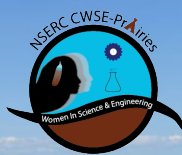


CWSE-Prairies Newsletter

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The goal of the NSERC CWSE - Prairies

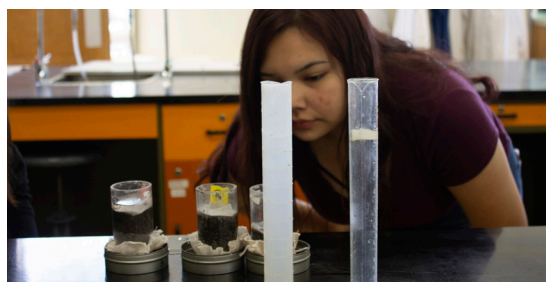
is to develop and support strategic activities that promote greater opportunities for women, particularly Indigenous women, in science and engineering across the Prairie Region.



Verna J. Kirkness Program 2019: CWSE-Prairies Meets Five Mighty Microbes

The Verna J. Kirkness program for Science and Engineering Education once again visited the University of Manitoba in May, giving Indigenous youth the opportunity to get first-hand experience in STEM research labs, and to build strong connections with peers from communities across Canada.

The 2019 program visited a total of nine universities (up from six in 2018), with 41 students hosted at the University of Manitoba, and over 150 hosted across the country. Annemieke Farenhorst's soil science lab joined forces with Ayush Kumar's microbiology lab to give five of these students an unforgettable experience experimenting and learning about the connections between water, soils, and microbes! Throughout the week, they went on a water sampling trip to the Forks, cultured bacteria and made bacteria art with fluorescent *E. coli*, dug their hands into dirt to learn about soil composition, and more. They stayed with other Kirkness students in student residences, shared meals together, and explored other parts of campus. They ended the week by giving a final presentation about their research findings.



The students formed a tight-knit crew, and affectionately named their group the "5 Mighty Microbes". The CWSE-Prairies was fortunate to have had the opportunity to work with them.



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A New Research Collaboration in Computer Science

This summer, the CWSE-Prairies initiated a new project to support undergraduate student research, with collaboration between the University of Manitoba and the University of Calgary. Two students have been working together under the guidance of a faculty member from each university. The project is interdisciplinary between computer science and sociology, and focuses on examining and improving upon existing tools for equitable hiring and job advertising in tech-related fields.

The two summer students, Arienne Nabong from the University of Manitoba and Linh Tran from the University of Calgary, began by collecting advertisements for jobs in computer science and engineering fields. They coded a Python program to automate the process, and yielded over 1000 advertisements to use in their data.

“Summer research has been such an amazing opportunity! Being able to contribute to the field I love is a great feeling. It's been very empowering to work so closely with a team of smart, driven women... I hope our research will have a positive effect on the community and start a bigger conversation about women in STEM.”

Because of increased focus on diversity & inclusion in workplace hiring practises, many employers have started running their job ads through a “decoder” tool, which will scan a job ad and return a result indicating whether the ad appears to be more “male-coded” or “female-coded”. The students next started searching for existing job ad decoder tools. They found seven free online decoders, and created a program that would allow them to run the job ads through these decoders all at once. They are now focusing on analyzing how the job ads appear to be “coded” according to the available decoders. Thus far, they have focused in particular on examining the different sections of an ad: comparing the company description, the job responsibilities, and the job qualification sections of each given ad. They have also examined how the decoders themselves work; the end goal of the project is to create a smarter decoder that uses machine learning techniques to consider, with more nuance, the context of “gendered” words when decoding.

In addition to the value of the research itself, this project is designed to create opportunities for young undergraduate students to participate in mentorship and collaborate across institutions with other women. *“Summer research has been such an amazing opportunity! Being able to contribute to the field I love is a great feeling. It's been very empowering to work so closely with a team of smart, driven women from both here at UM and also UC. I hope our research will have a positive effect on the community and start a bigger conversation about women in STEM,”* said one of the students.

Discover Days

This May, the CWSE-Prairies participated once again in the Science Rendezvous ‘Discover Days’ event at the University of Manitoba, as part of Science Odyssey Week. The event brought in 2,000 kids from schools in Winnipeg and the surrounding area to participate in imaginative, silly, and hands-on science activities, shows, and booths.

With the help of a great crew of volunteers, the CWSE-Prairies organized and hosted an activity station based around themes of water and soils. Kids visiting the station got to hypothesize and test different soil compositions for erosion. They also learned about water sampling through a relay race where they had to suit up in hipwaders (often oversized for the kids). Over the two day event, the station directly engaged 207 middle school students and their teachers/chaperones.



Science Rendezvous is an annual event that takes place at universities across Canada, but the University of Manitoba is the only location to have implemented the special “Discover Days” for school classes. The CWSE-Prairies is proud to have been involved in Discover Days since the initiative began in 2017.

Faculty Workplace Climate Survey Expands to Atlantic

The CWSE Prairies recently expanded the Faculty Workplace Climate Survey (FWCS) to the Atlantic provinces of Canada. The FWCS is a research project examining the experiences of academic faculty members at their workplaces, in particular within natural sciences and engineering (NSE) disciplines.

Faculty members in NSE departments were asked in-depth questions about their experiences of respect at work, support and inclusion by colleagues, career satisfaction, work-life balance, workload, equality at work, and incidents of harassment or discrimination. After completing the survey in the Prairies provinces and releasing a report on the preliminary findings, the CWSE-Prairies worked with the CWSE Atlantic Chair, Dr. Tamara Franz-Odenaal and her colleagues, to repeat the survey in the Atlantic. The findings of these two surveys have now also given rise to a total of five manuscripts regarding models of academic success and value in tenure and promotion considerations; selective incivility, harassment and discrimination within Canadian NSE faculties; the gender care gap in addressing student mental health concerns; and gendered divisions of academic labour. The analysis of the survey findings and manuscripts were largely produced by the CWSE-Prairies collaborators in sociology, Dr. Jennifer Dengate and Dr. Tracy Peters.

A major goal of this project is to develop strategic recommendations for university departments and administrators to improve university and departmental culture and policy to support diversity and difference in the workplace. A working group is currently underway for developing a first set of recommendations based on the findings from the Prairies and Atlantic.

The CWSE-Prairies also hopes to work with the CWSE National Network to extend the project to other parts of the country to aid in getting a better picture of experiences across the country. The results of the Prairies and Atlantic reports are available online at the CWSE-Prairies website.



Ready, SETT, Workshop!

The CWSE-Prairies Chair, Annemieke Farenhorst was recently in Regina to lead a workshop on equity, diversity and inclusion: *Towards Gender Inclusive Workplaces: Retaining and Supporting Women in Academia: A Workshop on Creating Respectful and Inclusive Workplaces for Managers*.

The workshop was hosted and invited by the Canadian Centre for Women in Science, Engineering, Trades, and Technology (WinSETT Centre), which offers professional development and leadership programs to support women in trades and technical fields.

The CWSE-Prairies has long worked closely with WinSETT to support women in academia and industry in the Prairies who would like to develop their skills. Over the course of several months in 2018-2019, the CWSE-Prairies was also involved in the WinSETT Centre's workplace leadership skills program in Edmonton. The program consists of 6 all-day workshops focusing on topics including negotiation, workplace politics, leadership, networking, and effective communication. The CWSE-Prairies sponsored 13 people to attend these workshops, and Dr. Farenhorst attended two sessions as a guest speaker.



Update on the Agriculture Mentorship Program



The Agriculture Mentorship program called its second year a wrap this April, but is looking ahead to how to keep its footing for the years to come. The program is designed to help students build connections, develop skills, and explore career goals under the guidance of mentors in industry and academia, and to help mentors expand their own networks. It includes events organized for all participants in the program, but also encourages mentorship groups to meet individually as well.

This year's lineup of group events included an evening of "speed-networking" and dessert, professional headshots, a craft night with targeted table discussions, and a leadership-focused scavenger hunt at the Forks. The program brought together 66 unique women studying or working in a broad variety of areas in agriculture and food sciences. This meant 22 mentorship trios, with 22 student participants and 44 mentor participants in total.

Most participants said that becoming familiar with others in the field was a valuable part of the experience. When asked about their favourite part of the program, one participant said *"Getting to know individuals, specifically females, that are involved in the industry I hope to be a part of in the future. I have since seen these women around campus and in articles and think it's great I am able to recognize them and make connections since being part of this program."*



Future Engineers Make Their Move

The CWSE-Prairies and WISE Kid-Netic Energy had a blast hosting and mentoring at the 6th annual Make Your Move event on Saturday, March 9th, 2019. Each year, this event occurs as a celebration of International Women's Day. It brings together 60 Grade 8 girls from Winnipeg and surrounding communities and teams them up with 20 engineer mentors to complete an engineering design-build challenge.

"I learnt about how much engineering really helps the planet and the people living on it."

In addition to the design challenge, the event involves a DJ spinning upbeat tunes, a photo booth, an emcee (Pamela Roz from Hot 100.5 FM) and great opportunities for mentorship between university students, professionals, and participants.

The design challenge usually draws from real world applications of engineering. This year, teams were challenged to create a trawling device for collecting microplastics in a body of water. At the end of the event, 90% of student participants said they would consider becoming an engineer (compared to 44% before the event). Student comments about the event were exceedingly positive; one student said *"I learnt a lot more about what engineers actually do and the different types of engineering there is. I learnt about how much engineering really helps the planet and the people living on it."* Another student commented on the value of the mentorship aspect of the event: *"I liked that we had the chance to work with a real engineer and do a challenge alongside with them, getting their opinions and support."*



Honouring a Cherished Advocate for Women in STEM

The CWSE-Prairies would like to acknowledge the loss of one of our region's great advocates for women in STEM. Dr. Margaret-Ann Armour was the Associate Dean of Science for Diversity at the University of Alberta, and co-founded the Women in Scholarship, Engineering, Science, and Technology (WISEST) program to support women, girls, and other underrepresented groups in STEM through education, mentorship, and outreach. She received numerous awards and honours, including being named to the Order of Canada. She will be remembered for her fun-loving spirit and infectious passion for STEM, as well as her dedication to nurturing and supporting others in developing the same passion.

As a way to honour Dr. Margaret-Ann Armour and the values she stood for, the NSERC Chairs for Women in Science and Engineering (CWSE) Network has named a conference grant in her memory. The objective of the Dr. Margaret-Anne Armour National Conference Grant is to support non-profit conferences that contribute to the advancement of women in STEM in Canada. For more information about this conference grant, or to apply, please visit the CWSE-Prairies website.



Changes to Come at CWSE-Prairies

With optimism and gratitude, the CWSE-Prairies would like to announce that Dr. Annemieke Farenhorst is preparing to step down from her position as Prairies Chair for Women in Science and Engineering in March 2020. She has recently moved into a position as Associate Dean of Research in the Faculty of Agricultural & Food Sciences at the University of Manitoba, where she has and will continue to address issues of equity, diversity, and inclusion of women in STEM from an administrative level.

The CWSE-Prairies Program Coordinator, Mahalia Lepage, will also be leaving her position in the fall of 2019. She and Dr. Farenhorst are both grateful for the work they have been able to do together, and for all the people they have engaged with, been inspired by, and exchanged knowledge with along the way. They look forward to welcoming whoever comes next to lead the CWSE-Prairies program into a new term.

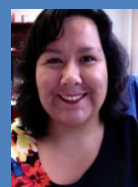
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