CHAIRS FOR WOMEN IN SCIENCE AND ENGINEERING (CWSE) PROGRAM

In 1996, NSERC launched the CWSE program in 5 regions across Canada with the following objectives:

1. Develop, implement, and communicate strategies to raise the level of participation of women in science and engineering as students and as professionals, specifically to:
   - encourage female students in elementary and secondary schools to consider careers in science and engineering;
   - increase the enrolment of women in undergraduate and graduate programs in science and engineering in Canadian universities and colleges;
   - increase the profile and retention rate of women in science and engineering positions;
   - eliminate barriers for women who wish to pursue careers in science and engineering; and
   - promote the integration of female students and professionals both within and outside academia.

2. Provide female role models who are accomplished, successful, and recognized researchers in science and engineering.

3. Develop and implement a communication and networking strategy to ensure a regional and national impact on opportunities for women in science and engineering.

CHAIRHOLDERS

In 2009, Anne Condon and Cecilia Moloney completed their terms as regional Chairs. Over the last 5 years, both individuals have made significant contributions in their regions as well as to the national CWSE network. Details about their programs and accomplishments can be found at the urls noted below.

- **Ontario**
  Valerie Davidson, Professor of Engineering, University of Guelph
  Corporate Sponsor: RIM

- **Prairie Provinces**
  Julita Vassileva, Professor of Computer Science, University of Saskatchewan
  Corporate Sponsor: Cameco

- **Quebec**
  Nadia Ghazzali, Professor of Mathematics and Statistics, Université Laval
  Corporate Sponsor: Industrial Alliance Insurance and Financial Services Inc.

- **Atlantic Provinces**
  Cecilia Moloney, Professor of Electrical and Computer Engineering, Memorial University of Newfoundland (Completed term in July 2009) [www.cwsea.ca](http://www.cwsea.ca)

- **BC & Yukon**
  Anne Condon, Professor of Computer Science, University of British Columbia (Completed term in May 2009) [www.jadeproject.ca](http://www.jadeproject.ca)

The CWSEs appreciate the contributions and support of Monika Michalska (NSERC) who has worked closely with the Chairs since 2006. The CWSE program is moving from the Research Partnerships Program to the Scholarships & Fellowships Division. We would like to welcome Rawni Sharp as the new contact at NSERC.

**NSERC Contact:** Rawni Sharp, Team Leader in Scholarships & Fellowships Division
Email: Rawni.Sharp@nserc-crsng.gc.ca
Projects 2007-2009

Science Ambassadors Program
The Science Ambassador Program is a science outreach program for Northern and Aboriginal children. University students spend a significant amount of time in the school, helping the teacher find exciting, hand-on, and culturally relevant ways of teaching science to the kids.

The program was spearheaded in 2007/08 and it continues to expand. In the first year we had two ambassadors, Dawn and Danielle, in three communities - Beardy’s & Okemasis, and Muscowpetung in SK and The Pas, MB. In 2008/09, the SA program expanded to 6 ambassadors in 4 communities (6 schools) within the provinces of Saskatchewan and Manitoba. The communities included: the Mosquito First Nation, the Muskowpetung First Nation, The Pas, and Opaskwayak Cree Nation. A further expansion with the community of Wollaston Lake, a fly-in mining community in the North of Saskatchewan was possible through the generous support of Cameco.

This year (2009-2010) the Science Ambassador Program is continuing to expand, with 12 Ambassadors and 7 communities throughout the three Prairie Provinces.

The University of Lethbridge is sending two Science Ambassadors to the Blood Tribe School, thus expanding the program into Alberta. Two new Cameco sponsored fly-in community locations are added - Black lake, and Fond Du Lac. Also a new Manitoba community, Flin Flon, is joining the program. The evaluation results show that there are significant positive changes in the attitudes of the students participating in the program towards science, engineering and related careers. The teachers are all very positive as well. For more information, please, visit:

www.ourscienceambassadors.com

www.ourWiseTales.com

ourWISE Tales is an online community to support women in Science and Engineering by providing an online community where they can share their thoughts and experiences.

www.ourwisetales.com

The Evaluation results show that there are significant positive changes in the attitudes of the students participating in the program towards science, engineering and related careers.
**MyWISE Mentor**

MyWISEmentor is a free email mentoring program for girls between the ages of 11 – 18 who live in Saskatchewan. The program was launched in 2008 to provide girls in Saskatchewan an opportunity to be mentored by women in science and engineering. The first year of the program was dedicated towards website establishment and promotion. The 2009 year has focused upon promotion and recruitment including, the creation of a professional promotional film and presentations to middle and high school students. As of January 2010, 11 mentors and 8 mentees have been recruited to the program.

[www.mywisementor.com](http://www.mywisementor.com)

**SaskScienceNetwork**

Connects outreach activities on the prairies. The website provides information about organizations engaged in science and engineering outreach. This site will help teachers find student-speakers to visit their class and talk about science, and provide access to organized outreach programs, such as science camps, science road shows, fairs, etc. Spearheaded and developed by the Prairie Chair, the site is now hosted by the College of Engineering Outreach and Recruitment Office.

[http://sasksciencenetwork.ca](http://sasksciencenetwork.ca)

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**Computer Science Attrition Rates Intervention Study 2008-2009**

A study was carried out at the Computer Science (CS) Department at the University of Saskatchewan to find out of a simple intervention measure – inviting the promising students in first year CS classes to a meeting with the professor to discuss possible career options in CS – would increase student satisfaction and retention rates, and the number of declared majors in CS. 136 students took part in the 2008/09 study. The results from the follow up study provided strong support for the hypotheses, with the students from the experimental group showing higher satisfaction and increased confidence, higher overall class average and higher number of declared majors in CS in 2009/10, as well as a decreased attrition rate.

**WiseBlog**

The WiseBlog is used for posting news articles, research, videos or other interesting information related to women in science, engineering, mathematics or computer science, and technology. The Chair and the Project Coordinator can both post to the blog. Since 2008, over 125 posts have been made. Please, visit: [http://wiseblog.usask.ca](http://wiseblog.usask.ca)

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Dr. Julita Vassileva  
NSERC/Cameco Prairie Chair of  
Women in Science and Engineering
“I never really knew anything about engineering, so it really opened windows for me!” - GEG participant

- **Codes, Computers and Communicating with Aliens** interactive workshop developed to emphasize computer and information technology. Since September 2010, we have reached 1,264 students in 50 classrooms, 43% of whom were female.

- **Ready, SET, Go!** workshops delivered to an additional 99 elementary and secondary classrooms reaching 2,312 students, 50% of whom were female.


- Campus events for youth: Roboticon Diversity Night WindENG Science & Engineering Sunday Farm Smart Youth Program Science Olympics Science Rendezvous

- On the web: teacher resource page on www.cwse-on.ca; Girls4Science Facebook page; Girls4Science on YouTube.

- **Go Eng Girl/GÉNiandes, les filles** 2009 attended by 795 girls.

- Coming in July 2010: science and technology workshops at Girl Guides’ Guiding Mosaic camp in Guelph.

“This was so much fun! I'm extremely interested in learning about all of these job opportunities that I've never thought of before. I'm seriously considering being an engineer or scientist!”

- Female RSG participant
POST-SECONDARY & BEYOND

“The information I have gained is truly invaluable in addition to all of the wonderful people I had an opportunity to meet. This workshop may change my career course and my life and for that, I thank you thank you thank you!” – Boot Camp Participant

- WiSE Connect funding granted to: five CCWESTT 2010 Conference bursaries; University of Guelph - Let’s Talk Science Partnership Program; Women in Engineering Advisory Committee - 2009 Spring Forum; WiSE/Ontario Centre for Public Policy - Policy Conference Awards; WIGSAT - Mapping the Field of Women in Technology in Canada project; WiSE Sudbury - Science & Engineering Olympics; CiSters - Grace Hopper Conference Bursary

- Ontario Network of Women in Engineering (ONWiE) initiative: Academic Boot Camp for Engineering PhD Students and Post Docs, University of Waterloo, May 2009

RESEARCH & PRESENTATIONS

- CWSE-ON Partnership Celebration recognizing the contributions of NSERC, RIM and the University of Guelph to renewing the Chair (March 8, 2010)


- “The Advancement of Women Engineers” presented at Women Engineers Moving Up in Ontario Conference (January, 2010)


NEW! Career Transitions survey tracking the career intentions of graduating undergraduate students in computer science and engineering. Participate online today at www.cwse-on.ca (May-July 2010)

Photo Credits: Martin Schwalbe, Rohini Wittke, Simone Saunders, Shannon McCarthy, Melanie Veltman, Valerie Davidson
The NSERC-Industrial Alliance Chair is currently composed of Nadia Ghazzali, the Chair holder, and eight assistants coming from different 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 both in research and in promotion. The Chair holder developed an international perspective, as she is the General Secretary of the International Network of Women Engineers and Scientists (INWES) and member of the Hassan II Academy of science and technology of Morocco.

Research part:
Since May 2008, the Chair published:

- an historic research on women engineers and scientists in Quebec (Ghazzali and Lanouette, 2008): “Les femmes en sciences et en génie à travers l’histoire au Québec” (Women in Science and Engineering through the History in Quebec). The full research is available, in French only, at [www.chaire-crsng-inal.fsg.ulaval.ca](http://www.chaire-crsng-inal.fsg.ulaval.ca).

- a statistical study (Boiteau and Ghazzali, 2008) entitled “Profils des inscriptions des étudiants aux trois cycles universitaires au Québec de 1999 à 2007” (Students registration profiles at undergraduate and graduate levels in Quebec from 1999 to 2007). The full report is available, in French only, at [www.chaire-crsng-inal.fsg.ulaval.ca](http://www.chaire-crsng-inal.fsg.ulaval.ca). As well, the data from this study are also available interactively on the website.

- a literature review (Ghazzali and Myrand, 2009) entitled “Facteurs liés à la faible présence des femmes en génie” (Factors linked to the underrepresentation of Women in Engineering). The full report is available, in French only, at [www.chaire-crsng-inal.fsg.ulaval.ca](http://www.chaire-crsng-inal.fsg.ulaval.ca).

- a statistical study (Émond and Ghazzali, 2009) entitled “Analyse du corps professoral universitaire en sciences et génie au Québec, de 1997 à 2007” (Analysis of the situation of the women professors in Science and Engineering, for all universities of Quebec, from 1997 to 2007). The full report is available, in French only, at [www.chaire-crsng-inal.fsg.ulaval.ca](http://www.chaire-crsng-inal.fsg.ulaval.ca). As well, the data from this study are also available interactively on the website.

- In addition, a statistical study about the international students coming to study in the universities of Quebec is in press (Ghazzali and Morin-Rivest, 2010). All the 18 universities of Quebec are investigated; the international students are from 194 different countries.

Promotional part:

- Different general public and lunch conferences.
- Canadian Physicists Association (CPA 2008).
- As in 2008, the Chair has held the second (2009) and third (2010) editions of the event, “Les filles et les sciences: un duo électrisant” (Girls and sciences, an electrifying duo!). The 2010 edition was attended by about 110 girls, a record attendance! The 2009 event was covered by the QuebecHebdo and the 2010 event, on Radio-Canada (FM 106, 9) Radio's program called “Ça me dit de prendre le temps” (I feel like taking my time), on February 23rd
2010. As well, the magazine “Espace Parents” (Parents' Space) and the blog of the dean of the Science and Engineering Faculty covered the 2010 event.

• In fall 2009, Ms. Ghazzali was among the 16 personalities honoured by “Groupe Femmes, Politique et Démocratie” (Group Women, Politics and Democracy), with the recent publication of the book “D’ailleurs, je suis aussi d’ici” (By the way, I am also from here), published by “Septembre éditeur” (September editor). Moreover, Ms. Katie Gagnon, from “Groupe Femmes, Politique et Démocratie”, launched a DVD, based on the book, which follows four of the 16 personalities, including Ms. Ghazzali. The video is available on the Chair’s website, in the “Actualités” (News) section: http://www.chaire-crsng-inal.fsg.ulaval.ca/accueil/

• On November 18th 2009, Ms. Ghazzali gave an interview, to the radio station CKIA FM 88,3, from Quebec, within the framework of the program “Égalité: Genre Féminin” (Equality: Female Gender), under the theme Career Women.

• The Chair sponsored the 2008-2009 and 2009-2010 editions of the project “Future Ingénieure?” (Future Engineer?), for Quebec City and Chaudière-Appalaches area in partnership with the Marianne-Mareschal Chair. Girls from the collegial level were matched to engineers in six businesses and research centers, corresponding to their field of interest, enabling them to demystify the Engineering profession.

International part:
The Chair holder was invited speaker to many national and international events as, among others:

• INWES Regional Conference ICWES14 held in Lille, France, from July 15-18, 2008, framework of the 9th and 10th INWES Board Meeting

• event “Women for science”, in Mexico City, Mexico, on April 20-22, 2009.

• in 2009, the Chair holder was invited professor at the INRIA, in France, and at the Open University, in UK.

• INWES Regional Conference BIEN’09, in Busan, Korea, from August 27-29 2009, framework of the 11th INWES Board Meeting

• the Chair and the “Association marocaine des professionnels et des scientifiques de Québec” (Moroccan Association of Quebec professionals and scientists) jointly hosted, on March 6th 2010, an event in Quebec City, for the International Women's Day, under the theme “Femmes d’ici, venues d’ailleurs, citoyennes engagées, leurs parcours, leurs réalités et les défis à relever pour l’atteinte d’un idéal égalitaire” (Women here from elsewhere, committed citizens, their journey, their achievements and the challenges for an egalitarian ideal).

• three conferences in Morocco, March 2010, in Casablanca, at the Private Polytechnic Institute of Casablanca, in Tanger, at the “Colloque francophone sur les sondages” (Francophone Colloquium on Surveys) and in Marrakech, at the Faculty of Science of the Cadi Ayyad University.

For more information, visit our website: www.chaire-crsng-inal.fsg.ulaval.ca

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