



HOUSE OF COMMONS  
CHAMBRE DES COMMUNES  
CANADA

**WOMEN IN SKILLED TRADES AND SCIENCE,  
TECHNOLOGY, ENGINEERING AND  
MATHEMATICS OCCUPATIONS**

**Report of the Standing Committee on  
the Status of Women**

**Hélène LeBlanc  
Chair**

**JUNE 2015**

**41<sup>st</sup> PARLIAMENT, SECOND SESSION**

---

Published under the authority of the Speaker of the House of Commons

**SPEAKER'S PERMISSION**

Reproduction of the proceedings of the House of Commons and its Committees, in whole or in part and in any medium, is hereby permitted provided that the reproduction is accurate and is not presented as official. This permission does not extend to reproduction, distribution or use for commercial purpose of financial gain. Reproduction or use outside this permission or without authorization may be treated as copyright infringement in accordance with the *Copyright Act*. Authorization may be obtained on written application to the Office of the Speaker of the House of Commons.

Reproduction in accordance with this permission does not constitute publication under the authority of the House of Commons. The absolute privilege that applies to the proceedings of the House of Commons does not extend to these permitted reproductions. Where a reproduction includes briefs to a Standing Committee of the House of Commons, authorization for reproduction may be required from the authors in accordance with the *Copyright Act*.

Nothing in this permission abrogates or derogates from the privileges, powers, immunities and rights of the House of Commons and its Committees. For greater certainty, this permission does not affect the prohibition against impeaching or questioning the proceedings of the House of Commons in courts or otherwise. The House of Commons retains the right and privilege to find users in contempt of Parliament if a reproduction or use is not in accordance with this permission.

Also available on the Parliament of Canada Web Site  
at the following address: <http://www.parl.gc.ca>

**WOMEN IN SKILLED TRADES AND SCIENCE,  
TECHNOLOGY, ENGINEERING AND  
MATHEMATICS OCCUPATIONS**

**Report of the Standing Committee on  
the Status of Women**

**Hélène LeBlanc  
Chair**

**JUNE 2015**

**41<sup>st</sup> PARLIAMENT, SECOND SESSION**



# **STANDING COMMITTEE ON THE STATUS OF WOMEN**

## **CHAIR**

Hélène Leblanc

## **VICE-CHAIRS**

Kirsty Duncan  
Tilly O'Neill Gordon

## **MEMBERS**

John Barlow	Pat Perkins
Joyce Bateman	Djaouida Sellah
Joan Crockatt	Susan Truppe
Mylène Freeman	

## **OTHER MEMBERS OF PARLIAMENT WHO PARTICIPATED**

Colin Carrie	Chungsen Leung
Sean Casey	Laurin Liu
Pierre-Luc Dusseault	Francis Scarpaleggia
Sadia Groguhé	Scott Simms
Gerald Keddy	Wai Young
Matthew Kellway	Bob Zimmer

## **CLERKS OF THE COMMITTEE**

Cynara Corbin  
Michelle Legault

## **LIBRARY OF PARLIAMENT**

**Parliamentary Information and Research Service**  
Laura Munn-Rivard, analyst



# **THE STANDING COMMITTEE ON THE STATUS OF WOMEN**

has the honour to present its

## **EIGHTH REPORT**

Pursuant to its mandate under Standing Order 108(2), the Committee has studied women in skilled trades and science, technology, engineering and mathematics occupations and has agreed to report the following:





# TABLE OF CONTENTS

---

WOMEN IN SKILLED TRADES AND SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS OCCUPATIONS .....	1
EXECUTIVE SUMMARY .....	1
INTRODUCTION .....	3
OVERVIEW OF WOMEN IN SKILLED TRADES AND STEM OCCUPATIONS IN CANADA.....	4
A. Defining skilled trades and STEM occupations .....	5
B. Women’s participation in skilled trades training and education and the skilled trades workforce .....	7
C. Women’s participation in STEM educational fields and STEM workforce .....	8
D. Federal initiatives to increase women’s presence in skilled trades and STEM occupations.....	9
ADVANTAGES OF ADDRESSING THE UNDERREPRESENTATION OF WOMEN IN SKILLED TRADES AND STEM OCCUPATIONS .....	13
A. Benefits to women in skilled trades and STEM occupations .....	13
B. Benefits of women’s presence to skilled trades and STEM occupations.....	14
EFFORTS TO INCREASE WOMEN’S PARTICPATION IN SKILLED TRADES AND STEM OCCUPATIONS .....	17
A. Early engagement of girls in skilled trades and STEM fields.....	17
B. Presence of role models and mentors.....	21
C. Raising awareness and correcting misconceptions .....	25
D. Addressing organizational barriers in the workplace.....	27
E. Improving workplace culture.....	31
F. Family-friendly workplace policies .....	33
LIST OF RECOMMENDATIONS .....	37
APPENDIX A: LIST OF WITNESSES .....	39
APPENDIX B: LIST OF BRIEFS .....	41
REQUEST FOR GOVERNMENT RESPONSE.....	43
SUPPLEMENTARY OPINION OF THE NEW DEMOCRATIC PARTY OF CANADA .....	45
DISSENTING REPORT OF THE LIBERAL PARTY OF CANADA.....	51



# WOMEN IN SKILLED TRADES AND SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS OCCUPATIONS

---

## EXECUTIVE SUMMARY

For Canadian women of a century ago, employment in skilled trades and science, technology, engineering and mathematics (STEM) occupations would have been unimaginable. However, over recent decades, women's representation in STEM fields of study and trades programs and in skilled trades and STEM-based careers has gradually increased. Skilled trades and STEM occupations represent rewarding employment opportunities for women across the country. As well, women's presence in skilled trades and STEM occupations has benefited these occupations, which have acquired talented and skilled female workers, and has benefited the Canadian economy as a whole.

In its report *Women in Skilled Trades and Science, Technology, Engineering and Mathematics Occupations*, the House of Commons Standing Committee on the Status of Women (the Committee) examines the topic of women in skilled trades and STEM occupations in Canada and provides relevant recommendations. The report serves to celebrate the inspirational women who are studying, seeking employment or establishing themselves in skilled trades and STEM careers.

The report's findings are based on testimony from the Committee's study on women in skilled trades and STEM occupations in Canada. The study began with briefings from officials from Employment and Social Development Canada, Citizenship and Immigration Canada, Status of Women Canada, Natural Sciences and Engineering Research Council of Canada and Statistics Canada. Testimony was provided by 30 witnesses – two of whom appeared as individuals, with the remainder representing 20 organizations – over a total of six meetings held between March and May 2015.

As outlined in the report, there are a number of efforts to address women's underrepresentation in skilled trades and STEM occupations, including the early engagement of girls in skilled trades and STEM fields; the support of mentors and the presence of role models; raising awareness of and correcting misconceptions about skilled trades and STEM occupations; addressing organizational barriers in the workplace; improving workplace culture; and instituting family-friendly workplace policies.

The Committee was pleased to hear from witnesses about the progress women have made in skilled trades and STEM occupations but acknowledges that challenges that limit women's full and equal participation continue to exist. One of the witnesses, Ms. Danniele Livengood, Secretary of the Society for Canadian Women in Science and Technology, noted: "The advances we've made thus far justify optimism and further

support as we take on the next set of challenges.”<sup>1</sup> The report’s recommendations serve to address these challenges and support women’s full participation in skilled trades and STEM occupations.

The Committee acknowledges the important contributions made by witnesses, who shared their knowledge, ideas and insights. The Committee hopes that this report will play a role in inspiring women from across Canada to pursue skilled trades and STEM studies and career opportunities. By establishing themselves in skilled trades and STEM occupations, women improve their own economic prosperity, support their families’ economic stability and contribute to Canada’s economic growth.

---

1 House of Commons Standing Committee on the Status of Women, [Evidence](#), 23 April 2015, 1105 (Danniele Livengood, Secretary, Society for Canadian Women in Science and Technology).

## INTRODUCTION

The House of Commons Standing Committee on the Status of Women (the Committee) agreed on 26 February 2015 to conduct a study on women in skilled trades and science, technology, engineering and mathematics (STEM) occupations in Canada.<sup>2</sup> The Committee adopted the following motion:

That, pursuant to Standing Order 108 (2), the Committee undertake a study on Women in skilled trades and Science, Technology, Engineering and Mathematics (STEM) occupations.

The Committee was briefed by officials from Employment and Social Development Canada (ESDC), Citizenship and Immigration Canada (CIC), Status of Women Canada (SWC), Natural Sciences and Engineering Research Council of Canada (NSERC) and Statistics Canada. The Committee received testimony from 30 witnesses – two of whom appeared as individuals, with the remainder representing 20 organizations. The briefings and testimony were received over a total of six meetings held from 24 March 2015 to 5 May 2015. In addition, the Committee received briefs from a number of organizations, many of which appeared before the Committee, along with written speaking notes and follow-up responses to questions from Committee members.

This report summarizes evidence gathered during the study on women in skilled trades and STEM-related occupations and gives an overview of women’s presence in these occupations in Canada. It also presents a discussion of the advantages of addressing the underrepresentation of women in skilled trades and STEM occupations and a description of efforts to increase women’s participation in skilled trades and STEM occupations. The central efforts to address women’s underrepresentation include the early engagement of girls in skilled trades and STEM fields; the support of mentors and the presence of role models; raising awareness of and correcting misconceptions about skilled trades and STEM occupations; addressing organizational barriers in the workplace; improving workplace culture; and instituting family-friendly workplace policies.

The Committee recognizes the significant contributions made by witnesses, who shared their knowledge, experiences and ideas, and would like to congratulate witnesses who shared compelling stories of their own personal success in these fields or their work to assist other women in these areas. The importance of this study was recognized by Committee members and witnesses alike, as it highlights rewarding occupations that provide financial stability and interesting work to Canadians – both women and men. Linda Savoie, Senior Director General of the Women's Program and Regional Operations Directorate at SWC, stated: “We welcome your committee's timely study of women in skilled trades and the STEM occupations. It truly underscores the vital contribution that women make to the economic life of Canada.”<sup>3</sup>

---

2 The evidence cited in this document is from the [House of Commons Standing Committee on the Status of Women \[FEWO\], 2<sup>nd</sup> Session, 41<sup>st</sup> Parliament](#), unless otherwise noted.

3 [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Senior Director General, Women's Program and Regional Operations Directorate, Status of Women Canada).

As outlined in this report, skilled trades and STEM-related occupations provide women with the ability to improve their own economic prosperity, support their family's economic stability and contribute to the advancement of Canada's economy.

## OVERVIEW OF WOMEN IN SKILLED TRADES AND STEM OCCUPATIONS IN CANADA

The Committee learned that women have made significant progress in the labour force over recent decades and now make up nearly half of all workers (48%). Among the Organisation for Economic Cooperation and Development (OECD) countries, Canadian women have the 5<sup>th</sup> highest labour force participation rate and the 7<sup>th</sup> highest employment rate.<sup>4</sup> Jonathan Will, Director General of the Economic Policy Directorate at the ESDC, told the Committee: "Over the past few decades, Canadian women have made considerable progress and are world leaders in both educational attainment and labour market performance."<sup>5</sup>

The Committee heard that in Canada, as in other OECD countries, men and women typically work in different fields, a situation that leads to what some stakeholders call "labour force segregation."<sup>6</sup> In particular, the Committee learned that women remain underrepresented in a number of occupational groups, such as skilled trades and STEM occupations. SWC informed the Committee that women made up approximately 5% of all trade workers and 22% of the STEM workforce in Canada in 2011.<sup>7</sup>

Women's underrepresentation in these fields starts at the post-secondary and apprenticeship level in Canada. In 2013, women made up 56% of new post-secondary graduates at the college, undergraduate and master's levels, largely in traditionally female-dominated programs, and remained underrepresented in traditionally male-dominated programs, such as skilled trades and STEM fields.<sup>8</sup>

The Committee also learned that women's participation in certain industries that employ skilled trades and STEM workers may have increased, but they remain employed in occupations that are traditionally female-dominated. For example, while women now represent 17% of the mining workforce (a 40% increase over the last decade), over 50% of those women work in human resources, finance and administrative and support roles. In contrast, among skilled trade occupations such as miners and equipment operators, the representation of women drops to under 10%, while among STEM-related occupations such as geologists and mining engineers the representation of women is around 20%.<sup>9</sup>

---

4 [Evidence](#), 24 March 2015, 1105 (Jonathan Will, Director General, Economic Policy Directorate, Department of Employment and Social Development).

5 Ibid.

6 [Evidence](#), 23 April 2015, 1120 (Kate McInturff, Senior Researcher, National Office, Canadian Centre for Policy Alternatives).

7 [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada).

8 [Evidence](#), 24 March 2015, 1105 (Jonathan Will, Department of Employment and Social Development).

9 [Evidence](#), 28 April 2015, 1100 and 1105 (Ryan Montpellier, Executive Director, Mining Industry Human Resources Council).

Witnesses also told the Committee that women's representation in skilled trades and STEM occupations is significantly lower at leadership levels in those sectors.<sup>10</sup> Ms. Danniele Livengood, Secretary of the Society for Canadian Women in Science and Technology (SCWIST), explained that large technology companies, such as Facebook, LinkedIn and Google, have a strong representation of women in the workforce, at around 35%, but women make up only 20% to 25% of senior staff.<sup>11</sup> Ms. Tammy Evans, President of the Canadian Association of Women in Construction (CAWIC), said that while women make up 11% of the overall construction industry workforce and around 4% of workers in the skilled trades occupations, they represent less than 2% of the board directors in the industry.<sup>12</sup>

### **A. Defining skilled trades and STEM occupations**

The Committee learned that there are many interpretations of skilled trades and STEM occupations and that those categories are constantly evolving and growing. For the purpose of this study, the Committee understands skilled trades and STEM occupations to be as described below.

Skilled trades are occupations whereby workers develop particular skills in a trade or craft and have a degree of both practical and theoretical knowledge of the trade or craft. According to Statistics Canada, for its presentation to the Committee, skilled trades were deemed to be equivalent to the "mechanic and construction trades," as outlined in the National Occupational Classification, and included industrial, electrical and construction trades and maintenance and equipment operation trades.<sup>13</sup> In Canada, registered apprenticeship training programs include six major trade groups: building construction; electrical, electronic and related trades; food and services; industrial and related mechanical trades; metal fabricating; and motor vehicle and heavy equipment.<sup>14</sup>

STEM occupations include professionals and technical staff in natural and applied sciences, technology, engineering and mathematics working in a wide range of sectors, such as biotechnology, environment, mining, electricity and oil and gas industries. Examples of occupations in these areas include civil, mechanical, computer, electrical and chemical engineers; engineering and architectural technologists; electronic and biological technicians; physicists; astronomers; geologists; chemists; meteorologists; biologists; architects; mathematicians; statisticians; and actuaries.<sup>15</sup>

---

10 [Evidence](#), 23 April 2015, 1100 (Danniele Livengood, Secretary, Society for Canadian Women in Science and Technology); [Evidence](#), 21 April 2015, 1125 (Saira Muzaffar, TechGirls Canada).

11 [Evidence](#), 23 April 2015, 1100 (Danniele Livengood, Society for Canadian Women in Science and Technology).

12 [Evidence](#), 5 May 2015, 1110 (Tammy Evans, President, Canadian Association of Women in Construction).

13 Statistics Canada, "Women in Skilled Trades and Science, Technology, Engineering and Mathematics (STEM) Occupations," *Presentation slides*, 26 March 2015.

14 Martin Turcotte, "[Women and Education](#)," *Women in Canada: A Gender-based Statistical Report*, December 2011, p. 15.

15 Statistics Canada, "Women in Skilled Trades and Science, Technology, Engineering and Mathematics (STEM) Occupations," *Presentation slides*, 26 March 2015.

The Committee heard that defining these occupational fields is critical in order to promote “clearly articulated visions, goals, desired outcomes, and measurement systems.”<sup>16</sup> Some witnesses suggested that the lack of a standard definition of skilled trades and STEM occupations leads to particular challenges in the field. Firstly, without a common understanding of skilled trades and STEM occupations, there is a lack of awareness in general society of the sectors and there are difficulties in sharing information to further promote the sectors. Dr. Bonnie Schmidt, President of Let's Talk Science, was concerned about a widespread lack of awareness of the very term “STEM” itself.<sup>17</sup> She explained: “I recently asked a large group of high school students what they thought STEM was, and they thought I was going to talk to them about stem cell research.”<sup>18</sup>

Secondly, without a standard definition of skilled trades and STEM occupations, it is difficult to measure and track progress in these sectors. Statistics Canada told the Committee that the agency does not have a “definition of STEM-related occupations” and, for the purpose of its presentation to the Committee, the agency used an occupational group deemed equivalent to STEM-related occupations: “natural and applied sciences and related occupations.”<sup>19</sup> The Committee heard that it is particularly challenging to classify STEM jobs, as there is not always agreement about whether to include occupations such as educators, managers, technicians and health care professionals in the sector.<sup>20</sup>

Dr. Schmidt explained that “until we have real clarity and standardization about what falls into these categories, we'll continue to question whether our engagement efforts are actually succeeding, because we're all measuring different things.”<sup>21</sup>

### **Recommendation 1**

**The Committee recommends that the Government of Canada develop clearly defined outcomes that can help align and leverage stakeholder efforts in attracting women in science, technology, engineering and mathematics based work.**

---

16 [Evidence](#), 21 April 2015, 1100 (Bonnie Schmidt, President, Let's Talk Science).

17 *Ibid.*, 1225.

18 *Ibid.*, 1100.

19 [Evidence](#), 26 March 2015, 1105 (Alison Hale, Director, Labour Statistics Division, Statistics Canada).

20 *Ibid.*, 1115.

21 [Evidence](#), 21 April 2015, 1100 (Bonnie Schmidt, Let's Talk Science).



## **B. Women's participation in skilled trades training and education and the skilled trades workforce**

SWC told the Committee during its briefing that women made up around 5% of all skilled trade workers in Canada in 2011 and that there had been little change in women's representation in related educational fields and the labour force in the skilled trades sector.<sup>22</sup>

Within the skilled trades sector, women remain underrepresented in educational and training opportunities. The Committee heard from ESDC that, as of 2012, female apprentices made up only 14% of all registered apprentices in Canada.<sup>23</sup> According to Statistics Canada, in the registered apprenticeship training programs, only one trade group – food and services – has a majority of women (65% of enrolments in 2007).<sup>24</sup> Women remain the minority in all other registered apprenticeship training programs. For example, women represented 3.7% of the enrolment in building construction programs in 2007, which was a small increase from 1.5% in 1991.<sup>25</sup>

Additionally, a significant proportion of women registered in apprenticeship training programs drop out and do not earn their certificates. As an example, women made up 3.0% of enrolments in training programs for electrical, electronic and related trades in 2007, but accounted for only 1.5% of graduates in those programs.<sup>26</sup>

However, there is evidence of progress in the skilled trades sector. According to ESDC, in some of the top Red Seal trades<sup>27</sup> in the construction sector, the proportion of women is very small but there has been significant growth over the past five years; for example, 80% growth in the number of female apprentices for steamfitter-pipefitter positions, 75% growth for female industrial mechanics and 60% growth for female plumbers.<sup>28</sup>

Witnesses provided the Committee with details on women's underrepresentation in the labour force for the skilled trades sector. As mentioned earlier, SWC noted that women made up around 5% of all skilled trade workers in Canada in 2011.<sup>29</sup> Similarly, Statistics Canada told the Committee that in 2011 young women aged 25 to 34 made up 4% of

---

22 [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada).

23 [Evidence](#), 24 March 2015, 1110 (Catherine Scott, Director General, Labour Market Integration, Skills and Employment Branch, Department of Employment and Social Development).

24 Martin Turcotte, "[Women and Education](#)," *Women in Canada: A Gender-based Statistical Report*, December 2011, p. 15.

25 *Ibid.*

26 *Ibid.*, p. 16.

27 The Red Seal Program sets common standards to assess the skills of tradespersons across Canada. There are currently 57 designated Red Seal trades.

28 [Evidence](#), 24 March 2015, 1245 (Catherine Scott, Department of Employment and Social Development).

29 [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada).

workers in the mechanic and construction trades, a sector chosen by Statistics Canada to represent the majority of skilled trades.<sup>30</sup>

Within trades related to mechanics and construction, Statistics Canada told the Committee that young women's participation varied: in 2011, they made up 1% of bricklayers, 2% of motor vehicle mechanisms technicians, 2% of plumbers, 2% of carpenters, 3% of motor vehicle body repairers, 5% of industrial electricians, 10% of cabinetmakers and 12% of painters and decorators.<sup>31</sup>

While the proportion of young women workers in skilled trades barely changed between 1991 and 2011, progress varied across occupations. The occupations that did show an increase from 1991 to 2011 in the proportion of women workers included cabinet makers (6% increase), painters and decorators (5% increase) and industrial electricians (4% increase). The occupations where women's presence remained relatively unchanged included bricklayers (no increase), plumbers (1% increase), and motor vehicle body repairers (1% increase).<sup>32</sup>

### **C. Women's participation in STEM educational fields and STEM workforce**

The Committee learned that women's representation within STEM educational fields and the labour force has undergone important growth over the past two decades but that women remain underrepresented, accounting for approximately 22% of the workforce.<sup>33</sup>

Women's increased representation in STEM occupations has been preceded by their increased enrolment in and graduation from STEM college and university programs. In 2011, 22% of STEM college graduates and 39% of STEM university graduates aged 25 to 34 were female. However, this proportion varied depending on the subject, with women representing 23% of graduates in engineering, 30% of graduates in mathematics and computer science and 59% of graduates in science and technology.<sup>34</sup>

Witnesses provided details on women's steady increase in the STEM workforce over the past decades. Statistics Canada told the Committee that young women made up 26% of STEM occupations that require a college diploma in 2011, compared with 18% in 1991. Among these STEM occupations, young women represented 6% of electronic technicians, 18% of civil engineering technologists and 32% of industrial designers in 2011. Within these occupations, young women made up the majority in only a few

---

30 [Evidence](#), 26 March 2015, 1105 (Alison Hale, Statistics Canada).

31 [Evidence](#), 26 March 2015, 1105 (Alison Hale, Statistics Canada); Statistics Canada, "Women in Skilled Trades and Science, Technology, Engineering and Mathematics (STEM) Occupations," *Presentation slides*, 26 March 2015.

32 [Evidence](#), 26 March 2015, 1105 (Alison Hale, Statistics Canada). Statistics Canada, "Women in Skilled Trades and Science, Technology, Engineering and Mathematics (STEM) Occupations," *Presentation slides*, 26 March 2015.

33 [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada).

34 Statistics Canada, "Women in Skilled Trades and Science, Technology, Engineering and Mathematics (STEM) Occupations," *Presentation slides*, 26 March 2015; Darcy Hango, "[Gender differences in science, technology, engineering, mathematics and computer science \(STEM\) programs at university](#)," *Insights on Canadian Society*, Statistics Canada, December 2013, p. 2.

fields in 2011, such as biological technicians (63%) and agricultural and fish product inspectors (67%).<sup>35</sup>

For STEM occupations that require a university degree, young women aged 25 to 34 represented 28% of the workforce in 2011, compared to 16% in 1991. Within these occupations in 2011, as an example, young women made up 12% of mechanical engineers, 15% of aerospace engineers and 24% of civil engineers. Young women had attained parity or the majority in certain STEM occupations requiring a university degree, such as architects (49%), chemists (49%) and biologists (65%).<sup>36</sup>

#### **D. Federal initiatives to increase women's presence in skilled trades and STEM occupations**

Through testimony from witnesses and briefings from departments, the Committee heard of a number of federal government-led initiatives focused on the skilled trades and STEM sectors, some of which specifically address women's representation in these occupations. A number of these initiatives are listed below:

- The Youth Employment Strategy, an initiative involving 11 departments and agencies, is designed to assist young Canadians, including young women, in gaining the skills and experience needed to enter the labour force, including by providing youth with real-life work experience in skilled trades fields.<sup>37</sup>
- In February 2014, the Minister of Labour and Minister of Status of Women launched the Group of Leaders on Women and the Economy in order to explore opportunities to increase women's representation within skilled trades and technical professions.<sup>38</sup>
- In December 2014, Industry Canada launched an updated science, technology and innovation strategy entitled *Seizing Canada's Moment: Moving Forward in Science Technology and Innovation 2014*, which builds on the existing 2007 framework and includes a focus on engaging youth.<sup>39</sup>
- The Canada Student Loans Program, delivered by ESDC, supports access to post-secondary education for Canadians, including young women

---

35 [Evidence](#), 26 March 2015, 1105 (Alison Hale, Statistics Canada); Statistics Canada, "Women in Skilled Trades and Science, Technology, Engineering and Mathematics (STEM) Occupations," *Presentation slides*, 26 March 2015.

36 [Evidence](#), 26 March 2015, 1105 (Alison Hale, Statistics Canada); Statistics Canada, "Women in Skilled Trades and Science, Technology, Engineering and Mathematics (STEM) Occupations," *Presentation slides*, 26 March 2015.

37 [Evidence](#), 24 March 2015, 1115 (Catherine Scott, Department of Employment and Social Development).

38 [Evidence](#), 24 March 2015, 1130 (Linda Savoie, Status of Women Canada).

39 [Evidence](#), 21 April 2015, 1105 (Bonnie Schmidt, Let's Talk Science); Industry Canada, [Moving Forward in Science, Technology and Innovation 2014](#), 2014.

interested in pursuing skilled trades or a STEM occupation, by providing financial assistance in the form of loans and grants to students who demonstrate financial need.<sup>40</sup>

- ESDC’s newly consolidated National Job Bank aims to provide Canadians with a single point of access for information “on job market trends, occupational profiles and job opportunities.”<sup>41</sup> In addition, in 2013, ESDC launched a new job alert system that delivers job market information up to twice daily to Canadians.<sup>42</sup>
- ESDC’s enhanced Job Matching Service, which was provided with \$11.8 million over two years in the 2014 Budget as well as \$3.3 million per year on an ongoing basis, offers a secure process to automatically match registered job seekers and employers in the same area on the basis of skills, knowledge and experience.<sup>43</sup>
- The Canada Job Grant, according to ESDC, provides over \$2 billion per year to provinces and territories through the labour market development agreements with the aim of helping “unemployed Canadians quickly find and return to work, including support for women in apprenticeship training.”<sup>44</sup>
- The Canada Apprentice Loan, offered by ESDC and launched in January 2015, allows individuals completing an apprenticeship in a designated Red Seal trade to apply for up to \$4000 in interest-free loans to pay for tuition, tools, equipment, living expenses and family costs.<sup>45</sup>
- The Federal Skilled Workers program, delivered by CIC, selects applicants for permanent residency based on “human capital factors associated with long-term success and adaptability, including language, education, work experience, and previous work or study in Canada.”<sup>46</sup> According to CIC, in 2004, women made up 26% of principal applicants, and this number increased to 36% in 2014.<sup>47</sup>
- The Provincial Nominee program, administered by CIC, has provinces and territories nominate people to immigrate to Canada who they believe will meet their specific labour market needs. The percentage of female

---

40 [Evidence](#), 24 March 2015, 1110 (Jonathan Will, Department of Employment and Social Development).

41 Ibid.

42 Ibid.

43 Ibid.

44 Ibid.

45 [Evidence](#), 24 March 2015, 1110 (Catherine Scott, Department of Employment and Social Development).

46 [Evidence](#), 24 March 2015, 1115 (Mathew Graham, Acting Director, Immigration Branch, Department of Citizenship and Immigration).

47 Ibid.

applicants admitted to Canada under the program increased from 21% in 2004 to 34% in 2014.<sup>48</sup>

- The Federal Skilled Trades Program, offered by CIC and launched in January 2013, provides permanent residency to skilled tradespeople in response to high demand in certain industries.<sup>49</sup> The selection model includes four criteria: arranged employment or a certificate of qualification to practise a trade in the relevant province or territory, language skills, work experience, and education qualifications necessary to satisfy employment requirements.
- SWC's Women's Program funds projects that address a variety of themes, including projects intended to promote women in skilled trades and technical professions. According to SWC, since 2007, more than \$15 million has been invested in projects targeted at sectors such as mining, trucking, construction, communications and technology, science, engineering and energy.<sup>50</sup>
- SWC sponsored a knowledge exchange event in 2014 to "explore best practices to support women in the skilled trades and STEM."<sup>51</sup>
- NSERC's Chairs for Women in Science and Engineering program designates five female chairs who are industry leaders with the goal of increasing the participation of women in science and engineering and providing role models for women in these fields.<sup>52</sup>
- NSERC's PromoScience offers hands-on learning experiences for students (from kindergarten to grade 12) and teachers by providing financial support to organizations working with youth in the field of science and engineering.<sup>53</sup>
- In 2013, NSERC co-organized the third gender summit for North America, involving over 600 participants from 30 countries, with the goal of discussing the barriers faced by women in science and engineering and sharing promising practices.<sup>54</sup>

---

48 Ibid.

49 According to CIC, the program is open to skilled tradespersons with work experience in the following National Occupation Classification skill type B occupational areas: industrial, electrical and construction trades; maintenance and equipment operation trades; supervisors and technical occupations in natural resources, agriculture, and related production; processing, manufacturing, and utilities supervisors and central control operators; chefs and cooks; and bakers and butchers.

50 [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada).

51 Ibid.

52 [Evidence](#), 24 March 2015, 1130 (Janet Walden, Chief Operating Officer, Natural Sciences and Engineering Research Council of Canada).

53 Ibid., 1140.

54 Ibid.

- ESDC commissioned the Council of Canadian Academies to assess Canada's STEM preparedness. Following the work of the Expert Panel on STEM Skills for the Future, a report was released in 2015, entitled *Some Assembly Required: STEM Skills and Canada's Economic Productivity*, which contains a section on women in STEM occupations.<sup>55</sup>

A number of witnesses expressed their appreciation for the ongoing support of these government initiatives and acknowledged the difference these programs make in encouraging girls and women to enter and succeed in skilled trades and STEM occupations in Canada. Dr. Bonnie Schmidt, President of Let's Talk Science, said that her organization was "quite happy" to see that the updated science, technology and innovation strategy, entitled *Seizing Canada's Moment: Moving Forward in Science Technology and Innovation 2014*, dedicated funding for youth engagement in STEM fields.<sup>56</sup> The Committee also heard from youth science and engineering programs that have been funded by NSERC's PromoScience program;<sup>57</sup> one witness stated that NSERC's PromoScience fund was "a very good step in the right direction."<sup>58</sup>

The Committee heard that certain government departments and agencies demonstrate a special commitment to gender, either by ensuring that women are well represented among employees or by taking gender analysis into consideration when developing or delivering programs. The Committee was pleased to hear, for example, that women make up 67% of NSERC's workforce and that 50% of its executive team is female.<sup>59</sup>

As another example, CIC noted that, as part of the development of the Federal Skilled Trades Program, the Department conducted a gender-based assessment of the program. It was determined that the two-year work experience requirement could be difficult to attain for women in their child-bearing years, as these women may take absences from the workforce; the requirement was therefore designed to be flexible, allowing applicants up to five years to obtain the two years of work experience required for the program. As well, CIC keeps gender disaggregated data, which indicates that there remain challenges in attracting women to apply to the federal skilled trades program; in 2014, of the 62 applicants admitted through the program, only about five were women.<sup>60</sup> The Committee encourages government departments and agencies to continue to strive for excellence by promoting capable and talented women within their ranks and by developing and delivering programs that have undergone gender-based analysis.

---

55 The Expert Panel on STEM Skills for the Future, [Some Assembly Required: STEM Skills and Canada's Economic Productivity](#), Council of Canadian Academies and Employment and Social Development Canada, 2015.

56 [Evidence](#), 21 April 2015, 1105 (Bonnie Schmidt, Let's Talk Science); Industry Canada, [Moving Forward in Science, Technology and Innovation 2014](#), 2014, p. 27.

57 [Evidence](#), 28 April 2015, 1135 (Jennifer Flanagan, President and Chief Executive Officer, Actua); [Evidence](#), 21 April 2015, 1250 (Bonnie Schmidt, Let's Talk Science).

58 [Evidence](#), 21 April 2015, 1250 (Bonnie Schmidt, Let's Talk Science).

59 [Evidence](#), 24 March 2015, 1140 (Janet Walden, Natural Sciences and Engineering Research Council of Canada).

60 [Evidence](#), 24 March 2015, 1115 and 1120 (Mathew Graham, Department of Citizenship and Immigration).

## **Recommendation 2**

**The Committee recommends that the Government of Canada continue its commitment to ongoing gender analysis through Gender-Based Analysis Plus.**

## **Recommendation 3**

**The Committee recommends that the Government of Canada support the ongoing commitment to women in skilled trades.**

## **ADVANTAGES OF ADDRESSING THE UNDERREPRESENTATION OF WOMEN IN SKILLED TRADES AND STEM OCCUPATIONS**

The central reason for addressing women’s underrepresentation in skilled trades and STEM occupations is that it upholds principles of gender equality. Beyond this motivation, improving women’s representation is advantageous to the women themselves, who have gained access to rewarding employment opportunities, to skilled trades and STEM occupations, which have acquired talented and skilled workers, and to the economy as a whole.

### **A. Benefits to women in skilled trades and STEM occupations**

The Committee heard that, while skilled trades and STEM occupations are not suited to all women, employment in these occupations can provide women with fulfilling careers.<sup>61</sup> Witnesses stated that women, like men, are usually looking for careers where they can apply their skills in a challenging environment, have opportunities for professional development and can make a positive contribution to people and to society. Careers in skilled trades and STEM occupations provide these opportunities.<sup>62</sup>

The Committee appreciated hearing from enthusiastic women who were starting their careers or were already established in these occupations. Ms. Dorothy Byers, Head of St. Mildred's-Lightbourn School and Member of the Board of Directors at FIRST Robotics Canada, stated that girls and women want careers that will “feed their passion” and that a job in a STEM occupation provides such an opportunity.<sup>63</sup>

---

61 [Evidence](#), 5 May 2015, 1200 (Anna Marenick, Director, Community Relations and Value Proposition, Irving Shipbuilding Inc.); [Evidence](#), 21 April 2015, 1215 (Dorothy Byers, Head of School, St. Mildred's-Lightbourn School, and Member, Board of Directors, FIRST Robotics Canada); [Evidence](#), 21 April 2015, 1215 (Bonnie Schmidt, Let's Talk Science); [Evidence](#), 28 April 2015, 1230 (Ryan Montpellier, Mining Industry Human Resources Council).

62 [Evidence](#), 28 April 2015, 1235 (Ryan Montpellier, Mining Industry Human Resources Council); [Evidence](#), 21 April 2015, 1105 and 1215 (Bonnie Schmidt, Let's Talk Science).

63 [Evidence](#), 21 April 2015, 1215 (Dorothy Byers, FIRST Robotics Canada).

Beyond job satisfaction, the Committee heard of the economic benefits in terms of the earning potential offered by skilled trades and STEM occupations.<sup>64</sup> In a briefing by Statistics Canada, the Committee learned that the employment income of young women working in STEM occupations with college diplomas is 19% higher than their non-STEM colleagues, and the employment income of young women working in STEM occupations with university degrees was 12% higher than their non-STEM counterparts.<sup>65</sup> A brief submitted by Women Building Futures noted that a woman completing the organization's trade program gained an average salary increase of 127%, as compared with her previous salary, as of her first day of hire.<sup>66</sup>

The Committee heard that improving a woman's economic prosperity has a ripple effect, as her economic situation "spreads to her children, her family, and her surrounding community,"<sup>67</sup> and also benefits the Canadian economy.<sup>68</sup>

## **B. Benefits of women's presence to skilled trades and STEM occupations**

The Committee heard of the talents and skills that women bring to skilled trades and STEM occupations.<sup>69</sup> Women were described as "a growing pool of talent for employers – hard-working, professional, and dedicated."<sup>70</sup> The Committee learned that employers are starting to actively recruit women because they bring unique perspectives, strong communication skills and a meticulous work ethic, among other qualities.<sup>71</sup>

As an example, Mr. Ryan Montpellier, Executive Director of the Mining Industry Human Resources Council (MiHR), told the Committee that one Canadian mining company had recently commended its female drivers as they tended to operate the trucks "more efficiently, safely, and with less wear and tear on the material" than the male drivers.<sup>72</sup>

---

64 [Evidence](#), 24 March 2015, 1105 (Jonathan Will, Department of Employment and Social Development); Women Building Futures, "The House of Commons Standing Committee on the Status of Women: Brief," *Written Submission*, 28 April 2015; [Evidence](#), 5 May 2015, 1135 (Doreen Parsons, Manager, Women Unlimited Association); [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada); [Evidence](#), 26 March 2015, 1110 (Alison Hale, Statistics Canada); [Evidence](#), 5 May 2015, 1120 (Tammy Evans, Canadian Association of Women in Construction); [Evidence](#), 28 April 2015, 1230 (Ryan Montpellier, Mining Industry Human Resources Council).

65 [Evidence](#), 26 March 2015, 1110 (Alison Hale, Statistics Canada).

66 Women Building Futures, "The House of Commons Standing Committee on the Status of Women: Brief," *Written Submission*, 28 April 2015.

67 [Evidence](#), 5 May 2015, 1135 (Doreen Parsons, Women Unlimited Association).

68 [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada).

69 Women Building Futures, "The House of Commons Standing Committee on the Status of Women: Brief," *Written Submission*, 28 April 2015; [Evidence](#), 5 May 2015, 1135 (Doreen Parsons, Women Unlimited Association).

70 [Evidence](#), 5 May 2015, 1135 (Doreen Parsons, Women Unlimited Association).

71 [Evidence](#), 23 April 2015, 1230 (Suzanne Winterflood, Executive Director, Centre for Education and Work); [Evidence](#), 24 March 2015, 1200 (Janet Walden, Natural Sciences and Engineering Research Council of Canada); [Evidence](#), 21 April 2015, 1105 (Bonnie Schmidt, Let's Talk Science).

72 [Evidence](#), 28 April 2015, 1220 (Ryan Montpellier, Mining Industry Human Resources Council).



Witnesses also cited studies that have demonstrated that corporations in which women are significantly represented in the workforce and leadership tend to have higher employee satisfaction, improved governance and higher profitability as compared with corporations with fewer women.<sup>73</sup>

The Committee learned that increasing women's presence in skilled trades and STEM occupations also benefits those occupations as relevant industries are projected to experience a labour shortage over the next decade. In a briefing to the Committee, ESDC indicated that skilled trades and STEM occupations comprise 34% of the total projected shortage.<sup>74</sup> As a result, women's access to these occupations and tackling the labour shortage in these occupations are "highly complementary priorities."<sup>75</sup>

Specific to STEM occupations, the Committee heard that having a diverse workforce, including with regard to the presence of female employees, is essential to productivity and innovation.<sup>76</sup> Witnesses stated that women bring a different perspective to theoretical and hands-on challenges in STEM occupations.<sup>77</sup> Mr. Jonathan Will, Director General of the Economic Policy Directorate at ESDC, stated that: "If a significant portion of the population is not fully represented in the STEM talent pool, this could negatively affect Canada's ability to innovate and grow."<sup>78</sup> The 2015 report *Some Assembly Required: STEM Skills and Canada's Economic Productivity*, produced by the Council of Canadian Academies and commissioned by ESDC, reported that "support for underrepresented populations in STEM is important for broadening Canada's STEM skill supply."<sup>79</sup>

With respect to skilled trades, witnesses spoke of the labour challenges facing these occupations over the next decade as they deal with a shortage of skilled trades professionals that is largely the result of having an aging and retiring workforce and a lack of succession preparation.<sup>80</sup> Recent forecasts indicate that, within the next decade, 25% of skilled trades professionals – the equivalent of one million jobs – in Canada will be eligible

---

73 [Evidence](#), 23 April 2015, 1230 (Sandra Eix, Member, Outreach & Make Possible Volunteer, Society for Canadian Women in Science and Technology); [Evidence](#), 23 April 2015, 1100 (Danniele Livengood, Society for Canadian Women in Science and Technology).

74 [Evidence](#), 24 March 2015, 1105 (Jonathan Will, Department of Employment and Social Development).

75 Ibid.

76 [Evidence](#), 24 March 2015, 1105 (Jonathan Will, Department of Employment and Social Development); [Evidence](#), 23 April 2015, 1100 (Danniele Livengood, Society for Canadian Women in Science and Technology).

77 [Evidence](#), 24 March 2015, 1200 (Ms. Janet Walden, Natural Sciences and Engineering Research Council of Canada); [Evidence](#), 28 April 2015, 1120 (Jennifer Flanagan, Actua).

78 [Evidence](#), 24 March 2015, 1105 (Jonathan Will, Department of Employment and Social Development).

79 The Expert Panel on STEM Skills for the Future, [Some Assembly Required: STEM Skills and Canada's Economic Productivity](#), Council of Canadian Academies and Employment and Social Development Canada, 2015, p. xvi.

80 [Evidence](#), 5 May 2015, 1230 (Tammy Evans, Canadian Association of Women in Construction); Women Building Futures, "The House of Commons Standing Committee on the Status of Women: Brief," *Written Submission*, 28 April 2015; [Evidence](#), 5 May 2015, 1140 (Teresa Weymouth, National Skilled Trades Coordinator, Unifor); [Evidence](#), 24 March 2015, 1105 (Jonathan Will, Department of Employment and Social Development); [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada); [Evidence](#), 28 April 2015, 1100 (Ryan Montpellier, Mining Industry Human Resources Council).

to retire.<sup>81</sup> Succession preparation is challenging as a number of workers qualifying for retirement will hold senior positions in skilled trades occupations, such as senior project managers, site superintendents and project estimators.<sup>82</sup>

The Committee agrees with Women Building Futures that: “Canada depends on this workforce to build, operate and maintain key projects that fuel the country’s economy, and generate the level of investment required to create more activity, more jobs and more wealth.”<sup>83</sup> Mr. Montpellier spoke of what he described as the “perfect storm” facing the mining industry:

According to the Mining Association of Canada, about \$100 billion of new mining projects are currently going through the environmental assessment and permitting phases. Even if a small fraction of those mining projects come to fruition, that will mean a significant increase in the growth of the sector and cause a significant amount of strain on an already tight labour market. The mining industry also is not immune to the aging workforce. In fact, about 40% of the mining industry workforce today is over 45 years old and one third of the industry will be eligible to retire in the next five years. Compounding this problem is the question of where we are going to find the next generation of miners.... [T]he mining industry has not done as great a job as it could have in attracting ... women.<sup>84</sup>

Witnesses stated that the industry is turning to women, an underrepresented group of workers, to fill these positions, and that women in turn benefit from these new opportunities.<sup>85</sup> In a brief to the Committee, Women Building Futures stated that underemployed women and Aboriginal women are “the largest, most underutilized local workforce available for this industry.”<sup>86</sup>

The Committee heard that some companies in skilled trades are excelling at recruiting women and other underrepresented groups of workers on a regular basis in preparation for such labour shortages, while other companies are only starting to focus on underrepresented groups out of necessity.<sup>87</sup> The Committee learned that attracting diverse groups of workers depends on effective promotion efforts by industry, in collaboration with all levels of government, as discussed later in the report.<sup>88</sup>

---

81 [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada); [Evidence](#), 5 May 2015, 1140 (Teresa Weymouth, Unifor).

82 Women Building Futures, “The House of Commons Standing Committee on the Status of Women: Brief,” *Written Submission*, 28 April 2015.

83 *Ibid.*

84 [Evidence](#), 28 April 2015, 1100 (Ryan Montpellier, Mining Industry Human Resources Council).

85 [Evidence](#), 5 May 2015, 1135 (Doreen Parsons, Women Unlimited Association); [Evidence](#), 5 May 2015, 1140 (Teresa Weymouth, Unifor); [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada).

86 Women Building Futures, “The House of Commons Standing Committee on the Status of Women: Brief,” *Written Submission*, 28 April 2015.

87 [Evidence](#), 28 April 2015, 1200 (Ryan Montpellier, Mining Industry Human Resources Council).

88 *Ibid.*, 1210.

## EFFORTS TO INCREASE WOMEN'S PARTICIPATION IN SKILLED TRADES AND STEM OCCUPATIONS

### A. Early engagement of girls in skilled trades and STEM fields

Witnesses agreed that early engagement of girls and young women in skilled trades and STEM occupations is vital to increasing the participation of women in these occupations over the long term.<sup>89</sup> The Committee heard that it is important to spark curiosity and to generate excitement with children at a young age through fun and exciting programs and projects.<sup>90</sup> The goal of such programs and projects is to engage children in schools but also through after-school programs, weekend clubs and summer camp experiences.<sup>91</sup> The Committee heard of one program that focuses on immersing children for an extended period of time, ideally 40 plus hours of content.<sup>92</sup>

Witnesses told the Committee that their programs are geared to children of a variety of ages as the goal is to expose girls to skilled trades and STEM occupations throughout their childhood. One program starts to engage children as early as preschool, the goal being to incite curiosity by encouraging children to look “at their natural environment” and “to ask really good questions, whether it's in the playground or in the park.”<sup>93</sup> A key time to engage young women is before the start of post-secondary education, ideally at the beginning of high school before they make decisions to stop taking skilled trades or STEM-related courses. This keeps as many opportunities open as possible for all post-secondary pathways, including college, university and apprenticeships.<sup>94</sup> Ms. Karen Low, Member of the Board of Directors of FIRST Robotics Canada, said that through their program:

[W]e are empowering women to make courageous post-secondary and career choices. Sometimes in these [Robotics] teams it's the first time they've learned that they're making decisions based on critical analysis and thinking. It's no longer about voting for the most

---

89 [Evidence](#), 28 April 2015, 1120 and 1235 (Jennifer Flanagan, Actua); [Evidence](#), 5 May 2015, 1125 (Anna Marenick, Irving Shipbuilding Inc.); FIRST Robotics Canada, “Overview and impact of STEM education for girls and women,” *Presentation slides*, 21 April 2015; [Evidence](#), 5 May 2015, 1245 (Tammy Evans, Canadian Association of Women in Construction); [Evidence](#), 28 April 2015, 1115 (Nancy Darling, Program Administrator, Women in Trades Training, Kelowna Campus, Okanagan College); [Evidence](#), 21 April 2015, 1130 (Bonnie Schmidt, Let's Talk Science); [Evidence](#), 24 March 2015, 1225 (Linda Savoie, Status of Women Canada); [Evidence](#), 24 March 2015, 1200 (Janet Walden, Natural Sciences and Engineering Research Council of Canada); [Evidence](#), 21 April 2015, 1115 (Karen Low, Member, Board of Directors, FIRST Robotics Canada); [Evidence](#), 21 April 2015, 1115 (Dorothy Byers, FIRST Robotics Canada); [Evidence](#), 23 April 2015, 1135 (Natalie Linklater, Engineering Co-Chair, Carleton University Women in Science and Engineering); [Evidence](#), 23 April 2015, 1135 (Rim Khazall, Science Co-Chair, Carleton University Women in Science and Engineering).

90 [Evidence](#), 24 March 2015, 1200 (Janet Walden, Natural Sciences and Engineering Research Council of Canada).

91 [Evidence](#), 28 April 2015, 1135 (Jennifer Flanagan, Actua); [Evidence](#), 24 March 2015, 1225 (Linda Savoie, Status of Women Canada).

92 [Evidence](#), 28 April 2015, 1135 (Jennifer Flanagan, Actua).

93 [Evidence](#), 21 April 2015, 1130 (Bonnie Schmidt, Let's Talk Science).

94 [Evidence](#), 24 March 2015, 1135 and 1255 (Janet Walden, Natural Sciences and Engineering Research Council of Canada); [Evidence](#), 21 April 2015, 1100 (Bonnie Schmidt, Let's Talk Science).

popular beauty queen or who's going to be in charge of your football team. It's based on scientific information and they now realize they have a very strong voice at the table.<sup>95</sup>

Witnesses told the Committee that it is important to expose girls to skilled trades and STEM fields through hands-on projects and experiential learning.<sup>96</sup> Ms. Jennifer Flanagan, President and Chief Executive Officer of Actua, spoke of the concept of Makerspace, which consists of a space containing many different tools, machines and computer technologies that allows kids and youth to immerse themselves in skilled trades and STEM related projects.<sup>97</sup> A Makerspace, for example, will be an area where children can be “printing on 3-D printers, using welding machines, doing die cutting, and learning computer science skills at the same time [which] allows them to see the breadth of opportunity that exists.”<sup>98</sup>

The Committee heard of the importance of fostering girls’ and young women’s confidence in participating in skilled trades and STEM fields of study through exposure to programs in a safe and encouraging environment that develop their skills and abilities, including problem solving, collaboration, critical thinking and financial and technical proficiency.<sup>99</sup> The Committee was told that young women excel in studies related to skilled trades and STEM occupations in high school and in many cases outperform their male counterparts, but often do not pursue studies in these fields.<sup>100</sup> Ms. Rim Khazall, Science Co-Chair of Carleton University Women in Science and Engineering, stated: “Their abilities are there; however, their confidence is severely lacking.”<sup>101</sup>

The Committee heard that girls’ lack of confidence is attributable in part to societal attitudes and biases that reinforce erroneous beliefs of gender differences in intellectual abilities.<sup>102</sup> Ms. Marie Connolly, Professor with the Department of Economics at Université du Québec à Montréal, explained that an example of such a bias is the myth and misconception that “girls can't do math.”<sup>103</sup> The Committee learned that girls must often prove that they have the abilities to excel in skilled trades or STEM fields. For example,

---

95 [Evidence](#), 21 April 2015, 1115 (Karen Low, FIRST Robotics Canada).

96 [Evidence](#), 21 April 2015, 1115 (Karen Low, FIRST Robotics Canada); [Evidence](#), 28 April 2015, 1200 and 1235 (Jennifer Flanagan, Actua); [Evidence](#), 23 April 2015, 1135 (Natalie Linklater, Carleton University Women in Science and Engineering).

97 [Evidence](#), 28 April 2015, 1200 and 1235 (Jennifer Flanagan, Actua).

98 *Ibid.*, 1200.

99 [Evidence](#), 28 April 2015, 1120 (Jennifer Flanagan, Actua); [Evidence](#), 21 April 2015, 1205 (Dorothy Byers, FIRST Robotics Canada).

100 [Evidence](#), 24 March 2015, 1105 (Jonathan Will, Department of Employment and Social Development); [Evidence](#), 21 April 2015, 1100 (Bonnie Schmidt, Let's Talk Science); [Evidence](#), 23 April 2015, 1130 (Rim Khazall, Carleton University Women in Science and Engineering); [Evidence](#), 28 April 2015, 1120 (Jennifer Flanagan, Actua).

101 [Evidence](#), 23 April 2015, 1130 (Rim Khazall, Carleton University Women in Science and Engineering).

102 [Evidence](#), 5 May 2015, 1105 (Marie Connolly, Professor, Department of Economics, Université du Québec à Montréal, as an Individual); [Evidence](#), 23 April 2015, 1100 (Danniele Livengood, Society for Canadian Women in Science and Technology).

103 [Evidence](#), 5 May 2015, 1220 (Marie Connolly, as an Individual).

Dr. Bonnie Schmidt, President of Let's Talk Science, told the story of her daughter who enrolled in a high school technology class:

When she showed up in her technology class, at the beginning the boys were not even wanting to talk to her. Three weeks in, when they realized that she could just outperform them on coming up with the CAD [computer-aided design] drawings, they started to huddle.<sup>104</sup>

Witnesses told the Committee of a number of programs and projects established with the goal of engaging children from preschool to elementary school to high school. FIRST Robotics Canada encourages youth to pursue further studies and careers in STEM fields and works towards this goal by running robotics competitions for students at the elementary, junior high and senior high school levels.<sup>105</sup> Around 87% to 90% of the girls who were involved in a FIRST Robotics program go on to study STEM subjects at university.<sup>106</sup>

Other programs mentioned included Let's Talk Science, which provides STEM-related education and outreach programs to children from preschool through grade 12, as well as to their educators, in order to generate interest in this field of study.<sup>107</sup> Actua offers interactive educational experiences in science, technology, engineering and mathematics to Canadian youth, including a national girls program.<sup>108</sup>

The Committee learned that, to keep up with global changes, "education systems across Canada are evolving to focus on creativity, innovation, communication, collaboration, problem-solving, and critical thinking."<sup>109</sup> Dr. Schmidt recommended "a strong national effort that's focused and measured" to engage young people in STEM, in order to keep Canada globally competitive."<sup>110</sup> Although such a move is beyond the jurisdiction of the federal government, a number of witnesses suggested that school curriculums at the elementary and high school level could incorporate more courses related to skilled trades and STEM occupations, including experiential learning.<sup>111</sup>

---

104 [Evidence](#), 21 April 2015, 1200 (Bonnie Schmidt, Let's Talk Science).

105 [Evidence](#), 21 April 2015, 1115 (Dorothy Byers, FIRST Robotics Canada).

106 *Ibid.*, 1120.

107 [Evidence](#), 21 April 2015, 1100 (Bonnie Schmidt, Let's Talk Science).

108 [Evidence](#), 28 April 2015, 1120 and 1125 (Jennifer Flanagan, Actua).

109 [Evidence](#), 23 April 2015, 1100 (Danniele Livengood, Society for Canadian Women in Science and Technology).

110 [Evidence](#), 21 April 2015, 1110 (Bonnie Schmidt, Let's Talk Science).

111 [Evidence](#), 5 May 2015, 1110 (Marie Connolly, as an Individual); [Evidence](#), 21 April 2015, 1105 and 1155 (Bonnie Schmidt, Let's Talk Science).

Witnesses also told the Committee that it is essential to engage children's influencers, specifically parents<sup>112</sup> and guidance counsellors and teachers,<sup>113</sup> to educate them on the benefits and opportunities provided by skilled trades and STEM occupations. Evidence indicates that parents and teachers play a vital role in encouraging girls and young women to pursue careers in skilled trades or STEM-related fields, and sometimes the career advice of parents and teachers can be shaped by gender biases or misconceptions related to the fields of study.<sup>114</sup> Dr. Schmidt noted that her program has provided STEM-related training to over 30,000 teachers at all different ages and grade levels with the goal of generating excitement among teachers, and subsequently their students, about STEM fields of study.<sup>115</sup>

Witnesses indicated that there is a need to educate and raise awareness among parents to combat particular prejudices they may have against their children entering skilled trades. The Committee heard that some of the misconceptions held by parents are that skilled trades occupations do not require a high degree of education or skill; offer limited employment opportunities; do not provide a suitable income; and do not offer job stability.<sup>116</sup>

#### **Recommendation 4**

**The Committee recommends that the Government of Canada work with stakeholders to provide opportunities for women and girls to be engaged in science, technology, engineering and mathematics from an early age.**

---

112 [Evidence](#), 5 May 2015, 1245 (Tammy Evans, Canadian Association of Women in Construction); [Evidence](#), 28 April 2015, 1205 (Jennifer Flanagan, Actua); [Evidence](#), 23 April 2015, 1130 (Natalie Linklater, Carleton University Women in Science and Engineering); [Evidence](#), 24 March 2015, 1230 (Linda Savoie, Status of Women Canada); [Evidence](#), 24 March 2015, 1145 (Catherine Scott, Department of Employment and Social Development); [Evidence](#), 21 April 2015, 1230 (Bonnie Schmidt, Let's Talk Science); [Evidence](#), 23 April 2015, 1115 (Suzanne Winterflood, Centre for Education and Work).

113 [Evidence](#), 5 May 2015, 1245 (Tammy Evans, Canadian Association of Women in Construction); [Evidence](#), 28 April 2015, 1125 (Jennifer Flanagan, Actua); [Evidence](#), 21 April 2015, 1130 (Bonnie Schmidt, Let's Talk Science); [Evidence](#), 24 March 2015, 1225 (Linda Savoie, Status of Women Canada); [Evidence](#), 24 March 2015, 1145 (Catherine Scott, Department of Employment and Social Development); [Evidence](#), 28 April 2015, 1115 (Nancy Darling, Okanagan College); [Evidence](#), 23 April 2015, 1115 (Suzanne Winterflood, Centre for Education and Work).

114 [Evidence](#), 28 April 2015, 1115 (Nancy Darling, Okanagan College); [Evidence](#), 21 April 2015, 1135 (Bonnie Schmidt, Let's Talk Science); [Evidence](#), 23 April 2015, 1210 (Suzanne Winterflood, Centre for Education and Work).

115 [Evidence](#), 21 April 2015, 1130 (Bonnie Schmidt, Let's Talk Science).

116 [Evidence](#), 5 May 2015, 1245 (Tammy Evans, Canadian Association of Women in Construction); [Evidence](#), 28 April 2015, 1205 (Jennifer Flanagan, Actua); [Evidence](#), 24 March 2015, 1145 (Jonathan Will, Department of Employment and Social Development).

## B. Presence of role models and mentors

Witnesses spoke of the importance of role models and mentors for girls and young women considering skilled trades and STEM occupations as well as women who are entering or establishing themselves in these occupations.<sup>117</sup>

The Committee heard that girls who have a mentor or role model in the skilled trades or STEM occupations are more likely to pursue studies and seek a career in these areas, as they can “imagine themselves in these fields in the future.”<sup>118</sup> According to Ms. Catherine Scott, Director General of Labour Market Integration in the Skills and Employment Branch at ESDC, in 2007 the Department led a national apprenticeship survey that revealed young women attracted to the trades often had a role model or a family member who was already working in that area.<sup>119</sup>

Witnesses stated that using a peer mentoring approach is an effective way to generate interest in skilled trades and STEM fields of study among girls and young women, as it shows that these occupations are accessible to everyone.<sup>120</sup> The Committee heard about the work of Carleton University Women in Science and Engineering, a peer support group composed of graduate and undergraduate students studying in STEM fields, whose mandate is to encourage and assist women pursuing an education and a career in these fields.<sup>121</sup>

The Committee was told that mentorship is also important for young women pursuing post-secondary education who may need advice and guidance with course work and the male-dominated nature of some programs.<sup>122</sup> For example, the Committee heard about NSERC’s Chairs for Women in Science and Engineering, whereby Chairs who are

---

117 [Evidence](#), 5 May 2015, 1210 (Doreen Parsons, Women Unlimited Association); [Evidence](#), 5 May 2015, 1215 (Tammy Evans, Canadian Association of Women in Construction); [Evidence](#), 5 May 2015, 1105 (Marie Connolly, as an Individual); [Evidence](#), 28 April 2015, 1135 (Nancy Darling, Okanagan College); [Evidence](#), 23 April 2015, 1120 (Kate McInturff, Canadian Centre for Policy Alternatives); [Evidence](#), 23 April 2015, 1135 (Rim Khazall, Carleton University Women in Science and Engineering); [Evidence](#), 28 April 2015, 1120 (Jennifer Flanagan, Actua); [Evidence](#), 23 April 2015, 1135 (Natalie Linklater, Carleton University Women in Science and Engineering); [Evidence](#), 23 April 2015, 1240 (Sandra Eix, Society for Canadian Women in Science and Technology); [Evidence](#), 23 April 2015, 1115 (Suzanne Winterflood, Centre for Education and Work); [Evidence](#), 23 April 2015, 1105 (Danniele Livengood, Society for Canadian Women in Science and Technology); [Evidence](#), 21 April 2015, 1220 (Dorothy Byers, FIRST Robotics Canada); [Evidence](#), 28 April 2015, 1105 (Ryan Montpellier, Mining Industry Human Resources Council); [Evidence](#), 24 March 2015, 1135 (Janet Walden, Natural Sciences and Engineering Research Council of Canada); [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada); [Evidence](#), 21 April 2015, 1210 (Bonnie Schmidt, Let’s Talk Science).

118 [Evidence](#), 28 April 2015, 1120 (Jennifer Flanagan, Actua).

119 [Evidence](#), 24 March 2015, 1145 (Catherine Scott, Department of Employment and Social Development).

120 [Evidence](#), 21 April 2015, 1120 (Dorothy Byers, FIRST Robotics Canada); [Evidence](#), 23 April 2015, 1135 (Natalie Linklater, Carleton University Women in Science and Engineering).

121 [Evidence](#), 23 April 2015, 1130 (Natalie Linklater, Carleton University Women in Science and Engineering).

122 [Evidence](#), 21 April 2015, 1220 (Dorothy Byers, FIRST Robotics Canada).

accomplished female researchers spend a significant amount of time connecting with and mentoring young women.<sup>123</sup>

The Committee learned that female mentorship and role models are also vital for women in skilled trades and STEM workplaces; without mentors or role models throughout their careers, women may leave the workforce or not advance in their careers.<sup>124</sup> Witnesses noted that mentors can mitigate the isolation that many women feel on the job as a result of a male-dominated workforce,<sup>125</sup> provide job advice and support;<sup>126</sup> help women navigate and progress in their careers;<sup>127</sup> and offer moral support and encouragement.<sup>128</sup> The Committee heard that employers in skilled trades and STEM occupations should assign mentors to women in the workplace, with the goal of supporting these women and improving their retention and professional advancement.<sup>129</sup> As well, the Committee was told that meet-and-greet and networking events in skilled trades and STEM occupations serve to connect working women and allow them to develop mentoring or supportive professional relationships.<sup>130</sup> Ms. Doreen Parsons, Manager at Women Unlimited Association, stated that there is a “ripple effect” whereby women who have received support go on to mentor other women.<sup>131</sup>

Some witnesses suggested that the skilled trades and STEM workforces need champions who can help advance women and their careers in these fields and who advocate for the success of women in the workplace generally.<sup>132</sup> Mr. Ryan Montpellier, Executive Director of MiHR, said that his organization is building networks of champions composed of volunteer leaders, such as a Vice-President of Human Resources or a Mine Manager, who, with the support of upper management, help to make meaningful changes with regard to diversity in their organizations.<sup>133</sup>

---

123 [Evidence](#), 24 March 2015, 1135 (Janet Walden, Natural Sciences and Engineering Research Council of Canada).

124 [Evidence](#), 28 April 2015, 1105 (Ryan Montpellier, Mining Industry Human Resources Council); [Evidence](#), 28 April 2015, 1135 and 1140 (Nancy Darling Okanagan College).

125 [Evidence](#), 28 April 2015, 1135 and 1140 (Nancy Darling, Okanagan College); [Evidence](#), 23 April 2015, 1130 (Natalie Linklater, Carleton University Women in Science and Engineering); [Evidence](#), 28 April 2015, 1105 (Ryan Montpellier, Mining Industry Human Resources Council).

126 [Evidence](#), 28 April 2015, 1110 (Nancy Darling, Okanagan College); [Evidence](#), 21 April 2015, 1220 (Dorothy Byers, FIRST Robotics Canada).

127 [Evidence](#), 28 April 2015, 1105 (Ryan Montpellier, Mining Industry Human Resources Council).

128 [Evidence](#), 28 April 2015, 1115 (Nancy Darling, Okanagan College).

129 Ibid., 1135 and 1140.

130 [Evidence](#), 23 April 2015, 1135 (Rim Khazall, Carleton University Women in Science and Engineering); [Evidence](#), 23 April 2015, 1105 (Danniele Livengood, Society for Canadian Women in Science and Technology).

131 [Evidence](#), 5 May 2015, 1210 (Doreen Parsons, Women Unlimited Association).

132 [Evidence](#), 28 April 2015, 1155 (Ryan Montpellier, Mining Industry Human Resources Council); [Evidence](#), 5 May 2015, 1210 (Doreen Parsons, Women Unlimited Association).

133 [Evidence](#), 28 April 2015, 1155 (Ryan Montpellier, Mining Industry Human Resources Council).



Witnesses stated that mentoring programs should welcome the participation and support of male colleagues and leaders.<sup>134</sup> Ms. Dorothy Byers, Head of St. Mildred's-Lightbourn School and Member of the Board of Directors of FIRST Robotics Canada, said that men should also be mentors “because that's the systemic change we need to see. It doesn't matter what gender you are, you are appreciated for what it is you can do.”<sup>135</sup>

The Committee heard of a number of excellent mentorship programs in the education sector or workplaces in skilled trades and STEM occupations. For example, CAWIC's mentorship program is for all women entering the industry.<sup>136</sup> SCWIST has a mentorship program called Make Possible, funded by SWC, which provides mentoring, networking connections, professional development and leadership opportunities to women in the technology sector.<sup>137</sup>

Some witnesses shared innovative online programs designed to provide women with mentorship and support.<sup>138</sup> Ms. Sandra Eix, Outreach & Make Possible Volunteer with SCWIST, told the Committee that her organization, with SWC funding, is creating an online forum where women and men can connect as both mentors and mentees, allowing the sharing of knowledge and advice in an online network.<sup>139</sup> Mr. Montpellier told the Committee of the Virtual MineMentor Program, which is designed to address mid-program drop-out in mining-related education programs. Since mine sites are not in proximity to most colleges and universities, the program connects students with workers in the mining industry online.<sup>140</sup>

Witnesses suggested recognizing and celebrating women in skilled trades and STEM occupations, in order to raise the profile of these positions for women.<sup>141</sup> Ms. Saira Muzaffar of TechGirls Canada spoke of their campaign called “Portraits of Strength,” which shares images on social media of accomplished women in STEM fields.<sup>142</sup> Ms. Danniele Livengood, Secretary for SCWIST, cautioned against defining women's success in the context of their gender:

---

134 [Evidence](#), 23 April 2015, 1240 (Sandra Eix, Society for Canadian Women in Science and Technology); [Evidence](#), 21 April 2015, 1225 (Bonnie Schmidt, Let's Talk Science); [Evidence](#), 21 April 2015, 1250 (Dorothy Byers, FIRST Robotics Canada).

135 [Evidence](#), 21 April 2015, 1250 (Dorothy Byers, FIRST Robotics Canada).

136 [Evidence](#), 5 May 2015, 1215 (Tammy Evans, Canadian Association of Women in Construction).

137 [Evidence](#), 23 April 2015, 1105 (Danniele Livengood, Society for Canadian Women in Science and Technology).

138 [Evidence](#), 23 April 2015, 1115 (Suzanne Winterflood, Centre for Education and Work); [Evidence](#), 28 April 2015, 1140 (Ryan Montpellier, Mining Industry Human Resources Council); [Evidence](#), 23 April 2015, 1240 (Sandra Eix, Society for Canadian Women in Science and Technology).

139 [Evidence](#), 23 April 2015, 1240 (Sandra Eix, Society for Canadian Women in Science and Technology).

140 [Evidence](#), 28 April 2015, 1140 (Ryan Montpellier, Mining Industry Human Resources Council).

141 [Evidence](#), 28 April 2015, 1220 (Nancy Darling, Okanagan College); [Evidence](#), 23 April 2015, 1105 (Danniele Livengood, Society for Canadian Women in Science and Technology).

142 [Evidence](#), 21 April 2015, 1140 (Saira Muzaffar, TechGirls Canada).

[A]rticles about a woman in STEM must not mention, among other criteria, the fact that she's a woman, her husband's job, her child care arrangements, or how she's the first woman to.... These items may seem normal, even laudable to include in a story about a successful women in STEM, but we have to ask ourselves whether we would say these things about a man in the same field. While we need to see more women in STEM represented in the media, it's essential to be mindful of how they are portrayed.<sup>143</sup>

The Committee also learned that women are significantly underrepresented in leadership positions in skilled trades and STEM occupations, resulting in a lack of mentors and role models in senior positions.<sup>144</sup> Ms. Livengood explained that this “needs to change, because more diverse models of leadership are what Canada needs to meet 21st-century challenges.”<sup>145</sup> The representative of Irving Shipbuilding Inc. told the Committee that the company invests in the advancement of women throughout its operations; for example: “A woman currently leads our white pine lumber operation, the largest of its kind in North America, and the [female] president of Engineers Nova Scotia is a technical director here at Irving Shipbuilding.”<sup>146</sup>

### **Recommendation 5**

**The Committee recommends that the Government of Canada continue to support mentorship campaigns, such as Status of Women Canada’s “It Starts with One – Be her Champion,” to give girls access to female role models in science.**

### **Recommendation 6**

**The Committee recommends that the Government of Canada work to build, connect and integrate the existing networks for mentorship and peer support for women in science, technology, engineering and mathematics.**

### **Recommendation 7**

**The Committee recommends that the Government of Canada support the integration of existing networks of mentorship for women and girls in science, technology, engineering and mathematics.**

---

143 [Evidence](#), 23 April 2015, 1105 (Danniele Livengood, Society for Canadian Women in Science and Technology).

144 [Evidence](#), 21 April 2015, 1125 (Saira Muzaffar, TechGirls Canada); Kathleen Lahey, “Submission to the House of Commons Standing Committee on the Status of Women: Women in Skilled Trades and Science, Technology, Engineering and Mathematics (STEM) Occupations,” *Written Submission*, 5 May 2015; [Evidence](#), 5 May 2015, 1110 (Tammy Evans, Canadian Association of Women in Construction); [Evidence](#), 23 April 2015, 1100 (Danniele Livengood, Society for Canadian Women in Science and Technology); [Evidence](#), 23 April 2015, 1120 (Kate McInturff, Canadian Centre for Policy Alternatives).

145 [Evidence](#), 23 April 2015, 1105 (Danniele Livengood, Society for Canadian Women in Science and Technology).

146 [Evidence](#), 5 May 2015, 1125 (Anna Marenick, Irving Shipbuilding Inc.).

### C. Raising awareness and correcting misconceptions

The Committee learned that, in order to increase the presence of women in skilled trades and STEM occupations, there is a need to raise awareness of the benefits afforded by these occupations and to correct misconceptions about these occupations held by the general public. Witnesses suggested that public outreach and awareness campaigns be carried out to provide Canadians with job descriptions of skilled trades and STEM occupations;<sup>147</sup> to highlight female role models in these fields;<sup>148</sup> and to share the valuable opportunities that exist in these fields.<sup>149</sup> As Ms. Rim Khazall, Science Co-Chair of Carleton University Women in Science and Engineering, said to the Committee, there is “a lack of information provided with regard to what an engineer is and what a scientist does.”<sup>150</sup>

The Committee heard that harmful misconceptions about skilled trades and STEM occupations limit women’s participation in these fields. One misconception is that skilled trades and STEM occupations are better suited to men; witnesses stated that it is necessary to break these stereotypes to encourage girls and young women to pursue these fields of study.<sup>151</sup>

Specific to STEM occupations, Ms. Jennifer Flanagan, President and Chief Executive Officer of Actua, told the Committee that understanding of the day-to-day work of these occupations must be improved: “These aren’t just careers in which people are off in a corner or in a dark room doing work by themselves. They’re very collaborative; they’re very creative; and they’re very diverse.”<sup>152</sup>

The Committee heard that there is a particular need to improve the public perception of skilled trades, as many Canadians assume that trades are “low paid, low skilled, and low prestige”<sup>153</sup> and that women are not capable of performing many of the jobs.<sup>154</sup> A brief submitted by Unifor stated that a recent Canadian Apprenticeship Forum youth survey found that there is a widespread negative perception of skilled trades among young people and that the trades are seen as a second or third career choice.<sup>155</sup>

---

147 [Evidence](#), 23 April 2015, 1135 (Rim Khazall, Carleton University Women in Science and Engineering).

148 [Evidence](#), 5 May 2015, 1105 (Marie Connolly, as an Individual).

149 [Evidence](#), 5 May 2015, 1140 (Teresa Weymouth, Unifor); Unifor, “Women in Skilled Trades, and Science, Technology, Engineering and Mathematics (STEM) Occupations: Submission to the Standing Committee on the Status of Women,” *Written Submission*, 4 May 2015; [Evidence](#), 28 April 2015, 1105 (Ryan Montpellier, Mining Industry Human Resources Council).

150 [Evidence](#), 23 April 2015, 1135 (Rim Khazall, Carleton University Women in Science and Engineering).

151 [Evidence](#), 23 April 2015, 1140 (Natalie Linklater, Carleton University Women in Science and Engineering).

152 [Evidence](#), 28 April 2015, 1200 (Jennifer Flanagan, Actua).

153 [Evidence](#), 24 March 2015, 1145 (Jonathan Will, Department of Employment and Social Development).

154 [Evidence](#), 21 April 2015, 1200 (Bonnie Schmidt, Let’s Talk Science); [Evidence](#), 5 May 2015, 1120 (Tammy Evans, Canadian Association of Women in Construction).

155 Unifor, “Women in Skilled Trades, and Science, Technology, Engineering and Mathematics (STEM) Occupations: Submission to the Standing Committee on the Status of Women,” *Written Submission*, 4 May 2015.

One witness spoke of the need to develop an industry awareness campaign to highlight the benefits of choosing a career in construction.<sup>156</sup>

Witnesses said that there is also a misunderstanding that tremendous physical strength is required to be in skilled trades occupations; such strength has become increasingly irrelevant as industries have become more and more mechanized.<sup>157</sup> Ms. Nancy Darling, Program Administrator of the Women in Trades Training at the Kelowna Campus of Okanagan College, said: “Some of our tiniest women are heavy-duty mechanics.”<sup>158</sup>

The Committee heard that governments and industry can both play a role in providing more resources to raise awareness and address misconceptions held by young women, other underrepresented groups and the general public.<sup>159</sup> Within industry, the Committee learned that there are recruitment and outreach efforts to attract women from diverse communities and of diverse ages.<sup>160</sup> Mr. Ryan Montpellier, Executive Director of MiHR, told the Committee that, in order to promote a positive and accurate image of the mining industry and the careers provided by it, employers are “supporting work placements for young women, providing mine tours, and bringing women on site.”<sup>161</sup>

The Committee heard about Okanagan College’s Women in Trades Training initiative, which provides information on skilled trades career options and practical and theoretical experience in the trades by offering a 12-week program that accepts unemployed or underemployed females with an interest in exploring the trades. In this way, the program provides a low-risk avenue for women to learn about the trades, address any misconceptions they may have and determine whether a career in one of these fields is right for them.<sup>162</sup>

### **Recommendation 8**

**The Committee recommends that the Government of Canada encourage women and girls to consider careers in skilled trades and science, technology, engineering and mathematics, and highlight the career opportunities and financial benefits.**

---

156 [Evidence](#), 5 May 2015, 1115 (Tammy Evans, Canadian Association of Women in Construction).

157 [Evidence](#), 28 April 2015, 1200 (Nancy Darling, Okanagan College); [Evidence](#), 24 March 2015, 1145 (Jonathan Will, Department of Employment and Social Development); [Evidence](#), 28 April 2015, 1145 (Ryan Montpellier, Mining Industry Human Resources Council).

158 [Evidence](#), 28 April 2015, 1200 (Nancy Darling, Okanagan College).

159 [Evidence](#), 28 April 2015, 1210 (Ryan Montpellier, Mining Industry Human Resources Council).

160 [Evidence](#), 5 May 2015, 1210 (Doreen Parsons, Women Unlimited Association).

161 [Evidence](#), 28 April 2015, 1100 (Ryan Montpellier, Mining Industry Human Resources Council).

162 [Evidence](#), 28 April 2015, 1145 (Nancy Darling, Okanagan College).

## Recommendation 9

**The Committee recommends that the Government of Canada continue to support outreach programs that raise awareness about the breadth of opportunities in the fields of science, technology, engineering and mathematics.**

### D. Addressing organizational barriers in the workplace

The Committee heard that women encounter organizational barriers within skilled trades and STEM occupations when they are seeking employment or professional advancement in such workplaces.<sup>163</sup> A brief from Women Building Futures stated that:

Men are hired into this industry every day without having to take any type of training. The reality is very different for women. Women must be better than [men], in order to be seen as good as, particularly in this industry. Opportunity in this industry is significant but it is far from equitable.<sup>164</sup>

While human rights legislation makes discriminatory workplace practices illegal, there was general agreement among witnesses that there exist gender prejudices and pro-male biases in job descriptions, interview questions, performance reviews and human resource policies.<sup>165</sup> For example, Ms. Sandra Eix, Outreach & Make Possible Volunteer with SCWIST, said that “the language in which job descriptions are couched is really significant in making them appealing across gender.”<sup>166</sup> She explained that men may be drawn to job descriptions that use very competitive statements such as “demolishing the competition,” whereas women are often drawn to teamwork terms such as “leadership” and “collaboration.”<sup>167</sup> Witnesses recommended that workplaces establish hiring initiatives specifically aimed at attracting female candidates,<sup>168</sup> including featuring “real women in promotional material.”<sup>169</sup>

Witnesses said that these biases in hiring or employment policies are often upheld by interviewers and individuals making the hiring decisions who have their own gender

---

163 [Evidence](#), 21 April 2015, 1125 (Saira Muzaffar, TechGirls Canada); [Evidence](#), 23 April 2015, 1100 (Danniele Livengood, Society for Canadian Women in Science and Technology).

164 Women Building Futures, “The House of Commons Standing Committee on the Status of Women: Brief,” *Written Submission*, 28 April 2015.

165 Centre for Education and Work, “One Foot in the Door: House of Commons Standing Committee on the Status of Women,” *Presentation Slides*, 23 April 2015; [Evidence](#), 5 May 2015, 1115 (Tammy Evans, Canadian Association of Women in Construction); [Evidence](#), 21 April 2015, 1140 (Saira Muzaffar, TechGirls Canada); [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada); [Evidence](#), 23 April 2015, 1110 (Suzanne Winterflood, Centre for Education and Work); [Evidence](#), 23 April 2015, 1105 (Danniele Livengood, Society for Canadian Women in Science and Technology).

166 [Evidence](#), 23 April 2015, 1205 (Sandra Eix, Society for Canadian Women in Science and Technology).

167 Ibid.

168 Centre for Education and Work, “One Foot in the Door: House of Commons Standing Committee on the Status of Women,” *Presentation Slides*, 23 April 2015.

169 [Evidence](#), 23 April 2015, 1110 (Suzanne Winterflood, Centre for Education and Work).

biases.<sup>170</sup> Ms. Saira Muzaffar of TechGirls Canada stated that: “Most hiring policies in the private and public sector favour candidates who are a good cultural fit, a fit decided and informed by the existing privileged class.”<sup>171</sup>

Evidence indicates that a significant impact of these gender biases is that, from the very beginning, women are hired for less senior and lower paid positions; there is an assumption by employers that women may have family and care responsibilities that will conflict with work priorities.<sup>172</sup> Ms. Danniele Livengood, Secretary of SCWIST, explained that most people are not aware of the biases that cause them to have certain expectations or make assumptions. She explained:

To illustrate the effects of implicit bias on women's advancement into leadership positions, a study presented a CV to several science professors and asked them to evaluate the candidate for a lab manager position. The male candidate was offered 12% higher salary and more mentorship and was rated more competent and hireable than the female candidate, even though the only difference in the CVs was the name at the top.<sup>173</sup>

Ms. Tammy Evans, President of CAWIC, suggested removing the names and gender on a CV, as doing so increases the number of women who are hired.<sup>174</sup> In addition, companies should improve transparency in practices related to hiring, professional advancement and performance reviews.<sup>175</sup> As well, it was suggested that companies invest in workshops to help employees, particularly human resource professionals, understand their biases;<sup>176</sup> as one witness explained, “even the best-intentioned ... hiring managers have implicit biases.”<sup>177</sup> The Committee heard that training for human resources employees should incorporate programs on recognizing and combating implicit bias, such as the Canadian Centre for Women in Science, Engineering, Trades and Technology’s workshop series and SCWIST’s Make Possible human resource inclusion workshop and toolkit on diversity.<sup>178</sup>

The Committee heard that another organizational barrier in some occupations in the skilled trades is that they have a “physical demand” analysis that restricts women’s access but that is no longer relevant to the industry. Mr. Ryan Montpellier, Executive Director of MiHR, explained that, in the past, a prerequisite for employment in the mining

---

170 Centre for Education and Work, “One Foot in the Door: House of Commons Standing Committee on the Status of Women,” *Presentation Slides*, 23 April 2015; [Evidence](#), 21 April 2015, 1140 (Saira Muzaffar, TechGirls Canada); [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada); [Evidence](#), 23 April 2015, 1115 (Suzanne Winterflood, Centre for Education and Work).

171 [Evidence](#), 21 April 2015, 1125 (Saira Muzaffar, TechGirls Canada).

172 [Evidence](#), 23 April 2015, 1150 (Kate McInturff, Canadian Centre for Policy Alternatives).

173 [Evidence](#), 23 April 2015, 1105 (Danniele Livengood, Society for Canadian Women in Science and Technology).

174 [Evidence](#), 5 May 2015, 1115 (Tammy Evans, Canadian Association of Women in Construction).

175 [Evidence](#), 21 April 2015, 1130 (Saira Muzaffar, TechGirls Canada).

176 [Evidence](#), 23 April 2015, 1105 (Danniele Livengood, Society for Canadian Women in Science and Technology); [Evidence](#), 23 April 2015, 1205 (Sandra Eix, Society for Canadian Women in Science and Technology).

177 [Evidence](#), 23 April 2015, 1105 (Danniele Livengood, Society for Canadian Women in Science and Technology).

178 Ibid.

sector was the ability to lift a certain weight. Such a requirement may have been appropriate decades ago, but with the level of mechanization in these industries today such physical strength is no longer necessary.<sup>179</sup> As well, the Committee discovered that personal protective equipment and other gear must sometimes be designed to accommodate women, as workers will leave due to safety concerns if they are not equipped properly.<sup>180</sup>

The Committee learned that some workplaces are not physically designed to accommodate women, particularly those located in outdoor or remote locations. A significant challenge that women may encounter is a lack of female washrooms.<sup>181</sup> Ms. Suzanne Winterflood, Executive Director of the Centre for Education and Work, shared with the Committee the story of one female employee who said:

I used the upstairs restaurant washroom and the general foreman called my boss and told him that I thought I was special because I wouldn't use the construction washroom – it had no door and no toilet seat.<sup>182</sup>

Ms. Winterflood said that another female employee:

[T]urned up for work, but on the day she started she couldn't access the plant because the only access was through the male changing rooms, so they couldn't start her.<sup>183</sup>

The Committee heard that even educational institutions are not always built to accommodate women.<sup>184</sup> Ms. Nancy Darling, Program Administrator of the Women in Trades Training at the Kelowna Campus of Okanagan College, said that the trades area of the college was built over 50 years ago when women were not students in the trades, and as a result there were no facilities for women, such as change rooms. An expansion of the college will now include provisions for women.<sup>185</sup>

The Committee learned that addressing organizational barriers requires more than the individual efforts of talented women who are entering and employed in these sectors.<sup>186</sup> Rather, initiatives to remove organizational barriers should be led by industry and supported by governments.<sup>187</sup> Ms. Muzaffar said that industry must examine “how we support professional development, how we structure and exercise hiring practices, and

---

179 [Evidence](#), 28 April 2015, 1145 (Ryan Montpellier, Mining Industry Human Resources Council).

180 *Ibid.*, 1150.

181 [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada); [Evidence](#), 28 April 2015, 1150 (Ryan Montpellier, Mining Industry Human Resources Council); [Evidence](#), 23 April 2015, 1115 (Suzanne Winterflood, Centre for Education and Work).

182 [Evidence](#), 23 April 2015, 1115 (Suzanne Winterflood, Centre for Education and Work).

183 *Ibid.*, 1215.

184 [Evidence](#), 28 April 2015, 1135 (Nancy Darling, Okanagan College); [Evidence](#), 23 April 2015, 1215 (Kate McInturff, Canadian Centre for Policy Alternatives).

185 [Evidence](#), 28 April 2015, 1135 (Nancy Darling, Okanagan College).

186 [Evidence](#), 21 April 2015, 1125 (Saira Muzaffar, TechGirls Canada).

187 *Ibid.*, 1140.

how we foster and promote leadership and excellence.”<sup>188</sup> She stated that some organizations, such as TechGirls Canada, can provide training to employees with the goal of providing “models that change behaviours and models that change the way people think, and to articulate barriers faced by people of colour, people with other barriers, and women in general, women with other privileges.”<sup>189</sup>

The Committee learned about some industry leaders who have implemented programs to increase women’s representation in their workforces. Mr. Montpellier said that companies must make “concrete decisions” about how they are going recruit and retain women employees.<sup>190</sup>

The Committee heard about the work of Irving Shipbuilding, which began a partnership with Nova Scotia Community College to build the Irving Shipbuilding Centre of Excellence following the 2011 award of the combat vessel package under the National Shipbuilding Procurement Strategy. The Centre has a mandate to provide residents of Nova Scotia, with a particular focus on underrepresented Nova Scotians, with opportunities for training in order to participate in shipbuilding.<sup>191</sup> Ms. Anna Marenick, Director of Community Relations and Value Proposition at Irving Shipbuilding Inc., said “women represent 4% of Irving Shipbuilding’s trades workforce, a small number to be sure, so this investment [in the Centre] sets out deliberately to change that.”<sup>192</sup>

As part of the work of the Centre of Excellence, in 2015, Irving Shipbuilding partnered with Women Unlimited, a not-for-profit women’s organization in Nova Scotia that promotes the full participation of women in trades and technology. Through this partnership, Irving Shipbuilding will help provide education funding and job opportunities to 20 women who will participate in the welding and metal fabrication programs at the Nova Scotia Community College.<sup>193</sup>

Ms. Muzaffar spoke of her organization’s collaboration with a number of companies that are making efforts to examine their workplace processes in order to understand any organizational barriers faced by women; these efforts are backed by the financial and human resources needed to make changes.<sup>194</sup>

The Committee also heard of the work of the Level Best Women’s Advancement Project Outline, led by CAWIC and funded by SWC, which will develop an action plan between 2014 and 2016 to increase hiring, retention and advancement of women within the construction industry. This action plan will provide guidance to “industry employers, trade unions and alternative unions and open shop employers” and offer workplace and

---

188 Ibid., 1125.

189 Ibid., 1200.

190 [Evidence](#), 28 April 2015, 1200 (Ryan Montpellier, Mining Industry Human Resources Council).

191 [Evidence](#), 5 May 2015, 1125 (Anna Marenick, Irving Shipbuilding Inc.).

192 Ibid.

193 [Evidence](#), 5 May 2015, 1130 (Doreen Parsons, Women Unlimited Association).

194 [Evidence](#), 21 April 2015, 1140 (Saira Muzaffar, TechGirls Canada).



career-specific tools to guide and support employers addressing internal challenges in increasing the representation of women.<sup>195</sup>

Ms. Winterflood said that her organization is developing self-assessing tools and checklists to examine whether a workplace is female-friendly and to offer tips on how to make the workplace more equitable. There are also guidelines on how to conduct a focus group with women in companies in order to better understand their particular challenges.<sup>196</sup>

The Committee heard that another effective method to encourage greater representation of women in skilled trades and STEM occupations is to recognize and celebrate organizations that are “models of diversity” and to share how they have benefited from the presence of women.<sup>197</sup>

## E. Improving workplace culture

The Committee learned that women in skilled trades and STEM occupations must contend with male-dominated workplace cultures.<sup>198</sup> Witnesses reported that at some workplaces, particularly at outdoor job sites, the work environment can be unwelcoming or hostile to women.<sup>199</sup> An additional challenge is that male colleagues and the workplace leadership – usually male-dominated – are unlikely to understand the barriers facing women, because they have never faced these challenges themselves.<sup>200</sup>

Witnesses stated that overt and subtle discrimination and harassment continue in the workplace.<sup>201</sup> Women are often fearful of reporting inappropriate behaviours because they do not want to escalate the situation or are hesitant of reporting to predominantly male authorities.<sup>202</sup> The Committee learned that employers can play a role in combating

---

195 Canadian Association of Women in Construction, “CAWIC Level Best Women’s Advancement Project Outline,” *Written Submission*, 5 May 2015.

196 [Evidence](#), 23 April 2015, 1115 (Suzanne Winterflood, Centre for Education and Work).

197 [Evidence](#), 23 April 2015, 1105 (Danniele Livengood, Society for Canadian Women in Science and Technology).

198 [Evidence](#), 5 May 2015, 1135 (Lisa Kelly, Director, Women’s Department, Unifor); Centre for Education and Work, “One Foot in the Door: House of Commons Standing Committee on the Status of Women,” *Presentation Slides*, 23 April 2015; [Evidence](#), 23 April 2015, 1110 (Suzanne Winterflood, Centre for Education and Work); [Evidence](#), 23 April 2015, 1100 (Danniele Livengood, Society for Canadian Women in Science and Technology); [Evidence](#), 28 April 2015, 1105 (Ryan Montpellier, Mining Industry Human Resources Council).

199 [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada); [Evidence](#), 5 May 2015, 1115 (Tammy Evans, Canadian Association of Women in Construction); [Evidence](#), 23 April 2015, 1120 (Kate McInturff, Canadian Centre for Policy Alternatives).

200 [Evidence](#), 21 April 2015, 1125 and 1145 (Saira Muzaffar, TechGirls Canada).

201 Centre for Education and Work, “One Foot in the Door: House of Commons Standing Committee on the Status of Women,” *Presentation Slides*, 23 April 2015; [Evidence](#), 5 May 2015, 1135 (Lisa Kelly, Unifor); [Evidence](#), 21 April 2015, 1125 (Saira Muzaffar, TechGirls Canada); [Evidence](#), 5 May 2015, 1115 (Tammy Evans, Canadian Association of Women in Construction).

202 Centre for Education and Work, “One Foot in the Door: House of Commons Standing Committee on the Status of Women,” *Presentation Slides*, 23 April 2015; [Evidence](#), 23 April 2015, 1255 (Suzanne Winterflood, Centre for Education and Work).

this behaviour by instituting and upholding respectful workplace policies and giving clear signals that women are welcome in the workplace.<sup>203</sup>

The Committee heard that women in skilled trades and STEM occupations are sometimes isolated and demeaned and face “micro-aggression” in the workplace. Women are isolated by employers and colleagues, who sometimes resent that the male-dominated culture, must change; for example, male employees must remove any inappropriate sexualized images on their workplace walls.<sup>204</sup> Ms. Nancy Darling, Program Administrator of the Women in Trades Training at Kelowna Campus of Okanagan College, said that employers can inadvertently isolate women, for example, by calling a work crew the night before to warn them that there will be a woman on the job site the next day.<sup>205</sup>

As well, women’s presence at the workplace is not always taken seriously; they may receive belittling comments such as suggestions that women are there to find a husband rather than be a welder.<sup>206</sup> The Committee heard that, as a result, women are forced to develop assertive communication skills to be their own advocates on job sites.<sup>207</sup>

The Committee was also told about micro-aggression, which is a form of unintended discrimination upheld by the use of known social norms and behaviours; without the conscious consideration of the user, micro-aggression has a similar effect as discrimination with intent.<sup>208</sup> For example, the Committee heard that women are sometimes told to “smile more,” “be polite,” or “be nicer” – comments not made to male colleagues – or are asked about their private plans to have children.<sup>209</sup> As well, while well-meaning, some women report that male co-workers treat them like “their daughter, their sister, their niece,” with a comforting and patronizing approach.<sup>210</sup> In other situations, women were asked or expected to prepare tea or clean up after team meetings with their colleagues.<sup>211</sup>

The Committee heard that widespread attitudinal shift is crucial to increase the representation of women in these occupations and that it will take a long time for that shift to happen through changes in the demographics of upcoming workforce generations.<sup>212</sup>

---

203 Centre for Education and Work, “One Foot in the Door: House of Commons Standing Committee on the Status of Women,” *Presentation Slides*, 23 April 2015; [Evidence](#), 5 May 2015, 1135 (Lisa Kelly, Unifor); [Evidence](#), 28 April 2015, 1105 (Ryan Montpellier, Mining Industry Human Resources Council).

204 [Evidence](#), 24 March 2015, 1125 (Linda Savoie, Status of Women Canada); [Evidence](#), 28 April 2015, 1140 (Nancy Darling, Okanagan College).

205 [Evidence](#), 28 April 2015, 1140 (Nancy Darling, Okanagan College).

206 Ibid.

207 Ibid.

208 [Evidence](#), 21 April 2015, 1230 (Saira Muzaffar, TechGirls Canada).

209 [Evidence](#), 21 April 2015, 1255 (Karen Low, FIRST Robotics Canada); [Evidence](#), 21 April 2015, 1230 (Saira Muzaffar, TechGirls Canada).

210 [Evidence](#), 23 April 2015, 1255 (Suzanne Winterflood, Centre for Education and Work).

211 Ibid., 1115.

212 [Evidence](#), 23 April 2015, 1150 (Kate McInturff, Canadian Centre for Policy Alternatives).

To address the issue of workplace culture, the Committee learned that it is important to provide education to male workers to encourage positive behavioural change towards female counterparts and to promote effective communication between male and female colleagues.<sup>213</sup> The Committee also heard that women need to be provided with information about potential challenges in the workplace and about their rights as employees, such as employment standards and access to maternity leave.<sup>214</sup> Through mentorship and other forms of guidance, such as online interactive case studies, women can learn how to cope with various scenarios in the workplace.<sup>215</sup>

The Committee heard that employers must establish safe and secure workplaces that are free of harassment, including ensuring that women can confidentially report harassment and have it dealt with effectively.<sup>216</sup> One witness spoke of Manitoba Hydro, which has a female human resources representative dedicated to addressing concerns reported by women in the field.<sup>217</sup>

## **F. Family-friendly workplace policies**

The Committee heard that a barrier to women's equal participation in the workforce, particularly in skilled trades and STEM occupations, is that women put in more unpaid work hours in the home than do men and remain the primary caregivers for their children and elderly relatives.<sup>218</sup> The Committee learned that establishing family-friendly policies in companies is a central way to address the uneven burden of responsibility on women; to increase the sharing of unpaid work between men and women; and to ensure that women are not marginalized in the workforce.<sup>219</sup>

Witnesses said that, as early as post-secondary school, young women are wondering if they can balance skilled trades and STEM studies or work, which are time-consuming and challenging, with having a family.<sup>220</sup> Witnesses said that, once in the workforce, women have difficulty balancing personal family life with work needs.<sup>221</sup>

---

213 [Evidence](#), 21 April 2015, 1125 (Saira Muzaffar, TechGirls Canada); [Evidence](#), 23 April 2015, 1255 (Suzanne Winterflood, Centre for Education and Work).

214 [Evidence](#), 23 April 2015, 1115 (Suzanne Winterflood, Centre for Education and Work).

215 *Ibid.*

216 *Ibid.*, 1255.

217 *Ibid.*

218 [Evidence](#), 21 April 2015, 1240 (Saira Muzaffar, TechGirls Canada); [Evidence](#), 23 April 2015, 1125 (Kate McInturff, Canadian Centre for Policy Alternatives); [Evidence](#), 24 March 2015, 1150 (Linda Savoie, Status of Women Canada).

219 [Evidence](#), 23 April 2015, 1125 and 1220 (Kate McInturff, Canadian Centre for Policy Alternatives).

220 [Evidence](#), 23 April 2015, 1205 (Rim Khazall, Carleton University Women in Science and Engineering); [Evidence](#), 28 April 2015, 1240 (Jennifer Flanagan, Actua).

221 [Evidence](#), 5 May 2015, 1115 (Tammy Evans, Canadian Association of Women in Construction); [Evidence](#), 5 May 2015, 1135 (Lisa Kelly, Unifor).

Some key challenges include inflexible or intensive work schedules,<sup>222</sup> busy travel schedules and remote worksites,<sup>223</sup> all of which are not conducive to individuals who want to start or raise a family.<sup>224</sup> The Committee also heard that skilled trades and STEM occupations with parental leave policies are more likely to attract and retain women.<sup>225</sup>

In addition, the Committee heard that women's professional development and advancement are often negatively affected by taking parental leave, requesting flexible work schedules and attempting to balance work and family responsibilities in general.<sup>226</sup> The Committee learned that women with family responsibilities can be perceived as being less capable of taking on a more senior position.<sup>227</sup> Dr. Kate McInturff, Senior Researcher with the Canadian Centre for Policy Alternatives, explained that there is a gender bias:

[W]hen women have children they're [seen as] less reliable, less serious, and not committed; and when men have children, we say they're very responsible and committed, and we should pay them more and promote them more.<sup>228</sup>

Dr. McInturff cited studies that show that "when women in academia have children ... their rates of pay and promotion go down. When men in academia have children, [rates of pay and promotion] go up."<sup>229</sup>

The Committee learned that both the federal government and companies can play a role in implementing family-friendly workplace policies. The federal government can incentivize the adoption of such policies and companies can establish and implement such policies, such as creating a flexible work infrastructure for both men and women.<sup>230</sup> Ms. Janet Walden, Chief Operating Officer of NSERC, spoke of the family-friendly measures implemented by NSERC for the post-secondary students, post-doctoral fellows and professors that it supports:

[W]e introduced allowances for parental benefits to make it easier for students and post-doctoral fellows to maintain their research programs while starting families. To reduce the loss of women during the assistant to full professor progression, our grantees can

---

222 [Evidence](#), 5 May 2015, 1115 (Tammy Evans, Canadian Association of Women in Construction); [Evidence](#), 21 April 2015, 1240 (Saira Muzaffar, TechGirls Canada); [Evidence](#), 24 March 2015, 1150 (Linda Savoie, Status of Women Canada); [Evidence](#), 23 April 2015, 1120 (Kate McInturff, Canadian Centre for Policy Alternatives).

223 [Evidence](#), 5 May 2015, 1115 (Tammy Evans, Canadian Association of Women in Construction); [Evidence](#), 28 April 2015, 1235 (Ryan Montpellier, Mining Industry Human Resources Council).

224 [Evidence](#), 28 April 2015, 1105 (Ryan Montpellier, Mining Industry Human Resources Council).

225 *Ibid.*, 1240.

226 *Ibid.*, 1100.

227 [Evidence](#), 21 April 2015, 1125 (Saira Muzaffar, TechGirls Canada).

228 [Evidence](#), 23 April 2015, 1220 (Kate McInturff, Canadian Centre for Policy Alternatives).

229 *Ibid.*

230 [Evidence](#), 21 April 2015, 1130 (Saira Muzaffar, TechGirls Canada).

request an extension of the term of their grant for up to two years for maternity or parental leave.<sup>231</sup>

The Committee heard that technology has provided employees with more flexible work hours, thus helping women juggle family responsibilities. As Ms. Saira Muzaffar of TechGirls Canada said: “My tools work 24 hours a day. My office is not my desk. My office is my phone. My office is my computer and my tablet.”<sup>232</sup>

A number of witnesses indicated that providing affordable and accessible childcare is important to encourage women to enter and remain in skilled trades and STEM occupations.<sup>233</sup> Some witnesses suggested that companies play a role in providing on-site childcare or childcare centres in the communities in which they operate.<sup>234</sup> Ms. Nancy Darling, Program Administrator of Women in Trades Training at Kelowna Campus of Okanagan College, said: “We have a daycare on campus and we're working to have that daycare made 24 hours so that access is greater for our women.”<sup>235</sup> One witness recommended to the Committee that the federal government establish a national childcare program.<sup>236</sup>

Witnesses explained to the Committee that there remains a gender wage gap in Canada in nearly all occupations, and that wage gap is in part attributable to women’s unpaid work and caregiving responsibilities.<sup>237</sup> The Committee heard that women in skilled trades and STEM occupations are also clustered in lower wage and less stable jobs.<sup>238</sup> Dr. McInturff provided examples to the Committee:

Women in mining, oil and gas, like women in other skilled trades, also face significant discrimination in their wages. The wage gap in oil and gas in Canada is one of the largest of any sector in our labour force, with women earning 65¢ on the male dollar, working full time, full year.... Female electricians earn 79¢ and female plumbers earn 82¢ for every dollar earned by their male peers, working full time, full year.<sup>239</sup>

- 
- 231 [Evidence](#), 24 March 2015, 1135 (Janet Walden, Natural Sciences and Engineering Research Council of Canada).
- 232 [Evidence](#), 21 April 2015, 1240 (Saira Muzaffar, TechGirls Canada).
- 233 [Evidence](#), 23 April 2015, 1210 (Sandra Eix, Society for Canadian Women in Science and Technology); [Evidence](#), 21 April 2015, 1145 (Saira Muzaffar, TechGirls Canada); [Evidence](#), 28 April 2015, 1240 (Nancy Darling, Okanagan College); [Evidence](#), 5 May 2015, 1135 (Lisa Kelly, Unifor); [Evidence](#), 23 April 2015, 1220 and 1225 (Kate McInturff, Canadian Centre for Policy Alternatives).
- 234 Centre for Education and Work, “One Foot in the Door: House of Commons Standing Committee on the Status of Women,” *Presentation Slides*, 23 April 2015; [Evidence](#), 28 April 2015, 1240 (Ryan Montpellier, Mining Industry Human Resources Council).
- 235 [Evidence](#), 28 April 2015, 1240 (Nancy Darling, Okanagan College).
- 236 [Evidence](#), 5 May 2015, 1225 (Kathleen Lahey, Professor, Faculty of Law, Queen's University, as an Individual).
- 237 [Evidence](#), 5 May 2015, 1205 (Kathleen Lahey, as an Individual); [Evidence](#), 23 April 2015, 1155 (Kate McInturff, Canadian Centre for Policy Alternatives); [Evidence](#), 5 May 2015, 1135 (Lisa Kelly, Unifor); [Evidence](#), 28 April 2015, 1145 (Ryan Montpellier, Mining Industry Human Resources Council); [Evidence](#), 21 April 2015, 1145 (Saira Muzaffar, TechGirls Canada).
- 238 [Evidence](#), 5 May 2015, 1135 (Lisa Kelly, Unifor).
- 239 [Evidence](#), 23 April 2015, 1120 (Kate McInturff, Canadian Centre for Policy Alternatives).

Ms. Muzaffar explained that, when comparing “one man and one woman, even in the average best-case scenario, the woman will make 20% less money than the man and will face more barriers when applying for senior leadership positions than he will.”<sup>240</sup> The Committee heard that central mechanisms to address the gender wage gap in all occupations across Canada include the implementation of family-friendly policies and access to childcare.<sup>241</sup>

---

240 [Evidence](#), 21 April 2015, 1125 (Saira Muzaffar, TechGirls Canada).

241 [Evidence](#), 23 April 2015, 1125 (Kate McInturff, Canadian Centre for Policy Alternatives); [Evidence](#), 5 May 2015, 1135 (Lisa Kelly, Unifor).

# LIST OF RECOMMENDATIONS

---

## Recommendation 1

The Committee recommends that the Government of Canada develop clearly defined outcomes that can help align and leverage stakeholder efforts in attracting women in science, technology, engineering and mathematics based work. .... 6

## Recommendation 2

The Committee recommends that the Government of Canada continue its commitment to ongoing gender analysis through Gender-Based Analysis Plus..... 13

## Recommendation 3

The Committee recommends that the Government of Canada support the ongoing commitment to women in skilled trades. .... 13

## Recommendation 4

The Committee recommends that the Government of Canada work with stakeholders to provide opportunities for women and girls to be engaged in science, technology, engineering and mathematics from an early age..... 20

## Recommendation 5

The Committee recommends that the Government of Canada continue to support mentorship campaigns, such as Status of Women Canada’s “It Starts with One – Be her Champion,” to give girls access to female role models in science. .... 24

## Recommendation 6

The Committee recommends that the Government of Canada work to build, connect and integrate the existing networks for mentorship and peer support for women in science, technology, engineering and mathematics..... 24

## Recommendation 7

The Committee recommends that the Government of Canada support the integration of existing networks of mentorship for women and girls in science, technology, engineering and mathematics. .... 24

**Recommendation 8**

**The Committee recommends that the Government of Canada encourage women and girls to consider careers in skilled trades and science, technology, engineering and mathematics, and highlight the career opportunities and financial benefits. .... 26**

**Recommendation 9**

**The Committee recommends that the Government of Canada continue to support outreach programs that raise awareness about the breadth of opportunities in the fields of science, technology, engineering and mathematics. .... 27**



# APPENDIX A LIST OF WITNESSES

Organizations and Individuals	Date	Meeting
<p><b>Department of Citizenship and Immigration</b></p> <p>Louis Dumas, Director Case Processing Centre - Ottawa</p> <p>Matthew Graham, Acting Director Immigration Branch</p> <p>Maia Welbourne, Director General Strategic Policy and Planning</p>	2015/03/24	51
<p><b>Department of Employment and Social Development</b></p> <p>Catherine Scott, Director General Labour Market Integration, Skills and Employment Branch</p> <p>Jonathan Will, Director General Economic Policy Directorate</p>		
<p><b>Natural Sciences and Engineering Research Council of Canada</b></p> <p>Serge Villemure, Director Scholarships and Fellowships Division</p> <p>Janet Walden, Chief Operating Officer</p>		
<p><b>Status of Women Canada</b></p> <p>Linda Savoie, Senior Director General Women's Program and Regional Operations Directorate</p>		
<p><b>Statistics Canada</b></p> <p>Alison Hale, Director Labour Statistics Division</p>	2015/03/26	52
<p><b>FIRST Robotics Canada</b></p> <p>Dorothy Byers, Member, Board of Directors Head of School, St. Mildred's-Lightbourn School</p> <p>Karen Low, Member, Board of Directors</p>	2015/04/21	54
<p><b>Let's Talk Science</b></p> <p>Bonnie Schmidt, President</p>		
<p><b>TechGirls Canada</b></p> <p>Saira Muzaffar</p>		
<p><b>Canadian Centre for Policy Alternatives</b></p> <p>Kate McInturff, Senior Researcher National Office</p>	2015/04/23	55

<b>Organizations and Individuals</b>	<b>Date</b>	<b>Meeting</b>
<p><b>Centre for Education and Work</b></p> <p>Marjorie Marchinko, Senior Adult Learning Specialist Suzanne Winterflood, Executive Director</p> <p><b>Society for Canadian Women in Science and Technology</b></p> <p>Sandra Eix, Member Outreach &amp; Make Possible Volunteer Danniele Livengood, Secretary</p> <p><b>The Carleton University Women in Science and Engineering</b></p> <p>Rim Khazall, Science Co-Chair Carleton University</p> <p>Natalie Linklater, Engineering Co-Chair Carleton University</p>	2015/04/23	55
<p><b>Actua</b></p> <p>Jennifer Flanagan, President and Chief Executive Officer</p> <p><b>Mining Industry Human Resources Council</b></p> <p>Ryan Montpellier, Executive Director</p> <p><b>Okanagan College</b></p> <p>Nancy Darling, Program Administrator, Women in Trades Training Kelowna Campus</p>	2015/04/28	56
<p><b>Canadian Association of Women in Construction</b></p> <p>Tammy Evans, President</p> <p><b>Irving Shipbuilding Inc.</b></p> <p>Anna Marenick, Director Community Relations and Value Proposition</p> <p><b>Unifor</b></p> <p>Lisa Kelly, Director Women's Department</p> <p>Teresa Weymouth, National Skilled Trades Coordinator</p> <p><b>Women Unlimited Association</b></p> <p>Doreen Parsons, Manager</p> <p><b>As an individual</b></p> <p>Marie Connolly, Professor Department of Economics, Université du Québec à Montréal</p> <p>Kathleen Lahey, Professor Faculty of Law, Queen's University</p>	2015/05/05	57

# APPENDIX B LIST OF BRIEFS

---

## Organizations and Individuals

---

Lahey, Kathleen

FIRST Robotics Canada

Unifor

Women Building Futures



## REQUEST FOR GOVERNMENT RESPONSE

Pursuant to Standing Order 109, the Committee requests that the government table a comprehensive response to this Report.

A copy of the relevant *Minutes of Proceedings* ([Meetings Nos. 51, 52, 54, 55, 56, 57, 58, 62 and 63](#)) is tabled.

Respectfully submitted,

Hélène LeBlanc

Chair



## INTRODUCTION

New Democrat members of the committee are glad to have heard so many witnesses speak from experience and with passion on how to increase women and girl's participation in the science, technology, engineering and mathematic (STEM) occupations. New Democrats would like to see federal government leadership to address the causes of women's underrepresentation in STEM fields.

Issues of gender inequality which permeate women's lives in Canada are also alive and well in the STEM fields, and these barriers need to be addressed. As one witness so eloquently stated:

*“individual merit does not trump and cannot balance the influence of institutional and behavioural barriers. Leaving the onus on the individual to represent themselves and transcend both institutional and social barriers is not a good enough solution and speaks to neither equality nor equity.”<sup>1</sup>*

Canadian women and girls are looking to the federal government for real leadership and change. It is not enough to provide a handful of women with apprenticeships and mentors, leave it to industry to regulate itself, and call it a day.

To really support women and all Canadians in a healthy, sustainable economy, the government needs to address the challenges and barriers faced by women such as inequality, sexism, hostile work environments and culture, and a lack of family-friendly policies.

## GENDER INEQUALITY + WAGE GAP

A main component of gender inequality in Canada is that pay inequity has yet to be redressed. Women's work remains undervalued compared to men's work. This is true of STEM and non-STEM fields. This is a huge problem in Canada, and many witnesses pointed to the need to address it with policy driven by facts, research, data, and long term measurable goals.

As one witness said:

---

<sup>1</sup>Ms. Saira Muzaffar (TechGirls Canada):

*“Men and women in Canada work in different fields, for different numbers of hours, at different rates of pay. Women are three times as likely as men to work part time, twice as likely to work for minimum wage, and nearly 100% likely to be paid less for the work they do.”<sup>2</sup>*

In addition, the committee heard that:

*“women's access to roles in leadership positions and their financial compensation in these positions do not competitively or equitably compare to the access and compensation available to men who have similar experience, expertise, and qualifications. This is true for most industry sectors, not just STEM fields, meaning that with all things being equal between two job candidates, one man and one woman, even in the average best-case scenario the woman will make 20% less money than the man and will face more barriers when applying for senior leadership positions than he will.”<sup>3</sup>*

And while we heard positive things about higher wages being available in STEM, the wage gap in these fields in Canada is one of the largest of any sector in our labour force. The committee heard that women working in the oil and gas sector earn 65¢ on the male dollar, working full time, full year, women working in construction trades earn 72¢ on the male dollar, female electricians earn 79¢, and female plumbers earn 82¢ for every dollar earned by their male peers, working full time, full year.<sup>4</sup>

## **CHILDCARE AND FAMILY-FRIENDLY POLICIES**

Witnesses also clearly stated that pay was not the only factor for women in choosing a career path. Many look for flexibility as “a piece of the puzzle”.<sup>5</sup> Witnesses stated that flexible work schedules can help women and caregivers, who are predominantly women.<sup>6</sup>

A disproportional share of unpaid work continues to be done by women, which can make it difficult for them to pursue certain occupations:

---

<sup>2</sup>Kate McInturff 2015 04-23 11:23

<sup>3</sup>Ms. Saira Muzaffar (TechGirls Canada):

<sup>4</sup>Kate McInturff 2015-04-23

<sup>5</sup>Ms. Karen Low

<sup>6</sup>Ms. Saira Muzaffar (TechGirls Canada):



*“Today women put in 3.9 hours of unpaid care work a day, compared to 4.2 hours of unpaid care work 20 years ago. Only now, that four hours of work comes on top of a full day of paid work for the majority of women. This is double the amount of time spent on household and care work as performed by men in Canada. Unless we add more hours to the day, this puts an absolute limit on women's capacity to increase their hours of paid work and to go after those more demanding jobs that require them to work after hours or overtime. Women are five times as likely to take time off from work to look after family members. Without family leave and sick leave policies that address this reality, women are further marginalized within the workforce and see their opportunities for advancement and better pay reduced.”<sup>7</sup>*

New Democrat members heard that the cost of childcare and lack of readily available spaces can be extremely prohibitive for women's participation in STEM fields. Many witnesses recommended the federal government make childcare a priority.

As one witness clearly stated:

*“Where affordable child care is readily available, women's labour force participation increases, the wage gap narrows, and the rates of promotion increase as well.”<sup>8</sup>*

Furthermore,

*“In every country that has provided affordable and accessible child care, women's employment levels have gone up, so that evidence is clear.”<sup>9</sup>*

New Democrat members noted the need for accessible, affordable childcare is, as one witness put it, “... a fundamental issue.”<sup>10</sup>

The committee also heard from Status of Women officials how important child care is if women are to have access to choices:

*“The responsibilities for child care, and even elder care, are still primarily with women, as we all have heard and as many studies demonstrate. This is also a factor that affects women's choices and the ability to meet inflexible workplace requirements. Access to child care if you're a shift worker is*

---

<sup>7</sup>Kate McInturff 2015-04-23 11:23

<sup>8</sup>Kate McInturff 2015-04-23 11:23

<sup>9</sup> Kate McInturff 2015-04-23

<sup>10</sup>Ms. Lisa Kelly (Director, Women's department, Unifor) 2015-05-05

*repeatedly also brought forward by the groups we work with that are trying to enhance the opportunities for women in these fields.”<sup>11</sup>*

## **SAFE AND SECURE WORKPLACES**

New Democrats heard from witnesses that safety and security in workplaces remained an issue for women in STEM. One witness put it thus:

*“A majority of our decision-makers are men (and women - JM) in positions of authority who have blindly enjoyed their privilege without ever having to understand what micro-aggressions are, why safety and harassment at work go hand in hand with job security, and why having a family and more responsibilities can be perceived to mean one is less serious and less capable of taking on a prominent role in a company, instead of the opposite.”<sup>12</sup>*

Harassment and not being taken seriously as forms of oppression came up often during testimony. Another witness pointed out that

*“It’s not just with the employers; it can sometimes be in the institutions as well, where women are maybe not perceived as taking it seriously. They’ve had comments such as that maybe they are there to find a husband more than to be a welder, and things like that.”<sup>13</sup>*

## **CONCLUSION**

Canada needs women in STEM fields as a part of a healthy, diversified economy. Skilled, higher earning jobs need to be created for women and men. In order to achieve this, we must address the inequalities and barriers that systematically keep women out of these fields, and address the pay inequality they continue to face.

Further, by putting in place family policies, like accessible and affordable child care, we make women's economic lives more secure and increase women's employment, women's labour force participation, and “makes it more likely that they can go into whatever job they want, at whatever point they want.”<sup>14</sup>

---

<sup>11</sup>Linda Savoie 2015-03-24 11:51

<sup>12</sup>Ms. Saira Muzaffar (TechGirls Canada):

<sup>13</sup>Nancy Darling (Program Administrator, Women in Trades Training, Kelowna Campus, Okanagan College);2015-04-28

<sup>14</sup>Kate McInturff 2015-04-23

### **The NDP recommends:**

- That the Government of Canada immediately implement pro-active pay equity legislation for all federally regulated workers based on the recommendations from the 2004 Pay Equity Task-force Report and repeal the Public Sector Equitable Compensation Act.
- That the Government of Canada work with the provinces, territories and Indigenous communities to create a universal early childhood and childcare program delivered with common principles like affordability, availability and quality that costs no more than 15\$/day per child.
- That the Government of Canada reinstate the federal minimum wage to 15\$ an hour.
- That the Government of Canada adopt a long term plan and vision to achieve gender equality in Canada including addressing barriers, and restoring the long term census for the much needed data and research needed.
- That the Government of Canada incentivize industry to change behaviours within workplaces to address harassment and other barriers to full participation in the work force.



## **LIBERAL PARTY OF CANADA DISSENTING REPORT: WOMEN IN SKILLED TRADES AND SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS OCCUPATIONS**

Kirsty Duncan, Member of Parliament for Etobicoke North

### **INTRODUCTION**

The subject area is enormously important, as the development of world-class talent in science, technology, engineering and mathematics (STEM) is critical to Canada and to our economy. It is also an area that is very important to women, as research suggests that women in STEM fields earn 33 percent more than women in non-STEM fields, and experience a wage gap relative to men.

First, I would like to underline the vital role that robust science plays in the lives of Canadians. For example, scientific investigation helps to identify risks to ecosystems and human health; and helps to protect the health and safety of Canadians and the communities in which we live. Unfortunately, science has been under persistent attack in Canada: for example, cutting \$148 million from the federal granting councils in 2009; cutting funding to the Experimental Lakes Area and the Polar Environmental Atmospheric Research Lab; and putting in place new media protocols to prevent public service researchers from discussing their peer-reviewed research.

Women are already facing barriers to entering STEM-related fields; it does not help that the national climate is perceived to be less than supportive owing to weak leadership from the federal government.

I would like to thank the witnesses who gave their time and ideas, spoke passionately about increasing the role of women in trades and science, technology, engineering and mathematics (STEM) education and occupations, and who put forth substantive recommendations.

Increasingly I have found that recommendations put forth by the Status of Women Committee are often lacking, meaningless, or watered-down. Unfortunately, this report continues in that tradition.

### **SPECIFIC RECOMMENDATIONS**

Recommendation 1 is simply vague. Despite recommending “clearly defined outcomes,” the report does not offer suggestions for these outcomes. What types of outcomes should the Government consider to attract women in STEM-based work, and will any support be given to stakeholders to help achieve outcomes?

Recommendation 2 recommends the Government “continue its commitment” to ongoing gender analysis (GBA). The Liberal Party affirms its commitment to GBA, but I believe the Government can and should do better in this area.

A 2009 report by the Auditor General reported that most government departments do not identify the different impacts on women and men, and made recommendations to improve GBA within the Government of Canada.

The Committee heard that the Government of Canada should commit to and conduct on-going, GBA of all its programs, and ensure GBA is undertaken prior to developing any new program or legislation.

It should be noted that according to Status of Women Canada officials, some 1,500 officials have taken the interactive course on GBA and received a certificate for doing so. According to the Clerk of the Privy Council, the number of employees of the federal public service in March 2013 was close to 263,000 employees. How many of the bureaucracy's executives, deputy ministers, and associate deputy ministers, have actually taken the course and/or prescribed it to their teams? It should also be noted that no further training was thought to be required beyond this initial, one-time, two-hour course.

Recommendation 3 maintains that the Government of Canada should “support the ongoing commitment to women in Skilled Trades”, again upholding the status quo. What kind of commitment—a promise, funding, or some other commitment?

Recommendation 4 mentions that the Government work with “stakeholders to provide opportunities for women and girls to be engaged in STEM from an early age”. What type of opportunities, how will they be provided and will funding be available?

Recommendation 5 highlights supporting the Government’s own “It Starts with One” campaign, although several mentorship campaigns currently exist.

Recommendation 7 is an important statement, but “support” should be specified. What we heard from witnesses is that Government needs to help with funding.

Recommendation 8 is important in intent, but how will the Government encourage women and girls to consider careers in skilled trades and STEM, and how will it “highlight career opportunities and financial benefits”?

Recommendation 9 maintains that the Government should “continue to support outreach programs that raise awareness about the breadth of opportunities in STEM fields”. Again, what kind of support should be specified? What the Committee learned is that programs are needed to provide training to teachers, parents, and other leaders to form a “web of support” for girls interested in STEM is needed.

WHAT IS MISSING

Women have been fighting for pay equity for one-hundred years in Canada, yet the gap in income between men and women in Canada still remains at 19 percent. According to the Conference Board, Canada ties with the United States for the 11th spot out of 17 peer countries, and earns a "C" grade.

It is therefore unfortunate that there is no recommendation to implement the recommendations of the 2004 Pay Equity Task Force. This is a glaring omission, and means a continuing lack of fairness to Canadian women. All Canadians, regardless of gender, deserve equality in the workplace and the full protection of their government.

It is also unfortunate that there is no recommendation ensuring a regular, independent, expert review of all government programs related to women and girls in STEM, women's progress in STEM fields, women's salaries compared to their male counterparts, remaining challenges, and that the review recommend best practices and solutions.

The Committee also heard that the Government should put in place "national sex equality laws", and ensure that government departments responsible for their application have effective means of monitoring for gender imbalances on a continuing basis in education and all occupations, including STEM fields. And finally the Committee heard about conscious and unconscious biases around gender, harassment, and micro-aggressions in educational settings and the workforce.

## CONCLUSION

We need utilize all our talent, regardless of gender. We need to know what challenges women face entering trade and STEM programs, what holds them back from achieving their full potential in their chosen fields, and whether there is equal pay for work of equal value.

