NSERC’s Chairs for Women in Science and Engineering Program (CWSE) was launched in 1996 with the goal of increasing the participation of women in science and engineering, and providing role models for women active in, and considering, careers in these fields. NSERC funding must be matched by cash contributions from corporate sponsors. Chair holders are active researchers in the natural sciences and engineering.

The National CWSE Network links the NSERC Chairs for Women in Science and Engineering from coast to coast. The research, tools, and best practices we develop, disseminate and share through our collaboration allow us to enhance the visibility and impact of our work both regionally and at national and international levels. www.bit.ly/NationalCWSENetwork

Find out more about the CWSE program at:
www.nserc-crsng.gc.ca/women
www.nserc-crsng.gc.ca/femmes
The NSERC Chair for Women in Science and Engineering, BC/Yukon Region, is held by Dr. Elizabeth Croft at the University of British Columbia, and operates under the name Westcoast Women in Engineering, Science, and Technology (WWEST). The Chair focuses on three goals:

1. Supporting outreach activities through collaboration and capacity-building.
   - WWEST Council and WWEST Partners provides an open dialogue between existing groups in BC and the Yukon, and encourages collaboration and sharing of resources.
   - Workshops build organizational capacity and provides groups with best practices for achieving impacts in a sustainable way.
   - WWEST Partners provides seed funding for new and growing initiatives.
   - Creating Connections bi-annual regional conference brings together organizations and individuals. The next conference, hosted by WWEST in partnership with other aligned groups, is planned for May 2013.

2. Improve recruitment efforts by creating and showcasing opportunities in SET to create positive changes in local and global communities.
   - Community Service Learning, Global Engineering Leadership, and International Service Learning pilots are in place at UBC, and best practices are being shared with our partners.
   - Providing speakers, workshops, and resources at conferences and special events for teachers, students of all ages, and general audiences.

3. Improve retention and provide industry support by identifying and disseminating best practices to create a respectful, supportive, productive, and healthy workplace.
   - Brought WinSETT Leadership Development workshops to BC and conducted a pre/post self-efficacy survey to measure Career self-efficacy. Interim results suggest the workshops are effective. Research on stress and job satisfaction, in conjunction with Principal Investigator Dr. Toni Schmader (UBC Dept. Psychology) and industry partners.
   - Dr. Croft is leading the Faculty Member Working Climate Survey at UBC Engineering and is a Committee Member for UBC Science. In addition to collecting information on the current climate, best practices are being collected for dissemination.

For more information on any of our programs, please visit www.wwest.ca

Get Connected with WWEST

WWEST and our partners have many opportunities for you to find out how to be involved with the amazing things happening in our region:

- Subscribe to the WWEST Digest, a semi-monthly mailing list, by emailing wwest@mech.ubc.ca with the word “subscribe.”
- Visit www.wwest.ca to get links to our blog, RSS feed, Facebook page, Twitter feed, and LinkedIn page.
- Check out the WWEST Council and WWEST Partners members listed at www.wwest.ca

We look forward to meeting you!
Dr. Annemieke Farenhorst, Faculty of Agricultural and Food Sciences, University of Manitoba is the NSERC-CWSE Chair for the Prairie region. Her official starting date was November 10, 2011. One of the focus areas of the Chair has been to strengthen academic and outreach programs related to Aboriginal women. This includes the production of a video with the purpose of encouraging Aboriginal youth to move towards careers as professional engineers and scientists, and for the purpose of reaching out to Aboriginal youth as part of the Verna J. Kirkness Program. The Chair is also collaborating with Sapotaweyak Cree Nation in a program that will assist youth from that community to conduct hands on analysis of water, using equipment situated in their own communities, and equipment at the University of Manitoba. These collaborations are made possible through $50K of new funding (2012) awarded to the Sapotaweyak Cree Nation.

The Chair became a member of the CIPWIE (Committee for Increasing the Participation of Women in Engineering), which operates through APEGM (Association of Professional Engineers and Geoscientists of Manitoba). In a capacity closely linked to this, the Chair examines factors influencing the participation and retention of women in science and engineering with the help of a PhD student that initiated her program in January 2012. Another component of the Chair activities is to lead workshops for women. On December 6, 2011, the NSERC-CWSE (Prairies) and the Agricultural Institute of Canada co-hosted a roundtable discussion for academic and professional women working in agricultural sciences. A follow-up Women’s Personal Development Day was held on March 20, 2012 in collaboration with the Manitoba Institute of Agrologists.

With respect to the overall promotion of the Chair program, a NSERC-CWSE (Prairies) logo contest was publicized in most of the high schools and university and colleges on the Prairies. A Facebook and an Internet site are operational, and two quarterly NSERC CWSE (Prairies) newsletters have been circulated to approximately 200 individuals.

The logo is a combination of two logos originally designed by Mitch Haw and Jessee Wise. The A in Prairies (text on top) represents a teepee, the traditional home of the Great Plains. Women are in charge of the decision making process surrounding the family teepee.

The circle is divided into two parts. Land is represented by the brown lower part. Land is the source of the strong agricultural sector in our Prairies. Water is represented by the blue upper part. Women are the keepers of water according to First Nation tradition.

A First Nation woman is seen in the foreground with the feather representing land, water and air, all of which are needed to provide for diversity in life. There are other women seen in the logo and together they are look forward to the East where the sun rises and new opportunities arise for them, their families and communities, and the World. The women also look at the water that is slowly evaporating from a flask as a warning that we need to take care of this precious resource if we want to keep the earth rotating and all of its inhabitants therein, as represented by the wheel.

Science and engineering (as represented by the flask and wheel), as well as traditional knowledge (as represented by the First Nation woman) can all be seen as essential components to preserving this water and life.

The NSERC-CWSE (Prairies) is reaching out to First Nations youth in Sapotaweyak Cree Nation, located approximately 600km north-west of Winnipeg.

Get Connected
Check out our website at http://cwse-prairies.ca
Find us on Facebook at http://on.fb.me/cwsepraries

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Science and engineering (as represented by the flask and wheel), as well as traditional knowledge (as represented by the First Nation woman) can all be seen as essential components to preserving this water and life.
The NSERC / Pratt & Whitney Canada Chair program for women in science and engineering aims to address the entire spectrum of women in science and engineering, through outreach programs to school-aged girls, university-based programs for undergraduate and graduate women, and working professional women in industry, government, academia and other sectors.

The Chair program aims to create new resources for women who are forging new paths in the male-dominated areas of science and engineering. For example, a new project on women's communication styles for success in professional advancement has begun. Communications experts have developed a rubric to analyze powerful scientific women's speeches for both verbal and non-verbal techniques to project competence, credibility, confidence and communality, all deemed essential through research for women who seek to advance. The annotated videos will be available for the community to learn from to consider in their own communication styles.

A major goal of this new Chair is to network professional women across the province in order to create a community of near peers, quantify some of the demographics of the science and engineering female graduates, and conduct social science research to understand the remaining challenges for scientific women in various sectors. Alumnae events are being organized on a yearly basis in Ottawa and Toronto to reach large numbers.

Within the sponsoring company, the Chair program also aims to address issues related to women's advancement. A first event was recently held at the Mississauga plant for all managers and women, addressing cultural diversity and the importance of managing cross-cultural interactions to contribute to the success of the enterprise.

Dr. Mavriplis represents the national network of NSERC Chairs for Women in Science and Engineering in the Engineers Canada Women in Engineering Advisory Group.

Look for the Best Practices for Fostering Women's Career Advancement in Technical Professions panel discussion at CCWESTT 2012, organized by Dr. Mavriplis and the national network of Chairs.

The women rock at the Faculty of Engineering! At University of Ottawa’s recent graduate Research Day, 16 of the 50 entries were women, both Master’s and PhD students. 8 of the 15 disciplinary prizes were swept up by these talented women. A prize is awarded to the overall best female presenter, this year to Aida Fankish (left), in a competition judged by three professional women from engineering industry and government sectors. See Aida’s video on the website.

The primary goal of the NSERC / Pratt & Whitney Canada Chair for Women in Science and Engineering (Ontario Region) is to address issues for the entire spectrum of women in these numerous and demanding fields from early interest in schools, through university studies and professional lives, in particular at the mid-career stage and on to leadership.

La Chaire CRSNG / Pratt & Whitney Canada pour les femmes en science et génie pour la région de l’Ontario est détenue par Dr. Catherine Mavriplis à l’Université d’Ottawa. L’objectif de la Chaire est de s’adresser aux problèmes pour la gamme entière de femmes dans ces domaines nombreux et exigeants. Elle s’adresse à l’intérêt précoce aux écoles, jusqu’aux études universitaires et aux vies professionnelles, en particulier à l’étape mi-carrière et des postes de direction.

Get Connected
Visit / visitez:  scieng-women-ontario.ca

Email / courriel: info@scieng-women-ontario.ca

• Some prior and ongoing work to advance women in science and engineering is listed at http://by.genie.uottawa.ca/~mavripli/women.html

• You can contact the Chairholder directly at the University of Ottawa email and telephone addresses given on this page. Vos communications en français sont également bienvenues.

• If you are a graduate or current student of Queen’s University, Prof. Evelyn Morin, in the Department of Electrical and Computer Engineering, will act as a liaison for the project. Similarly for University of Toronto, you may contact Lisa Simpson-Camilleri, Assistant Dean for Academic Human Resources and Diversity.

University of Ottawa offers many bilingual outreach programs to girls such as the very successful Girl Guide Badge Day, coming up in May.
The NSERC-Industrial Alliance Chair, held by Prof. Nadia Ghazzali, began in 2006. Since our last update in 2010, the Chair has been supported by fifteen assistants coming from varied university backgrounds, such as statistics and actuarial science. The goal of the Chair is to stimulate young girls’ interest in a science or engineering career by putting in place concrete measures and promotional programs and by instituting actions that could enhance the merit of active scientific women in the workplace. The Chair is very active in both research and promotion. The Chair holder developed an international perspective, as she is member of the Hassan II Academy of science and technology of Morocco and she was the General Secretary of the International Network of Women Engineers and Scientists (INWES), from 2008 to 2011. She is also a member of the Expert Panel on Women in University Research, Council of Canadian Academies.

On February 1st 2012, Prof. Ghazzali was appointed President of the Université du Québec à Trois-Rivières (University of Quebec in Trois-Rivières). She has been officially appointed by the Council of Ministers of Quebec, Canada, for a mandate of five years.

Research
Since May 2010, the Chair has published seven studies regarding the underrepresentation of women in science and engineering in universities, academic careers and research chairs, and the factors contributing to the underrepresentation. Details can be found at www.chaire-crsng-inal.fsg.ulaval.ca.

The Chair is currently preparing three surveys about equity indicators among institutional senior administration, faculty members, and university students. The three surveys will be available in both French and English, and will be distributed in universities across Canada.

Promotion
• In 2011, the Chair sponsored the Intercollegiate Science Competition “Science, on tour”, which had the theme, “L’allée retour” (“The out and back”), offering four $500 bursaries for women participating in the national finals.
• On March 1st 2011, Prof. Ghazzali gave an interview to Radio Canada Première Chaine (Radio One) Moncton, on the underrepresentation of female students in Engineering, in the Atlantic universities (specifically New Brunswick).
• Prof. Ghazzali gave an interview to the Science TV program “Découverte” of Radio-Canada for a special on Marie Curie, for the 100th anniversary of her second Nobel award, on December 4th 2011.
• Discussion-conference “S’ils étaient de sexe différent et avaient le même âge” (If they were of different sex and had the same age), on December 8th 2011.
• On March 8th 2012, Prof. Ghazzali gave an interview on the program “Débats” Radio Canada Première Chaine (Radio One), titled “Les défis des femmes d’ici et d’ailleurs” (Challenges of women from here and elsewhere), for International Women’s Day 2012.

International
The Chair holder attended and was an invited speaker at many national and international events including, among others:
• Conference “Building Mathematical and Scientific Talent in the BMENA Region”, held from September 27-29 2010, in Amman, Jordan. The event was hosted by the Royal Scientific Society and AAAS, and was supported by the John Templeton Foundation. Prof. Ghazzali was involved in Panel 8, “Fostering Research”. Her lecture was entitled “Moroccan experience to promote science and mathematics and to stimulate talents”.
• Prof. Ghazzali assisted in the creation of the Moroccan Association of Women Engineers and Scientists, collaborating with Minister Delegate Ms. Nouzha Chekrouni and Ms. Sooud Bensouda, Professor of Engineering in the Hassan II University. She also collaborated with M. Abdalla A. Alhajjar and Ms. Ghada Amer, from the Arab Science and Technology Foundation, setting up a Regional INWES Arab Network. She was also involved in the creation of an Algerian association, within the framework of the Algerian 2010 Conference mentioned previously.
• Training and Coaching Program for Young Engineers - Leadership and Ethics Empowerment for Young Engineers was held in Hammamet, Tunisia, on December 15-19 2010. The event was hosted by the World Federation of Engineering Organizations (WFEO). Prof. Ghazzali presented “Leadership des femmes dans les Sciences et l’Ingénierie” (“Women’s Leadership in Science and Engineering”).
• Prof. Ghazzali was also selected by the Council of Canadian Academies for their “Canada’s Research Tree”, created to show support for Canada’s science community and to acknowledge the time and expertise provided to the Council. It was realised within the framework of the AAAS Annual Meeting, which was held on February 16-20, in Vancouver, Canada.

L’objectif de la Chaire CRSNG-Industrielle Alliances pour les femmes en sciences et en génie au Québec est de stimuler l’intérêt des jeunes filles pour les carrières en sciences ou en génie, en mettant en place des mesures concrètes et des programmes promotionnels, ainsi qu’instituant des mesures visant à mettre en évidence le mérite et le rôle des femmes scientifiques actives en milieu de travail. La Chaire est très active, à la fois au niveau de la recherche et de la promotion. La titulaire a développé une perspective internationale, en tant que membre de l’Académie Hassan II des sciences et techniques du Maroc et elle a été Secrétaire générale de l’International Network of Women Engineers and Scientists (INWES), de 2008 à 2011. Elle est également membre de l’Expert Panal on Women in University Research, du Conseil des académies canadiennes.

Left: Official meeting of Prof. Nadia Ghazzali (third right) with the Prime Minister (fourth left), within the framework of the 2010 NSERC Summit.

Above: Professor Nadia Ghazzali, Chair holder of the NSERC-Industrial Alliance Chair for Women in Science and Engineering in Quebec and President of the Université du Québec à Trois-Rivières

Above: Dr. Ghada Amer, Arab Science and Technology Foundation, and Prof. Ghazzali, at the 2010 Conference, in Jordan

The goal of the NSERC-Industrial Alliance Chair for Women in Science and Engineering in Quebec is to stimulate the interest of young girls and women for Science and Engineering, by setting up concrete measures, promotional and research programs, to produce a complete statistical profile of the situation in the academy and for the research chairs, to identify the factors involved in the underrepresentation of women in these fields and to lead initiatives for the recognition of the contribution of women scientists and engineers.
Dr. Tamara Franz-Odendaal, Associate Professor at Mount Saint Vincent University, NSERC Atlantic Chair for Women in Science and Engineering.

In October 2011, WISE Atlantic’s website was launched (www.WISEatlantic.ca) and in January 2012 a social media Facebook page was developed. Our first role-model video, profiling Dr. Franz-Odendaal’s career as a Developmental Biologist, was developed last fall. This is one of fifteen videos to be developed within science, technology and engineering fields over the next five years.

WISE Atlantic has gotten off to a rapid start and has already connected with hundreds of grade 7-12 female students through classroom and community workshops. Together with Program Coordinator, Tanya Poulton, Dr. Franz-Odendaal has engaged young women about science related careers through formal presentations at schools, participation at The Mount’s Open Campus Days, and by delivering webinars via the internet.

In February WISE Atlantic co-sponsored a ½ hour Women Engineers Workshop at the Annual Atlantic Engineering Competition. The Chair and her team has also developed and hosted three Career Exploration community sessions at local libraries, organized a role model career session at the GIRLS 2012 conference at MSVU, and sponsored a Women in Science Retreat at Cape Breton University. These last two events attracted 150-300 girls in junior and senior high school. Another Women in Science Retreat for girls in grades 7 to 12, Girls Get WISE, is scheduled for Saturday, May 26th, 10 a.m. to 5 p.m. at Mount Saint Vincent University in Halifax.

WISE Atlantic also sponsored two Girls Team Awards at the Nova Scotia Provincial Science Fair, the finalists of which will compete at a National Science Fair in PEI in May, 2012, where Tamara will judge projects from all corners of the country.

Teachers were funded to attend the 2011-2012 finals of the High School Robot Programming Competition and FIRST® LEGO® League competition in order to inspire them to put teams together; and WISE Atlantic is sponsoring three girls’ teams for the 2012-2013 competition. A Professional Development day for Science teachers and a Science Retreat for NS Girl Guides are scheduled for the Fall 2012.

Our six year survey study of students from grades 7 to 12 is also well underway. This survey will assess when students (particularly girls) begin thinking about their careers, and how much they know about science-related careers as they move through each grade level.

For more information on our programs, please visit www.WISEatlantic.ca

Get Connected
Find out more about WISE Atlantic initiatives:

- Sign up for our quarterly newsletter by visiting our home page or emailing us at WISEatlantic@msvu.ca;
- Visit WISEatlantic.ca for information for students, teachers, and professionals;
- Like us on Facebook (www.facebook.com/WISEatlantic)

### WISE Atlantic Outreach October 13, 2011 - March 31, 2012

- Elementary Students: 239
- Junior High Students: 239
- High School Students: 211
- University Students: 209
- Role Models: 208
- Teachers: 205
- Parents: 238
- Others (Partners and Professionals): 24

WISE Atlantic has begun to develop a network of connections with girls, teachers and young professional women.
In August 2011, Valerie Davidson completed an 8-year term as the Ontario Chair for Women in Science and Engineering. Together with staff and many volunteers, she established a broad program of activities – CWSE-ON – focusing on connections with girls and women at different education and career stages. “Joining WiSE Conversations: Strategies and Successes from CWSE-ON” is a record of key initiatives undertaken over the period 2003-2011.

In this record, CWSE-ON initiatives are described in three sections by audience: Early Enthusiasts (elementary and high school students), Interested Intellectuals (university students) and Productive Professionals (women working as scientists and engineers). Each section outlines activities, highlights the essential collaborations, describes results and indicates sources for the resources that were developed. Many of these resources are available in a digital repository at the University of Guelph library (https://atrium.lib.uoguelph.ca/xmlui/handle/10214/2694).

“The 8 years of the CWSE-ON program passed by very quickly but were filled with so many unique and rewarding experiences” reflects Valerie. “I am very pleased that the Ontario program is continuing under the leadership of Catherine Mavriplis at the University of Ottawa.”

The CWSE-ON program received generous support from NSERC, Hewlett Packard Canada (2003 – 2008), Research in Motion (2008 – 2011) and the University of Guelph.

The Science Ambassador Program allows senior undergraduate or graduate students in the natural sciences, engineering, or health sciences to spend a significant period of time (1.5 months) in schools with high proportion of students of Aboriginal ancestry. These university students act as Science Ambassadors by assisting science teachers in the school by organizing and preparing hands-on materials, finding creative and culturally relevant ways of demonstrating science, by catalyzing class discussions and facilitating science lab experiments and demonstrations.

The science ambassador program has reached over 3000 students in northern and/or rural Communities, since its inception in 2007. The students involved in the program ranged from primary to high school (grades K-12). In its fourth year, in 2011 the Science Ambassador Program continued to expand its role in the Prairie Provinces. The program had its highest yet number of ambassadors, 11, and spread to 10 locations across northern Saskatchewan and Manitoba: Wollaston Lake, Fond du Lac, The Pas and Opaskwayak Creek Nation, Flin Flon, Black Lake, Beardy’s and Okemasis First Nation, Mosquito First Nation, Little Pine First Nation, Poundmaker First Nation and Thunderchild First Nation. The ambassadors came from a variety of different backgrounds, ranging from Bachelor’s of Education students to Bachelor’s of Engineering students and Bachelor’s of Science graduates.

**Evaluation Results**

'Pre' - survey administered to students before exposure
'Post' - survey after exposure to ambassadors

Question 1: A job as a scientist would be good? Yes/No

Question 2: A job as an Engineer would be good? Yes/No

Question 3: Do you think Women/Girls like science? Yes/No