Engineers Canada 30 by 30 Initiative

PEO 30 by 30 Task Force

April 11, 2019

Introductions

- **Helen Wojcinski P. Eng., FEC, FCAE, MBA, CMC** President of Wojcinski & Associates Ltd; Chair, PEO 30 by 30 Task Force; PEO 30 by 30 Champion, Engineers Canada; and Member, Engineers Canada's Equitable Participation in Engineering Committee

- **Christian Bellini P. Eng., FEC,** Principal, Blackwell Structural Engineers; Vice Chair, PEO 30 by 30 Task Force; and Engineers Canada Board Director

- **Bob Dony, PhD, P.Eng., CEng, FIEE, FEC,** Associate Professor, School of Engineering, University of Guelph; Council Liaison, PEO 30 by 30 Task Force; and PEO Past President

- **Lola Mireya Hidalgo, P.Eng., PMP,** Construction Contracts Engineer, Ministry of Transportation Ontario; Member, PEO 30 by 30 Task Force; and PEO Councilor

Overview

- Equity in engineering
- Engineers Canada 30 by 30 Initiative
- PEO 30 by 30 Action Plan – PEO and Stakeholder Proposed Actions and Metrics
- Thoughts/Feedback
- Next Steps for 2019

Equity in engineering

Why is equity important?

- Economic, social, and organizational success
- Women are not a diversity group but instead comprise over 50% of the population
- Not tapping into the full talent pool in serving the public's best interest
- Other licensed professions such as law and medicine have already attained gender parity
- Progress toward gender parity in engineering remains slow
- Chronic underrepresentation continues to portray our profession unfavourably to the public

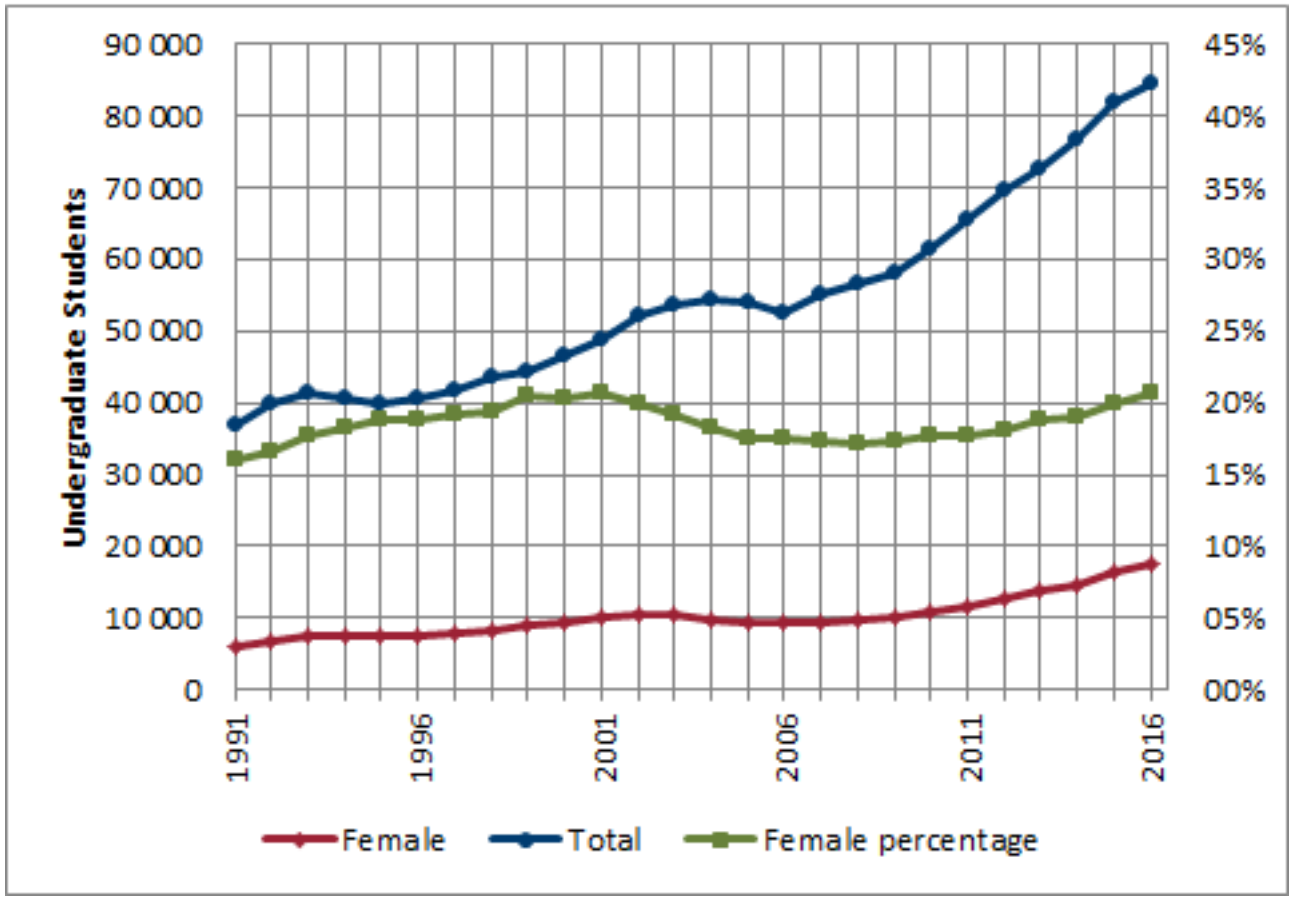
Women in engineering

- Nationally,17.4% of newly licensed engineers were women in 2017
- **The challenge:** this percentage has stagnated for the past five years

Where do we stand in Ontario?

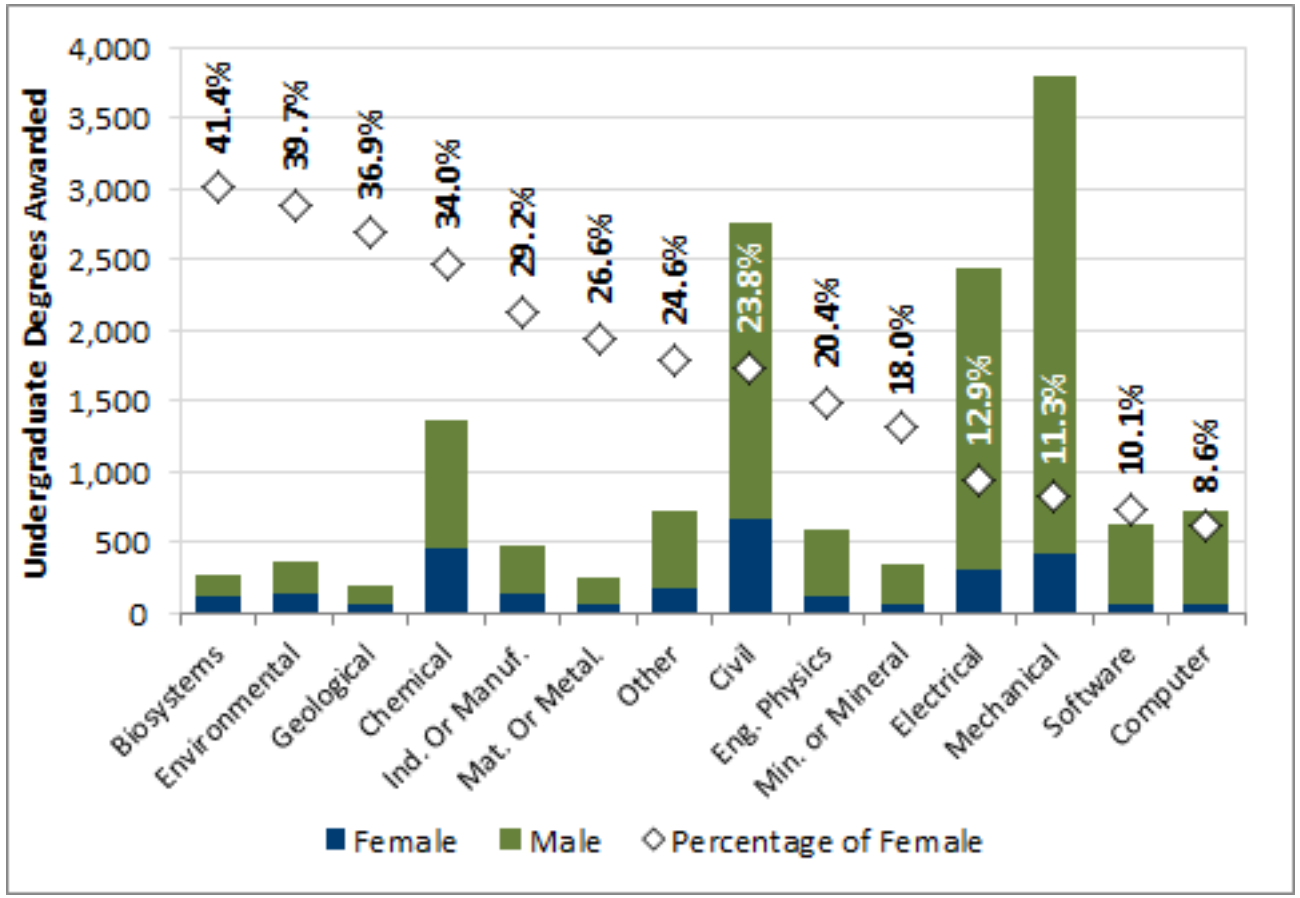
19% of newly licensed engineers were women in 2017

Undergraduate enrolment and degrees awarded



Of 14,905 engineering degrees awarded nationally in 2016, 2,882 (19.3%) were to women

Undergraduate degrees awarded by gender and discipline



The Leaky Pipeline

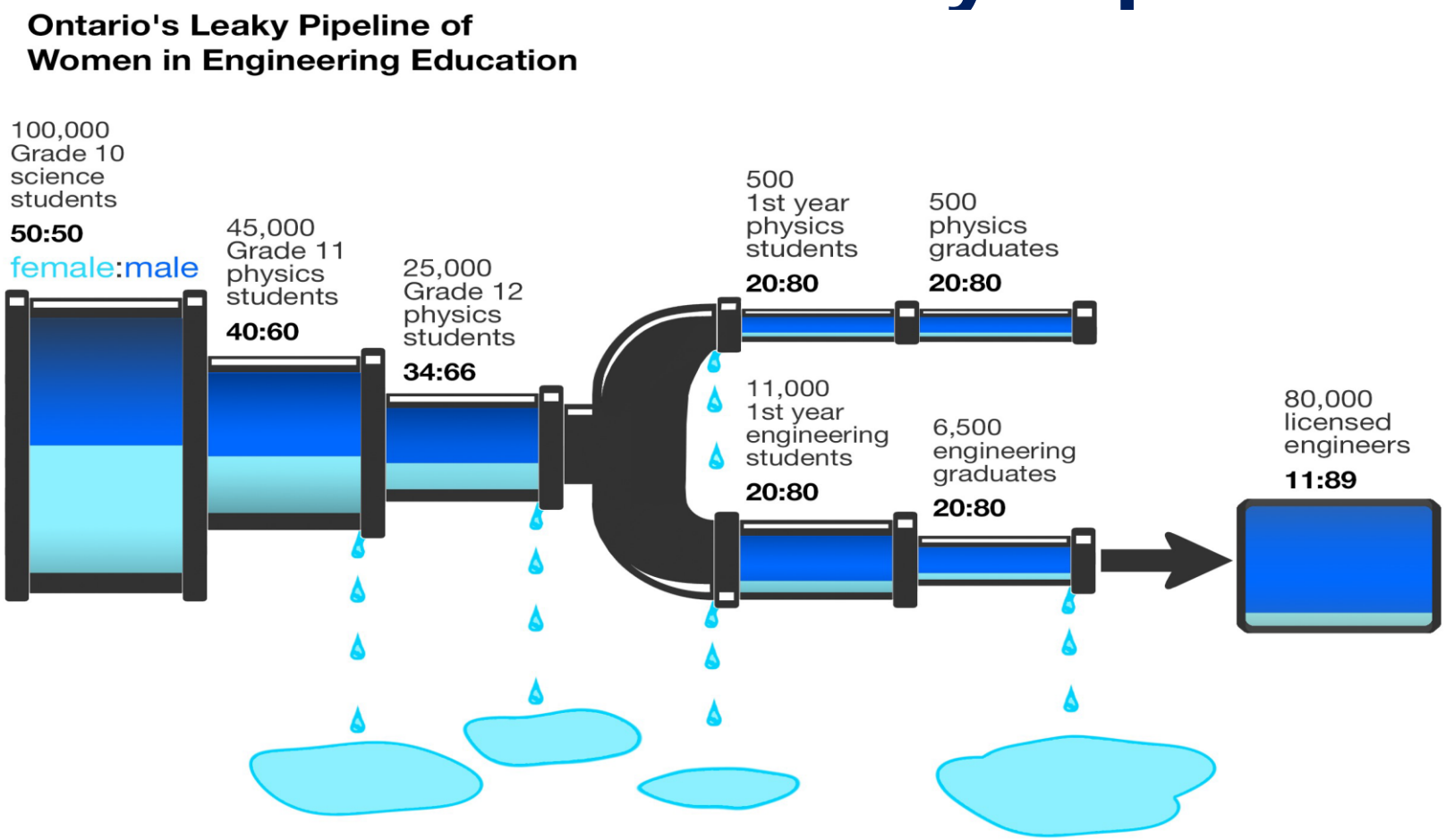


Figure 1: Ontario's Leaky Pipeline for Women in Engineering and Physics. The ratios are presented as the proportion of females:males at different points in the pipeline. Developed using Ontario Ministry of Education Enrolment data from 2016

M. Wells, M. Williams, E. Corrigan, and V. Davidson, *Closing the Gap in Engineering and Physics: The Role of High School Physics,* College of Engineering and Physical Sciences, University of Guelph, College 2018

The Leaky Pipeline

Possible Factors as to why girls are not pursuing engineering or physics:

- **Inherent Differences**, biological characteristics or psychological traits, between male and female students, although both have equal aptitude despite understanding the subject differently (boys understand at a technical level; girls prefer a broader world view context)
- **Sociocultural Influence**, societal attitudes about what is considered appropriate for girls and women, leads to parents and teachers providing less encouragement and support for girls studying physics compared with boys
- **Culture of Engineering and Physics**, refers to the culture within the engineering and physics disciplines and how this is presented to students – lack of women role models and a narrow technological focus versus a larger social, environmental or work context

M. Wells, M. Williams, E. Corrigan, and V. Davidson, *Closing the Gap in Engineering and Physics: The Role of High School Physics,* College of Engineering and Physical Sciences, University of Guelph, College 2018

The Context of Engineering Practice

Problems and Solutions:

- A shift to problems of greater complexity – “Wicked” Problems
- Accountability for social, economic and environmental outcomes
- Democratization – technology no longer the domain of engineers
- Ownership of problems and solutions over the long term (stewardship)

Key Question: Are we attracting/retaining the diversity of people in the profession that we need in terms of backgrounds, interests and capacity?

The Future of Engineering in Canada – Is it Time for Fundamental Change?, Jim A. Nicell, Ph.D., P.Eng., Dean of Engineering, McGill University, Canadian Academy of Engineering Annual General Meeting, June 18, 2018

Engineers Canada
30 by 30

Equity and outreach

- Pressing need to address the lack of representation
- In 2011, Engineers Canada launched a bold initiative, the 30 by 30
- 30 by 30 seeks to increase the number of newly licensed engineers who are women to 30 per cent by the year 2030
- In 2018, initiative was further expanded through Engineers Canada's Strategic Priority 3 (SP3) to include recruitment, retention, and professional development of women in engineering

Why 30 per cent?

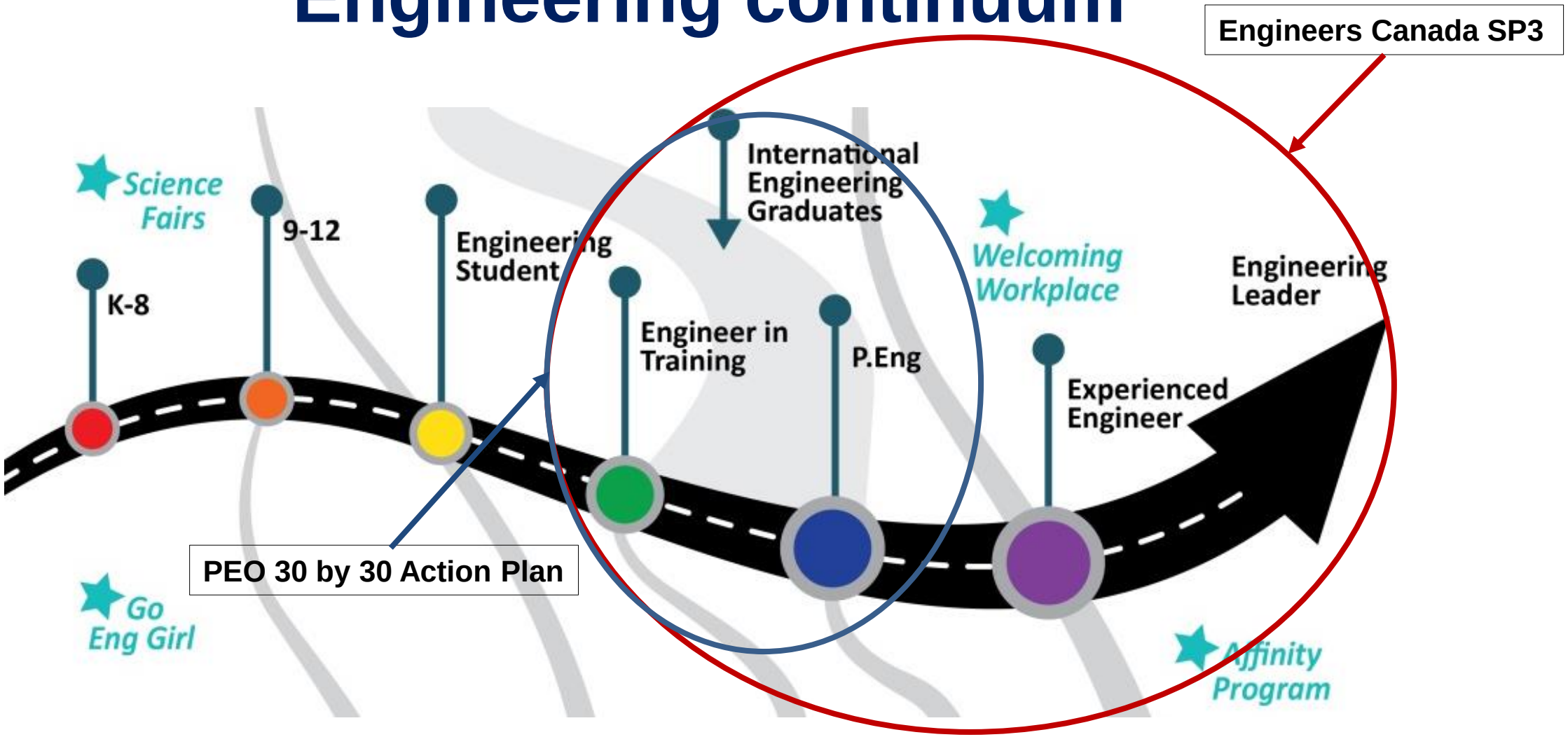
- 30 per cent is the critical mass needed for meaningful change

Importance of licensure

- Professional engineers are licensed in Ontario to effectively meet economic interests while ensuring that public interests are never compromised (stewardship);
- Professional engineers work to a higher standard of accountability and professionalism (*Professional Engineers Act; Code of Ethics*)

- Licensure is also important in terms of:
  - Recognition by employers and clients
  - Commitment to the profession
  - Participation in professional self-regulation
  - A global advantage
  - Opportunities for advancement
  - Flexibility

Engineering continuum



30 by 30 Key Success Factor

"It is…critical that the unacceptably low number of women in the profession be regarded as not just a women-in-engineering issue, but an issue of concern for the entire engineering profession, for **both women and men**."

PEO Action Plan, September 2018

Implementing 30 by 30 in Ontario

- PEO Council unanimously endorsed the 30 by 30 Initiative in September 2017
- PEO approved establishment of a 30 by 30 Task Force in June 2018
- PEO approved PEO Action Plan in September 2018 based on the Engineers Canada's nine promising practices in facilitating women obtaining their licences and succeeding in the engineering profession
- PEO Action Plan outlines specific actions that the key stakeholders along the pathway to licensure – universities, organizations supporting internationally educated engineers, PEO as the Regulator, and employers of engineers – need to undertake in order to reach the 30% goal

PEO Action Plan –
PEO and Stakeholder Proposed Actions

30 by 30 Action Plan – PEO's Actions

- In keeping with PEO's mandate, PEO's actions in the plan are primarily centred on internal operations, for example:
  - Reviewing licensing process for unconscious bias towards women applicants
  - Targeting women graduates to pursue licensure through PEO programs such as the Licensing Assistance Program, EIT annual work experience reviews, Engineering Intern and Student Program, International Engineering Graduate Bridging programs
  - Featuring practising women engineers in PEO publications (e.g. Engineering Dimensions) – role models are critical
  - Encouraging women engineers to serve on and assume leadership roles on PEO committees, task forces, chapter executives, external board appointments
  - Search Committees actively recruiting women engineers to run for PEO council
  - Showcasing progressive employers and universities who are championing the 30 by 30
  - Tracking the progress being made in reaching the 30% goal and providing annual reports to PEO Council and to the Ontario Society of Professional Engineers (OSPE)

30 by 30 Action Plan – PEO Chapters Actions

PEO Chapters have many programs that can be tailored to facilitating women's pathway to licensure:

- Experience requirements workshops to better prepare future interviewees;
- EIT information presentations;
- Licensing Assistance Program for women engineering graduates and internationally educated women engineers;
- Women in leadership positions in the Chapters;
- Education outreach programs that are welcoming to young women;
- Equitable bestowment (50% female; 50% male) of scholarships;
- Women engineering role models as Chapter event speakers, representatives, awardees, and in Chapter publications

Example(s) of Best Practices for Chapters

- Placeholder slide for any pertinent 30 by 30 Action Plan examples, such as LAP/mentorship programs, that Chapters can adapt and use in their organizations (these examples can be posted on PEO 30 by 30 webpage, if granted permission to do so, and further expanded upon and shared as the initiative continues to be launched…)

Proposed PEO Regulator Metrics

(all striving for 30% goal)

- **PEO Registrar – Percentage of Women Pursuing and Obtaining their Licence:**
  - **Percentage of newly licensed engineers who are women**
  - Percentage of women versus men applying for licensure
  - Percentage of female versus male CEAB and non-CEAB being licenced
  - Percentage of female versus male EITs
  - Percentage of women versus men being called for interviews
  - Percentage of women versus men obtaining their licence

Proposed 30 by 30 Metrics for PEO Chapters

With these metrics, the goal is to reach 30%:

- Percentage of women engineering graduates and internationally educated women engineers who are participating in the Chapter LAP and actually obtaining their licences
- Percentage of women engineers as members of Chapters
- Percentage of women engineers in Chapter leadership positions
- Other?

30 by 30 Challenge to External Stakeholders

- Willingness to consider becoming/become a 30 by 30 Champion for their organization
- As a 30 by 30 Champion, develop an action plan/actions based on the PEO Action Plan and shared best practices from peers
- Develop metrics (three key indicators) to measure and report progress on an annual basis, as recommended by the PEO 30 by 30 Task Force
- Agree to being included on PEO's 30 by 30 webpage, Wall of 30 by 30 Champions, and part of the larger, collective effort to track and commit to the progress being made on achieving the 30% goal as a profession

Thoughts/Feedback

- Thoughts on the 30 by 30 initiative?
- What does your Chapter need to participate in the initiative and achieve the 30% goal?
- Who else do you think should be included in this engagement – other peers in your network?

Proposed Next Steps for 2019

• Awareness Sessions with Stakeholders	March to June
• Synthesis and Best Practices from Awareness Sessions	July/August
• Action Plan Workshops/Sessions with Stakeholders	September to December
• Showcasing of 30 by 30 Champions/Participants	July to December

Stay in Touch

- For more information on Engineers Canada 30 by 30:
  https://engineerscanada.ca/diversity/women-in-engineering/30-by-30
  https://engineerscanada.ca/sites/default/files/30by30-en.pdf

- For more information on PEO 30 by 30 Action Plan:
  http://www.peo.on.ca/index.php?ci_id=32117&la_id=1

- For more information on PEO 30 by 30 Task Force, contact:

Jeannette Chau, MBA, P.Eng., Manager, Government Liaison Programs
Staff Advisor to the PEO 30 by 30 Task Force
jchau@peo.on.ca
Tel: (647) 259-2262