

CHAIRS FOR WOMEN IN SCIENCE AND ENGINEERING



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COAST TO COAST UPDATE 2020

CHAIRS FOR WOMEN IN SCIENCE AND ENGINEERING

BC & Yukon | Prairies | Ontario | Québec | Atlantic



**NSERC
CRSNG**

Chairs for Women in Science and Engineering
Chaires pour les femmes en sciences & génie

Réseau National Network



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NSERC CHAIRS FOR WOMEN IN SCIENCE AND ENGINEERING

The **Natural Sciences and Engineering Research Council of Canada (NSERC)** aims to make Canada a country of discoverers and innovators for the benefit of all Canadians. The agency supports university students in their advanced studies, promotes and supports discovery research, and fosters innovation by encouraging Canadian companies to participate and invest in post-secondary research projects. NSERC researchers are on the vanguard of science, building on Canada's long tradition of scientific excellence.

The **Chairs for Women in Science and Engineering (CWSE) Program** was launched in 1996. The goal of the program is to increase the participation of women in **Science, Technology, Engineering, and Mathematics (STEM)**, and to provide role models for women active in, and considering, careers in these fields. The CWSE Program is regional—with one Chair for each of the Atlantic, Quebec, Ontario, Prairies, and British Columbia/Yukon regions.

Objectives of the Chair Program:

- Develop, implement and communicate strategies to raise the level of participation and retention of women in science and engineering as students and as professionals, taking into account intersectional dimensions—these strategies could include some of the following:
 - encourage female students in elementary and secondary schools to consider careers in science and engineering
 - increase the profile and retention rate of women in science and engineering positions
 - eliminate barriers for women and other under-represented or disadvantaged groups who wish to pursue careers in science and engineering
 - promote the consideration of equity, diversity and inclusion (EDI) as an essential component of research and training
- Provide female role models who are accomplished, successful, and recognized researchers in science and engineering.
- Develop and implement a communication and networking strategy to ensure a regional and national impact on opportunities for women in science and engineering



NSERC
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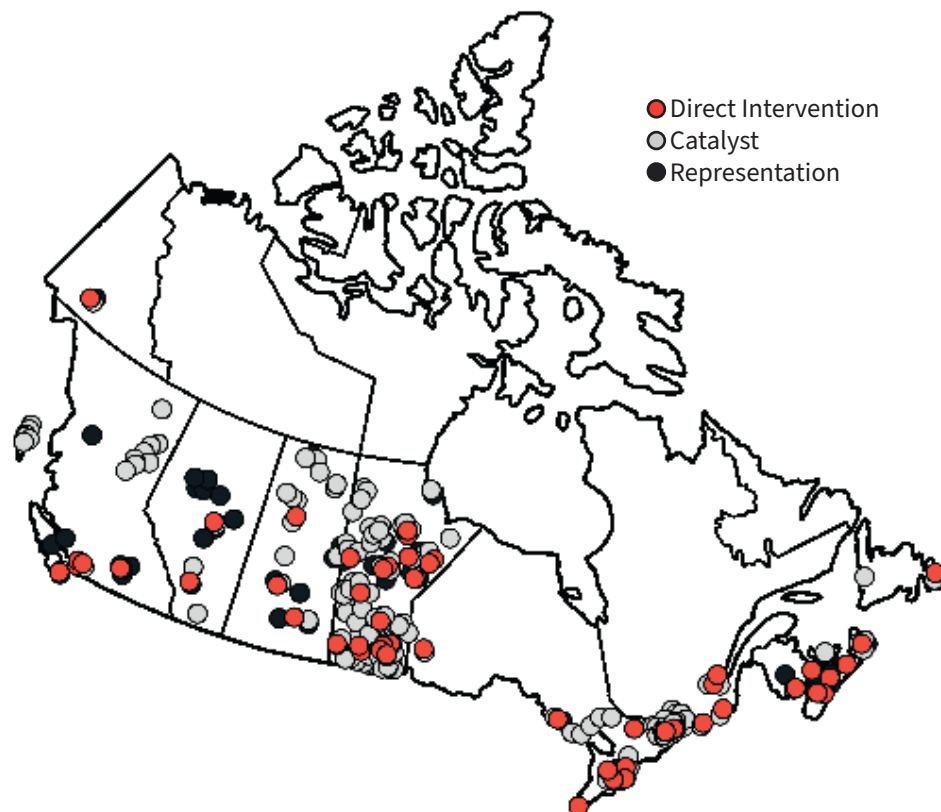
Chairs for Women in Science and Engineering
Chaires pour les femmes en sciences & génie

Réseau National Network



COMMUNITIES IMPACTED

January 2018 to December 2020



Direct Intervention	Communities where Chairholders and/or their regular staff have directly visited for some type of intervention or activity.
Catalyst	Communities where some type of intervention occurred as a result of a Chair program, including locations visited by programs Chairs fund.
Representation	Communities Chairs have accessed by bringing community members to more central locations for interventions or programming. This is often more cost-effective than direct interventions in remote communities.

IMPACTS



SHARING PROVEN PRACTICES

109 committees
396 lectures, panels, courses, and workshops
2 conferences



SHINING A SPOTLIGHT

211 publications
98 mainstream media features and interviews
54 regional and national awards



REACHING OUT

37857 youth and parents
12242 post-secondary students
9311 industry professionals
8291 academics and teachers
67701 direct interactions



BUILDING MOMENTUM

36 major grants received
\$2.30 million leveraged
beyond the original NSERC and matching grants



BUILDING NETWORKS

47 companies
180 non-profit organizations
14 international partnerships

WIDE ENGAGEMENT



3463
Facebook
likes



5526
Twitter
followers



2593
newsletter
subscribers



1790788
unique
web views

ACADEMIC ADVANCEMENT WORKSHOPS

The **National Network of CWSE** sponsors academic advancement workshops nationwide. The workshops are a unique opportunity for women to look ahead to promotion—to get advice and support on their career path. The workshops focus on skills, strategies, and "insider information" necessary to obtain and succeed in a tenure-track position in science and engineering and advance to other positions of leadership. The network rotates which region will host a workshop each year.

From 2015 - 2020:

9 Workshops
Hosted

182 Academics
Reached

DR. MARGARET-ANN ARMOUR NATIONAL CONFERENCE GRANT

The objective of the **Dr. Margaret-Ann Armour National Conference Grant** is to support the organization of non-profit national conferences and workshops that contribute to the advancement of women in STEM in Canada. Eligible activities for consideration include those that:

- Aim to enhance women's participation in STEM;
- Promote women's leadership participation;
- Complement student education

From 2017 - 2020:

17 Conferences
Sponsored

14 Canadian Regions
Reached

For more information on our workshops and conference grant,
please email CWSECFSG@gmail.com

WESTCOAST WOMEN IN ENGINEERING, SCIENCE AND TECHNOLOGY

Inspiring Girls and Empowering Women



Westcoast Women in Engineering,
Science and Technology

Westcoast Women in Engineering,

Science and Technology (WWEST) is the operating name for the NSERC Chair for Women in Science and Engineering for the BC/Yukon Region. Our mission is to engage industry, the community, and students to increase the awareness and participation of women and other under-represented groups in STEM fields of study and careers. Below is just a sampling of WWEST's many initiatives. To see more, please visit www.wwest.ca



- **Creating Connections Conference:** This biennial STEM conference covers topics on diversity and aims to engage meaningful dialogue about diversity in science, engineering, and technology disciplines. Creating Connections 6.0 was held May 3-4, 2019 and had 284 students, academics, and industry professionals in attendance.
- **WWEST Associate Chairs:** The WWEST Associate Chairs act as role-models and deliver programs in their region based on existing WWEST programs as well as their own proposed activities. From 2017-2019, engineer and Technology Innovation Officer, Alison Anderson, acted as WWEST Associate Chair at Yukon College. Dr. Jennifer Jakobi, Professor in the School of Health and Exercise Sciences served as the WWEST Associate Chair at the University of British Columbia's Okanagan (UBCO) campus from 2018-2020.
- **Outreach Apps:** The first of three apps, Tune Twister is a free, open-source sound engineering app which allows kids in grades 4-8 to learn about the science of sound by manipulating music tracks. Two other apps are in development for kids to learn image manipulation and machine learning. WWEST is working with outreach programs to bring these apps to Indigenous, rural, and inner-city youth.



- **Best of the WWEST Podcast:** Each episode of this series profiles a woman in STEM, with the goal of providing role models and discussing a breadth of STEM jobs. Episodes have been released every two weeks since April 2017. Episodes are available on all podcast platforms, as well as on the WWEST website, along with a full transcript.
- **"In Plain Sight"** is a photojournalistic look at the lives and careers of women in STEM fields, where they are often overlooked. Deanna Flinn, of Free Admission Photography, has captured the aspects of these women's lives that are not often seen as congruent with a career in a STEM field. Things like family, community, advocacy, collaboration, and mentorship. WWEST hopes this exhibition allows the public to see women in STEM in a new way. The exhibition can be viewed online, at wwest.ca/inplainsight

Message from the Chair

The past 6 years have been such an incredible journey as the WWEST Chair. I am thankful to have worked with so many talented people from across the region in making WWEST a program that promotes the participation of more girls and women in STEM in post-secondary studies and careers. Through our many projects we have reached communities on a local and global scale to promote equity, diversity, and inclusion in the STEM fields and beyond, even during a global pandemic. We are excited about 2021's possibilities and opportunities.

Dr. Lesley Shannon
NSERC Chair for Women in Science and Engineering BC/Yukon Region

Thank you to our partners: Simon Fraser University, Bit Quill Technologies, Orbital Technologies, Xylinx.

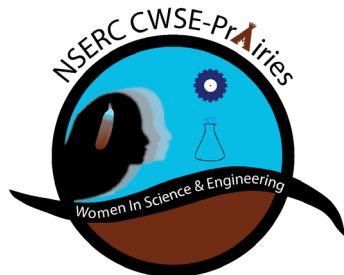
@WWEST.sfu
 @WWEST_SFU

www.WWEST.ca

CHAIR FOR WOMEN IN SCIENCE AND ENGINEERING

The **Prairie NSERC Chair for Women in Science and Engineering** enhances opportunities for girls and women to participate and grow in science and engineering careers.

Dr. Annemieke Farenhorst who has been the Prairie Chair for the past eight years, stepped down in May 2020 and the new Chair for the Prairie region, Dr. Laleh Behjat was announced. Dr. Behjat's program is described on the next page.



Message from Dr. Annemieke Farenhorst, Former Prairies Chair

Everywhere we look in nature, we observe diversity. Perhaps that is why it feels so odd when diversity is absent in our workplace. Let's work to bring diversity to all sectors and layers of society and reshape our world into a better place.

Many thanks to our partners: University of Manitoba, Verna J. Kirkness Education Foundation, University of Saskatchewan, Province of Manitoba (Agriculture), Manitoba Pork Council, Engineers Geoscientists Manitoba, University of Alberta, University of Calgary, University of Regina, and Iris Meck Communication Inc.

www.cwse-prairies.ca

Women in Science and Engineering for a Diverse Planet



Dr. Laleh Behjat, the new Chair for the Prairie region, describes below her vision for the new WISE Planet program.

What is our mission? WISE Planet's mission is to create a diverse, inclusive, equitable and just society by training women and other underrepresented groups in STEM to be change leaders equipped to implement strategies and innovations that will build that society.

Why now? To remove systemic barriers, true cultural and structural change is needed. This can seem overwhelming, but the time is now. Society is facing major challenges that will require everyone's contributions to solve.

- A climate crisis is changing our environment.
- A digital revolution is changing our work.
- Biotechnology will change our bodies.

WISE Planet sees an opportunity to finally get all hands on deck. We can build equity and justice into the future. Our change leadership program will enable the next generation of scientists and engineers to build this new reality.

Program components and structures: The program includes a network of industry, and academics experts in Science and Engineering as well as the community and non-profit organizations. The programming is offered to Early Career Fellows as well as undergraduate scholars. Early Career Fellows are nominated by sponsoring organizations and include early-career women or graduate women and other underrepresented groups in STEM disciplines. These Fellows receive training in change leadership, experiential learning through individual projects, and networking opportunities.

Many thanks to our partners: the University of Calgary, ENMAX, ATCO, Spartan Controls, Alberta Women Science Network, Calgary Public Library, Informed Opinion, Indigenous Engineering Solutions, Platform Calgary and Telus Spark.

 @CWSE_Prairies

www.ucalgary.ca/wise-planet

CHAIR FOR WOMEN IN SCIENCE AND ENGINEERING

The **NSERC Chair for Women in Science and Engineering for the Ontario region** has been promoting the participation and advancement of women in science and engineering educational programs and professional employment for the past eight years. The bilingual Chair program developed a strong following through a comprehensive communications campaign, meaningful professional development programming, engaging interdisciplinary research projects, and strategic partnerships in the science and engineering community.



Dr. Catherine Mavriplis who has been the Ontario Chair for the past eight years, stepped down in June 2020 and the new Chair for Ontario, Dr. Shohini Ghose was announced. Dr. Ghose's program is described on the next page.

Message from Dr. Catherine Mavriplis, Former Ontario Chair

The pandemic period has been a good time to reflect on my nine years as Chair in Ontario. So much has changed in that decade since I first contemplated the program, even without the new twists of our confinement period. Now, we are even more challenged but, refreshingly, we are able to reinvent the way we do things, for example how we teach and deliver our message that science and engineering benefit from the full participation of a diverse group of people. As always, it is the creativity of students and young professionals from diverse backgrounds that fuels ideas for new initiatives that are really changing the face of these disciplines. I want to thank all the participants, stakeholders, donors and, last but not least, the funding agency NSERC, for supporting my Chair program in Ontario. And I wish our new Chairs, Shohini Ghose and Laleh Behjat, all the best in their journeys ahead."

Many thanks to our partners: The Leacock Foundation, Pratt & Whitney Canada, CAE, Lockheed Martin Canada, the University of Ottawa, and the Verna J. Kirkness Science & Engineering Education Program.

www.scieng-women-ontario.ca

Empowering Women in Science and Engineering from the Classroom to the Boardroom



Dr. Shohini Ghose, the new Ontario Chair is planning a comprehensive program of action, research and communication (The ARC Program) to achieve the NSERC CWSE Program objectives. She will build on her work as the founding Director of the Centre for Women in Science (WinS) at Laurier, that aims to build a vibrant community in STEM. The Centre brings together science researchers and social scientists with expertise in gender issues, education, psychology, public policy and science communication. Its activities include advising and consulting on policy such as Canada's Dimension Charter, providing resources, facilitating networking and outreach, supporting research and conferences, and communication and engagement with a broad audience.

Some **upcoming projects** are listed below:

Research: WinS researchers are collaborating with other institutions including Canadian Science Publishing and Canadian Association of Physicists on projects to understand the environment and experiences of STEM researchers in Canada.

Action: WinS students are creating a database of resources about wise practices in EDI. We are expanding existing collaborations with our partner institution Perimeter Institute (PI), to engage high school students and teachers. We continue to work with NSERC and other organizations on the Dimensions program. We celebrate student research through our annual awards program.

Communication: We combine art and science to engage a broad audience and raise awareness of gender issues in STEM. Our upcoming art+science project #EmptyChairs will honour those who have inspired us during the pandemic.

Many thanks to our partners: Perimeter Institute, Conestoga College, Communitech and NXM Labs for supporting the Chair's activities.

www.wlu.ca/wins

CHAIRE POUR LES FEMMES EN SCIENCES ET EN GÉNIE

Pour une meilleure représentation féminine en sciences et en génie



Depuis 2015, la Chaire pour les femmes en sciences et génie au Québec (CFSG) conçoit des activités et des ressources informatives à l'intention des filles et des femmes, de l'école jusqu'au milieu du travail. Elle intervient également de différentes façons auprès du cercle d'influence de ces dernières, comme les parents, le personnel enseignant, la direction d'établissements universitaires, etc. Par une meilleure intégration des femmes en sciences et en génie (SG), nous pouvons : améliorer leur autonomie en leur donnant accès à des emplois qui offrent de bons salaires et des postes de pouvoir; les impliquer davantage dans les prises de décision face aux défis de la compétitivité industrielle mondiale, de la crise climatique et environnementale ainsi que du vieillissement de la population; créer des milieux de travail où hommes et femmes se respectent, se complètent et s'équilibrent; augmenter la créativité organisationnelle par la diversité des perspectives; augmenter la qualité et la performance.



Quelques activités de la Chaire

- **Trousses didactiques en technologie** au primaire et au secondaire pour stimuler l'intérêt des filles (et des garçons).
- **Séries vidéo** sur les modèles en SG sur YouTube : Changer le monde au féminin, D'une femme à une autre, Portraits de femmes en SG et Ta passion, ton emploi.
- **Portfolio de formations** : formations pour les étudiantes en SG (p. ex. sur le leadership et la communication) et une formation complète en équité, diversité et inclusion en recherche et en enseignement supérieur.
- **Étude de l'impact des stages coopératifs** sur l'engagement et la persévérance des étudiantes en SG.



Objectifs

1. PRÉSENTER et DÉMYSTIFIER les possibilités qu'offrent les SG pour contrer les stéréotypes;
2. FORMER et SOUTENIR différents milieux afin de réduire les barrières qui affectent le choix de carrière des filles et la rétention des femmes en SG;
3. MOBILISER et RASSEMBLER les parties prenantes, dont les entités partenaires et collaboratrices, autour de la promotion, du recrutement, de la rétention et de la progression des femmes en SG;
4. COMPRENDRE et FAIRE ÉTAT de la situation des femmes en SG au Québec afin de soumettre des pistes de solutions pour favoriser leur progression;
5. ASSURER LA PÉRENNITÉ des ressources développées afin d'assurer un transfert des connaissances.

Message de la Chaire

Notre équipe est fière du chemin parcouru ces cinq dernières années, puisque nous mesurons des retombées concrètes au Québec et au Canada. C'est d'ailleurs sur une note positive que nous entamons notre second mandat en collaboration avec plusieurs personnes et entités qui ont à cœur notre mission. Mobilisons nos efforts et alimentons un cercle vertueux pour les femmes en SG!

Eve Langelier, Ing. Ph.D.

Chaire pour les femmes en sciences et en génie du CRSNG au Québec

Merci à nos partenaires: l'Université de Sherbrooke, Rio Tinto, Hatch, le Fonds de recherche du Québec, le Secrétariat à la condition féminine, GE aviation Bromont, la Fondation canadienne FCSCJ, l'Association minière du Québec et La Fondation de l'Université de Sherbrooke.

WOMEN IN SCIENCE AND ENGINEERING ATLANTIC PROGRAM

Engaging Girls in Inspirational STEM Activities

The Women in Science and Engineering—Atlantic Region (WISEatlantic) program aims to shift gendered STEM stereotypes. We empower girls to consider 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.



Youth Engagement

- **Girls Get WISE Science Summer Camp**, two per year
- **Girls Get WISE Science Retreat**, one local and one rural per year
- **Sponsor** three girls First Lego League and Let's Talk Science Challenge teams each year
- The **WISEatlantic Partnerships Program** provides sponsorships to three local organizations per year that ran STEM outreach activities.

Providing Support for Women in STEM

- **Step-Up workshops** for female academics seeking career advancement.
- Hosted the **Atlantic ConnecTions Conference** for women in SETT in Atlantic Canada in 2015, 2017, and 2019.

New in 2020

- **Stepping Forward Workshop** for Female Postdocs in STEM
- Monthly **Career Corner** virtual role model events for girls.
- **Living WISEly App Idea Design Contest** for girls 14-16.



Testimonials

"This was a fantastic opportunity, and I was thoroughly impressed about how inclusive and accommodating WISEatlantic was." – Retreat Participant

"Huge impact! Very interested in pursuing sciences after high school. The interviews with professionals and hearing their stories was one of the most memorable parts for her." — Parent of Summer Camp Participant

Message from the Chair

The WISEatlantic Program has had an exciting and productive nine years and it has been rewarding to see the program continue to grow and adjust. I am always inspired by the young girls who attend our Girls Get WISE events and their enthusiasm for STEM. While there is still much work to be done, it is encouraging to see the changes implemented by government, industry, and academia towards more diverse and inclusive workplaces for women in Science and Engineering. I continue to seek new and innovative ways to expand the reach of the WISEatlantic Program, and to work with the other NSERC CWSE-holders to promote increased diversity and inclusion within STEM both in industry and academia in Canada.

Dr. Tamara Franz-Odendaal
NSERC Chair for Women in Science and Engineering, Atlantic Region

Many thanks to our partners: Lockheed Martin Canada, and Mount Saint Vincent University. In-kind: Skills Canada—NS, Techsploration, and Nova Scotia Community College.



@WISEatlantic

www.WISEatlantic.ca