

INWES Education and Research Institute

CCWE + 20 workshop



Monique Frize
President

September 17, 2011 EMBEC 2011 Budapest

INWES ERI

- ▶ Charity incorporated in Canada
- ▶ Projects: outreach, education, research
- ▶ Governed by a Board of Directors

www.inweseri.org



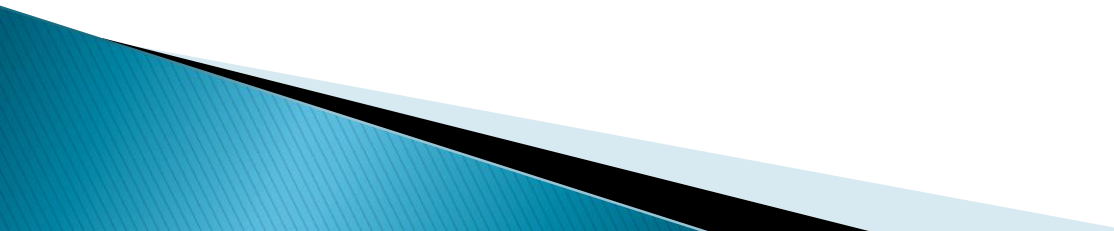
Canadian Committee on Women in Engineering (CCWE): 1990–1992

- ▶ Northern Telecom/NSERC Women in engineering Chair (UNB) announced May 11'89
- ▶ Massacre at Ecole Polytechnique (Dec 6, 1989)
- ▶ Chair began a national mandate (Dec 11, 1989)
- ▶ CCWE (Feb 22, 1990) 19 persons: 6 public fora (Barriers and Bridges), over 200 memoirs sent in;
- ▶ 1991: Conference in Fredericton for more development of report.
- ▶ Report: released in April 1992. Signatures for implementation.
- ▶ 1995: What was done? What is left to be done?

Follow-ups and other interventions

- ▶ 1996: NSERC (women in research S&E)
- ▶ 21 recommendations; 5 regional chairs
- ▶ 1998: CCWEST conference Vancouver
- ▶ 2000: CCWEST conference St-Johns, Nfld
- ▶ 2002: ICWES12/CCWEST and creation of **INWES**
- ▶ 2007: **INWES Education and Research Institute**
- ▶ 2009: The Bold and the Brave: A history of women in science and engineering
- ▶ 2011: **CCWE+20...Workshop April**
- ▶ **25 recommendations for 2011–2016.**

1992 CCWE Report: Barriers and Bridges

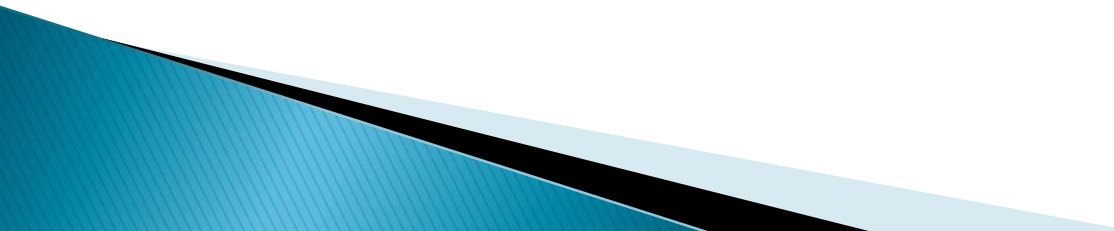
- ▶ Divided in chapters on:
 1. Youth (7 recommendations)
 2. Universities (10 recommendations)
 3. Workplaces (5 recommendations)
 4. Associations: scientific, professional, technical (7 recommendations)
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In 2011: CCWE+20

- ▶ Added granting agencies

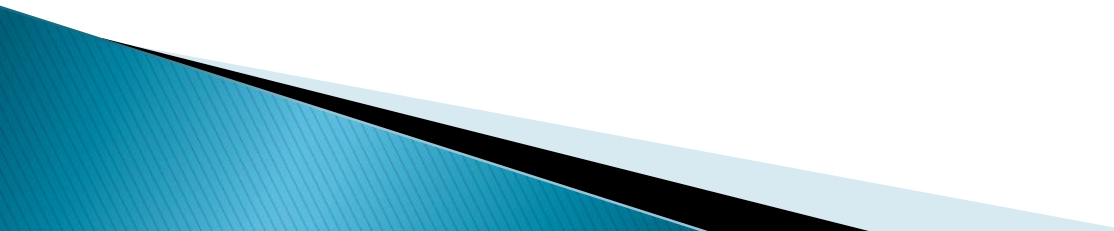
Women in..	CCWE1992 Goals for 1997 (1990)	Actual 2009	CCWE+20 Goal 2016
Women in 1 st year Undergrad studies	25-35%		25%
Women enrolled undergraduate programs	(13 %)	17.4%	25%
Master's studies	20 %	24.1%	25%
Doctoral studies	10 %	22%	25%
Faculty members: professors	5% (2 %)	Full 7% Associate 11% Assistant 18%	
Women graduating with Eng. Degree	18 % (13 %)	17.6%	25%
Profession	-	10.4%	25%

Cont...

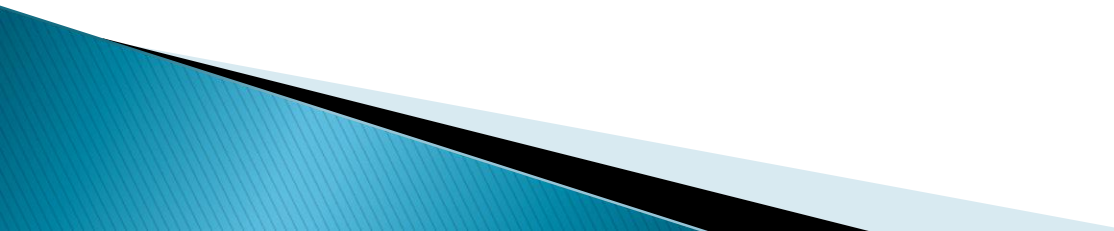
- ▶ More women engineers will be in senior management positions and on Boards of companies employing engineers.
 - ▶ More women will be elected on Council and appointed to committees
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April 29/30 2011

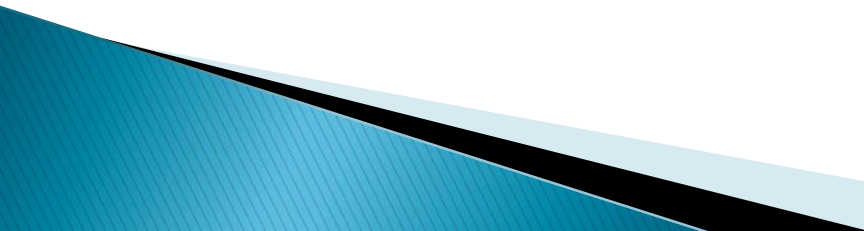
70 participants representing:

- ▶ Associations of Professional Engineers
 - ▶ Deans and professors
 - ▶ 5 Regional Chairs Women S&E
 - ▶ Canadian Commission for UNESCO
 - ▶ Outreach groups to youth
 - ▶ Granting Agencies
 - ▶ Students
 - ▶ Industry
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Youth issues: same as 1992

- ▶ Primarily, lack of understanding of what engineers do and misconceptions about engineers (students, parents, teachers and guidance counsellors)= lack encouragement.
 - ▶ Stereotyping – peer pressure: geeks and nerds are not cool
 - ▶ Parents(mothers) play a role in setting expectations in education
 - ▶ Lack of role models – they might know an engineer, but not what they do.
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Issues: new

- ▶ Princess syndrome...millenium girls
 - ▶ Lack of strong curriculum and delivery of foundation courses in science in math in the schools, so high school students are not prepared to go into engineering.
 - ▶ Strict requirements for science and math courses required to qualify for science and engineering; wrong choices in 9th grade can eliminate options later on. Family and counsellors do not realize what the course requirements are for engineering.
 - ▶ Non conventional students need a bridge to get caught up or be provided with remedial coursework.
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Top three recommendations

No.1.

Communicate a **clear and exciting brand image** of engineering that appeals to young students (from preschool to high school) and their parents, through contests, social media, films, TV and books.

No. 2.

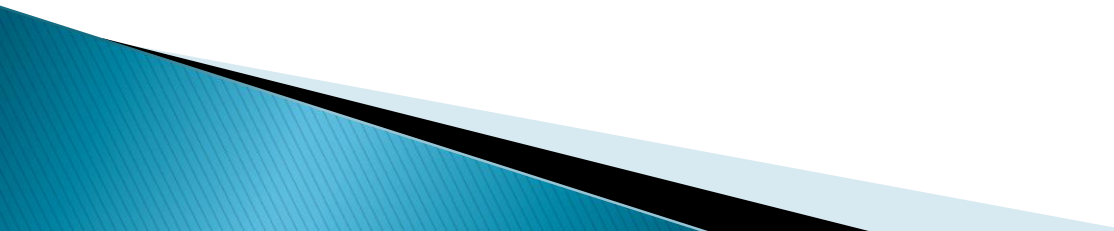
- ▶ **Enhance the knowledge** of engineering among teachers, counsellors and parents with specific information on the **nature of engineering careers**; steps required to be admitted into engineering ; providing activities and tips for parents to encourage their daughters to consider careers in engineering.



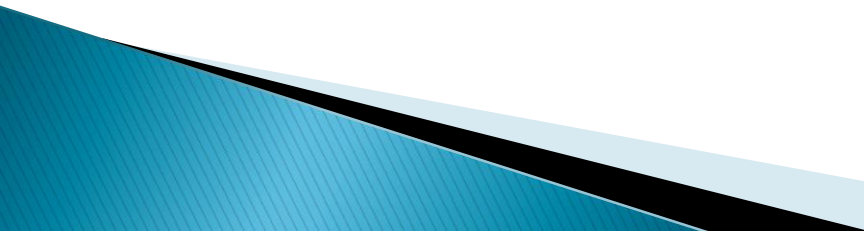
No. 3.

- ▶ Enhance the image and the **structure of engineering programs** to attract a more diverse group of students, with the aim of reaching an undergraduate enrolment rate of 25% female students by 2016 and 30% by 2020. Currently, this figure sits at 17%.

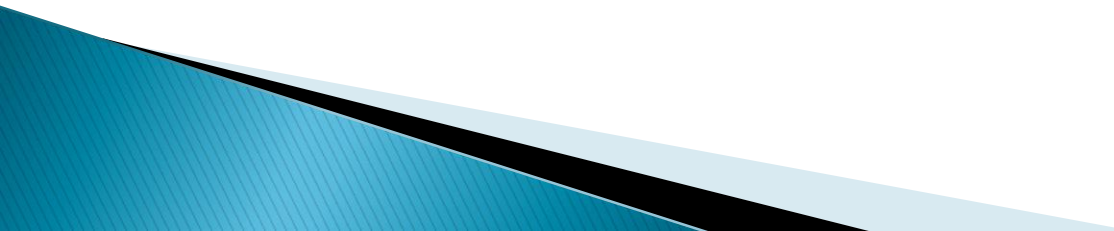
Issues: associations

- ▶ **Associations**
 - ▶ There has been some progress in many areas, but still need to work on getting more women into leadership positions in boards, associations and staff.
 - ▶ Some associations have no women engineers as staff!
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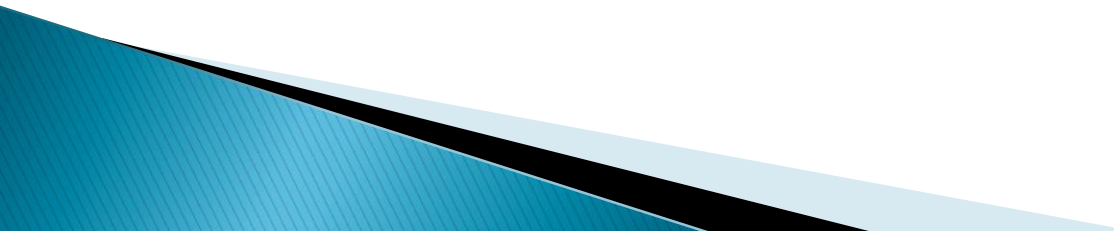
Actions: associations

- ▶ Within 5 years, the associations should implement succession plans with the aim of having the senior association staff comprised of 30% women and also have 30% of the volunteers working on committees to be women (develop plan within 1 year).
 - ▶ Need to organize and mobilize the members to vote for candidates who will support need to make changes, then hold them accountable to make changes for women in engineering. Need strong elected board/council members willing to change the policies and staff who support the changes.
 - ▶ Contact each association at the governance level over the next 6 months and lay out this goal. Who? Engineers Canada and grassroots organisations (e.g. Women in Engineering groups)
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Next steps

- ▶ Media release: 4 radio and 1 newspaper
 - ▶ Academica: CCWE+20 report was the no.1 most clicked report the week of July 25.
 - ▶ Report on INWES ERI website: www.inweseri.org
 - ▶ Timelines, metrics, lead organisations for implementation identified + how to.
 - ▶ Standing committee to monitor progress (fall).
 - ▶ Repeat the workshop concept in 2 or 3 years.
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Need:

- ▶ Commitment from associations, universities / deans, families, industry, and granting agencies
 - ▶ Realize time is running out for training a sufficient number of engineers and gaining critical skills that women can bring.
 - ▶ Template for repeating the process in other countries.
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Thank you!



