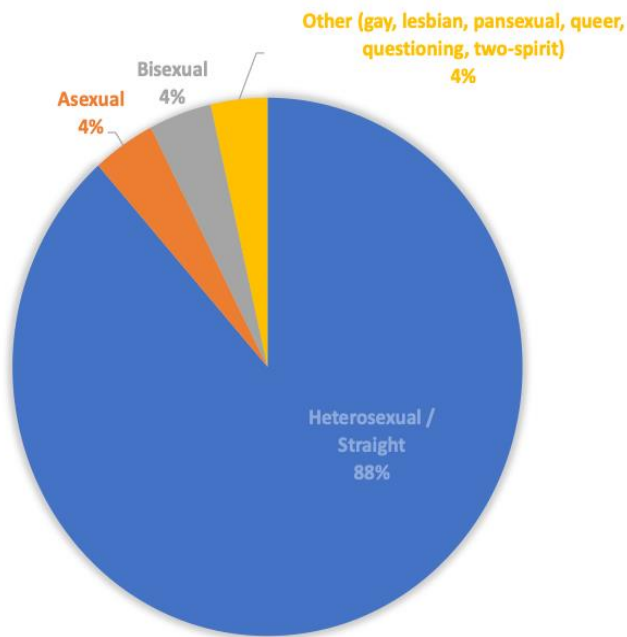




3. Respondents' Gender Identity (n=282)

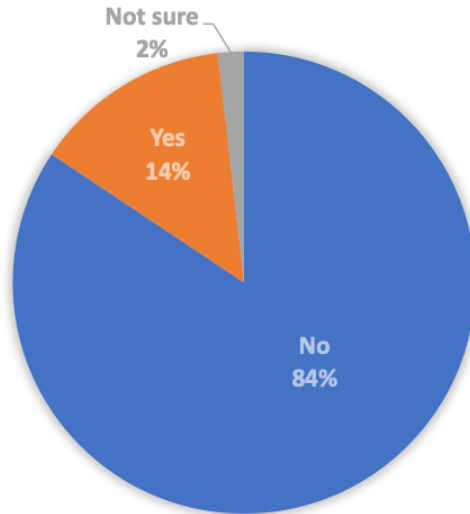


4. Respondents' Sexual Orientation (n=277)

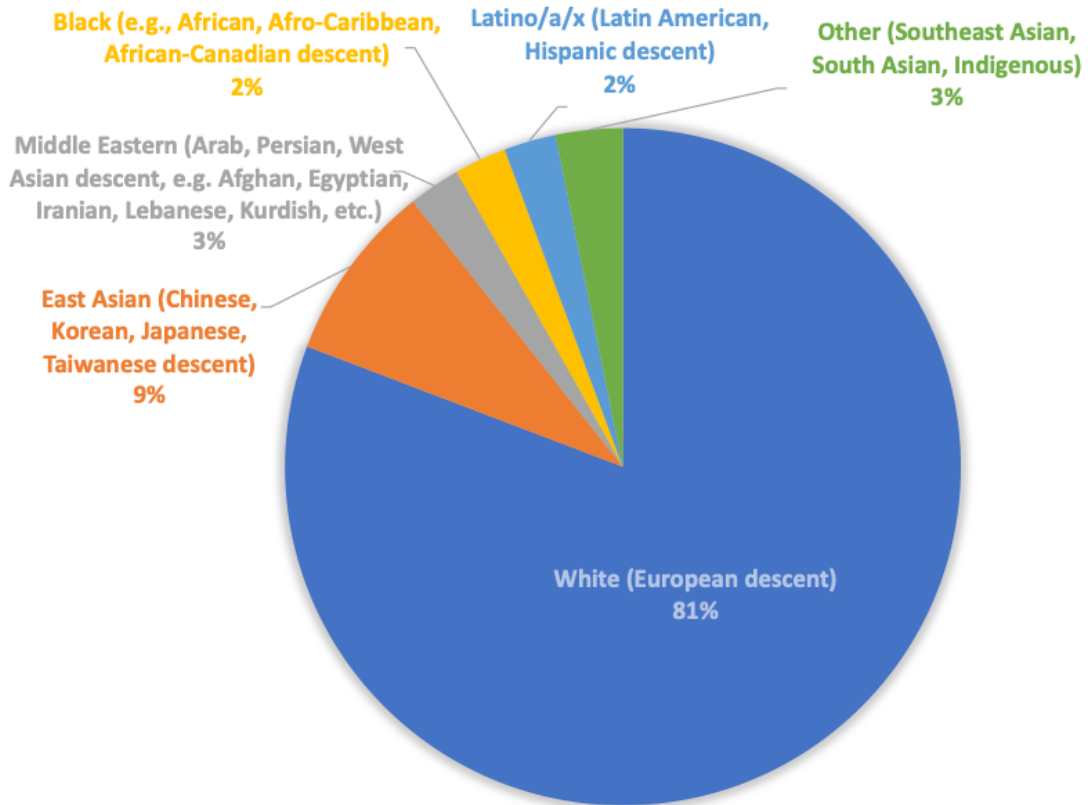




5. Respondents' Identification as Racialized Persons (n=280)

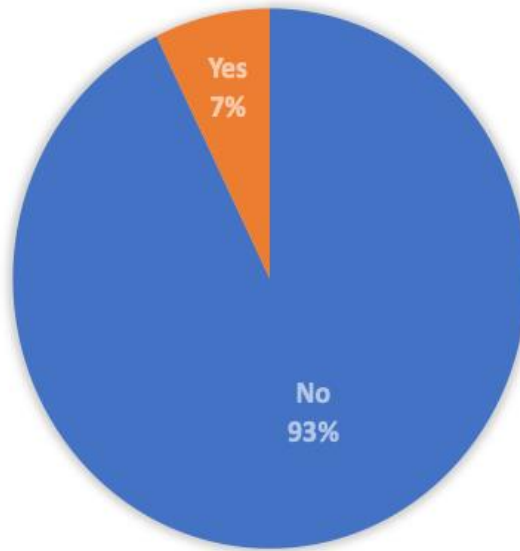


6. Respondents' Racial Identity (n=279)





7. Respondents' Self Identification as Person with a Disability (n=281)



8. Respondents' Training Participation in Equity, Diversity, and/or Inclusion in Workplaces or their Studies (n=278)

