



CCWE⁺²⁰: A project of the INWES Education and Research Institute

OVERALL GOAL

Increase the participation of women and other underrepresented groups in engineering study programs and in the profession.

Women in..	CCWE1992 Goals for 1997	Actual 2009	CCWE⁺²⁰
Women in 1 st year Undergrad studies	25-35%	-	
Women enrolled Undergraduate programs	-	17.4%	
Master's studies	20 %	24.1%	
Doctoral studies	10 %	22%	
Faculty members: professors	5%	Full 7% Associate 11% Assistant 18%	
Women graduating with Engineering degree	18 %	17.6%	
Profession	-	10.4%	

CCWE⁺²⁰ OBJECTIVES

1. Collect information on what has been done in the last 20 years; determine what has worked and what has not.
2. Assess differences between the generation of youth of 20 years ago and today.
3. Develop recommendations and strategies with timelines and outcomes that could be implemented in the next 5 years.
4. Prepare a *declaration* that all can sign and commit to before leaving.
5. Make the CCWE⁺²⁰ National Workshop report available on INWES-ERI's web site.



QUESTION FOR DAY 1

**Are the issues today similar to those of 20 years ago?
...in each of the following categories:**

Youth – Universities – Workplaces – Associations – Granting Agencies

YOUTH: Barriers in CCWE 1992 report

- Stereotyping that channel girls away from science and math;
- At school, more discouragement by some teachers and guidance counsellors;
- Lack of role models in engineering;
- Perception that engineering is a “male” profession; that high grades are needed; that engineers just build bridges and roads.

UNIVERSITIES: Barriers in CCWE 1992 report

- Some difficulty in adjusting to the pervasive male culture and curriculum that does not reflect women’s perspectives;
- Never meet or very few women professors;
- Few women in graduate school;
- Few universities have flexible tenure procedures and supportive policies to recognize difficulties of balancing family and demands of an academic career.

WORKPLACES: Barriers in CCWE 1992 report

- Women encounter attitudes and activities that are systemically biased against them;
- Many face discrimination in hiring, promotion, job assignments, salary;
- Some experience harassment;
- Many have to cope with isolation (only female on site);
- Not enough employers have policies that enable employees to balance family and career.



ASSOCIATIONS: Barriers in CCWE 1992 report

- Women engineers are minorities in terms of membership, governance, prizes and awards, keynote and expert panel speakers.

GRANTING AGENCIES: Barriers not included in 1992 CCWE report

- Gender disaggregated data on success rate by type of program are not always collected nor made available.
- Selection committees are male-dominated and some women sitting on these committees are, at times, not sensitive to gender issues.
- Although grant applications include a section on reasons why productivity may have been affected (either by maternity/parental leave, serious illness, elderly care, administration etc.), women are often reluctant to use this section because they feel that committee members will not consider this aspect seriously.
- Selection committee members often judge research proposals along the lines of traditional disciplines; applications that are multi-disciplinary or non-traditional, often preferred by women, can be judged negatively and thus rejected.
- Nominations by universities for Chairs, awards, or prizes have often excluded women, i.e. 19 Canada Research Chairs went to 19 men in 2010.



QUESTIONS FOR DAY 2

A. YOUTH

1. What are the expectations and aspirations of today's young people?
2. How do today's youth engage in science and engineering?
3. How should we adjust our teaching methods in science and technology for the K-12 and CEGEP student populations?

B. UNIVERSITIES

1. How can we improve outreach activities so as to increase the enrolment of under-represented groups in engineering?
2. How do we improve the image of engineering as a profession that benefits society as a whole?
3. How do we dispel entrenched, hero-style and geek-style engineering myths and replace with team-building, collaborative reality?
4. Would teaching *professionalism* to engineering students in first year help to address inappropriate behaviour?
5. How can the curriculum and climate become more women-friendly?
6. How will the Canadian Engineering Accreditation Board's (CEAB, BCAPG) new approach accommodate the CCWE⁺²⁰ Workshop recommendations on curriculum and teaching style?
7. How can we support parenting by students, faculty members and staff?
8. How do we develop the leadership potential of women?

C. WORKPLACES

1. How to stem the tide women leaving the profession?
2. How do we foster an inclusive approach in industry and government?
3. How will employers commit to creating a workplace culture that allows flexibility?
4. How can women in mid-career or in career breaks be supported through career planning?
5. How do we develop the leadership potential of women?



D. ASSOCIATIONS

1. How will your engineering associations foster a women-friendly climate and environment?
2. How will associations recognise the unique contributions of women?
3. How will the associations improve the image of engineers in Canadian society?

E. GRANTING AGENCIES

1. What strategic outlook and positioning could granting agencies adopt to support women and other underrepresented groups, and what programs could they put into place to this end?
2. Are all documents issued by agencies gender inclusive?
3. Is gender sensitivity training mandatory for women and men on selection committees and on staff?
4. How will the selection process take into account the temporary lower productivity of persons who request special consideration for maternity or parental leave, serious illness, elderly care, and administrative positions, to give a few examples?
5. How can agencies improve the gender disaggregated data collected on the success rates for all types of grants, awards, scholarships, and prizes?