STAN SCIENCE & TECHNOLOGY AWARENESS NETWORK RSST RESEAU DE SENSIBILISATION SCIENCES ET TECHNOLOGIE

Welcome

Welcome to the 2026 STAN Virtual Conference, **Connected Currents: Navigating Uncertainty Together**. This three-day virtual gathering brings together educators, researchers, communicators, and community leaders working across science, technology, engineering, arts, and mathematics.

Through full sessions, ignite sessions, and facilitated networking, the conference explores how we respond to uncertainty with collaboration, creativity, equity, and care.

About this Program

Session Types and Icons

- 🔷 Full Sessions: 60-minute interactive presentations or panels
- ⚡ Ignite Sessions: 10-15-minute focused talks designed to spark ideas and action
- 🔗 Networking Sessions: Facilitated or open opportunities to connect

Time Zone: All session times are listed in Eastern Standard Time (EST).

Slack: Join the conference Slack workspace to connect with other delegates throughout the event: https://join.slack.com/t/stanrsstconfe-qo92427/shared_invite/zt-3mfl2gwae-hWXyqc0IFS0uVUMhSBFOUA * you may also find links in the *daily email or zoom chat*

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Day 1: Feb 24 - Cross-Sector Collaboration

Day 1 at a Glance

Time (EST)	Session	Speakers
11:00	Welcome and Land Acknowledgement	Isabel Deslauriers, Jo-Ann Coggan
11:30	Bridging the STEM Education Continuum: Equity through Work-Integrated Learning Experiences	Stephanie MacQuarrie; Sarah Afrouzi; Lisa Cole; Kevin Hewitt
12:45	Break	
13:30	*Annual General Meeting (AGM)	STAN Leadership
14:00	Ignite: Connected by Uncertainty	Conan Lee
14:15	Do → Reflect → Explain → Connect	Cameron A. Straughan
15:30	Ignite: Storytime to Science Communication	Valerie Miller

***Annual General Meeting (AGM):** The AGM is a members-only governance session and will take place via a **separate Zoom link**. All attendees are provided with a free membership to and may attend.*

11:00–11:30 - Welcome and Land Acknowledgement

11:30–12:30

🔷 Bridging the STEM Education Continuum

Equity through Work-Integrated Learning Experiences

Stephanie MacQuarrie, Chair for Inclusion in Science and Engineering - Atlantic; Associate Professor of Chemistry; Dean of Science & Technology, Cape Breton University
Sarah Afrouzi, CISE-Atlantic STEM Mentor; Neuroscience Undergraduate Student, Dalhousie University

Lisa Cole, Director of Programming, kindergarten 2 industry (k2i) Academy, Lassonde School of Engineering, York University
Kevin Hewitt, Chair for Inclusion in Science and Engineering - Atlantic; Professor in the Department of Physics & Atmospheric Science; Associate Dean, Equity and Inclusion, Faculty of Science, Dalhousie University

Pathways between secondary and post-secondary education provide significant opportunities for fostering career-readiness and meaningfully addressing systemic inequities faced by youth from equity-deserving groups. In this interactive panel session, join NSERC CISE-Atlantic in conversation with STEM educators and mentors, examining these cross-cutting features of work-integrated learning (W-IL) experiences. Using the k2i Academy's proven model and its successful expansion into Nova Scotia (W-IL in Physics 2025), learn how project-based learning, interdisciplinarity, and the Equity Ethic facilitate equitable STEM achievement, as well as ideas for braiding these concepts into practice.

🔗 **Followed by Open Networking**

12:45–13:30 - Break

13:30–14:00

Annual General Meeting (AGM)

The AGM is a forum for members to hear from and ask questions to STAN leadership, and to provide input on governance and services. We will review the financial statement, annual report, and strategic plan.
Note: Separate Zoom link.

14:00–14:15

Connected by Uncertainty

Quantum Lessons on Change and Collaboration in STEAM Education

Conan Lee, Events & Stakeholder Relations Coordinator, Let's Talk Science

Quantum physics is more than a branch of science. It is a story of radical ideas, inherent uncertainty, and collaborative breakthroughs. From the initial introduction of the concept

of “quanta” to the recent popularization of quantum technologies, each milestone has challenged how we see the world and inspired new ways of thinking.

This Ignite session weaves together fundamental quantum concepts with pivotal moments in history, uncovering strategic approaches for STEAM education and outreach.

Participants will explore how the story of quantum science mirrors the very process of innovation: questioning assumptions, embracing uncertainty, and collaborating across disciplines. These insights can spark more creative, adaptable, and engaging approaches to science learning, inspiring both students and educators to embrace curiosity, change, and growth.

14:15–15:15

🔷 Do → Reflect → Explain → Connect

A Framework for Culturally Responsive STEM Learning

Cameron A. Straughan, STEM Teacher, Mamawmatawa Holistic Education Centre

This interactive virtual presentation introduces the DREC model—Do, Reflect, Explain, Connect, a simple, culturally responsive framework designed to strengthen STEM learning through hands-on experience, reflection, and meaningful real-world connections. Developed through classroom practice in a northern First Nations school, DREC restructures how STEM lessons begin and unfold, ensuring learners engage actively before theory is introduced. Rather than leading with abstract concepts, DREC emphasizes doing first—allowing students to explore materials, test ideas, and generate authentic questions that naturally build toward scientific or engineering explanations.\

Participants will experience a DREC lesson themselves through a fast-paced breakout-room STEM challenge: This activity models how students engage with tangible problems, collaborate, revise their strategies, and draw on prior knowledge. After the building phase, attendees will engage in structured reflection—examining what worked, what didn’t, and why—mirroring the reflective processes young learners use to deepen metacognition. This reflection sets the stage for the Explain phase, where core concepts emerge naturally from participants’ own attempts. The presentation then concludes the lesson cycle with Connect, linking strategies to real engineering, teamwork, daily problem-solving, and classroom practice.

The presentation will also highlight how DREC aligns with widely recognized Indigenous teaching principles, including experiential learning, storytelling through reflection, and

making connections to land, community, and lived experience. DREC supports students who learn best through action, relationship, and relevance—characteristics common across many Indigenous and non-Indigenous learners. The model's strength lies in its clarity, accessibility, and cultural responsiveness: four stages, one cycle, intuitive language, and an emphasis on meaning-making rooted in the learner's world.

Attendees will see how DREC compares with familiar instructional models such as the 5E Model, inquiry-based learning, Kolb's experiential learning cycle, and the three-part lesson plan. While these models share common elements, DREC offers a more concise and classroom-friendly structure. Participants will learn why DREC may be especially effective for elementary and middle school students, whose cognitive development favours concrete experience before abstract reasoning. The session also presents early anecdotal classroom evidence from Grades 1–8, along with developing plans for formal data collection, including exit tickets and teacher surveys.

Throughout the session, participants will engage in polls and short reflective prompts to deepen their understanding of DREC's potential applications in their own settings. Whether teaching STEM, literacy, arts, or social studies, educators will leave with a practical, adaptable framework they can implement immediately. DREC offers a clear, research-informed, and culturally responsive alternative to theory-first STEM instruction—one that centres doing, thinking, meaning-making, and connection.

By the end of the session, attendees will have directly experienced each stage of the DREC cycle and gained concrete strategies for applying this model in classrooms across a wide range of cultural and educational contexts.

🔗 **Followed by Open Networking**

15:30–15:45

⚡ Storytime to Science Communication

Writing Children's Books to Build Our Outreach Program

Valerie Miller, Outreach and Engagement Lead, Future Energy Systems, University of Alberta

When you want to bring science to the next generation, is there a shortcut? Yes! Children's books represent a unique way to access public libraries and schools. In 2021, staff from

Future Energy Systems, a research program at the University of Alberta, created The Energy Adventures of Tommy and Remi, a book series exploring climate change and the energy transition. This series formed the foundation to an expansive outreach program that has now visited more than 750 classrooms, and directly engaged with nearly 200,000 individuals at in person events. This ignite session will briefly explore the history that led to the creation of this series, its development, and provide a roadmap for any science communicators seeking to undertake a similar project.

Children's storybooks are a unique platform for science communication, combining art and science, and an opportunity to make a lasting impression on young minds. In an era of numerous distractions and misinformation, finding new ways to make high-quality scientific content available and accessible to children can be a challenge. By using the children's book format, science communicators can leverage existing channels to bring content directly to children in the classroom and through public libraries. Members of Future Energy Systems partner with researchers to explore new topics and break them down in fun ways.

🔗 **Followed by Open Networking**

Day 2: Feb 25 - Change Management, AI & Data

Day 2 at a Glance

Time (EST)	Session	Speakers
11:00	Check-in | Coffee & Open Chat	
11:30	Showing Change Clearly: A Beginner's Guide to Data Visualization and Communicating Uncertainty	Michelle Campbell Mekarski; Renée-Claude Goulet; Cassandra Marion
12:30	Ignite: What Are Science Identities, and Why Are They Important?	Emily MacLeod
12:45	Break	
13:30	Ignite: Navigating AI and Misinformation	Katie Zajac

13:45	Ignite: A Social Media Trial of Climate Literacy Interventions	Kathryn (Katie) Harper
14:15	Ideas in Motion: Networking Forum	Frédérique Baron

11:00–11:30 - Check-in | Coffee & Open Chat

11:30–12:30

🔷 Showing Change Clearly

A Beginners Guide to Data Visualization and Communicating Uncertainty

Michelle Campbell Mekarski (she/her/elle), Science Advisor, Ingenium Canada – Canada Science and Technology Museum
Renée-Claude Goulet (she/her/elle), Science Advisor, Ingenium Canada – Canada Agriculture and Food Museum
Cassandra Marion (she/her/elle), Science Advisor, Ingenium Canada – Canada Aviation and Space Museum

In science communication, unclear data can create more uncertainty than it resolves. This interactive workshop is designed for communicators who want to turn numbers into clear, compelling visuals—without needing a background in statistics or advanced software.

This beginner-friendly session focuses on two key skills: explaining numbers and visualizing change. Participants will learn practical techniques to help audiences understand numbers, trends, and variability, making data both accessible and actionable.

We approach uncertainty in three ways:

1. Presenter uncertainty – figuring out the best way to show your data.
2. Audience uncertainty – helping non-experts read and interpret charts and graphs without confusion.
3. Scientific uncertainty – explaining variability, probabilities, and risk in a clear, trustworthy way.

Through hands-on exercises and real-world examples, participants will explore:

1. Techniques to make abstract numbers tangible and concrete, helping audiences grasp scale, impact, and meaning.
2. How to choose the right visual format for different types of data, from bar charts and line graphs to scatterplots and maps.

3. Design principles—like color, labeling, and layout—that make visuals easier to understand and more credible.
4. Strategies for reporting uncertainty in ways that inform audiences without overwhelming them.

All activities are designed to be practical, interactive, and immediately applicable (no calculators or specialized software required!). Participants will leave with clear, user-friendly approaches to presenting data and explaining uncertainty to non-specialist audiences.

Whether preparing a social media post, a report, or a public presentation, this workshop equips participants to turn numbers into narratives, show change with clarity, and build trust through accessible evidence. By the end of the session, participants will be able to see—and help their audiences see—change clearly, even in the midst of uncertainty.

12:30–12:45

⚡ What Are Science Identities, and Why Are They Important?

Emily MacLeod, Postdoctoral Scholar, McGill University

Who we are, the extent to which we identify (or not) with science, and how others see us shapes our (dis)engagement with science and science-related subjects in school, in out-of-school settings, in our work, and in our everyday lives. Broadly, this is what we mean by 'science identities', a concept included for this first time in the PISA 2025 framework. But how do we measure 'science identities', and why are science identities important?

The presentation will have four parts. I will begin by asking attendees to reflect on their own backgrounds in science and I will then introduce the concept of science identities. Specifically, I will introduce the definition of science identities as ongoing processes rather than fixed facets of our personalities – and introduce key definitions from the literature. I will also note, however, that there is no single definition of science identities.

In the second part of the presentation, I will provide a brief synthesis of the existing knowledge base on science identities by highlighting themes identified by current reviews on this concept and mapping the development of this relatively new research area. The existing research has shown that our science identities, or the extent to which we 'are' or 'feel' "sciencey", are not simply built or defined by our internal or 'natural' interest or skill in

science; but they are co-constructed by the people, places and spaces around us. For this reason, this presentation will focus on the importance of recognition in our science identities. To outline this point, I will here invite attendees to search for 'scientist' or 'science person' on google images and/or social media and share their reflections on a padlet/miro board.

The third part of the presentation will focus on how science identities have been measured to date and will consider the inclusion of science identities in the new PISA science framework. Here I will present findings from a review of methods used in science identities research by Anna Danielsson and colleagues (2023). I will also introduce the measures used in the PISA framework, namely science capital, attitudes, and environment. This will be aided by a short 2-minute Youtube video.

Finally, the presentation will end with evidence of how science identities can be developed, and an invitation for attendees to consider how to develop the science identities of others through their work. This activity will be guided by the following questions: How does your own science identity inform your work? What opportunities does your work provide to develop the science identities of others? If the presentation takes a traditional panel form this activity will be as a discussion in breakout rooms (depending on number of attendees). If the presentation takes an ignite session format, the activity questions will be posed to end the session.

🔗 **Followed by Open Networking**

12:45–13:30 - Break

13:30–13:45

⚡ Navigating AI and Misinformation

Action to Impact Through STEAM Education

Katie Zajac, Environmental Education Engagement Manager, GreenLearning

As artificial intelligence becomes increasingly integrated into how students encounter and process information, educators face new challenges in helping learners decipher what is credible and what is not. This session invites teachers to reflect on the growing influence of AI in shaping perceptions of science and technology — including the spread of misinformation and disinformation.

Participants will explore practical strategies for fostering critical thinking and digital literacy in the classroom. Using the FLICC method (Fake experts, Logical fallacies, Impossible expectations, Cherry-picking, and Conspiracy theories), this session will look at real-world cases and practice identifying signs of mis- and dis-information. Educators will learn how their students can take climate action in a creative artful way that promotes the sharing of accurate, positive scientific information — modeling how we can empower students to become informed.

13:45–14:00

⚡ A Social Media Trial of Climate Literacy Interventions

Kathryn (Katie) Harper, PhD, Impact and Innovation Unit, Privy Council Office, Government of Canada

Climate change poses a serious threat to Canadians from coast to coast to coast. To adapt to its impacts and mitigate further climate change, there must be coordinated efforts at all levels to reduce emissions and strengthen climate resilience. Canadians need to know key information about climate change to empower them to take action and advocate for positive change. However, previous research has shown that Canadians have gaps in their understanding of climate change and climate action. In collaboration with Environment and Climate Change Canada (ECCC) and the Canadian Association of Science Centres (CASC), we conducted a quasi-experimental social media trial to explore the effect of behaviourally informed messages designed to boost climate literacy. This project was a part of our Program of Applied Research on Climate Action, a partnership between the Privy Council Office's Impact and Innovation Unit, ECCC, and Natural Resources Canada, that ran from September 2021 to March 2025.

Three interventions, based on our previous research, were posted, two weeks apart, on CASC's ScienceUpFirst Facebook and Instagram accounts during the winter of 2024-25:

- Consensus: Highlighting the scientific and social consensus on climate change and climate action.
- Concrete Action: Explaining effective and accessible individual pro-climate actions.
- Combined: Combining strategies from the previous conditions and other behaviourally informed communications strategies.

A climate literacy quiz was also posted at four timepoints: two weeks before the first intervention (to establish baseline performance), and concurrently with each of the three

interventions (to measure the impact of the interventions). The quiz contained four questions:

- One question about climate change causes
- Two questions about climate change mitigation
- One question about climate change adaptation

The primary outcome of interest was respondents' accuracy on the climate literacy quiz questions. Social media statistics were also analyzed to explore differences in how the audience viewed and engaged with the content.

Overall, performance on the climate literacy quiz (i.e., accuracy) was higher following the interventions than at baseline. The Concrete Action and Combined conditions appear to have improved participants' knowledge of individual climate change mitigation behaviours. Results did not suggest that any of the interventions were effective in boosting knowledge in other tested domains (e.g., causes, adaptation).

These findings partially replicate those of our previous survey-experiment evaluating the impacts of climate literacy communications. The most notable exception is that the Combined condition, which was successful in increasing literacy across a variety of domains in the previous experiment, had limited impact in the field trial. This highlights the importance of testing communications in the field to ensure they have the desired effect on the intended audience. In the present study, the audience of ScienceUpFirst followers is likely to be more science-literate, and climate-literate, than the general population. This may explain the lack of significant effects of the interventions on some domains – it is possible that the baseline accuracy rates represented a "ceiling" of relatively high literacy. Future research may explore the impacts of these types of interventions among diverse audiences with varying baseline levels of science and climate literacy.

🔗 **Followed by Open Networking**

14:15–15:30

🔗 🔷 Ideas in Motion: Networking Forum

Facilitated by Frédérique Baron

A facilitated virtual networking session to connect with peers across the field, exchange ideas and experiences, and build meaningful relationships that support collaboration, learning, and future opportunities.

Day 3: Feb 26 - Health & Wellness and Outdoor Education

Day 3 at a Glance

Time (EST)	Session	Speakers
11:00	Check-in | Coffee & Open Chat	
11:30	Practical Steps to Indigenize STEM Education	Abiodun Ezekiel Adesina; Ifeoma Blessing Okafor; Glory Ure Nwankwo
12:45	Break	
13:30	Creating a Culture of Care in Non-Formal Learning Environments	Chantal Martin; Poh Tan; Dennis Chen; Hannah Dyck-Chan; Sangeeta Thomas
14:45	Breaking Barriers, Building Opportunities	Roopali Chaudhary; Gayathri Shukla; Anjali Barak

11:00–11:30 - Check-in | Coffee & Open Chat

11:30–12:30

Practical Steps to Indigenize STEM Education

Dr. Abiodun Ezekiel Adesina, Senior Lecturer in Integrated Science Education, Emmanuel Alayande University of Education, Oyo, Nigeria
Dr. Ifeoma Blessing Okafor, Lecturer, Biology Education, Federal College of Education (Technical), Umunze, Nigeria
Dr. Glory Ure Nwankwo, Lecturer, Integrated Science Education, Federal College of Education (Technical), Umunze, Nigeria

Global environmental, technological, and social changes are transforming science and technology education. Curricula must remain scientifically rigorous while rooting themselves in local cultures and contexts. Indigenizing STEM education integrates Indigenous knowledge, values, and worldviews alongside Western science, fostering

inclusive, relevant, and meaningful learning for all students, particularly Indigenous learners.

This approach, often guided by "Two-Eyed Seeing"—blending Indigenous and Western perspectives—promotes equity, reconciliation, and cultural resurgence. It addresses historical exclusions, enhances engagement, and enriches STEM by connecting concepts to local environments, traditions, and community needs.

Practical steps include acknowledging traditional territories, building relationships with Indigenous elders and communities, incorporating place-based and land-based learning, integrating Indigenous knowledge with Western science, adopting culturally responsive pedagogy (e.g., storytelling and experiential methods), developing community partnerships for programs and mentorships, providing holistic support for Indigenous students, continuously evaluating curricula for biases, Using AI to indigenise STEM education etc. Successful examples from Canada (Actua InSTEM), Australia (CSIRO Indigenous STEM Project), and the U.S. (AISES) demonstrate improved engagement, performance, and representation in STEM. Implementation demands ongoing collaboration, starting small and adapting with local Indigenous guidance.

We'll engage the virtual audience with online discussions, zoom polls and questions, breakout rooms, a virtual activity they can do on STEM indigenisation using AI.

🔗 **Followed by Open Networking**

12:45–13:30 - Break

13:30–14:30

🔷 Creating a Culture of Care in Non-Formal Learning Environments

Co-creating Garden Learning that Connects Curiosity, Care, and Action

Chantal Martin, Director of Education and Research, Vancouver Botanical Gardens Association
Dr. Poh Tan, Research Fellow and Research Associate, Vancouver Botanical Gardens Association; Institute for Environmental Learning, Simon Fraser University
Dennis Chen, Senior Manager of Community Engagement, Vancouver Botanical Gardens Association
Hannah Dyck-Chan, Research Fellow, Vancouver Botanical Gardens Association

Sangeeta Thomas, Learning Garden Coordinator, Vancouver Botanical Gardens Association

VanDusen Botanical Garden and the Bloedel Conservatory are living classrooms where people of all ages meet plants, places, and community. As botanical gardens respond to biodiversity loss, climate change, and questions of sustainability, these sites invite visitors to learn, reflect, and act. In the spirit of STAN 2026, Connected Currents: Navigating Uncertainty Together, this session shares how a cross-sector team works side by side to design programs that are relevant, welcoming, and grounded in local ecologies.

Co-led by the Vancouver Botanical Gardens Association and SFU's Institute for Environmental Learning, our collaboration brings together researchers, environmental educators, gardeners, teachers, students, families, and garden visitors. Through participatory action research, we co-create STEAM learning experiences that blend online and in-garden exploration. Examples include StoryMaps virtual field trips that remove geographic barriers and support pre- and post-visit learning, a new Learning Garden shaped by a classroom teacher and a landscape architecture student, and VBGA Fellowship projects that test and refine hands-on activities for diverse audiences.

People learn by touching, making, and wondering. Within curated beauty, we make space for what we call a good mess. Inquiry tables. Maker-style challenges. This balance of freedom and gentle guidance helps participants move from curiosity to collective action.

Attendees will leave with:

· Practical models for connecting people and plants through a STEAM lens, both online through StoryMaps and in the garden with simple, repeatable activities.
· Collaboration strategies to show how educators, gardeners, researchers, teachers, and students can share ownership and create programs that reflect community needs.
· Design principles for beautiful spaces that also welcome good mess, including scaffolds, prompts, and assessment of ideas that keep creativity alive while aiming for biodiversity, climate, and conservation outcomes.

Our panel hopes to offer a hopeful and practical vision. Botanical gardens can anchor adaptive, community-centered STEAM learning that nurtures curiosity, care, and informed action, both online and on the land.

🔗 **Followed by Open Networking**

14:45–15:45

🔷 Breaking Barriers, Building Opportunities

Advancing South Asian Women in STEMM

Roopali Chaudhary, CEO / Lead Researcher, Lotus STEMM
Gayathri Shukla, Founder & Principal Consultant, Campfire Kinship
Anjali Barak, Program Coordinator, Lotus STEMM

South Asian women represent one of Canada's most educated STEMM demographics, with nearly 28% earning a bachelor's or higher degree (Statistics Canada, 2021) - far surpassing the national average for women. This academic achievement, however, is rarely matched by professional leadership, visibility, or sustained advancement (Statistics Canada, 2023; Canadian Women in STEM Report, 2022).

Through Breaking Barriers, we set out to understand not just where the challenges for South Asian women in STEMM lie, but "why" - moving the conversation from expecting women to change themselves to urging system actors to create spaces where they can genuinely thrive.

This year our team surveyed 200 South Asian women and listened to the real stories of 50 focus group participants across the country. What we discovered reframes both the scale and human depth of the challenge. By weaving together data and personal stories through an intersectional lens, our findings reveal the urgent need for systemic change and we aim to take the first step by facilitating workshops with key stakeholders to translate these insights into action.

🔗 Followed by Open Networking and Closing Remarks