



Bridging the Gender Gap in STEM through Outreach & Professional Development

Program of the NSERC Chair for Women in Science and Engineering - Atlantic Canada

Part II
2017-2023

Edited by

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Forward

Dear friends and colleagues,

Our WISEatlantic program has been a stellar success. I thank everyone that contributed to the program over the years - our program assistants, role models, teachers and students. An enormous thank you to my Program Manager, Sally Marchand, for her phenomenal work. We are very proud of the impact that we have had in Atlantic Canada. I would also like to thank all the STEM women professionals who shared their experiences of working in STEM and contributed their insights, challenges and stories. Your feedback on our programming meant a lot to us, and helped us build better programs each year. You empowered us to keep going, as much as we empowered you to hang in there - together we have helped make the STEM culture better for everyone.

It has been enormously satisfying to see the young women who attended our junior high program embark on their own science journeys. Equally satisfying is the knowledge that we acted as a catalyst by providing seed funding and in-kind support to help so many local and grass-roots-level organizations establish their own STEM programming for equity deserving groups. I have met so many wonderful people that I would never have met had I not accepted the NSERC Chair for Women in Science and Engineering position back in 2011. The Atlantic Connections Conferences that we established, our work in hosting the CCWESTT 2022 conference, and my involvement in co-founding the Canadian Black Scientists Network, will always be memories that I will treasure.

At Mount Saint Vincent University, I was able to launch a series of Science camps for girls, Science retreats and also support other faculty to establish their own science programs such as the Two-Eyed Seeing Program and Science Circles. I also established the Margaret-Ann Armour Award for Science, launched a research assistantship program for International, Black and Indigenous Science students and helped to put the Verna Kirkness Program on the radar within the leadership team.

These successes would not have been possible without the support and funding from NSERC and Mount Saint Vincent University. I am very grateful to have worked with so many community partners who share my commitment to equity and inclusion.

As an immigrant woman, I feel incredibly privileged to have been in a position to help improve the STEM culture in Atlantic Canada, to have met so many wonderful women in STEM, to know that I helped some girls make the decision to pursue STEM as a career and helped some women stay in STEM.

Thank you to everyone.

Keep in touch,

*Dr. Tamara Franz-Odendaal
Professor at Mount Saint Vincent University &
NSERC Atlantic Chair Women in Science & Engineering*

Acknowledgements

A sincere thank you to the sponsors and partners of the NSERC Chair for Women in Science and Engineering for the Atlantic Region from 2017-2023



About WISEatlantic



The WISEatlantic program was launched in October 2011 with the aim of supporting women in Science, Engineering, Trades and Technology (SETT). This book is part two, with the first book covering the period 2011-2017. The WISEatlantic program was housed at Mount Saint Vincent University from 2011-2023.

The **goals** of the WISEatlantic program are to shift gendered STEM stereotypes. We empower girls to consider Science, Technology, Engineering and Math (STEM) - based careers by raising their awareness of the diversity of jobs within these fields, and enabling them to visualize themselves working in these fields. WISEatlantic also supports early career women in STEM through professional development and networking opportunities.

Team Members

Chair: Dr. Tamara Franz-Odendaal

Dr. Tamara Franz-Odendaal is a Professor of Biology and the NSERC Chair for Women in Science and Engineering (CWSE) for Atlantic Canada at Mount Saint Vincent University, Nova Scotia. Dr. Franz-Odendaal is one of five NSERC CWSE in Canada. She leads the WISEatlantic Program, as well as her research program in skeletal biology.

Program Coordinator: Sally Marchand (2013-2023)

Program Assistants: Jeanette McPherson (2013-2023)
Madyn Bourque (2018-2023)
Molly Murray (2019-2023)
Tiffany Fields (2021-2022)

Equity Research Assistants: Drew Burchell (2021-2022)
Shams Quader (2022-2023)



L - R: Sally Marchand, Tamara Franz-Odendaal, Jeanette McPherson, Madyn Bourque, Molly Murray

Highlights: Impacts & Outreach

Since 2017 WISEatlantic has continued to offer engaging and impactful STEM programming to girls+ in Atlantic Canada. Our one-day Girls Get WISE Science Retreats have continued at MSVU on a yearly basis, and we've been able to sponsor other organizations throughout Atlantic Canada to host their own Girls Get WISE Retreats, expanding our reach. We also successfully added a second yearly Girls Get WISE Science Summer Camp for girls+ 15 & 16 years. We've continued to connect and support women in SETT through our Atlantic Connections Conferences, as well as Step-Up and other workshops.



WISEatlantic has directly engaged with over 1334 girls+ in STEM since 2017

Over the past 6 years, WISEatlantic has...

Inspired Youth by:

- Running 6 Junior Girls Get WISE Science Summer Camps; and 5 Senior Girls Get WISE Science Summer Camps.
- Delivering 9 one-day Girls Get WISE Science Retreats and sponsoring 6 other retreats in the region.
- Connecting 428 girls to 82 women role models in STEM through our Girls Get WISE Programs
- Directly engaging 1477 youth in other outreach activities such as virtual role model sessions, Science Odyssey events, Science Literacy events, CAGIS, etc.
- Creating and producing a Career Spotlight series of four booklets which have been distributed to 58 schools in Atlantic Canada.



"I am very grateful to everyone who made this camp possible!! I see the quiet assumption that math and science is TOO hard in things my daughter says and things that are said to her. Thank you for opening her eyes and building her confidence!" -Parent of Past Participant

Supported Women in SETT by:

- Hosting the Atlantic ConnecTions Conference in Charlottetown, PEI which engaged with 84 students, academics, and industry professionals in SETT.
- Co-hosting the 2022 CCWESTT Conference in Halifax engaging 242 women, non-binary and trans folks. Raised over \$250,000 in sponsorships for this conference.
- Organizing and hosting two Step-Up Academic Advancement workshops engaging with 39 female academics.
- Sponsoring Five SSTAR Sponsorships engaging 230 post-secondary students and 293 others (academics, general public)

“Excellent- even just meeting with other women is refreshing, but the ideas presented were excellent as well. And, the speakers were fantastic.”
- Step-Up Workshop Participant



Acted as Catalysts & Sponsors by:

- Sponsoring 14 community groups who are working to increase diversity in STEM through our Partnerships Program. These sponsorships reached 1109 youth, 188 women in STEM.
- Sponsoring a total of 17 First Lego League Teams that had at least 50% girl participants.
- Launching the Indigenous-Black-International Science (IBIS) Student Assistantship in 2022 which matched eight STEM students and researchers at MSVU for paid research experience.
- Initiating the Dr. Margaret-Ann Armour Award at MSVU. This award, given in memory of Dr. Margaret-Ann Armour, will be presented annually, to undergraduate female students majoring in Science fields who have volunteer experience in their community.
- Dr. Franz-Odendaal helped launch the Canadian Black Scientists Network. She served as co-founder and as Lead Ally for the network.
- Helping to launch the Verna J Kirkness Program at MSVU to be offered in 2023 to Indigenous students.

WISEatlantic Impact by Province



Nova Scotia

Direct Engagement
 Girls: 1324
 Role models: 152
 Professionals: 1670
 Indirect engagement/sponsorship
 Girls: 184
 Professionals: 1007
 Communities Reached: 18



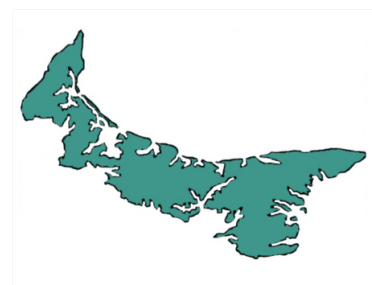
Newfoundland and Labrador

Direct Engagement
 Girls: 11
 Professionals: 146
 Indirect engagement/sponsorship
 Girls: 31
 Professionals: 48
 Communities Reached: 4



New Brunswick

Direct Engagement
 Girls: 29
 Role models: 6
 Professionals: 16
 Communities Reached: 3



Prince Edward Island

Direct Engagement
 Girls: 239
 Professionals: 107
 Indirect engagement/sponsorship
 Youth: 120
 Communities Reached: 1

Since 2017, WISEatlantic has impacted **26 communities** directly throughout Atlantic Canada, and **directly** engaged with over **4951** girls+, university students, teachers, parents, professionals, and academics.




Website and Communications

In 2017 the WISEatlantic.ca website was redesigned to ensure improved engagement of our target audiences through a more modern design. In response to feedback regarding the resources page of the website, in 2021 we had this page re-vamped so that it is easier to find specific resources. Other changes to the website in the last 5 years include the addition of a Blog page (2020) that features all kinds of stories and interest pieces relating to STEM. Since the WISEatlantic launch in 2011, a four page quarterly newsletter was produced.



The WISEatlantic website has had over 40,194 unique visits since its launch

Social Media Follows 2017-2023

	Average Monthly New Followers	Total New Followers
	12	809
	38	2514
	12	277

During the Covid-19 pandemic in 2020, we changed the format of our newsletter from four to two pages and produced the newsletter every two months instead of quarterly. This change was made to increase engagement with our audiences. The change also saw the addition of a featured blog post, where the first few paragraphs of the story are published in the newsletter and readers are directed to our website for further reading. Each newsletter was shared via email with 720 individuals.

Over the past five years we’ve increased engagement across our social media platforms which include Twitter, Facebook, Instagram, and LinkedIn. You can see the trends in our audience engagement in the image to the left.

We’ve also engaged with the news media throughout our activities. From 2018-2023, WISEatlantic has been featured in over 22 public media outlets, including on television, in magazines, websites, and in print. Of these media features, Dr. Franz-Ondendaal has been interviewed for 5 television segments, 4 radio broadcasts, and over 17 print sources. Dr. Franz-Ondendaal was also featured in the CBC Nature of Things documentary, “The New Human”.

ATLANTIC News

International Women's Day: N.S. women stand up to bridge gender gaps in STEM



Selected Presentations & Panels

Selected Invited Presentations:

- Franz-Odendaal TA. 2023. Building Equity and Inclusion in Research Teams. CanFly national conference, Dalhousie University. (plenary)
- Franz-Odendaal, TA. 2023. Being Bold: A Science Odyssey. Girls UP conference, University of New Brunswick (keynote)
- Franz-Odendaal TA. 2022. From Statistics to Experiences: Women in STEM. International Women's Day Event, Hosted by Memorial University (virtual)
- Franz-Odendaal TA. 2021. Inclusivity in the Research Ecosystem. CARA-EAST Conference (virtual) (keynote)
- Franz-Odendaal TA. 2018. Emotional Intelligence in the Workplace. WinSETT workshop, NSCC (keynote)
- Franz-Odendaal TA. 2018. How networks, mentors, and sponsors can help your career in STEM. WinSETT workshop, Memorial University (keynote speaker)
- Franz-Odendaal TA. 2017. Status of Women in Science in Canada, University of Prince Edward Island.
- Franz-Odendaal TA. 2017. How networks, mentors, and sponsors can help your career in STEM. WinSETT workshop, Memorial University (keynote)
- Mavriplis C., Langelier E., Franz-Odendaal T., Farenhorst A., Shannon L. 2017. Canada's National Network of NSERC Chairs for Women in Science and Engineering. Gender Summit 11. Montreal, Canada
- Joy P., Blotnick K., French F., Franz-Odendaal TA. 2017. Gender-based analysis of math self-efficacy, career influencers and STEM career knowledge amongst students in Atlantic Canada. Gender Summit 11. Montreal, Canada
- Franz-Odendaal TA. 2017. Towards Advancing Women in Academia, Academic Advancement Workshop, Saint Francis Xavier University.

Selected Invited Expert (panels, moderator, discussant)

- Moderator, Trainee Experiences in STEM, 2023, International Union of Pure and Applied Chemistry, Global Women's Breakfast, Mount Saint Vincent University.
- Panelist, International Women's Day. 2022. Panelists: Morine K, Dean C., Franz-Odendaal, TA. Ghose, S., Langelier E., Jakobi J., and Behjat L (organized by NSERC).
- Panelist, Principle Investigator Round Table, Best practices for mentoring students and creating inclusive research environments. Panelists: A. Smoll, J-L McIsaac and TA Franz-Odendaal, May 2021. Mount Saint Vincent University.
- Organiser and Moderator, Strengthening EDI policies to diversify the STEM sector. Panelists: Farenhorst, L. Behjat, S. Villemure, L. Shannon, K. Hewitt. 2020. 12th Canadian Science Policy Conference.
- Moderator, Inclusion in SETT, Atlantic Connections Conference, 2019
- Panelist, Symposium on Tri-council funding. Research Symposium Day, MSVU, Halifax, 2019
- Moderator, Diversity in the Tech Sector, Industry Conference, STEMfest, Halifax, November 2018
- Panelist, Successful Local Conferences, CCWESTT Biennial Conference, Edmonton, May 2018
- Invited to provide expert opinion on increasing diversity for the Review of the Diversity Policy (GBA+) within National Research Council of Canada, 2018
- Participated in roundtable discussion on gender equality for the G7 Innovation and Employment Minister's meeting, 2018 (invited by Senior Assistant Deputy Minister in the Strategy and Innovation Policy Sector at Innovation, Science and Economic Development Canada)
- Panelist, Diversity in STEM discussion, Wolfville, NS, March 2018 (over 120 attendees; youtube posting)
- Panelist, Diversity in Engineering, National Undergraduate Engineering Conference, Halifax, NS, January 2018.
- Panelist, Canadian Forum for Workforce Development in the Marine Industry, P-12 Education panel with Deputy Minister of Education for NS, Sandra McKenzie, September 2017
- Invited to host the Minister of Science, the Honourable Kirsty Duncan, visit to the Girls Science Camp at MSVU, 2017
- Participated in roundtable discussion with Gudie Hutchings, Parliamentary Secretary for Small Business and Tourism, Government of Canada, Centre of Women in Business, 2017
- Invited to meet MP Marilyn Gladu, with MSVU president Ramona Lumpkin, 2017
- Invited to be a witness at the House of Commons, Ottawa, Status of Women, Canada, meeting #62/42nd Parliament/1st session, 2017.

Selected Conference Presentations

- Adams, J., Daniel J, Jerome-Majewska L., Andrade M., Asiedu E., Quader S., Ouedraogo A., Burchell D., Franz-Odendaal. 2023. Perceived or experienced barriers of Black Canadian trainees in STEMM (Science, Technology, Engineering, Math and Medicine) fields. Black Excellence in STEMM, Canadian Black Scientists Network, Virtual National Conference (oral)
- Bonardi O, Burchell D, Franz-Odendaal TA, Joy, P. 2022. Experiences of Canadian LGBTQ+ postdoctoral scholars in the sciences. QAtCanSTEM Queer Atlantic Canadian STEM 2022 Colloquium, October 20-21st 2022.
- Bincik H, Newman RL, Hayes, J and Franz-Odendaal TA. 2022. She Persisted or did She? The Role of Belongingness and Utility Value in Women's Persistence in STEM. CCWESTT Biennial Conference, Halifax, NS.
- Burchell D, Franz-Odendaal TA and Joy P. 2022. LGBTQ+ Postdocs in Science: Perspectives on Representation, Mentorship and Coming out. CCWESTT Biennial Conference, Halifax, NS.
- Koch, E. Franz-Odendaal TA and Davis-Janes A. 2022. Outperformance-related Discomfort: Another Factor in Women's Under-representation in STEM. CCWESTT Biennial Conference, Halifax, NS.
- Franz-Odendaal TA., Marchand S. 2022. STEM for All. Girls conference, Halifax, MSVU
- Franz-Odendaal TA. Mavriplis, C, Farenhorst A., and Shannon L. 2020. Assessment of Academic Advancement Workshops for Female Faculty in STEM in Canada. XI European Conference of Gender Equality in Higher Education.
- Franz-Odendaal TA. Mobilizing the university community into EDI action: an example from a small university in Canada. 2020. Presentation in Colloquium on Gender Equality, Diversity and Inclusion Initiatives across Canada. Mavriplis, C., Franz-Odendaal TA, Bennet, S. XI European Conference of Gender Equality in Higher Education.
- Burchell, D., Franz-Odendaal, T., Joy, P. 2021. Experiences of Canadian LGBTQ2S+ Postdocs in Science: A Qualitative Study. Canadian Association of Postdoctoral Scholars' Postdoc Appreciation Week (virtual). (September 2021).
- Bincik H, Newman R, Franz-Odendaal TA, Hayes J. Examination of Underlying Processes that Contribute to Gender Disparities in Commitment to STEM and non-STEM Academic Majors (Canadian Psychology Association 82nd Annual National Convention taking place from June 7th - 25th, 2021.)
- Dengate, J, Farenhorst A, Peter T, Franz-Odendaal TA. 2020. Bias Perception: An exploration of Canadian Faculty within Natural Sciences and Engineering. QAtCanSTEM Colloquium (poster)
- Mavriplis, C, Shannon L, Langlier E, Farenhorst A, Franz-Odendaal TA, D'Armours C, Young H. 2019. 30 Years of Canada Chair's for Women in Science and Engineering: The Changing Landscape. ICWES 18, Warwick, United Kingdom (oral)
- Purdy, C, Braddon K, Bombay, A, Syliboy A, Franz-Odendaal TA, Grant S. 2019. Collaborating and Evaluating: A scoping review of science outreach programs for indigenous youth on Turtle Island. Crossroads Research Conference, Dalhousie University, Halifax.
- Purdy, C., Franz-Odendaal TA, Syliboy A., Grant, S. 2019. The extent and use of evaluation methods used in promotional science programs targeting indigenous youth on Turtle Island: a scoping review. Research Symposium Day, MSVU, Halifax (oral)
- Franz-Odendaal TA and Winn A. 2018. Shifting mindsets about girls in Computer Science. CAN-CWIC, Halifax (poster)
- MacQuarrie S.* and Franz-Odendaal TA*. 2018. Dealing with Difficult Conversations: student and supervisors in graduate school. CCWESTT Biennial Conference, Edmonton (oral) (*authors contributed equally)
- Wynot J. Mavriplis C, Franz-Odendaal TA*, Shannon L*, Fahrenhorst A.*. 2018. Integrating Gender-based analysis in Evaluation and Performance Measurement. CCWESTT Biennial Conference, Edmonton (*authors contributed equally) (oral)
- Franz-Odendaal TA.*and Clark D.* 2018. An Exploration of the Experiences of Immigrant Women in STEM. CCWESTT Biennial Conference, Edmonton (*authors contributed equally) (oral)
- Franz-Odendaal TA and Marchand S. 2018. Current Myths and Stereotypes surrounding Girls in SETT. CCWESTT Biennial Conference, Edmonton

Selected Awards, Recognitions & Committees

Awards and Recognitions – WISEatlantic

- INSIGHT into Diversity – Inspiring Programs in STEM (2022)

Selected Awards and Recognitions – Dr Franz-Odendaal

- Distinguished Professional Award, Discovery Centre (2022)
- Diversity and Inclusion Award, MSVU (2020)
- Crystal Award for Women Worth Watching in STEM (2017)

Selected EDI-related Committees (2017-2023)

- NSERC Chairs Women in Science And Engineering Network Manager (2019-2023)
- Tri-agency Advisory Council on Training, reporting to Canadian Standing Committee on Research (2022-2023)
- Dimensions Chair, MSVU (2020-2022)
- Canadian Black Scientists Network, Co-founder and Lead Ally (2020-2023)
- Nova Scotian Institute of Science, President (2020-2022)
- Canadian Coalition for Women in Engineering, Science, Trades and Technology, Board Member (2015-2020)
- Committee Member, NSERC Chairs for Women in Science and Engineering Advisory Committee for the CWSE Program Evaluation, 2020





Engaging Girls+ in STEM

Girls Get WISE Science Camps

Our week-long Girls Get WISE Junior Summer Camp has been running annually since 2012. For ten years, the camps have been bringing together young girls and diverse female role models to provide participants with the chance to experience the many opportunities STEM has to offer. Each camp maintains certain key features that set our camp apart from others. A role model session is always held where campers get to talk to women in STEM working in varied fields, and ask questions ranging from their careers and education, to what a day in the life looks like.

Furthermore, participants get the chance to learn about developmental biology through working with zebrafish, a model organism used in Dr. Franz-Oudendaal's lab. Microscopy basics are taught in advance of working with the fish, in addition to how to use a pipette and petri dishes. From learning about zebrafish breeding, egg collection, and fish care, the girls get to watch the rapid development of an organism right before their eyes. Additionally, participants get to try their hand at different STEM fields including chemistry, engineering, mathematics, psychology, trades, technology, and computer science.

One of the highlights of the Junior camp is the Open Lab we have on the last day. We invite families of campers, as well as members of the MSVU community, to come and see what activities the campers have done throughout the week. Campers are given the task of setting up stations to showcase their work and to guide guests around and explain the activities.



Collecting Eggs 2018 Summer Camp



"My two daughters did the WISEatlantic program a few years ago. My oldest has just been accepted to McGill University for Biology/Medical Sciences with a scholarship. I give great credit to your program for inspiring her to study and enjoy Science. Many thanks for your program and the people who work to make it possible" -Parent



Girls Get WISE Science Camp - July 2018

Our Girls Get WISE Senior Summer Camp was introduced in 2018 and was developed for girls aged 14-16. These camps were 4 days and had activities that built off of their more in-depth knowledge base, in addition to fostering their curiosity as they approach university and beyond. While these camps were not focused on zebrafish development, they still featured our role model sessions.



"The camp really opened my eyes up to different jobs. I love the Mount. I hope one day I can come here as a student and be in science." - Past Senior Camper

Example of Camp Activities:

- Algae strings
- Aluminum foil boats
- Solar observing
- Limiting reactants chemistry
- Working with circuits
- The science of bath bombs
- Neuroscience demonstrations
- Developmental biology
- Soldering
- Engineering design challenges



2019 Junior WISE Summer Camp

97.7% of campers indicated that the camp met or exceeded their expectations
95.2% of campers said that the camp inspired them to continue with math and science classes in school



Girls Get WISE Science Retreats

Every spring, WISEatlantic hosts a day-long Science retreat at Mount Saint Vincent University for girls aged 11-16. The event always draws in a large crowd and aims to provide youth with the chance to engage with and celebrate STEM with other like-minded youth interested in science. The day starts with an ice breaker activity before participants are split into two groups for the main hands-on STEM sessions. A role model session is held in the afternoon to connect youth with various women working in STEM; the allotted time gives them the chance to ask questions about their careers, schooling, day-to-day experiences, and ask for advice as they start to think about what they want to do with their futures.



Since 2017, 5 retreats have taken place at MSVU, and one was virtual during the Covid-19 pandemic.

Over the years, the Girls Get WISE Retreat has become a space for girls+ to explore their interests, try new things, and experience science in various ways. Furthermore, the opportunity to meet and interact with those of diverse backgrounds provides participants with a unique and impactful experience that has been inspiring youth since day one.



"I attended a Girls Get WISE Science Retreat back in grade 11 and it was a great experience. The mentors that talked to us at the end really inspired me. Now, a few years later, I am concluding my first year of university, working towards a Bachelor of Science in Environmental Sciences." -Past Retreat Participant



The role model session connects girls with women working in STEM professions, which allows them to learn more about the possibilities of future careers, while chatting with role models in a relaxed setting.

Inspiring Role Models have been women working as...

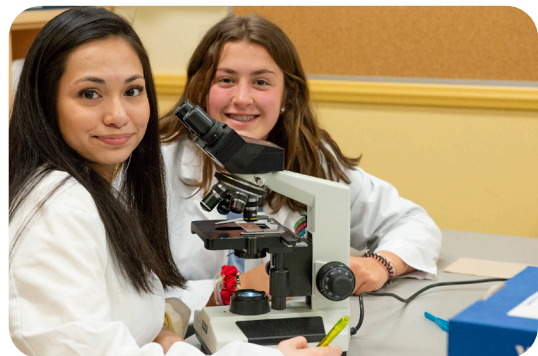
- Developmental Biologist
- Medical Physicist
- Forensic Anthropologist
- Civil Engineer
- Cancer Researcher
- Chemist
- Environmental Engineer
- Computer Scientist
- Veterinarian
- Microbiologist
- Mathematician
- Physicist
- Aerospace Engineer
- Paramedic



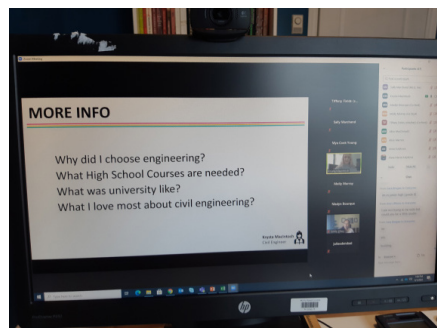
2018 WISE Retreat - Role Models

Activities during the retreat have included:

- Onion cell lab
- The mathematics of winning
- Virtual escape room
- DNA decoding
- Forensic investigation
- Catapult challenge
- Designing marble roller coasters
- Electrifying Chemistry



97.4% of retreat participants indicated that the event met or exceeded their expectations
93.8% of retreat participants said that the event inspired them to continue with math and science classes in school



Girls Get WISE Rural Science Retreats

Each year we aim to host one of our Girls Get WISE Science Retreats in a more rural area within Atlantic Canada. This allows us to reach more girls who may not have the means to travel to our Retreat in Halifax. We often team-up with a local group, university, or community college who assist us with the planning and delivery. Below are the rural retreats we have hosted from 2017. We were unable to host rural retreats from 2020-2021 due to restrictions caused by Covid-19 pandemic.

The following rural retreats took place from 2017-2023:



Allison Bernard Memorial High School 2017

We teamed up with the Nova Scotia Department of Education to host a Girls Get WISE Science Retreat in Eskasoni for 31 Indigenous girls in grades 7-10. Dr. Stephanie MacQuarrie from Cape Breton University delivered one of the hands-on sessions where the girls made soap. The other session had the girls designing a water filter.



Mount Allison University Retreat 2018

We brought our Girls Get WISE Science Retreat to Mount Allison University in 2018. Twenty-one girls participated in the day-long event which featured our always-anticipated role model session, as well as an engineering and chemistry activity. A former WISEatlantic participant, and current student at Mount Allison, assisted with planning and volunteered on the day!



St. Francis Xavier University Retreat 2019

WISEatlantic teamed up with St. Francis Xavier University to host our Girls Get WISE Science Retreat in Antigonish in 2019. Thirteen (13) girls engaged in various activities, including a chemistry lab and physics challenge. The event finished off with a role model session which gave girls the chance to talk to a primary care paramedic, chemist, mathematician, and a chemical engineer.



Girls Get WISE Science Retreat

Girls in grades 7-10, join us for a fun day of exploring Science, Technology, Engineering, and Math (STEM) through hands-on activities and discover rewarding STEM careers by meeting with women working or studying in STEM fields!

November 26, 2022
10:00-3:15pm

NSCC Pictou Campus

Cost is \$10* per participant and includes lunch.
Register at [WISEatlantic.ca/events](https://www.wiseatlantic.ca/events)

*We believe in providing opportunities to explore STEM in ALL girls. If need to a reference to attending, please contact: info@wiseatlantic.ca

IGNITE 

2020 - 2023 Pictou NS Retreat

In the Spring of 2020 we had planned a retreat in partnership with Ignite Atlantic that would take place at NSCC Pictou Campus. This event was cancelled due to the pandemic. Two more attempts were made to host this event and due to restrictions and weather events, we were unable to host this event.

Living WISEly App Design Contest



To encourage young girls to continue to explore STEM during the COVID-19 pandemic, WISEatlantic hosted the Living WISEly App Idea Design Contest. It was developed for girls aged 14-16 to hone their creative skills to one of today's most heavily discussed topics: sustainability. Participants were tasked to design their own app that either promoted or was related to sustainability. To get participants thinking about the design process, they attended a virtual App 101 Session with a local female app designer, which introduced various tips and tricks for them to keep in mind while developing their designs. They also pitched their ideas to a panel of judges and received feedback before fine-tuning their app design and presenting it for a final time.

Three winners were selected:

S. Kaur's app was called "Plan-It" and was designed to make it easier for individuals to make sustainable purchases at a variety of big-name stores. By incorporating a reward system into her app that gave users the chance to earn discounts when they made certain sustainable choices, she ensured that people would keep coming back to her app and make long-term changes.

B. Skye's app, "Go Go Eco", was aimed towards younger children. Users would have the opportunity to grow a virtual garden by doing various real-time and in-game tasks related to sustainability. Her goal was to teach the younger generation about how they can make sustainable choices from their own home, like growing a vegetable garden, or ditching single-use plastics.

B. Pothu named her app "Accident Free" because its' purpose was to prevent car accidents from occurring. The app would sync with a vehicles' monitoring system to alert the driver of any immediate threats. Another feature of the app included syncing with 911 in the event of an accident and alerting the appropriate emergency assistance, in addition to providing first responders important information such as the location of the accident.



MSVU Girls Conference's

WISEatlantic has been an active participant in the annual Girls Conference for many years now. The event, hosted by the Alexa McDonough Institute for Women, Gender, and Social Justice at Mount Saint Vincent University brings together community organizations, universities, and girls from local schools and gives them the opportunity to engage in various workshops led by community leaders. For both conferences in 2018 and 2019, WISEatlantic hosted role model sessions where participants had the chance to interact with women in STEM and learn about their fields of work.

In 2020, we ran a session called 'Try Your Hand at the Game of Life'. The activity tasked participants with budgeting their money based on the salary of a STEM or non-STEM job. Similar to the 'Game of Life', they had fun picking their houses, cars, pets, etc., while dealing with life events and sticking to a budget!

In 2022 Dr. Franz-Odendaal gave a presentation on EDI in STEM at the virtual conference and in 2023 Sally Marchand and Madyn Bourque did a session on Women in STEM by having participants play the STEMs board game. For more information on this game, please refer to page 40.

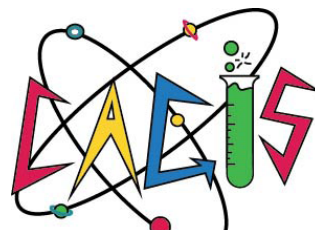
In 2023, WISEatlantic once again ran a hands-on session featuring the STEMs board game that our program sponsored.



CAGIS

WISEatlantic partnered with the Canadian Association for Girls in Science (CAGIS) to start a Halifax chapter in 2018. The not-for-profit science club is for girls ages 11-16 and invites members to participate in monthly events at different science, technology, engineering, and math (STEM) workplaces. The club provides young girls with the opportunity to explore STEM through various hands-on activities led by experts in their fields. CAGIS also gives university students and women working in STEM professions the chance to volunteer, lead, and plan activities and

Some events that the Halifax chapter organized were a visit to Bluedrop Training and Simulation to learn about their work in the aerospace industry, a makerspace with partner Brilliant Labs, pH chemistry with cabbage juice indicator and so much more! At the onset of the COVID-19 pandemic, monthly meetings were shifted online to adhere to Public Health guidelines. In 2022 events returned to in-person.





Youth STEM Outreach

Science Literacy Week



SCIENCE
LITERACY
WEEK

Science Literacy Week showcases the many ways kids and families can explore and enjoy the diversity of Canadian science. Libraries, museums, science centres, schools and not-for-profits come together to highlight the books, movies, podcasts and events that share exciting stories of the science, discoveries and ingenuity shaping our lives. It's about each and everyone's unique relationship with science and how they live it. WISEatlantic has been happy to offer Science Literacy Week programming for several years now including the below events.

2018 Out of this World!

WISEatlantic teamed up with the Woodlawn Public Library to host three Atlantic Canadian scientists who were conducting space-related research: Dr. Catherine Lovekin, an Assistant Professor of Physics at Mount Allison University who studies the insides of stars; Dr. Tamara Franz-Odenaal, a Professor of Biology at Mount Saint Vincent University who specializes in developmental biology and bone development specifically; and Dr. Svetlana Barkanova, a Professor of Physics at Grenfell Campus of Memorial University who focuses on the basic laws that govern the universe.

2019 Exploring Careers in Ocean Sciences

Junior High students got the chance to learn about different careers in ocean sciences from three local scientists, in addition to engaging with a hands-on shipbuilding activity run by COVE. This event was held at the North Memorial Public Library.

2020 Biodiversity Bonanza

WISEatlantic held online Zoom sessions throughout Science Literacy Week to celebrate biodiversity! Each day featured a different scientist who specializes in a different kingdom (animal, plant, etc.).

2021 Climate and Fake News

Participants heard from a local scientist who researches the effects of climate change on our environment, and put their fact-checking skills to the test in a Science Communication activity called 'Fake News' during an online Zoom workshop.



Science Literacy Event 2018

Science Odyssey Week



Science Odyssey Week is a national campaign organized by NSERC that celebrates Canadian achievements in science, technology, engineering, arts and mathematics (STEAM). Every year in May, hundreds of science outreach leaders deliver fun, engaging and inspiring activities to Canadians of all ages. WISEatlantic has participated in several Science Odyssey Weeks including:

2017 Demystifying DNA

Dr. Tamara Franz-Odendaal did a short presentation on DNA at Mount Saint Vincent University. The event, targeted for Junior High students, also had participants build their own DNA strands using everyday materials and extract DNA from fruit.

2018 Be Curious - Explore Careers with Impact

WISEatlantic hosted a panel of 5-6 females in various STEM careers at the NSCC Lunenburg Campus in Bridgewater. Each panelist was asked questions regarding how they got into their career and how their job helps their community. Following structured panel time, the floor was opened up for questions from the audience.

2021 Coloring the Galaxy

A virtual event for grade 8-9 classes and their teachers in Atlantic Canada was held to explore concepts of light and the electromagnetic spectrum. Participants learned how scientists add color to monochrome images from telescopes, including the Burke-Gaffney telescope in Halifax.

2022 Pondering Ponds

To celebrate Science Odyssey Week, WISEatlantic held an event called "Pondering Ponds" at Mount Saint Vincent University. Those in attendance got to use paper microscopes called Foldscopes to look at different water samples collected around campus. Using identification keys, they also got to identify any organisms they found in their water samples. Finally, they used pH strips to test the pH of their water, in addition to comparing samples and discussing potential reasons for their findings.



Career Spotlight Series of Booklets

The career spotlight series booklets are a series of four booklets showcasing women in STEM. They include “Women in Science”, “Women in Engineering”, “Indigenous Women in STEM” and “Women in Computer Science”. These booklets are available on the WISEatlantic website and were distributed to guidance counsellors in Atlantic Canada. The booklets were also translated into french and a Mi’kmaq translation of the Indigenous booklet is underway.

The booklets highlight women’s careers and education paths, and features important qualities you should have for a career in a specific field. The booklets also feature their favorite parts of their careers and pieces of advice for young females going into a STEM field. The booklets can be found at www.wiseatlantic.ca



Women in Science

Cody Paige, Geologist
Alexandra Merkx-Jacques, Molecular Microbiologist
Leanne Lucas, Research Associate, Chemistry & Physics
Hilary Moors-Murphy, Marine Biologist
Nola Etkin, Chemist
Linda Campbell, Environmental Biologist

Women In Engineering

Rumbi Muvungi, Aerospace Engineer
Amy Pellerin, Environmental Engineer
Browren Allard, Chemical Engineer
Maggie MacKay, Water Resource Engineer
Nathalie Vendrys, Civil Engineer

Indigenous Women in STEM

Kalolin Prosper, Civil Engineer
Cheyenne MacDonald, Botanist
Sara Rumbolt, Biologist (Environment)
Jennifer Sylliboy, Biologist
Janna MacKay, Dietitian

Women in Computer Science

Wanda Mason, Programmer/Analyst
Diane Ortiz-MacLeod, Data Scientist
Rebecca Ansems, Software Engineer 2
Sreejata Chatterjee, Software Developer (Co-founder)
Bimpe Ayoola, Software Engineer, PhD Student

Team Sponsorship

Every year, WISEatlantic sponsors up to three First Lego League teams in Atlantic Canada that are comprised of at least 50% girls+. We have sponsored 17 teams from 2017-2023, including the Portland Gophers who won the best robotic design award at the qualifying competition held at NSCC in 2019. For the community portion of their project, the group chose to work on cleaning local lakes and researched both causes and solutions of Cyanobacteria (a type of algae) in our lakes.

Other notable mentions include the Sisters of Science who won the Innovative Solution Award for their project entry and received the regional nomination for the FLL Global Innovation Award in 2019, the Robats who competed at the International Video Qualifier in 2022 and earned first place and qualified for the Robofest Online World Championship.

WISEatlantic has supported the Imhotep Legacy Academy that aims to help improve student success for students of African heritage in Nova Scotia through First Lego team and equipment sponsorships.



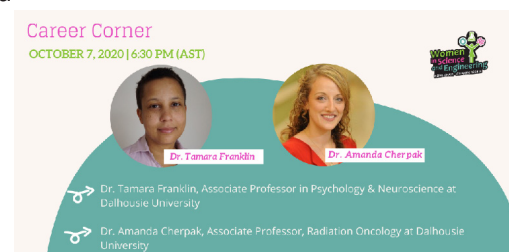
Techsperts 2018



Sisters of Science 2018

Career Corner Virtual Role Model Sessions

Our role model sessions are one of our most loved and highly anticipated events. To make them more accessible during the pandemic, WISEatlantic introduced monthly 'Career Corner', Virtual Role Model sessions. These events gave female STEM scientists the chance to engage with girls of all ages looking to explore different science fields. Participants were able to ask questions related to their careers, including what courses or programs they took, what a day in the job is like, and opportunities their career has to offer. The personal sessions fostered interest in STEM by providing girls with role models they could easily interact with in an engaging, virtual environment.



Skilled Futures for Women Events



From 2018-2022 WISEatlantic provided funding to Skills Canada Nova Scotia in support of their Skilled Futures for Women events. As part of this partnership, we hosted sessions at these events and/or assisted with organizing a role model session as part of the event. Below is a description of the events held through this partnership:

Skilled Futures for Women Truro

The event was held in Truro on May 2nd, 2018 and introduced grade 8 to 10 female students to career opportunities within skilled trades and technologies. There was a specific focus on the exciting careers available in Nova Scotia's ICT sector. WISEatlantic helped run the speed mentoring role model session for this event.

Skilled Futures for Women in Technology Event Acadia

The Skilled Futures for Women in Technology event was held at Acadia University in 2019 and 2020. The events each brought together seventy female students from grade 8 to 10 to explore technology career options. Numerous hands-on workshops were held including those that gave participants the chance to learn about virtual reality, tidal energy, robotics, and boatbuilding. Participants also had the opportunity to speak with seven role models from various fields in technology about their careers, WISEatlantic assisted with the organization of this session. WISEatlantic also hosted a hands-on session called Coding with Cups which teaches coding principles without the use of computers.

Skilled Futures for Women Interview Series

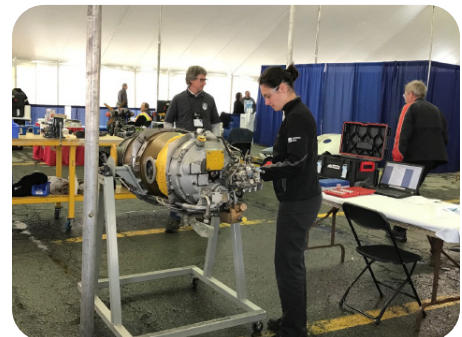
WISEatlantic sponsored the development of three videos for Skills Canada Nova Scotia's Skilled Futures for Women Interview Series. The aim of the series is to share the stories of various successful women working in skilled trades industries in the hope of inspiring the next generation of young women to pursue their own careers in skilled trades and technologies. Our sponsored videos feature Airframe Technician Tanya Fraser-Forbes, Red Seal Welder Antonia Wareham, and IT Director Sherri Thom. Want to view the videos? Visit www.skillsns.ca

Summer Camp at Veith House

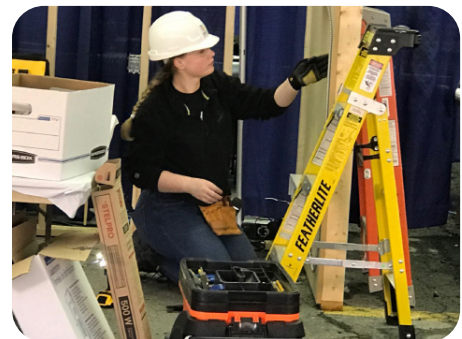
In 2022 Skills Canada Nova Scotia hosted a four-week summer camp for 15 newcomer females in grades 5 to 8 at Veith House. WISEatlantic helped to organize a role model session and also did a session on coding using Turing Tumblers - marble-powered computers.



Skills Canada Competition 2019



Skills Canada Competition 2019



Skills Canada Competition 2019



Engaging with Professional Women in STEM

Atlantic ConnecTions Conference 2019

The third biennial Atlantic ConnecTions Conference was held on **May 30 & 31, 2019** at the University of Prince Edward Island in Charlottetown, PEI, and was hosted by WISEatlantic and the Faculty of Sustainable Design Engineering. The main theme of the conference was “Sustaining Women in SETT”, and as such the program particularly focused on how best to retain women and gender minorities in SETT in Atlantic Canada.

ACT 2019 provided an opportunity for attendees to share their experiences of studying and working in male-dominated fields, to network with others, and to discuss successful strategies for recruiting and retaining women in SETT. ACT 2019 welcomed over 90 students, academics and industry professionals from SETT sectors across Atlantic Canada.

There were two optional workshops offered on May 30th, including a WinSETT workshop titled “Making Your Communication Style Work for You” and a workshop for Tradeswomen and Apprentices titled “Respectful Workplaces for Women”.

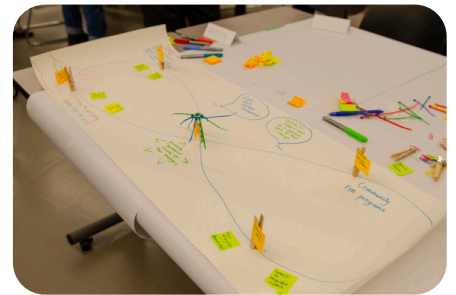
Additionally, numerous panels were held throughout the weekend. These included: “Inclusion in the SETT Workforce”, which focused on strategies being implemented to foster diversity in the workplace, “Strategies for Hiring Women”, which highlighted best practices and effective strategies for hiring women in SETT, and “Retention of Women in SETT”, which featured a variety of leaders sharing the strategies their companies have made to retain women they have hired.

The conference concluded with a workshop by Dr. Dayna Lee-Baggley, Ph.D., R. Psych. Registered Clinical Psychologist on professional resiliency for women.

Read the full conference report on the conference website, <http://atlanticconnections.ca/>



ACT Organizing Committee





WISEatlantic, along with Women in Aerospace Canada – Atlantic, co-hosted the 2022 Conference in Halifax at the Marriott Harbourfront Hotel. The conference was the 19th of its kind and celebrated thirty years for the organization. The theme was Reach for the Stars: Creating Impact Together and aimed to bring together the Canadian SETT workforce to highlight what industry partners and member organizations are doing to work towards a more diverse field. Over a year of planning went in to making this conference a success.



Over 300 allies and women in SETT at all phases of their careers attended the three-day event. Prior to the official start of the conference, there were two WinSETT Workshops offered; Fundamentals of Respectful and Inclusive Workplaces and From Difficult to Effective Conversations. As well, Robyn Quinn hosted a three hour communications workshop called 'You as a Brand'.



As well as the pre-conference workshops, there was also a Policy Forum. Interestingly, the first ever CCWESTT Policy Forum took place in Halifax 10 years prior to this one. This session was facilitated by Donna Clark and Christina Comeau of Courage Group International. The 2022 CCWESTT Policy Forum provided a space and voice for participants to think together about the mechanisms needed to shift systems. This highly participative Policy Forum found new ways of thinking and doing – innovations that we hope will expand opportunity for women's voices in hastening the evolution of systems toward more inclusive futures.

The full program kicked off on day two with keynote speaker Dr. Maydianne Andrade (Professor, Department of Biological Sciences, University of Toronto Scarborough). Concurrent presentations in the morning and afternoon were separated by another keynote speaker address by Michael Bach, founder and chair of the Canadian Centre for Diversity and Inclusion. The events of the final day started with a presentation by Natasha Ferguson, founder of Ethelfox Construct Group. Once again, concurrent presentations were partitioned by lunch activities and the CCWESTT Annual General Meeting. The conference phased out with a reception and dinner gathering.



This conference would not have been possible without the help of our co-host Women in Aerospace Canada - Atlantic, Alexia McGill and her team at Agenda Managers, members of the various planning committee's, sponsors, speakers, and participants - THANK YOU ALL!



CCWESTT Committee Chairs

Stepping Forward Workshops

The 2020 Step-Up to Professorship and Beyond Workshop was the third of its kind to be held by WISEatlantic. The event was held in Dartmouth and brought twenty-one female faculty participants from across Atlantic Canada and seven invited speakers together to discuss a range of topics related to promotion to professorship and beyond. Numerous sessions were held, including 'Finding Success as an Academic', 'Tenure and Promotion File: Tips and Strategies', and 'Leadership: The Invisible Work'. This workshop was kindly sponsored by the NSERC Chairs for Women in Science and Engineering Network.



"It was just great, unlike any other workshop because it was about us genuinely- not too much "activity" and not too much sitting" - Workshop Participant

Stepping Forward Virtual Workshop

The Stepping Forward Workshop was a two-day virtual workshop held on November 26th and 27th for female Postdoctoral Fellows in Science, Technology, Engineering, and Math (STEM) fields. Thirty-eight participants were in attendance along with 13 invited speakers and panelists. The goal of the workshop was to provide participants with the tools and advice needed to embark on the next steps in their careers, whether that be in academia, industry, or government. Some topics covered included professional resiliency, networking, cover letters, and creating stellar applications.



**STEPPING
FORWARD**

The workshop took place in a variety of formats such as panel sessions and break-out rooms. A re-broadcast of the recorded sessions was held in February 2021 for those who could not attend the live workshop.

SSTAR Sponsorship

SSTAR Sponsorship

The Shifting Systems Today for the Advancement and Retention of Women in Science (SSTAR) Sponsorship is an annual sponsorship awarded to those who wish to host an event or workshop targeted towards graduate students and/or post-docs in Science programs in Atlantic Canada. Sponsorships have been ongoing since 2018. Examples of events and workshops funded by the SSTAR Sponsorship include:

2018 Nobel Prize Paradox and Lunch and Learn Organized by Dr. Svetlana Barkanova and held at Memorial University's Grenfell Campus, three panelists discussed the current status of women in science and Nobel prizes won by women in Physics and Chemistry. Additionally, a lunch and learn workshop was held in which participants were encouraged to consider the problems that need to be solved in science and engineering, and explore how they could help develop solutions.



2018 Graduate Research of Women in Science and Engineering (GROW) Seminar Series - Numerous opportunities were sponsored through the GROW program at the UPEI Faculty of Sustainable Design Engineering, including a WINSETT Gender Inclusive Workplace workshop, Go Eng Girl Day, Go Code Girl Day, and various Lunch and Learns.

2018 Diversity in STEM Panel: Why it Matters In recognition of International Women's Day 2018, WISE Acadia, in collaboration with the Acadia University Faculty Association Women's Committee, hosted a Diversity in STEM panel discussion at the KC Irving Environmental Science Centre. The panel was moderated by Dr. Randy Lynn Newman and included four panelists of diverse backgrounds.



2019 Women in Science Summer Book Club A summer book club engaged twelve female STEM participants from three Atlantic universities: Mount Saint Vincent, Dalhousie, and Saint Mary's. Three books were covered, and dialogue was focused on the disparities that women face in STEM, and the ways in which we can combat them.



2020 Continuing to G.R.O.W. Seminar Series at UPEI was an expansion from their seminar series started in 2019. Two virtual seminars were had as well as a Holiday Luncheon for Engineering undergraduate and graduate women and a memorial event for the 30th anniversary of the Montreal massacre.

2022 SMU Science Book Club - An EDIA focused book club was held at Saint Mary's University, for faculty and students, specifically discussing ways in which academia needs to change in order to recruit, manage and support women and other underrepresented groups associated with STEM.

2023 WISE St. FX Women in Science and Engineering Social - The aim of this social was for women students in different Science and Engineering fields on campus to network and form connections. They hope to continue this event in 2024.

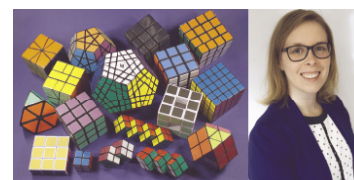
Through the SSTAR sponsorship to-date, we've reached 319 post-secondary students and academics.

Women in Science Speaker Tour



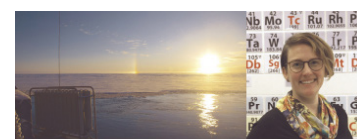
WISEatlantic has partnered with Science Atlantic to organize and host the Women in Science Speaker Tour. The purpose of the tour is to showcase the research conducted by early-career female faculty in Atlantic Canada. A different scientific discipline is featured in each tour and each speaker visits two or more Science Atlantic member institutions during the tour. Two tours per academic year were run each year, with the exception of 2020, as the onset of the COVID-19 pandemic prompted the tour to take a hiatus.

Dr. Danielle Cox, Assistant Professor, MSVU presented a talk at UPEI entitled “Getting to the Root of the Problem” on November 6, 2017 and at St. Francis Xavier University, on November 20th. She presented a public talk at UNB Saint John entitled “The Mathematics of Puzzles and Games” on November 23.



The Mathematics of Puzzles and Games

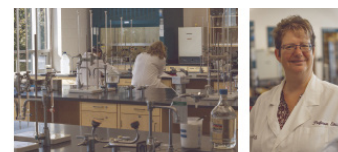
Dr. Heather Reader, Assistant Professor, Department of Chemistry, Memorial University presented a research talk at Saint Mary’s, Mount Allison, and UPEI entitled “Fingerprinting Dissolved Organic Matter: An approach to the better understanding of the chemical nature of the reduced carbon in the ocean”. Dr. Reader also presented a public talk entitled “A river at the North Pole: finding the Transpolar Drift” at Dalhousie University on November 2, 2018.



Women in Science Speaker Tour

Fingerprinting dissolved organic matter:
An approach to a better understanding of the chemical nature of reduced carbon in the ocean

Dr. Nola Etkin, Professor, Department of Chemistry, UPEI presented a research talk at Grenfell University entitled “Making Science Inclusive: What are we doing to build a more equitable and welcoming learning and working environment?” Dr. Etkin also presented a public talk at Cape Breton University entitled “There’s still a great future in plastics”.

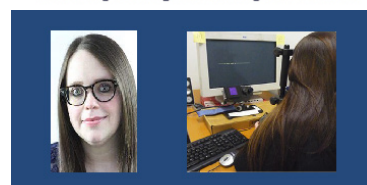


Women in Science Speaker Tour

Making Science Inclusive:

What are we doing to build a more equitable and welcoming learning and working environment?

Dr. Veronica Whitford, Assistant Professor, Department of Psychology University New Brunswick presented a research talk on March 12, 2020 at St. Mary’s University. Her talk was titled “Oculomotor Reading Patterns Across the Lifespan: A Bilingual Focus”.



Women in Science Speaker Tour

Oculomotor Reading Patterns Across the Lifespan:
A Bilingual Focus

Dr. Alana Pindar, Weston Family Professor, CBU presented a research talk at St. Francis Xavier University entitled “Flower, Food and our Future: the status and trends of our bees on November 4, 2021.



Women in Science Speaker Tour

Flowers, Food, and our Future: the status and trends of our wild bees

Dr. Nadja Bressan, Assistant Professor, Faculty of Sustainable Design Engineering, UPEI gave a research and public presentation at Saint Mary’s University on November 30, 2021 and at MSVU on January 20, 2022. Her talk was entitled “Veterinary Medicine Engineering: A new field of Science”.



Women in Science Speaker Tour

Veterinary Medicine Engineering –
A New Field of Science

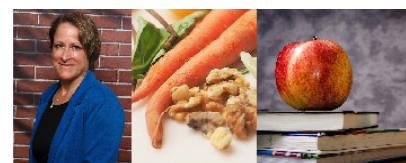
Women in Science Speaker Tour Con't

Dr. Tasneem Darwish, Assistant Professor, Department of Computer Science, Faculty of Science, St. Francis Xavier University gave a research talk at Dalhousie University March 10, 2023. Her talk was entitled “Mobility Management in Future Low Earth Orbit (LEO) Satellite Networks”.



Women in Science Speaker Tour
Mobility Management in Future Low Earth
Orbit (LEO) Satellite Networks

Dr. Tracey Everitt, Assistant Professor, Department of Human Nutrition, St. Francis Xavier University gave a research talk at Cape Breton University on November 15, 2022 and Mount Allison on March 3, 2023. Her talk was titled “Research to Support the Development of a National School Food Program”.



Women in Science Speaker Tour
Research to Support the Development of a National School Food Program

Non-Linear Career Paths of Women in STEM

Dr. Tamara Franz-Odendaal co-hosted a round-table event with Dr. Liette Vasseur, a Biological Science Professor at Brock University and the UNESCO Chair in Community Sustainability, at Mount Saint Vincent University on March 20, 2018. Thirteen women in various STEM careers attended the event, which was held to discuss non-linear career paths of women in STEM. Data and stories collected from multiple round-table events held across Canada were compiled into a reflective paper:

VASSEUR, Liette; van Volkenburg, Heather. “The Non-linear Paths of Women in STEM: The Barriers in the Current System of Professional Training”, the Canadian Commission for UNESCO’s IdeaLab, May 2018.



Please note that two other events took place that did not happen in time for the printing of this booklet. The first was a REBOOT Leadership Retreat facilitated by Francoise Roy in PEI, May 30-June 1, 2023, in which nine women in STEM participated. The other was a Writing Retreat for women graduate students in STEM. Participants were randomly selected from those that applied and the retreat took place at Liscombe Lodge in Nova Scotia with eight participants, from June 14-17, 2023



WISEatlantic as Catalyst & Sponsor

WISEatlantic Partnerships Program

The WISEatlantic Partnerships Program is an opportunity for community organizations in Atlantic Canada to receive a small one-year sponsorship for projects that promote the outreach, recruitment, and retention for girls, young women, industry professionals, and other under-served groups in science, technology, engineering, and math (STEM). Over the years, WISEatlantic has sponsored numerous groups that have embarked on many different projects and opportunities to do just that. Below is a list of the initiatives sponsored through the Partnerships Program:

2017/2018

Women Scientists in Agriculture and Fishing – Faculty of Agriculture –
Dalhousie University - Truro, NS and PEI

WISE NL Speaker Series – WISE NL, St. John's - NFLD

In School STEM Workshops – Education 20/20 - PEI

2018/2019

Technology in Marine Conservation – Terranaut Club - Annapolis Valley

Open Space: Engaging Teens in Western Newfoundland in Physics and Astronomy – Dr. Svetlana Barkanova - NFLD

Analysis and Development of Diversity and Inclusion in the Atlantic Canada Water Industry – The Atlantic Canada Water and Wastewater Association

Build II: Computer Science Camp for Girls – Refresh Annapolis Valley

2019/2020

Soapbox Science - Halifax

Veith House Math Club - Halifax

STEMinists Leadership Development Program – Terranaut Club -
Annapolis Valley

2020/2021

Diversity of Nature Field Camp - Keji, NS

Paleontologist for the Weekend - Fundy Geological Museum - Parrsboro,
NS

2022/2023

Canadian Black Scientists - Regional Youth Science fair - Three of the student presenters won medals and university entrance scholarships at the National Science Fair competition in 2023 - Halifax, NS



WISE NL Speaker Series 2018



Terranaut Club - 2020



Fundy Geological Museum 2021



Diversity of Nature 2021

Partnership with Science Circles & Two-Eyed Seeing Camp



From 2017-2021, Dr. Franz-Odendaal, along with Dr. Shannon Grant and Dr. Danielle Cox of Mount Saint Vincent University, were awarded NSERC PromoScience funding to conduct the following programming:

Science Circles

Dr. Danielle Cox established these monthly meetups which gave students in grades 7 to 12 (and their teachers) the opportunity to explore different fields of science, including Mathematics, Nutrition, Chemistry, and Biology. Science Circle events were held from 2016 to 2020 at Mount Saint Vincent University and were re-started in 2023.

Two-Eyed Seeing Camp

Dr. Shannon Grant spearheaded the creation of the Two-Eyed Seeing Camp under this same PromoScience grant. Two-Eyed Seeing is now the product of the partnership between Mount Saint Vincent University, Sipekne'katik First Nation, Pictou Landing First Nation, and Mi'kmaq Kina'matnewey. The camp was launched in 2018 as a 1-week in person day camp. On the first day, Mi'kmaq youth attend camp at the Mount, and then in each partner community for the rest of the week. On the final day of the camp, a science fair is held in Sipekne'katik First Nation where youth present posters they made highlighting the various activities they engaged in over the week. Some of the activities from years one and two included Getting to know Amu, Composting at the Community Garden, and The Voice of the Drum.

The camps were held in person in both 2018 and 2019; a variety of online events were held in lieu of the in-person event in 2020. Furthermore, the Two-Eyed Seeing partnership expanded in 2020 to include Acadia First Nation and has received their own independent PromoScience Funding from NSERC.



*Composting Critters Session,
led by Department of Applied
Human Nutrition, MSVU*

Canadian Black Scientists Network

Dr. Tamara Franz-Odendaal is a co-founder and lead ally from 2020-2023 of the Canadian Black Scientists Network. Founded in July 2020 by a small group of faculty, the CBSN aims to create a network that supports the inclusion of intersectional identities manifested in Black individuals. By building a platform that promotes organizational collaboration, the network strives to challenge racism, discrimination, and inclusion barriers in STEMM. The CBSN has seen extensive growth since its creation and now includes hundreds of members from across the country. The CBSN held their first national virtual conference in February, 2022 which saw 1500 participants from across the country participate. The CBSN continues to run events annually. Visit www.blackscientists.ca for more information.



IBIS Student Assistantship

WISEatlantic was excited to launch the new IBIS Student Assistantship for the Fall and Winter semesters of the 2022/2023 academic year. This paid Assistantship gives Indigenous, Black, and International undergraduate students in Natural Science programs at MSVU, who have limited to no previous research experience, the opportunity to explore working in a research environment. Both students and Natural Science researchers at the MSVU apply to the program and successful applicants are matched. The program is fully funded by WISEatlantic. In the first year of this program we successfully matched eight students and researchers. A meet-up for students and faculty participating in the program was held on November 7th and was an opportunity for participants to network and enjoy some lunch together.

Feedback from evaluations indicates that all students who participated in the program expressed interest in attending graduate school in the future and credited the IBIS program with familiarizing them with what that would look like and easing any uncertainties they had. Additionally, all students said that they were more confident in their ability to succeed in a STEM career after participating in the program. Researchers also provided feedback and 75% of them indicated that they would participate in the program again.

"The lab skills that I learned are irreplaceable along with the love that I now have for research. This program really made an impact on my life." Former Student



Dr. Margaret-Ann Armour Award

The NSERC Chair for Women in Science and Engineering Program - Atlantic Region established this award at MSVU in memory of Dr. Margaret-Ann Armour, a Canadian chemist who was a tireless advocate for women in science across Canada.

This award will be presented annually, and in perpetuity, on the recommendation of the Departments of Chemistry/Physics, Biology and Mathematics to undergraduate female students majoring in these fields with proven volunteer experience on the MSVU campus or larger community while studying at MVSU. Students must also have a demonstrated growth in their understanding of their chosen scientific discipline.



Digital Waves

Digital Waves is a grassroots organization aimed at closing the gender gap in the field of technology. Stemming from WISEatlantic's Living WISEly App Design contest, Digital Waves developed a sustainability challenge for girls and gender-diverse youth in Newfoundland. Their contest invited youth to consider how they could make Newfoundland and Labrador more sustainable by using their smartphones. Participants learned various skills through remote workshops including business and entrepreneurship, app design, and marketing and logo design. Beyond their app design contest, Digital Waves also works to encourage youth to pursue tech fields, help parents provide their children with exciting opportunities, and assist businesses in finding diverse talent.



Engaging Teachers - AST Conferences

Over the years, WISEatlantic has made numerous appearances at the Association of Science Teachers Conference in Halifax. Our booths made it possible for Science teachers and guidance counselors across the province to access resources that we developed for their classrooms. These resources included our Women in STEM Poster Series, as well as our Career Spotlight Booklet series. We also facilitated a few workshops for teachers during the conference, including one on how to use Foldscopes in the classroom as well as a session on the myths that surround girls in STEM and how we can bust them.



Madyn & Sally at AST Conference 2022

Spotlight Series/ Atlantic STEM Partnerships Workshops

This initiative by WISEatlantic aimed to highlight the fantastic work being done in Atlantic Canada by organizations with similar goals to ours: to increase Equity, Diversity, and Inclusion in STEM. A hand-out was created featuring organizations that fit the above criteria, aimed at informing Teachers, Parents, and the general public of the great work being done and how they may benefit from this programming. These organizations were also featured in separate social media highlight posts.

Following the release of the booklet, we held a virtual workshop with organizations that were featured, as an opportunity for these organizations to get to know each other's work, find new ways to collaborate or learn from each other, and brainstorm solutions to common issues in their work. There were two workshops held, one in May and one in June, 2021. The participants discussed topics such as: organizational best practices, outreach, partnerships and funding, and problem solving. A feedback survey was sent around to participants following the workshops and 82% of participants found the workshops very, or mostly useful.



STEM SPOTLIGHT

ORGANIZATIONS INCREASING STEM INCLUSION FOR EQUITY-DESERVING GROUPS:

A GUIDE FOR PARENTS AND TEACHERS IN ATLANTIC CANADA

PRODUCED BY WISEATLANTIC
MAY 2021
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Sponsored Development of STEMs Board Game

In 2020 WISEatlantic provided funding to assist Dr. Katherine Jones of Cape Breton University and the IslandWISE program in the development of her new STEM-themed board game. The game, called STEMs, teaches youth about successes and setbacks along the way to becoming a professional scientist, and how grit and determination can help you advance despite the challenges that might be encountered. Players also learn about scientists who overcame significant barriers during their pursuit of science. We were fortunate to be able to play the camp at our 2022 Girls Get WISE Science Camp, pictured right.





Research, Reports & Publications

Research Reports and Publications

Selected Research Publications

- Bonardi O., Burchell D., Franz-Odenaal TA, Joy P. In press. "My discipline is never going to survive if it continues being the discipline of straight white men": Experiences of Canadian LGBTQ+ postdoctoral scholars in the sciences. *Canadian Journal of Science, Mathematics, and Technology Education*.
- Purdy C., Churchill, M., Braddon, K., Sylliboy, A., Franz-Odenaal, TA., Paul, V., Marshall, A., Grant, S. In Press. Exploring Collaborative Approaches to Indigenous Science Outreach Programs on Turtle Island: A Scoping Review. *Healthy Populations Journal* (Special Issue on Indigenous Health).
- Burchell, D, Franz-Odenaal TA., Joy, P. 2022. "I never want to leave part of myself at the doorstep": Experiences of Canadian LGBTQ+ postdoctoral scholars in the sciences. *International Journal of Gender, Science and Technology* 14:1.
- Franz-Odenaal TA, Marchand S. 2022. Girls Get WISE – A Programming Model for Engaging Girls+ in STEM. *Frontiers in Psychology -Gender, Sex and Sexualities*. (Special Issue, invited)
- Heymann, C., Scully S. and Franz-Odenaal TA. (2021). Exploration of Student's Career Drivers and Goals by Grade Level and Gender in Atlantic Canada. *Youth Studies Journal*.
- Dengate, J., Farenhorst, A., Peter, T, and Franz-Odenaal, TA. 2021. "Shining Armour": What Margaret-Ann Armour Taught Us about Equity, Diversity and Inclusion and Mentorship in Science. *Canadian Journal of Chemistry*. 99:8:692-697
- Franz-Odenaal TA, Blotnick K, Joy P. 2020. Math Self-efficacy and the likelihood of pursuing a STEM-based career: A Gender-Based Analysis. *Canadian Journal of Science, Mathematics and Technology Education*. 20(3): 538-556.
- Dengate, J., Farenhorst, A., Peter, T., & Franz-Odenaal, T. 2021. Gender Inequality in Research & Service amongst Natural Science & Engineering Professors in Canada. *International Journal of Gender, Science & Technology* 13:1:23-42.
- Dengate, J., Hoffart, R., Peter, T., Farenhorst, A., & Franz-Odenaal, T. 2021. The effect of women academic leaders on Canadian Natural Sciences and Engineering faculty. *Canadian Journal of Higher Education*. 51:2: 1-14.
- Peter, T., Dengate, J., Farenhorst, A., & Franz-Odenaal, T. (2020). Department culture in Canadian sciences & engineering: An empirical test of the Culture Conducive to Women's Academic Success Model. *Journal of Women and Gender in Higher Education*. 13:2: 175-192.
- Dengate J, Peter T, Farenhorst, A. and Franz-Odenaal TA. 2019. Selective Incivility, Harassment, and Discrimination in Canadian Sciences & Engineering: A Sociological Approach. *International Journal of Gender Science and Technology* 11:2: 332-353.
- Whynot J., Mavriplis C*, Shannon L*, Farenhorst A.*, Langelier E.* and Franz-Odenaal TA*. 2019. Knitting Theory in STEM Performance Stories: Experiences in Developing a Performance Framework. *Canadian Journal of Program Evaluation* 33:3 (Special Issue: Next Generation Program Theory). (*authors contributed equally)
- Blotnick K.A, Franz-Odenaal TA, French F and Joy P. 2018. A study of the correlation between STEM career knowledge, mathematics self-efficacy, career interests, and career activities on the likelihood of pursuing a STEM career among middle school students. *International Journal of STEM Education*. 5:22
- Franz-Odenaal TA, Blotnick K, French F and Joy P. 2016 Experiences and Perceptions of STEM. Subjects and Careers and Engagement in STEM Activities Among Middle School Students. *Canadian Journal of Science, Math and Technology Education*. (Special Issue – Emerging Conceptions of Science, Technology, Engineering and Mathematics (STEM) Education). 16:2: 153-168 (Invited submission).

Selected Research Reports

- Franz-Odenaal, T., Mavriplis, C., Farenhorst, A., Shannon, L., Burchell, D., & Marchand, S. 2021. NSERC CWSE Network Advancement Workshop Survey Results. NSERC Chairs Women in Science and Engineering Report. Pp 1-15.
- Franz-Odenaal TA, Behjat, L. Shannon, S. Ghose, E. Langelier, J. Dengate, T. Peters, A. Farenhorst. 2020. Tips for Supporting EDI During Crisis and Disruption 2021.
- Franz-Odenaal TA, Shannon L, Farenhorst A, Mavriplis C and Burchell D. Published 2021. Academic Advancement Workshop Report: 2011-2021. A NSERC CWSE Network Report. P1-15.
- Franz-Odenaal, S. Marchand, D. Burchell. 2021. STEM Spotlight: Organisations increasing STEM inclusion for equity-deserving groups: a guide for parents and teachers in Atlantic Canada. 2021. WISEatlantic. Pp6.
- Stratton, L. and Franz-Odenaal TA. 2020. Barriers for Women in Accessing Primary (Family) Health Care in Nova Scotia. Pp12.
- Heymann C., Scully S., Franz-Odenaal TA. 2019. Cove Workforce Initiative: Student intentions and perceptions survey. Pp74.
- Dengate J., Farenhorst A. Peter T., Franz-Odenaal TA., Saj, D., Marchand, S., Lepage M. 2018. Faculty Workplace Climate Survey Results- Atlantic Canada.
- Pereault, A., Franz-Odenaal, T., Langelier, E., Farenhorst, A., Mavriplis, C., Shannon, L. 2018. Analysis of the distribution of females and males in STEM fields in Canada. Version 1.1.

Other

Pioneers in Skirts Screening

WISEatlantic was pleased to partner with Women in Aerospace Canada Atlantic (WIA) for an International Women's Day celebration. The event showcased "Pioneers in Skirts", a 60-minute documentary on achieving gender equity in the workplace and world. The event had a great turn-out with over 80 people in attendance ranging from youth to adults.

Following the film, WISEatlantic Chair Dr. Franz-Odendaal and WIA Atlantic VP Eva Martinez, led a discussion on impactful moments from the film and how employers can change the work climate to support gender equity.



STEMfest

The International Festival of Science, Technology, Engineering and Mathematics (STEMfest) is a collection of events and conferences exploring industry, social, and economic development through STEM education and innovation and was held in Halifax in 2018. Dr Franz-Odendaal served on the executive committee organising this event, while Sally Marchand helped organise the youth outreach sessions.

WISEatlantic participated in the event by hosting a booth during the Youth Event, as well as a session for the Skills Canada Nova Scotia Skilled Futures event that involved learning the concepts of coding without computers. Additionally, our Chair, Dr. Tamara Franz-Odendaal, moderated the 'Towards a Diverse Workforce' panel during the Industry Conference. Over \$350,000 was raised for this event and engaged over 5000 individuals.

