

SSF Annual Report

Canadian Association of Science Centres

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SSF Annual Report: Canadian Association of Science Centres Introduction

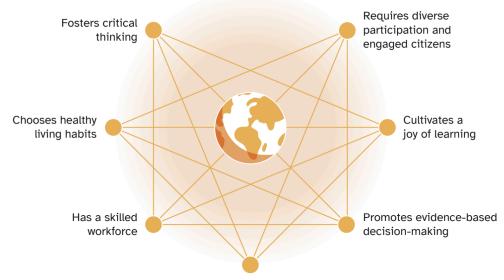
The core purpose of the Canadian Association of Science Centres (CASC) SSF-funded project is to strengthen evidence-based decision-making, advance innovation skills development, and foster an inclusive science culture across Canada through the support of the informal science learning sector. Our project also helps to accelerate the exchange of research results and the translation of this knowledge into action in Canada. It also supports the economic, societal and health benefits for people across Canada, and helps create a skilled, diverse workforce to fulfill industry and societal needs.

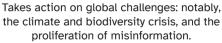
CASC is a bilingual network of trusted organizations that represent a critical component of Canada's science, technology, and innovation landscape. We connect the public science engagement community, which cultivates a joy of learning by making STEM (science, technology, engineering, math) approachable, accessible, and relevant. With more than 90 organizations across Canada, including science centres, museums, zoos, and outreach organizations, our network collectively reaches over 10 million citizens per year.

Objectives Towards Achieving Expected Results

CASC's SSF project builds on CASC's strength as the steward of Canada's largest public STEM engagement network. We build connections between Canada's science ecosystem and society, provide enriching professional development opportunities for STEM educators, and we are experts in developing and managing public national campaigns focused on STEM literacy, digital literacy, and health literacy.

A thriving science and innovation culture across Canada















We're working towards a long-term vision of a thriving Science and Innovation culture across Canada that is diverse, cultivates a joy of learning, chooses healthy living habits, engages citizens, and supports a skilled workforce. A thriving Science and Innovation Culture is a society in which people embrace innovation and life-long learning, think critically, make evidence-based decisions, and take action on issues that impact their daily lives.

We do this by advancing and progressing our SSF objectives to:

- 1. Advance Truth and Reconciliation in STEM engagement;
- 2. Build DIEA (diversity, inclusion, equity, accessibility) capacity of the informal STEM engagement sector;
- 3. Make STEM approachable, relevant, and accessible:
- 4. Tackle science misinformation:
- 5. Understand the societal and economic value of the informal STEM learning sector.
- 6. Continually improve our programs and adapt to change.

Alignment with Federal Priorities

CASC's SSF project aligns explicitly with the following 2024-2025 Federal Priorities:

- Advance a Culture of Innovation
 - Ensure Canadians are equipped with skills, tools to participate in an innovative, high-growth economy
- Education
 - Canadians have access to inclusive and quality education throughout their lives (Canadian Ambition, UN Sustainable Development Goals)
 - Scale up youth and student skills and employment programming and initiatives for Canadian youth
- Climate action (2030 Emissions Reduction Plan)
 - Work in partnership with FN, Inuit and the Metis Nation to address climate change and its impacts
- Advance equality and inclusion
 - Improve support and increase opportunities for Black and Indigenous researchers; foster the mentorship and development of younger researchers
 - Increase inclusion in the clean energy workforce by creating more opportunities for women, LGBTQ2 and other under-represented people in the energy sector
 - Support official language minority communities
 - Promote cultural and creative industries in both official languages and work with Indigenous partners to preserve, promote and revitalize Indigenous languages in Canada
 - Strengthen Canada's democratic institutions, including combatting disinformation

Health

- Strengthen public health supports
- Build a healthier future, with a particular focus on ensuring that health inequities are understood and addressed, including for Indigenous Peoples, Black Canadians and vulnerable Canadians
- Promote healthy eating









- Focus on increasing food skills; prioritize and direct its policy and promotion efforts to children and youth, young adults, and families who are experiencing or at risk of food insecurity
- Canadians adopt healthy behaviours
- Support efforts to improve public education to reduce stigma related to problematic substance use

Economy

- Ensure that Canada remains a tourist destination of choice; create and enhance tourism products, facilities and experiences
- o Better support the economic growth of small and medium-size communities
- Ensure that Canada's natural resources are developed sustainably, competitively and inclusively

Results of the 2024-2025 Fiscal Year

Throughout Year 1 of CASC's SSF-funded project, we met and exceeded our expected results toward our key objectives. At the highest level, the project advanced the Strategic Science Fund's expected outcomes to:

- Increase collaboration between academia, research institutes, non-profit, private and public sectors and diverse international and community organizations. Through SSF support, CASC supported 74 partnerships, 30% of which were with new collaborations in year 1 of the project.
- Disseminate scientific knowledge to diverse end users. Through SSF support, CASC shared scientific knowledge to people across Canada through our social media channels reaching more than 3.65 million people in year 1 of the project.
- Develop scientific literacy skills among diverse target populations. Through SSF support,
 CASC directly engaged ~13,000 participants in facilitated STEM learning events.

The following section provides a full summary of results achieved year 1 for each CASC objective.











Objective 1: Advance Truth and Reconciliation in STEM engagement

Year 1 Highlights

- ★ Delivered 24 learning sessions with STEM engagement professionals of which 87% of participants increased their awareness and understanding of Indigenous Knowledge.
- ★ 100% of CASC staff completed a 3-day, in-person Indigenous Cultural Competency training for all CASC staff at Algoma University.
- ★ Over 85% of attendees participated in on-the-land learning experiences at the CASC annual conference that started with a sunrise pipe ceremony. 96% of CASC Conference participants reported an increased awareness and understanding of Indigenous Knowledge
- ★ Convened 8 Communities of Practice (CoP) exclusively for Indigenous professionals from across the CASC network, facilitated by Dr. Melanie Goodchild with at least 80% of participants reporting that these sessions were a meaningful learning experience that has a lasting impact on their work.

Through our collaboration with Dr. Melanie Goodchild, Anishinaabekwe (Ojibway woman) systems thinking and complexity scholar, emergent and collective learnings have helped shape a new strategy for CASC's SSF Objective 1: Advance Truth and Reconciliation in STEM Engagement. As part of this work, we co-developed a new professional development program called Niigani Miinigowiziiwin Accelerator Program (We Give These Gifts to the Future) with Dr. Goodchild, the Wolf Willow Institute, and MIT's Presencing Institute. This program will strengthen relationships with Indigenous communities and weave Indigenous knowledge into STEM engagement organizations' function, supporting STEM Equity in public engagement, advancing critical thinking and tackling misinformation. This work in Year 1 has laid the groundwork for the launch of this program in Year 2.

In addition, CASC developed and implemented a new strategic approach for the CASC annual conference – Canada's largest informal science learning conference. We have expanded the experience to be place-based in collaboration with local community collaborators, with a focus on braiding, weaving, and bridging Indigenous and Western Science into professional development sessions.

Overall the following outcomes were achieved towards advancing Truth and Reconciliation in STEM engagement:

- Increased awareness of Indigenous methods and processes that support learning and engagement.
- Increased understanding and interest in systems change work to decolonize STEM engagement at individual and organizational levels.
- Greater number of STEM engagement professionals applying strategies to decolonize STEM engagement.

CASC is continually reexamining and adapting our processes in consultation with Indigenous partners to support reconciliation across our organization.











Objective 2: Build DIEA capacity of the informal STEM engagement sector

Year 1 Highlights

- ★ Provided 18 complimentary registrations for equity-deserving professionals to attend the CASC conference and included 9 DIEA learning sessions.
- ★ Shared 19 DIEA professional development sessions, including Community of Practice sessions and conference learning opportunities. The total sum of all attendees for all sessions was > 4800.
- ★ Co-developed a first-of-its-kind <u>STEM Equity in Action Certification Program</u> with Visions of Science, supporting STEM Equity in public engagement, advancing critical thinking, and tackling misinformation. This work in Year 1 has laid the groundwork for the launch the pilot of this program in Year 2

Throughout Year 1, CASC shared 19 DIEA professional development opportunities with our network, including Community of Practice and conference learning sessions. We also made a specific commitment to break down barriers and adopt more inclusive internal practices for our CASC annual conference. We updated our DIEA event guidelines, provided 18 complimentary registrations for equity-deserving professionals to attend the CASC conference, and included 9 DIEA learning sessions in the conference program.

Overall, 63% of informal STEM engagement professionals who accessed DIEA professional development programs and resources reported an increased awareness, understanding and motivation to take positive action. This is lower than anticipated (i.e. was expected >80%) and may be because participants already had a baseline awareness. We will review our post-program surveys and update the questions. This may prompt an update to our forecast in future years. CASC leveraged SSF funding to secure additional funding for events in Year 1, which increased opportunities for engaging STEM professionals with inclusion-focused PD and events. Overall, the total sum of all attendees for all sessions was 4840.











Objective 3: Make STEM approachable, relevant, and accessible

Year 1 Highlights

- ★ Facilitated and managed 41 Communities of Practice sessions, building trust and collective intelligence across the public STEM Engagement sector, fostering collaborations, and seeding new partnerships.
- ★ Assumed ownership of Science Literacy Week from NSERC, and started planning for the re-launch of this annual campaign for Fall 2025.
- ★ Ensured 100% of public-facing online content produced by CASC was in both official languages (French/English)

CASC supports our network to make STEM approachable, relevant and accessible by:

- Creating opportunities for STEM Engagement Professionals to hone their science communication skills using proven communication strategies that help reduce barriers.
- Supporting informal STEM Engagement Organizations with flow-through funding to deliver programs that are locally relevant and connected with global challenges.

Short-term outcomes in 2024-2025:

- Science communication professionals build knowledge and share experiences through Communities of Practice.
- Conducted a thorough review of past practices to reduce administrative burden and increase efficiency.
- Created parameters, guidelines and processes to invite proposals for program delivery that are more efficient for members to apply for funds and begin delivering programs quickly.











Objective 4: Tackle science misinformation

Year 1 Highlights

- ★ Shared 1,558 Posts i.e., the number of English and French posts published across ScienceUpFirst and LaSciencedAbord social media channels
- ★ Garnered 3,497,413 online impressions i.e., the number of times English and French ScienceUpFirst and LaSciencedAbord content was displayed to users.
- ★ Resulted in 150,942 online engagements (i.e., the number of times users engaged with ScienceUpFirst and LaSciencedAbord content, including reactions, comments, shares, post link clicks)
- ★ Developed and delivered the inaugural *Together Against Misinformation Week* campaign, partnering with over 45 Canadian organizations, and reaching over 11 million individuals online.
- ★ Supported 12 community engagement activities reaching equity-deserving communities across Canada including Black, Indigenous, South Asian and 2SLGBTQiA+ communities.
- ★ Co-developed the novel <u>Freestyle Social Training Course</u> with Science Everywhere, to train educators to deliver an engaging activity that advances critical thinking and tackling misinformation.

CASC's ScienceUpFirst/LaSciencedAbord initiative is an internationally recognized initiative that has developed a first-in-class platform for debunking misinformation. The initiative produces digital French and English content (posts, videos, live discussions) and shares it across social media platforms including Instagram, X (previously Twitter), Bluesky, Threads, Facebook, TikTok, YouTube, and a dedicated website. CASC launched the initiative in 2021 in response to the proliferation of online health misinformation.

The primary goals are to apply scientifically-backed strategies to help stop the spread of misinformation by pre-bunking and de-bunking dis/misinformation, helping audiences navigate a complex information landscape, and building public digital literacy capacity across Canada. Science Up First/La Science dAbord provides the knowledge and tools Canadians need to make informed health and climate action decisions. To date, the initiative has shared over 12,000 posts that have been viewed over 40 million times and garnered over 1.3 million engagements (i.e., shares, comments, likes).











ScienceUpFirst an initiative of casc



40 million+

impressions (number of times content was displayed) since launch in 2021



12,000

pieces of content across all platforms since launch in 2021



1.3 million+

engagements since launch in 2021



50+ collaborators including CASC members, national organizations, community organizations, science communicators, researchers and experts.



4 connections to the research ecosystem. ScienceUpFirst supports research programs and research grants at UofA, UBC, SFU, and Royal Roads University.

ScienceUpFirst's impact from launch to March 31, 2024

The Together Against Misinformation campaign started a national dialogue, shared tools for addressing misinformation, and built skills to recognize it. SSF funding provided operational support (staff salaries), which allowed CASC to access additional funds from other government agencies (e.g. CIHR, PHAC) to develop a micro-grant program that funded 12 community engagement activities reaching equity-deserving communities across Canada including Black, Indigenous, South Asian and 2SLGBTQiA+ communities.

Short-term outcomes

- Surpassed 1.3 million new social media engagements (target was 1.1 million).
- Connected scientists, researchers, and medical professionals with the public.
- Increased the public's knowledge about important issues prone to misinformation on social media.
- Increased awareness about social media misinformation, promoting evidence-based decision-making.











Objective 5: Understand societal and economic value of the informal STEM learning sector

Year 1 Highlights

- ★ 15 CASC STEM Engagement organizations participated in an international Annual Statistics Survey, through a new partnership with our colleagues in the US, Europe and Asia-Pacific.
- ★ Explored the feasibility of establishing a CASC Research Task Force to provide advice and guidance regarding CASC's national research priorities.
- ★ Engaged 10 CASC Science Centre and Museum members in deep focus group discussions to understand CASC's value.

In year 1, CASC established a new partnership with ASTC, the Association of Science and Technology Centres, Ecsite, the European network of science engagement organisations, and ASPAC, the Asia-Pacific Network of Science and Technology Centres to conduct an Annual Statistics Survey, which is a comparative study on the science center and museum field, aimed at providing an understanding of the structure, functions, and impacts of science engagement organizations around the world. Data is collected from science centers, museums, and other informal science education organizations regarding their operations over the most recently completed fiscal year and covers a wide range of statistics related to workforce, facilities, visitor attendance, and finances, as well as rotating data on field-wide issues. Through this survey, organizations can benchmark their own operations against key data points, gaining valuable insights into visitor demographics, engagement strategies, financial health, and more.

CASC also worked with Halmyre, an association consultancy, to conduct focus group discussions with CASC Science Centre and Museum members to understand CASC's value. The study highlighted CASC members' need for further diversity, inclusion, equity, and accessibility (DIEA) training and to better understand visitor/user needs. CASC members also indicated that they want Science misinformation workshops and continuation of the annual in-person conference.

Short-term outcome

• Increased understanding of the impact of Canada's informal STEM learning sector.











Objective 6: Continually improve our programs and adapt to change.

Year 1 Highlights

★ Completed 100% of formative and summative evaluation reports for all programs to achieve SSF objectives.

One of CASC's key beliefs is that data-driven approaches support innovation and learning. We intentionally gain new insights and different ideas through the use of data and analytics. We maximize our impact by using data to help prioritize, adapt, and be nimble.

As such, by administering and completing evaluations for all of our SSF-funded programs we ensure the following outcomes:

Short-term outcomes

- Evaluations inform ongoing improvements.
- Programs meet audience needs.
- Results and best practices are shared across the network.

Medium-term outcomes

- Program goals are achieved.
- Increased capacity across the network to deliver programs.











Testimonials

Below are a few of the numerous testimonials we receive showcasing the real-world impact of our work from a wide variety of people engaged in our SFF project, including members of the public, STEM engagement professionals, educators, staff, and community leaders. More testimonials are available in Appendix A.

"I plan to share with my colleagues, and continue connecting with those that I met. I also have a better understanding of how to go about building new relationships with the Indigenous communities around me to help with my future programming."

~ CASC Conference participant in response to the questions: How do you plan to use what you learned at the CASC 2024 Conference?

"We are the only Science Centre in our region, so this Community of Practice has been a great support, knowing we have others who do similar work that we can reach out to, and hearing they have similar issues and generating ideas/solutions. Often I might be working on a project alone, or with just a couple of staff, where a larger centre might have a whole team of people for a similar project. Helps to know we are still part of a larger team!"

~ Educator/Programmer participant in Community of Practice, Saskatchewan Science Centre.

"I'm very much interested in prevention and pre-bunking. This is a term now that we're getting more used to. Some very key actors in this space include entities like [Canadian Association of Science Centres'] ScienceUpFirst [initiative], which is supported by a network of science centres... These networks exist and they're not just to address the piece of disinformation. They are trying to tell the public that these are the tactics that you should be aware of that's going to come at you before a piece of misinformation occurs."

~ Dr. Theresa Tam, the Chief Public Health Officer of Canada, wore our Together Against Misinformation socks at the 2024 Canadian Immunization Conference and gave a shout-out to Science Up First during her plenary presentation in the morning.

"Thank you! We have used your content to support a staff training level one and two and a tool for assessing for misinformation. We are now working on a campaign pulling together general medial literacy and various misinformation/debunking posts from various of our Public Health Programs. We are also promoting training information from you as well. So you can see some fruits of your labour!"

~ Public Health Nurse from the Leeds Grenville and Lanark District Health Unit in Ontario

"I am starting a local community wellness support group and I pledge that I will require all information presented therein to be evidence based, as well as continuing to share what I know about critical thinking and verifying sources before I repost stuff."

~ Pledge from member of public as part of Together Against Misinformation week

"Thank you for sharing these! I have found learning about logical fallacies to be really interesting and these graphics make it easy for me to share with people without tripping over my tongue trying to explain it myself."

~ Member of public, in response to our post on the false dichotomy trap/fallacy

"Thank you very much for this information. I absolutely love your Instagram/TikTok myth busting. My teenage grandchildren follow your account too. Thank you for all that you do!"

~ Member of public, in response to a request for information on homeopathy











Activities Undertaken

Overview of Strategic Approach

CASC activities funded under the SSF ultimately help to accelerate the exchange of research results and the translation of this knowledge into action in Canada, as well as strengthen evidence-based decision making, innovation skills development and science culture. We do this by being a supporter, connector, and champion for our members, extending their reach and strengthening the impact of their work.

Being a Supporter

Strengthen members & their capacity

Being a Connector

Ecosystem building and strategic partnerships to connect STEM & society

Being a Champion

Represent Canadian public STEM engagement sector

- Provide professional development opportunities that help our members reach their full potential and help them advance their impact.
- Support research that will benefit members.
- Support all sizes and types of science engagement organizations
- Respect member perspectives and engage with priorities that matter to members.
- Establishing CASC as 'go to' network for public knowledge mobilization within the national research ecosystem.
- Provide enjoyable online and offline opportunities for connection among our network, community groups, and other disciplines and sectors.
- Facilitate communities of practice for members to share, inspire each other, and cooperate on impactful topics.
- Build national initiatives that work towards systems change
- Biggest fan and supporter of our members, amplifying their work on a national stage and showcasing how the network is making a positive difference
- Foster solidarity among members of our network and across the broader public engagement sector.













Our methodology utilizes these foundational approaches:

- Network weaving: Being the connective tissue across research and public engagement sectors. No one organization can solve climate change, biodiversity loss, and the proliferation of misinformation. Diverse perspectives and organizations are needed for effective solutions and to foster collective impact.
- Co-creation: "Nothing about us without us". We ensure that no policy, initiative, or
 program is implemented without the direct participation of members of the group(s)
 affected by it. We are curious and listen deeply, with compassion and humility, to
 understand and meet the needs of our members, partners, audiences, and staff.
- Collective impact: We are a national network that brings diverse people and organizations together in a structured and collaborative way to achieve social change.
- *Trust building:* We actively work to build and maintain trust by being honest, credible, transparent, authentic, reliable, and accountable.
- Incorporating many ways of knowing: Our work is informed by inclusive approaches that
 value knowledge gained from Indigenous and Western research methods, as well as the
 inherent need for multi- and interdisciplinary, mission-driven research to help address
 pressing social, technological, economic, and health challenges.
- Effective communication: We communicate clearly and are always learning, using
 approachable, relevant, and accessible strategies in all our communications, and
 support the advancement of science communication. We employ a dedicated
 francophone team, to create content specifically for francophone public audiences.

Overview of Eligible Activities

The following sections provide an overview of activities conducted by CASC categorized by SSF eligible activity categories.

1. SSF Eligible Activity: Development and delivery of STEM learning activities

CASC develops and delivers professional development learning programs to support the needs of the public STEM engagement sector. Priorities identified through focus groups and surveys with CASC members indicated the need for deeper diversity, inclusion, equity, and accessibility (DIEA) training and to better understand visitor/user needs. CASC members also indicated that they want Science misinformation workshops and continuation of the annual in-person conference.

Year 1 of our SSF funding focused on delivering professional development learning opportunities through existing offerings, such as our annual in-person conference, increasing the number and frequency of our online Community of Practice groups, expanding the CASC Systems Changer in Residence position to help decolonizing public STEM engagement organizations, and developing new professional development opportunities aligned with SSF objectives.











CASC Conference

Every year, the Canadian Association of Science Centres and CASC member host partner, organize a three-day conference offering keynote speakers, a variety of sessions, and opportunities to network with colleagues at events including a welcome reception, trade show, and the CASCADE National Awards Ceremony.

In 2024, CASC developed and implemented our new strategic approach for the CASC annual conference, Canada's largest informal science learning conference, to be place-based in collaboration with local community collaborators, with a focus on braiding, weaving, and bridging Indigenous and Western Science into professional development sessions. In addition, we worked with CASC Member IDEA STEM, a disability-led organization advancing accessibility and anti-ableism through research, strategy, training, and lived experience, to update our DIEA guidelines for the planning and delivery of our conference.

Key activities for the CASC annual conference included:

- Establishing the theme and sub-themes
- Creating a peer-reviewed, diverse program which included 16 learning sessions
- Fundraising for support of conference costs
- Working with local CASC member organizations and local community partners
- Coordinating venue and accommodations for all delegates and invited guests
- Developing a communications plan that included major announcements, event registration and ongoing communications throughout the conference

The 2024 CASC Conference was a truly unique experience that took place across two cities in Saskatchewan. We began in Saskatoon for a day of place-based learning with local, land-based organizations. We began with an a Pipe ceremony at the Remai Modern Museum in Saskatoon. Thanks to precision organization, we shuttled all 150 conference delegates from the opening ceremony to the Meewasin Northeast Swale. Following lunch, we then shuttled all delegates to Wanuskewin Heritage Park for a walking tour and Tipi teaching. We ended the day with a 3-hour shuttle to Regina, where the conference and learning sessions resumed.

Communities of Practice (CoP)

A community of practice, or CoP, is a group of people who share a common concern, a set of problems, or an interest in a topic. These groups meet regularly – in person and virtually – and come together to fulfill both their individual and group goals. At CASC, Communities of Practice are a familiar model used to bring members of the network together – to ideate, collaborate and collectively have impact on their work to advance STEM learning in Canada.

In 2024/25, SSF funding supported staff roles to facilitate 6 separate CoPs, offering 41 sessions in total. We used Zoom meeting formats to host the CoPs and provided a CASC facilitator to oversee and record the conversations and next steps. The CASC facilitator also coordinated the CoP gathering schedule and invited special guest speakers and experts to be part of conversations relevant to their work. Topics for discussion were determined by the group, ensuring relevance was maintained and therefore participation was high. CASC implemented an effective communications strategy that includes an ongoing, online forum where CoP members can continue to contribute to the conversations and/or lean on one another for support.











The following Communities of Practice are available for CASC members at all levels:

Educators and Programmers CoP: Meet Third Tuesday of each month (10 in total) The Educators and Programmers CoP was established in 2020. This community is for programming and education staff across the CASC membership. The CoP is a place for sharing, collaboration, and learning. It offers best practices, guidelines, and strategies that lead to quality educational and outreach programming in our science centres, museums and outreach organizations.

Indigenous CoP: Meetings: Meet Second Wednesday of each month (7 in total)
The Indigenous CoP is facilitated by Dr. Melanie Goodchild, Anishinaabe systems and
complexity thinker and Systems Changer in Residence with CASC. It is a gathering for those in
the CASC network who self-identify as First Nations, Inuit and Metis. Together with Dr.
Goodchild, participants explore the experience of Indigenous professionals working in the
informal science engagement space. These gatherings take the form of yarning sessions, a
traditional Aboriginal form of conversation from Australia, rooted in narrative storytelling.

Together Against Misinformation CoP, Met monthly from April to October, leading up to Together Against Misinformation Week in November, 2024 (10 in total)
This Community of Practice included a network of CASC members, industry professionals and science champions meeting on a monthly basis in preparation for the November 2024 Together Against Misinformation campaign.

GenAction CoP, Met monthly (10 in total)

The GenAction Community of Practice was for CASC Members interested in climate action programs for youth from K-12. It was open to all CASC Members to attend, and was mandatory for GenAction participating members. The GenAction program was completed in March, 2025.

Total Solar Eclipse CoP, Met as needed leading up to 2024 Total Solar Eclipse (2 in total) The Total Solar Eclipse CoP was a gathering of science communicators and informal science educators in the path of the 2024 total eclipse. The CoP helped participants to run safe and successful eclipse programming during the April 8 event across Eastern Canada. The CoP allowed CASC members to collaborate to share resources, expertise and learn together.

National Environmental Learning Leaders CoP, Meet Monthly (2 in total) Leading ongoing conversations and opportunities for organizations within the Canadian Network for Environmental Education and Communication (EECOM) to learn from each other and create a stronger informal environmental education sector.











Expanding CASC Systems Changer in Residence role to help decolonize STEM public engagement organizations and spaces

Since January 1, 2023, CASC has collaborated with Dr. Melanie Goodchild, Anishinaabekwe (Ojibway woman) systems thinking and complexity scholar. Her research focuses on deep systems awareness from the perspective of Anishinaabe gikendaasowin (our original ways of knowing). Dr. Goodchild was the first Academic Director of Makwa Waakaa'igan at Algoma University in Baawaating (Sault Ste. Marie), a national cross-cultural centre of excellence and is now (as of March, 2024) the first Vice President Indigenous Knowledge, Scholarship and Research at Shingwauk Kinoomaage Gamig, an Indigenous post-secondary institute located in Baawaating (place of the rapids), within the traditional territory of the Three Fires Confederacy. She is also a scholar/practitioner/faculty member with U School for Transformation by the Presencing Institute at the Massachusetts Institute of Technology (MIT) and the Wolf Willow Institute for Systems Learning.

As part of CASC's SSF-funding program, Dr. Goodchild holds the position of Systems Changer in Residence with CASC. Similar to an "artist in residency," her relationship with CASC is an opportunity for Dr. Goodchild to work in a new environment, with the time and space to develop work, creatively explore new ideas, and put her research theories into practice. She is helping to advance Truth and Reconciliation across our sector and decolonize STEM spaces by braiding together Indigenous and non-Indigenous knowledge to help us gain deeper understandings about ourselves and our relationship to the systems in which we live and work.

In year 1 of CASC's SSF Program, we finalized the Systems Changer in Residence position in agreement with Dr. Goodchild, and she supported CASC with:

- The development and delivery of a monthly CASC Community of Practice for Indigenous STEM engagement professionals from across the CASC network.
- Facilitated virtual learning sessions with the CASC network,
- Delivered in-person workshops to the CASC network,
- Facilitated a retreat for the CASC Board of Directors.
- Led a three-day on-the-land learning experience for CASC staff, and
- Delivered sessions at national conferences in collaboration with CASC.

Co-Creating New Accelerator Program to deepen relationships with Indigenous communities

As part of her role as Systems Changer in Residence, Dr. Goodchild supported the development of the Niigani Miinigowiziiwin Accelerator Program, which was announced in Q4 and received 17 applications from interested CASC member organizations.

The Niiganii Miinigowiziiwin (We Give These Gifts to the Future) Accelerator Program is a transformative, collective learning journey that supports CASC Members as they develop relationships with local Indigenous communities and engage more deeply with Indigenous Knowledge Systems.

Based on transformative systems change practices, this program is designed for CASC members who are somewhere along their journey of strengthening relationships with local Indigenous communities and have started down the path of braiding Indigenous wisdom into their operations, outreach and education initiatives.

This first-of-its-kind program in Canada, will be facilitated by Dr. Melanie Goodchild, in partnership with the globally recognized Presencing Institute and systems change leaders at







Wolf Willow Institute. Upon completion of the Accelerator Program, participants will be granted a microcredential from Shingwauk Kinoomaage Gamig.

It is anticipated that as many as 50 individuals from up to 10 CASC Member organizations will participate in the first cohort of this program.

Co-Creating New STEM Equity Professional Development Program

CASC embarked on co-creating a new professional development program focussed on STEM Equity for the public science engagement sector. CASC partnered with Visions of Science, a CASC member organization that is committed to advancing STEM equity by engaging Black and other racialized youth from low-income communities across the Greater Toronto Area who experience significant barriers to participation. Their goal is to disrupt this systemic exclusion that ultimately results in chronic underrepresentation in STEM education and careers. Visions of Science address these disparities and provide youth with the tools, resources, and support they need to succeed in STEM and beyond.

In January 2025, the CASC team, in collaboration with Visions of Science, issued a needs assessment to all CASC members. The assessment was intended to help us better understand the current state, gaps and barriers to advancing equity in STEM education. With an overwhelming response from over 80 CASC programmers, educators and administrators, the needs assessment clearly identified a desire for professional development that focused on skill development and tools that foster community engagement and build cultural competency. The needs assessment also identified that the ideal environment for this kind of learning was a combination of life, interactive training sessions as well as self-paced learning modules with open access.

The CASC and Visions of Science team met for a design jam in March 2025. The teams came together to design a program outline and schedule that will kick off in October 2025. The first phase of the program will exist as a pilot. CASC members participating in the pilot program will be credited as co-developers of the program. A final version of the <u>STEM-Equity in Action</u> Certification program will be made available to CASC members in Fall 2026 and will include a certification of completion.

Co-Creating New Training Program to Tackle Misinformation

CASC co-developed the novel <u>Freestyle Social Training Course</u> with media and events company Science Everywhere, a CASC member organization founded by CBC's Nature of Things co-host Anthony Morgan, with a mission to "make science everywhere". They create and host live science shows for organizations across North America to help people realize that science is not what you think. It's how. This program will train educators to deliver an engaging activity that advances critical thinking and tackling misinformation. Freestyle Socials use fun questions and surprising game rules to help us bridge those divides so we can think better together. Work in Year 1 laid the groundwork to launch the training course between April 2025 and March 2026.











2. SSF Eligible Activity: Public education and communications related to science

CASC supports public education and communications in three broad ways:

- (1) Providing support to public STEM engagement organizations to deliver educational programs.
- (2) Run a national initiative called ScienceUpFirst/LaSciencedAbord that tackles science misinformation.
- (3) Develop and lead national communications campaigns, to connect and focus the broader STEM public engagement sector in collaboration with the STEM research and health ecosystems around key topics relevant to Canadians.

Provide support to public STEM engagement organizations

In 2024-25, CASC reviewed past flow-through funding programs to evaluate internal and external processes, communications, reporting, and software. We also worked with our members to review the best practices from their perspectives.

This review identified areas of improvement and efficiency that we will implement in 2025-26, including:

- Leveraging GenAction, a CASC flow-through funding program that ended in October 2024. GenAction was focused on inspiring youth climate action through positive, action-oriented activities that individuals can do to mitigate the impacts of Climate Change. The content that was developed from that program is still highly relevant and easily adapted to be delivered to equity-deserving youth and their families.
- Continue to offer Communities of Practice focused on specific initiatives that enable STEM Engagement Professionals to build national connections and learn from each other.
- Streamline internal processes to invite and evaluate proposals, facilitate contracts and ensure accurate reporting of required metrics by Ultimate Recipients. CASC will adopt new software systems in 2025-26 to increase this efficiency and reporting accuracy.

In year 1, SSF funding provided operational support (staff salaries), which allowed CASC to access additional funds from other government agencies (e.g. CIHR, PHAC) to develop a micro-grant program that funded 12 community engagement activities reaching equity-deserving communities across Canada including Black, Indigenous, South Asian and 2SLGBTQiA+ communities, engaging over 2000 equity-deserving individuals. Past and current collaborators include: Children's Healthcare Canada, Ma Mawi Wi Chi Itata, Ottawa Public Health, Refugee 613, Royal Canadian Institute of Science, Star Blanket Cree Nation, Science Everywhere, and the South Asian Health Network.











Run a national initiative that tackles science misinformation

SSF-funds support the core operations of CASC's ScienceUpFirst initiative that works with a collective of independent scientists, researchers, healthcare experts, community partners, science communicators, and science engagement organizations working to stop the spread of misinformation. We share the best available science online in creative ways to stop the spread of misinformation, as well as we work with partners and collaborators across Canada to foster an ecosystem that bridges science, research, and society.

Core funding for CASC full-time staff allows this initiative to leverage additional support to create impactful campaigns that would not have been possible without SSF's support.

Over 2024-2025, ScienceUpFirst continued its work to debunk misinformation surrounding vaccines, women's health, 2SLGBTQIA+ health, nutrition, and climate change. Additionally, we expanded our efforts to address mental health and drug-related misinformation through a collaboration with Canada's largest mental health teaching hospital, the Centre for Addiction and Mental Health (CAMH). Together, we produced over 20 pieces of content and, alongside the Women's Health Research Cluster and WomenMind, co-hosted an event focused on misinformation surrounding women's brain health across different life stages.

Lead national public communication campaigns

Together Against Misinformation Week

The <u>Together Against Misinformation Week campaign</u> started a national dialogue, shared tools for addressing misinformation, and built skills to recognize it. With the support of 45+ Canadian organizations, ScienceUpFirst launched the Together Against Misinformation awareness week from November 12–17, 2024. Collectively, the campaign reached over 11 million individuals across CASC and partner social media channels, and over 140 million people including public relations reach.

This was achieved through a collective impact approach that included a national social media campaign, in-person events across Canada supported in part by CASC's micro-grant program, and by a community of practice dedicated to the campaign.

Core activities in support of the social media campaign included:

- Creation of promotional materials and public relations strategy
- Creation of sharable content for partners
- A call to action to the public "What's one piece of misinformation you wish would go away?"
- Influencer strategy where we delivered branded socks to key influencers and asked them to share how they are "Pulling up their socks against misinformation".
- Delivered live, "CoffeeUpFirst" online events that were facilitated conversations with experts on topics that address science misinformation

Organizations that received support from CASC to deliver 44 facilitated activities, such as workshops, webinars, outreach booths, etc., reported the following outcomes:

- 81% participants reported an increase in subject area knowledge
- 82% participants reported an increase in misinformation awareness
- 75% participants reported an increase in misinformation tactics knowledge
- 77% participants reported an increase in critical thinking confidence











CASC hosted 10 Community of Practice sessions from April, 2024 - October, 2024 in preparation for the November 2024 Together Against Misinformation Week. Workshops delivered in these CoP sessions addressed

- Accessible and inclusive programming
- How to tackle science misinformation
- Research and evaluation of programs
- Training to run a Freestyle Social event
- Critical thinking
- Difficult conversations
- Media 101

Science Literacy Week

In 2025, CASC assumed the ownership of <u>Science Literacy Week</u> from NSERC, and started planning for the re-launch of this annual campaign for Fall 2025. Science Literacy Week is a bold, national communications campaign conducted in partnership with educators, CASC members, libraries, government agencies and more. By coming together, our goal is to ignite curiosity, celebrate Canadian science, and deepen public engagement in STEM learning. Through collaborative programming and support for partners from coast to coast to coast, Science Literacy Week connects people to the stories, science, and communities shaping our planet—and our future.

3. SSF Eligible Activity: Day-to-day operations as they relate to the fulfilment of the terms of the contribution agreements

In the first year of the program, CASC undertook several internal initiatives to ensure the long-term success of the Action to Impact program:

<u>Organizational Planning</u>: CASC worked with an external firm to adapt internal processes to create detailed planning and execution strategies, including governance, key success factors, KPIs, identifying issues and a three-year strategy to address gaps. The output also includes a high-level dashboard for Board oversight.

<u>Human Resources</u>: We recruited, hired, onboarded, trained, and integrated two new staff members. Additionally, we reviewed the roles and job descriptions of the entire CASC team to ensure that individuals responsible for all aspects of the objectives have the necessary skills, resources, and professional development opportunities to be successful in their roles.

<u>Information Technology and Cybersecurity</u>: We contracted an external Information Technology Services company to:

- Transition file management to one secure cloud with limited, team-based access
- Create and implement a cybersecurity strategy with ongoing staff training and system testing
- Develop processes and procedures to ensure CASC staff have the hardware and software needed to be productive and efficient and that these systems are working as intended.











<u>Reporting Processes</u>: During the first year of the program, CASC used the recipient and program KPIs documents provided by SSF staff to develop internal reporting structures and processes to ensure we are capturing the appropriate data.

<u>Financial Reporting and Planning</u>: We reviewed our current chart of accounts and adapted accounting procedures to ensure we are capturing the required financial data according to the program parameters and can effectively manage how we are allocating funds towards each objective accurately.

Supporting the creation and dissemination of information in French

CASC provides 100% of our public-facing content (website, social media, etc.) in both official languages (French/English). CASC's ScienceUpFirst/LaSciencedAbord initiative is a national, bilingual platform that debunks science misinformation online. Based on audience and expert feedback, the French feed, LaSciencedAbord, features exclusively French content created by and for francophone audiences.

CASC's francophone ScienceUpFirst French Content Lead is deeply rooted in the francophone science-communication community and is the liaison with francophone community groups, allowing specific needs of this community to be addressed. In addition, a dedicated bilingual Audience Engagement specialist, monitors and addresses all comments and questions from LaSciencedAbord social media channels and shares audience feedback with the entire content creation team.

Equity, Diversity and Inclusion

Principles of EDI are woven into all of our work as outlined in CASC's core values, which are the deeply ingrained principles that guide all of CASC's actions to achieve SSF objectives. Our core values are visible in every aspect of the organization – from operations, programs, and communications to internal policies and processes. CASC's values serve as our cultural cornerstones. They are never compromised, either for convenience or short-term economic gain. Previous sections in this Annul Report, have described DIEA activities undertaken within our SFF objectives.

CASC Core Values

- **Collective impact**: We are a national network that brings diverse people and organizations together in a structured and collaborative way to achieve social change.
- **Trust**: We actively work to build and maintain trust by being honest, credible, transparent, authentic, reliable, and accountable.
- Shared understanding: We are curious and listen deeply, with compassion and humility, to understand and meet the needs of our members, partners, audiences, and staff.
- **Diverse and inclusive**: We bring together people with a wide range of backgrounds, opinions, ideas, and skills, from a variety of types of organisations. We cultivate a culture of inclusion where people feel respected and valued for who they are as an individual or group and for their contributions.











- **Effective communication**: We strive to communicate clearly and are always learning, using approachable, relevant, and accessible strategies in all our communications, and support the advancement of science communication.
- Environmental sustainability: We will continue to envision and implement sustainable environmental practices across CASC operations and support leading the CASC network towards a greener future.

Organizational Make-up

Over the past 40 years, the leadership of CASC has transitioned to being predominantly led by women. This reflects the advancement of women in leadership roles across the sector.

Over the past 10 years, and especially as part of the 50-30 challenge, CASC has focused more deeply on increasing the representation of other equity-deserving groups on our Board of Directors. Presently, CASC's Board of Directors is composed of 80% women, 20% men, 27% who identify as being part of an equity-deserving group (not including women), including 2SLGBTQI+, Indigenous, racialized, and/or immigrant communities.

Among CASC staff, 70% identify as women, and 30% men. Over 50% of CASC staff identify as being part of an equity-deserving group (not including women), including 2SLGBTQI+, racialized, neurodiverse, and/or immigrant communities.

General Description of Activities

Part of CASC's DIEA (diversity, inclusion, equity, accessibility) strategic approach is to center diverse communities by creating conditions for strengthening trust, connection, and emergence to bridge fragmented efforts and make collaboration work at scale. We apply the following beliefs in the work we do:

- "Nothing about us without us." Diverse participation and representation are non-negotiable. We ensure that no policy, initiative, or program is implemented without the direct participation of members of the group(s) affected by it.
- Collaboration is essential to tackle global challenges. No one organization can solve climate change, biodiversity loss, and the proliferation of misinformation. Diverse perspectives and organizations are needed for effective solutions and to foster collective impact.
- There are many ways of knowing. Our work is informed by inclusive approaches that value knowledge gained from Indigenous and Western research methods, as well as the inherent need for multi- and interdisciplinary, mission-driven research to help address pressing social, technological, economic, and health challenges.

CASC has an internal DIEA Committee with representation across staff roles within the organization and diverse identities, including CASC's CEO. This committee has a mandate to establish priority areas of improvement that pertain to DIEA within CASC, and establish action items that committee members and/or the collective group can take on to achieve this improvement. The committee is accountable through regular reports on our plan and progress.

In addition, the ScienceUpFirst/LaSciencedAbord initiative has an Advisory Committee, which includes a diverse group of senior leaders that review, advise and mentor, and draw on the ScienceUpFirst/LaSciencedAbord coalition of experts, a deep network of scientists, researchers and science communicators from across Canada.











Financial Performance

CASC's gross revenue for 2024-25 was \$4,441,531, of which 44% is from SSF. We leveraged other federal sources (CIHR and PHAC, see below) to increase activity in the ScienceUpFirst initiative, which resulted in higher than expected number of posts, as well as increased impressions and engagement.

CASC also leveraged other non-government funding to provide additional travel bursaries for ultimate recipients to attend the annual CASC conference to participate in professional development, networking and learn about upcoming opportunities to work with CASC through the Niigani Minigowiziwin Accelerator Program, the flowthrough funding and the STEM Equity in Action Program.

1,946,700
765,207 205,000
1,157,481
354,242
19,419
4,441,531

The total funds received from SSF were spent according to the amounts budgeted for the program specifically:

- Knowledge Mobilization (87%) including salaries and benefits for staff directly working on delivering Objectives 1-6 of the program, contractors retained to develop and design programs, travel specifically to develop and design programs, delivery of community of practice activities, etc.
- Networking (1%)
- Operational Costs (12%) including salaries and benefits for staff administering the program, audit fees, banking costs, insurance premiums, project management expenses, organization-wide software (such as Google Workplace, Zoom)

SSF Spending by Objective

- Objective 1: Advancing Truth & Reconciliation \$464,764 (24% of total SSF in year spending)
- Objective 2: Building DIEA Capacity \$184,309 (9% of total SSF in year spending)
- Objectives 3: Evaluation, and 6: Societal and Economic value of sector \$168,788 (9% of total SSF in year spending)
- Objective 4: Make STEM Approachable, relevant and accessible \$347,125 (18% of total SSF in vear spending)
- Objective 5: Tackle Science Misinformation \$542,878 (28% of total SSF in year spending)











APPENDIX A: Testimonials

Below are a small segment of the numerous testimonials we receive showcasing the real-world impact of our work from a wide variety of people engaged in our SFF project, including members of the public, STEM engagement professionals, educators, staff, and community leaders.

From CASC Members:

"I plan to share with my colleagues, and continue connecting with those that I met. I also have a better understanding of how to go about building new relationships with the Indigenous communities around me to help with my future programming."

~ CASC Conference participant in response to the questions: How do you plan to use what you learned at the CASC 2024 Conference?



On the land learning, Wanuskewin Heritage Park, CASC 2024 Conference

"We are the only Science Centre in our region, so this Community of Practice has been a great support, knowing we have others who do similar work that we can reach out to, and hearing they have similar issues and generating ideas/solutions. Often I might be working on a project alone, or with just a couple of staff, where a larger centre might have a whole team of people for a similar project. Helps to know we are still part of a larger team!"

~ Educator/Programmer participant in Community of Practice, Sask Science Centre





ScienceUpFirst initiative:

"Any opportunity to learn from Dr. Melanie Goodchild is a gift, but the experience of spending 3 days of deep learning, unlearning and reflecting with the entire CASC team was truly exceptional. This intensive learning experience helped us better understand the past and present experience of Indigenous Peoples in Canada, it provided a safe space for us to ask questions, and it cemented us in value of advancing Truth and Reconciliation in STEM Learning as professionals. It was also a profound personal experience, and I am grateful to work in an environment that fosters this kind of open learning with such support and compassion."

~ CASC staff member, Reflections on 3-day Indigenous Knowledge program

Previous Residential School, Algoma University, where CASC Staff took part in Gabegendadowiin, a 3-day Indigenous Knowledge training with Dr. Melanie Goodchild

From Healthcare Professional in regards to







"I'm very much interested in prevention and pre-bunking. This is a term now that we're getting more used to. Some very key actors in this space including entities like [Canadian Association of Science Centres' | ScienceUpFirst [initiative], which is supported by a network of science centres and of course Tim Caulfield in his own way and the University of Alberta. These networks exist and they're not just to address the piece of disinformation. They are trying to tell the public that these are the tactics that you should be aware of that's going to come at you before a piece of misinformation occurs. This is how social media works. This is how they're rewarding the dissemination of misinformation, so that individuals feel empowered."

~ Dr. Theresa Tam, Chief Public Health Officer of Canada, wore our Together Against Misinformation socks at the 2024 Canadian Immunization Conference during her plenary presentation in the morning.

"CASC's support through the ScienceUpFirst initiative, is the only reason why Ask Auntie was even possible! As a small non-profit based in the Yukon, securing funding, especially regarding resource development, misinformation capacity building, and science-based trust building is hard to come by. The Yukon is home to many Rural, Northern, and Remote Communities that are dependent on contextualized healthcare access strategies that understand the geographical position, social demands, and healthcare needs of these communities. The TAM microgrant afforded us the opportunity to offer a new type of online healthcare access for our community partners. We want to expand the directory to be more region specific for smaller communities to know if new clinics pop up and what resources are nearby, especially if they do not live in or near Whitehorse.."

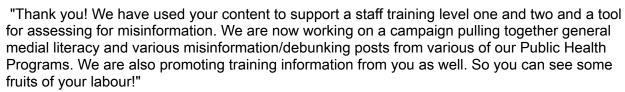
~ One Yukon Coalition, Tackling Misinformation micro-grant recipient

It is extremely impactful for OKH as it gives us a chance to organize in-person activity to combat health misinformation and raise awareness among youth group who is very vulnerable to online misinformation. We really appreciate this microgrant in helping us to impact our youth directly, as well as helping community partners and experts to connect with youth. This fund means a lot to our team and the community, especially when OKH is a relatively new but successful initiative that has been experiencing funding challenges. It really helps us in reaching our potential and expanding our work from the digital space to physical space.

~ Our Kids' Health Network, Tackling Misinformation micro-grant recipient

"Thanks, been with Alberta Health Services for 20 years. Now doing a desk job, so thankfully not front line now, but still busting baloney and sharing truth. I used to use Snopes, but now I share ScienceUpFirst resources."

~ From an Alberta Registered Nurse



 Public Health Nurse from the Leeds Grenville and Lanark District Health Unit in ON From Members of the Public in regards to ScienceUpFirst initiative:



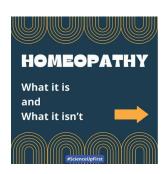






"Thank you for sharing these! I have found learning about logical fallacies to be really interesting and these graphics make it easy for me to share with people without tripping over my tongue trying to explain it myself."

~ In response to our post on the false dichotomy trap/fallacy False Dichotomy Traps



"Thank you very much for this information. I absolutely love your Instagram/TikTok myth busting. My teenage grandchildren follow your account too. Thank you for all that you do!"

~ In response to a request for information on homeopathy in our info inbox

What Homeopathy Is and Isn't



"That was a very good, concise article that should be easy to understand. I will post your link as a reference to those who are still talking about "immunity debt". Thanks for taking the time to read and respond to my concerns. [...] We all really appreciate the work you are doing."

~ In response to our immunity debt post What is Immunity Debt?



"Thank you SO much for so thoroughly exploring this for me and for putting my mind at ease!! This is the kind of nuanced analysis one doesn't get when stumbling upon these stories in the news or in chatting with friends. I have been confident about my choice to get vaccinated while breastfeeding, but was just looking for some validation from a scientific perspective! Which you have given me (a random person on Twitter!). Thank you so much for taking the time and for doing the important work you do. It's a rare thing to find. You've also given me a lot of talking points for those times when discussing with some of my more vaccine-hesitant friends!"

~ In response to a concern about breastfeeding after having been vaccinated COVID-19 Vaccines and Reproductive Health

I pledge to help people spot misinformation, but also to find diverse, trusted voices. I love that ScienceUpFirst works with and promotes so many experts and people with expertise who come from different backgrounds and have had different life experiences. Great job!

~ Pledge from member of public as part of Together Against Misinformation week









