



Engineers Canada's Verbal Testimony to the House of Commons Standing Committee on the Status of Women

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Introduction

On May 18, 2017, Jeanette Southwood, M.A.Sc., FCAE, FEC, P.Eng., IntPE, Engineers Canada's Vice-President of Strategy and Partnerships, provided both written and verbal testimony to the House of Commons Standing Committee on the Status of Women.

The Standing Committee on the Status of Women was examining and reporting on issues pertaining to the economic stability of women in Canada. They include:

- the factors contributing to a higher incidence of poverty among women than men;
- the effect of unpaid care work on women's economic stability;
- the elements that influence women's income, including the gender pay gap and occupational barriers; and
- the measures that can be used to increase women's entry, participation, retention and representation in economic leadership positions.

Mrs. Southwood focused her testimony on the need for the engineering profession and the federal government to work collaboratively in order to attract and retain women in both engineering educational programs and to the profession. She discussed the need for federally funded research, specific to engineering, in order for both the profession and the federal government to better understand the barriers contributing to women leaving the profession. Her full verbal testimony is outlined below.

Testimony

Jeanette Southwood, Vice President, Strategy and Partnerships, Engineers Canada:

Thank you for the opportunity to appear here today, Madame Chair. As the Vice-President of Strategy and Partnerships for Engineers Canada, I am very pleased to be here to discuss Engineers Canada's involvement in protecting women's economic security while promoting the representation and retention of women within the engineering profession.

Engineers Canada is the national organization that represents the 12 provincial and territorial associations that regulate the practice of engineering in Canada and license the country's more than 290,000 professional engineers. Together, we work to advance the profession in the public interest.

Engineers Canada has long worked towards facilitating the entry and success of women in the engineering profession. The entry and retention of women into careers in engineering is a key opportunity to increase women's economic security. After all, engineering, along with business and health, is among Canada's best compensated professions. In addition, the E in STEM, engineering, is a career that involves bringing together the accomplishments of the sciences, technology and mathematics (the S, T, and M in STEM) to make a difference in the world and to help people. In fact, according to an international survey described in the Queen Elizabeth Prize for Engineering Report, the number one role of engineering in the next 20 years is to solve the world's problems. Number two is to inspire new innovation and Number three is to improve the quality of people's lives

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Yet despite engineering being a key opportunity, women, who make up 50.4 per cent of the total Canadian population, comprise only 12 per cent of practicing licensed engineers and only 19 per cent of undergraduate engineering students. While women can benefit economically from a career in engineering, Canadian society is also better served when the engineering profession is representative of the public interest it protects. We must work together to attract underrepresented groups, specifically women, into engineering education programs, as well as the profession, in order to enhance their economic stability and promote their representation in male-dominated industries.

There are many factors that impact a woman's decision to enter into the engineering profession. Some of these factors may include the pay inequity that exists between men and women, inflexible maternity and parental leave benefits due to the current maternity leave system, and the stereotypes that engineering is a male-dominated industry. There are also several other factors that are not well known or are often anecdotal.

Although these are all important topics to address, the focus of my testimony today will revolve around the need for federally funded research that is specific to engineering. This research is necessary to gain a better understanding of why young females are staying away from the engineering profession and to understand the possible interventions that stakeholders and policy makers can take in order to support women's entry into engineering. This research is also necessary to gain a better understanding of the barriers that contribute to women leaving the field of engineering.

Engineers Canada, and all of the regulators it represents, is working on raising the percentage of newly licensed engineers who are women to 30 percent by the year 2030; a goal known as 30 by 30. The current percentage of licensed engineers who are women stands at 17 per cent; a percentage that has not increased in the last three years.

In order to address the issues that are discouraging women from entering the profession, engineering stakeholders need to be supported by national, government-driven policies that encourage youth, especially girls, to consider a post-secondary engineering education, as well as a career in engineering. This support begins at the primary, secondary and post-secondary school level.

Foundational skills in STEM will prepare Canadian youth for any future career path they choose to pursue – regardless of their gender. But while the representation of women on university and college campuses across Canada has increased over the past decades, post-secondary enrolment rates for women in STEM subjects, and especially engineering, continues to remain extremely low.

According to a 2011 analysis conducted by Statistics Canada, among high school students with grades between 80-89 per cent, approximately 52 per cent of boys chose a STEM university program, but only 22 per cent of girls chose the same.

Among those students who had grades below 80 per cent and attended university, approximately 30 percent of male students chose a STEM program, while only 10 per cent of women with similar grades did the same. This demonstrates that there is a discrepancy between male and female students entering into STEM programs; even if they hold the same educational credentials

The enrolment rate is even lower in engineering programs. Undergraduate enrolment and graduation rates of women in engineering programs continue to be significantly lower than other disciplines. In

2011, women between the ages of 25-34 in the science and technical streams accounted for 59 per cent of all science and technology graduates, a stark contrast to the 23 per cent of graduates in engineering who were women that same year.

There is consensus that youth engagement in STEM subjects is a key vehicle to increasing a child's interest in engineering. Engineering stakeholders are involved in delivering outreach programs for this reason, with the goal being to increase enrolment in engineering programs. These programs are often specifically targeted to young women, as they are less likely to identify engineering as a possible career choice.

Understanding the core reasons for why girls are less likely than boys to pursue STEM subjects beyond high school would better prepare engineering stakeholders to deliver targeted youth engagement strategies and interventions to young women. This information would be extremely beneficial at a time when young girls could be taking the necessary steps to enter the engineering field, should they so choose to do so.

In order to attract young women into engineering education programs, as well as the engineering profession, federal research funding is required to gain a better understanding of why young women are not pursuing engineering as an educational path.

This research should focus on identifying and addressing the factors that are deterring young women from pursuing post-secondary engineering disciplines, even though they have the necessary qualifications and credentials to enrol in those programs. Having this knowledge will be critical in allowing stakeholders to implement the appropriate interventions for addressing what deters young women from engineering.

We also encourage the federal government to commit to incorporating research into its funding criteria for federal programs, such as PromoScience, so that these programs can also address these root causes.

Too often when discussing STEM disciplines is the emphasis placed on science, technology, and mathematics, with a lack of focus on engineering. For this reason, programs being considered for PromoScience funding should also specifically target engineering.

The attrition of women within the profession is also a real threat for retaining women in the profession.

As a Professional Engineer myself, I have personally witnessed women who leave the profession due to workplace barriers. I was fortunate to be able to overcome many of these barriers in my own career path. I have had a good career in engineering; next month, I will be receiving an honorary doctorate. However, many women may not have the necessary support or opportunities to overcome such barriers. Often times these barriers, such as inflexible maternity leave, pay inequity, or workplace culture result in attrition for women in the engineering profession.

There is evidence from the United States and several other countries around the loss of women from the engineering profession; however, beyond anecdotal information, there is limited data available in Canada that illustrates the extent of this challenge.

Engineering stakeholders cannot make informed choices on how best to retain women in the engineering profession without relevant Canadian-specific data to guide their efforts.

For this reason, Engineers Canada encourages the federal government to invest in workforce research funding for the engineering profession in order to better understand and combat the reasons that cause women to leave the profession and to increase opportunities for women in the profession. We want women to stay in a stable, well-paying profession in order to protect their economic security. As part of this investment, Engineers Canada also encourages the federal government to focus on research specific to Indigenous women and women who are visible minorities.

Madame Chair, thank you for allowing me to present to the committee today on this important issue.