

Opening Doors and Breaking Down Barriers

Highlights from *Engineering Professional Success*:

OSPE's Pilot Mentorship Program for Female Engineering Graduates



ONTARIO
SOCIETY
OF PROFESSIONAL
ENGINEERS

BEHIND EVERY GREAT ENGINEER.

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ACKNOWLEDGEMENTS

Thank you to Status of Women Canada for sponsoring *Engineering Professional Success*, and our contributing partners: Ontario Network of Women in Engineering (ONWiE), Professional Engineers Ontario (PEO), PEO York Chapter, and the Canadian Centre for Women in Science, Engineering, Trades and Technology (WinSETT). Thank you also to Janet Murray, Primary Researcher; Lead Advisor, Professor Emerita Valerie Davidson, P.Eng; and Program Development Manager, Aarthi Vig.

The Ontario Society of Professional Engineers (OSPE) is the voice of the engineering profession in Ontario. We represent the entire engineering community, including professional engineers, engineering graduates, interns and students who work or will work in several of the most strategic sectors of Ontario's economy.

Inspiring and Empowering Women in Engineering

Great things happen when you pair experience and enthusiasm. Insight is shared, confidence is gained, and lasting connections are made.

This is what OSPE discovered in launching *Engineering Professional Success* - a pilot mentorship program aimed at increasing the retention and advancement of female engineering professionals.

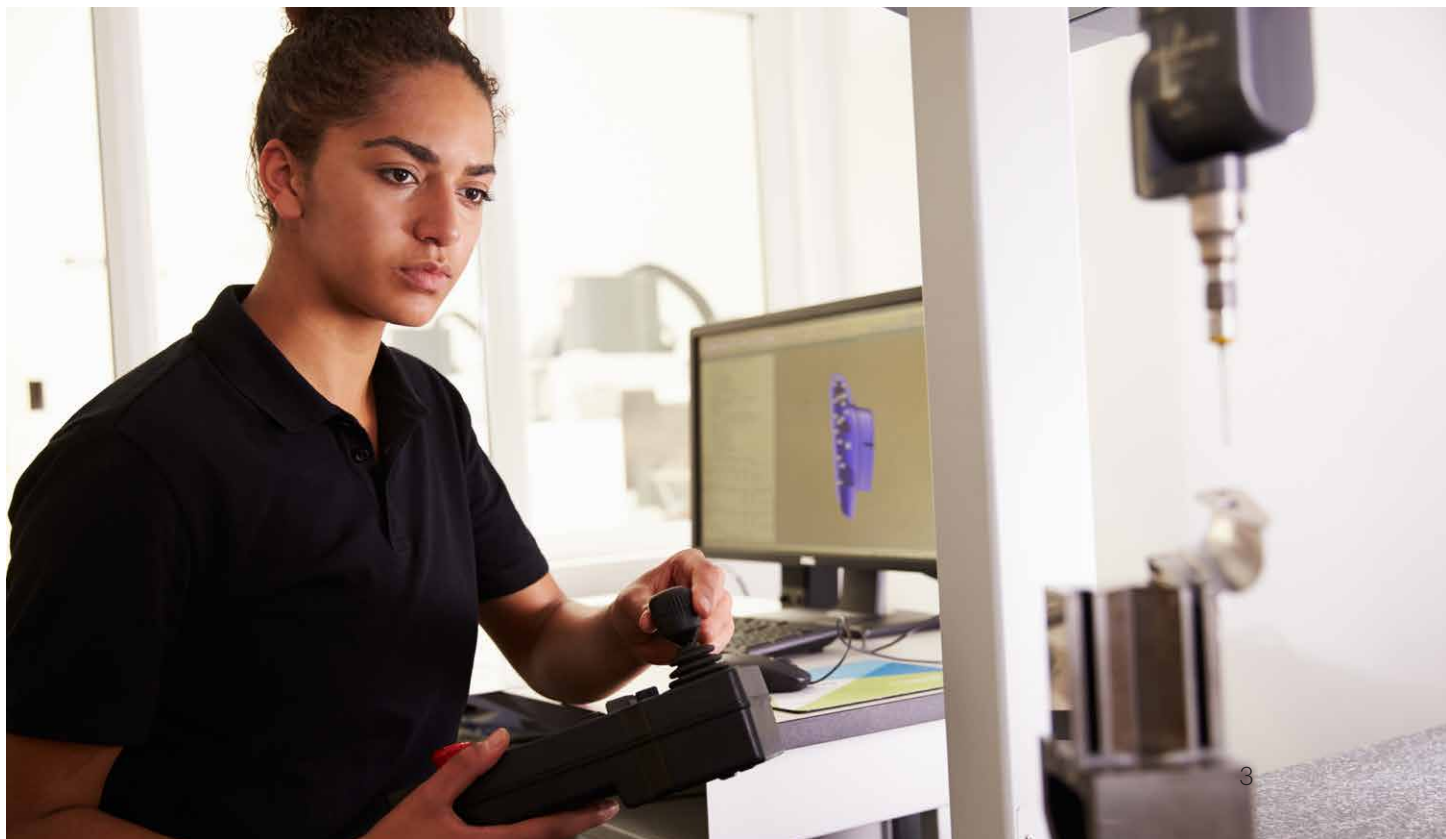
The project directly supports the 30 by 30 goal set by *Engineers Canada* to increase the number of newly licensed female engineers to 30% by 2030.

Funded by the Status of Women Canada, the initiative is targeted at women who are about to graduate from engineering programs, recent graduates who are registered as Engineering Interns (EITs), recent graduates who are not registered as EITs, and new licence-holders in the early stages of their professional careers (the first five years as a P.Eng.).

Women at these stages of their careers—both those trained in Canada and abroad—face a distinct set of challenges. They are both subtle and complex and can have a significant impact on their engagement and career progression.

Research shows that the career phase between graduation and licensure is an opportune time to support women's engagement in the profession and help them transition to successful careers in engineering.

Engineering Professional Success was developed to take advantage of this window of opportunity.



The Proof is in the Pilot

In February 2015, OSPE conducted a needs assessment survey, which was completed by 1566 students who were about to graduate, EITs and professional engineers from across the province. There were 530 female respondents, 79 of whom were International Engineering Graduates (IEGs). OSPE's research uncovered the experiences, opinions and decision-making approaches that these women use to move through this critical stage of their careers.

A vast majority (97%) of female respondents thought mentorship was important when *"starting an engineering career after graduation."* About two-thirds agreed that *"mentoring improves women's career prospects and retention in the engineering profession."*ⁱ

OSPE designed a pilot mentorship program that reflects the needs of both IEGs and Canadian Engineering Graduates (CEGs) and is flexible enough to accommodate varying schedules and preferences.

The pilot, which ran between November 2015 and January 2017, was a tremendous success. It resulted in the launch of 90 mentoring relationships, pairing participants from over 23 communities across Ontario. In the follow-up survey of mentors and protégées (mentees)

MORE THAN
95%

OF RESPONDENTS SAID THE PROGRAM MET
OR EXCEEDED THEIR EXPECTATIONS.



*I wish there was a program like this
when I was starting out in engineering."*

– Mentor

ⁱOntario Society of Professional Engineers (2015) Mentoring Women for Early Career Advancement in Engineering online questionnaire. Available upon request.



Some of the words that protégées used to describe the experience included:

INSPIRED ME TO
STAND UP FOR MYSELF

INCREDIBLY
VALUABLE

WISER CAREER
DECISIONS

RENEWED
PASSION

Mentors talked about the value of the program in reaffirming their own career choices and giving them the opportunity to reflect on their journey. One participant noted, *“the mentoring process has allowed me to not only guide an upcoming female engineer, but to evaluate my own professional journey and to understand the next steps for my own career path.”*

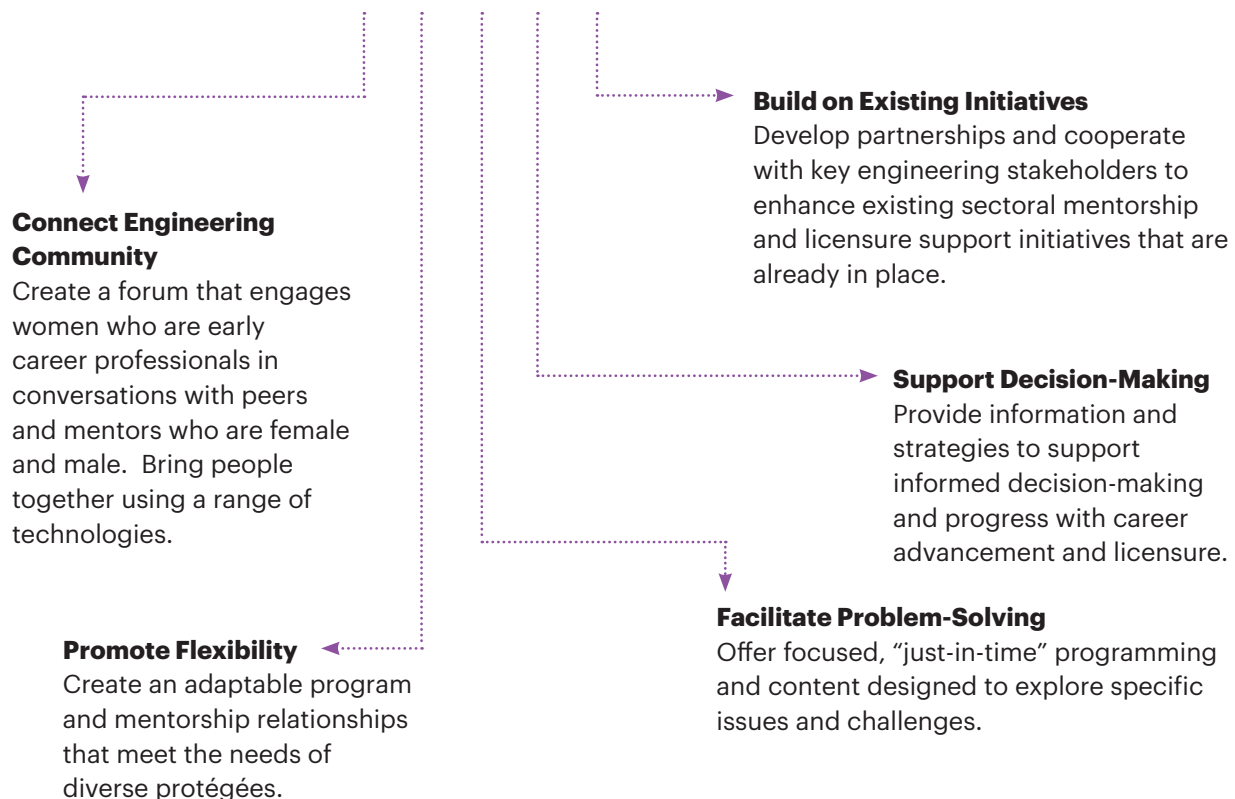
OSPE is excited about the success of this pilot. It’s clear that there is a strong appetite for this type of program. Protégées have forged powerful connections that have already started helping them transition into engineering employment and licensure and advance into leadership roles. Some have even become mentors themselves.

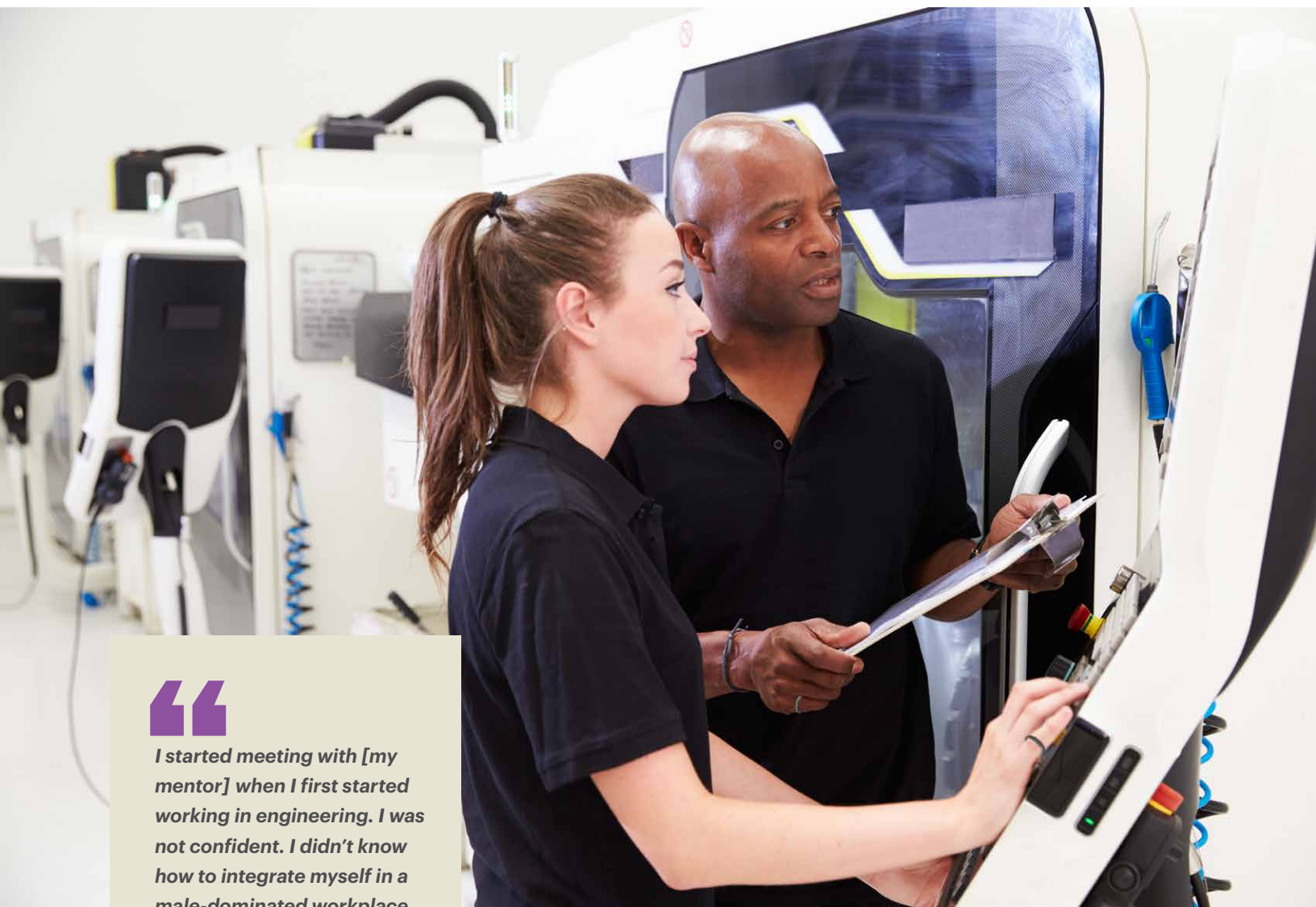
Providing the Building Blocks of Success

Respondents identified the following as benefits they expected to derive from participation in a mentorship program.

- o Better-Informed career decision making (81%)
- o Strengthened professional networks (74%)
- o Strengthened professional engineering knowledge and practice (66%)
- o Connections to employment opportunities (66%)
- o Sustained engagement in engineering careers (60%)
- o Enhanced professional profile and credibility (60%)
- o Enhanced social networks and a sense of belonging (58%)
- o Increased likelihood of completing the licensure process (56%)
- o Improved work/life balance (45%)
- o Enhanced Canadian work experience - female IEG (65.8%) vs. female CEG (35.1%) – Average (39%)

Based on this insight, the following recommendations were made for the design of the program.





“

I started meeting with [my mentor] when I first started working in engineering. I was not confident. I didn't know how to integrate myself in a male-dominated workplace environment. I found it hard to manage working with the operators on the shop floor. However, after meeting with [my mentor] and taking her advice into consideration, I have overcome my fears and self-doubt issues. [My mentor] gave me advice on how to deal with conflict in the workplace. I have always used her advice when I run into conflicts...she inspired me to stand up for myself and be confident of the work that I produce.”

The program was promoted by OSPE, as well as through numerous partner and stakeholder events across the province. Promotional activities included OSPE articles and website content, committee member outreach, promotion at industry events, presentations to employers, and participation in Ministry of Labour consultations.

These efforts resulted in the enrollment of **59 mentors and 76 protégées.**

Among the mentors,

39 were female, 20 were male,
44 were Canadian-trained, and
15 were IEGs.

There were 50 Canadian-trained protégées and 26 IEGs.

Building Confidence and Resilience

The research provided a clear sense of women's priorities and the hurdles they must overcome in the early stages of their careers. Survey respondents listed the following as the top challenges they face.

- o Weak professional network (36%)
- o Inadequate on-the-job training or professional development opportunities (35%)
- o Underutilized engineering skills (33%)
- o Work culture and job demands that compete with family and/or community responsibilities (33%)
- o Fewer opportunities for field work than colleagues (23%)
- o Feel disrespected and undervalued by managers and/or co-workers (22%)

The majority also confirmed that mentorship is a valuable support mechanism for female engineering graduates as they move through the licensure process, adapt to the engineering work culture, seek access to influential networks, and contemplate career advancement strategies.

Securing and thriving in engineering employment

A 2015 OSPE report showed that only



32% of Canadian-trained women with engineering degrees were employed as engineers or engineering managers



and only 14% of internationally-trained women with engineering degrees were in similar positionsⁱⁱ

In light of this, some female CEGs and IEGs employ alternative strategies to advance their careers and make ends meet. These strategies sometimes delay licensure or take them out of the engineering profession altogether. A mentor can provide the gentle nudge that is needed to help persevere when the going gets tough and can help a protégée stay on track if she is discouraged and is feeling the pull of non-engineering career options.



My mentor makes me feel less nervous and more confident in interviews. She shared some very helpful (not the usual) advice, e.g. to have a conversation in your interview, not just answer questions. You need to feel like an equal."

ⁱⁱOntario Society of Professional Engineers (2015). *Crisis in Ontario's Engineering Labour Market: Underemployment Among Ontario's Engineering-Degree Holders*. OSPE. <https://www.ospe.on.ca/public/documents/advocacy/2015-crisis-in-engineering-labour-market.pdf>

Transitioning to the world of work and building strong networks

Workplace culture is another factor influencing attrition of women in engineering. In addition to issues inherent in a profession dominated by men, many women struggle to maintain work-life balance. They lack professional networks and supports and find it difficult to establish professional credibility in the face of gender stereotyping.

Women face many situations that can cause them to second-guess their skills and career choices. By sharing their experiences and strategies, mentors can help protégées navigate these challenges with greater confidence and focus.

Growing personally and professionally

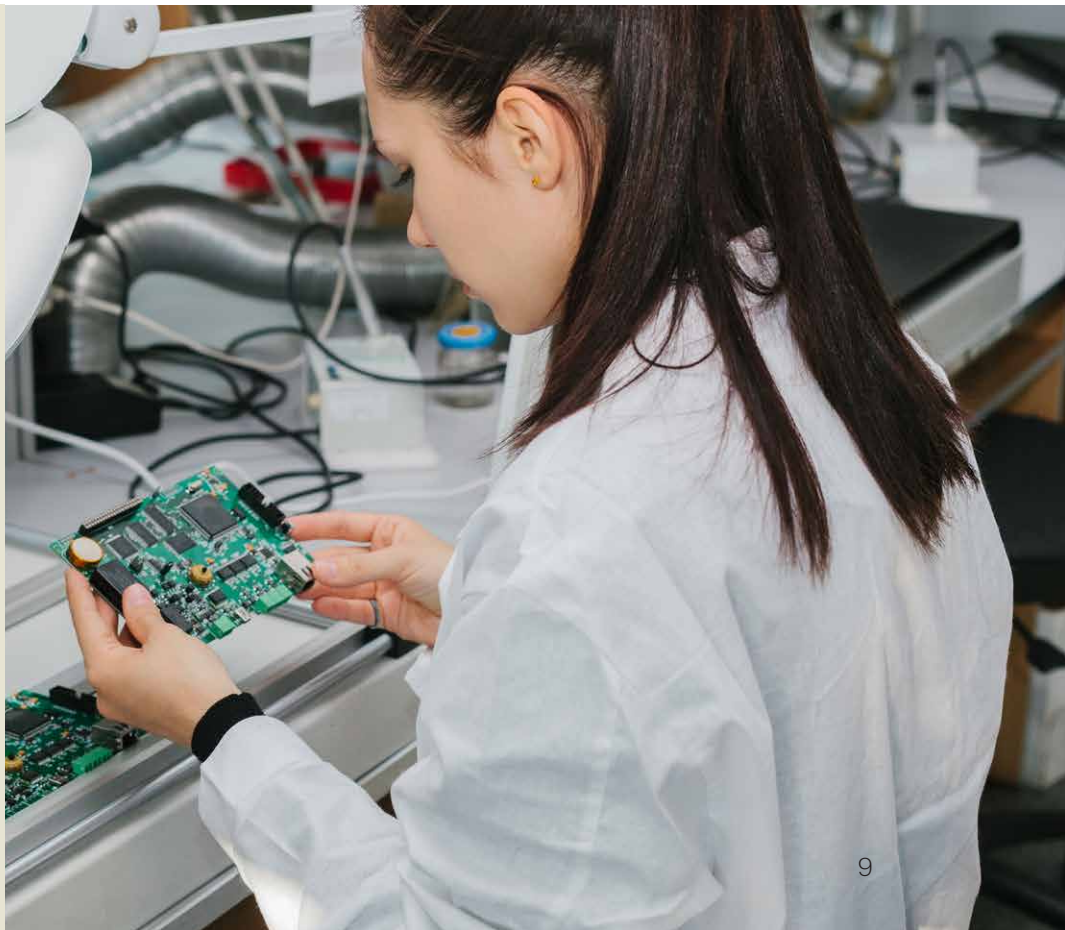
A professional licence is very important to career advancement, identity, recognition and a sense of belonging in the engineering profession. It increases access to technical engineering employment, broadens career pathways supporting specialization, increases the potential for promotion, and enhances earning power.

It is a rigorous process involving four stages that are typically completed over a period of about 4 to 5 years, depending on the individual. Mentors can ease the pressure candidates feel by helping them:

- Navigate the process
- Find and secure professionally supervised engineering employment
- Regain momentum if they take time off to have children or care for family

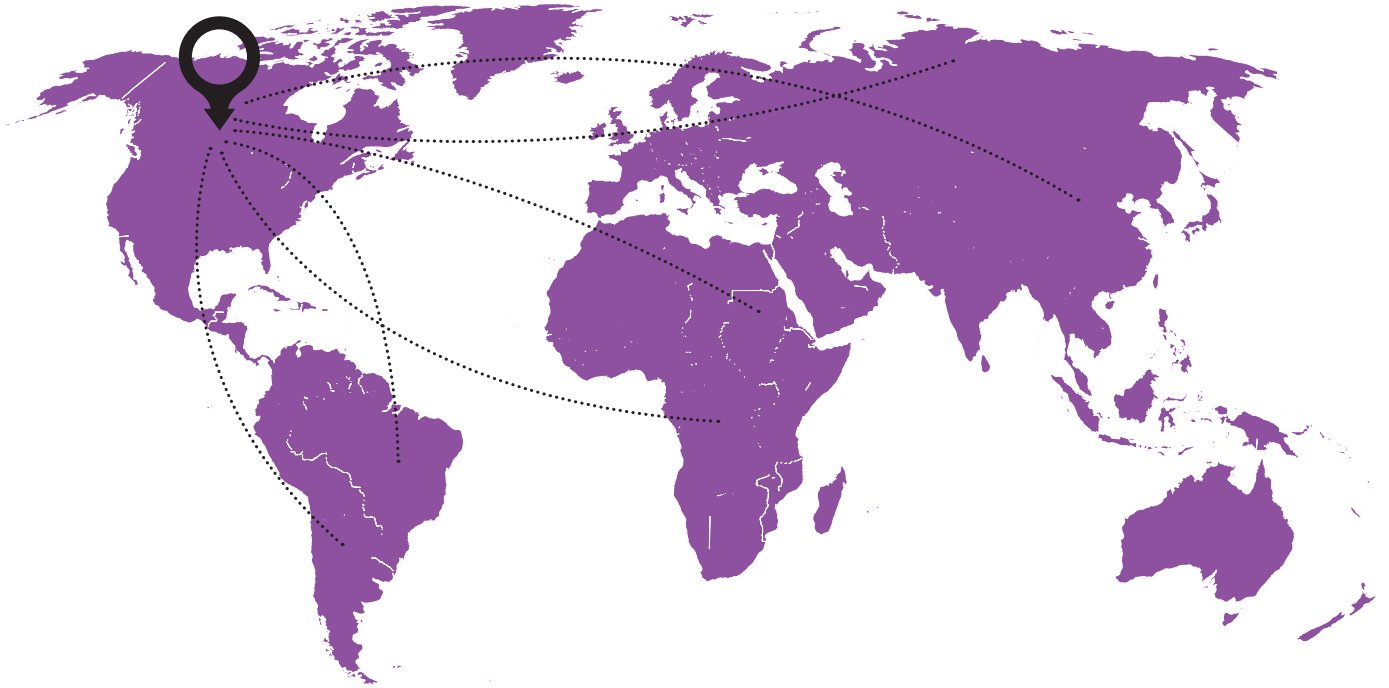


My mentoring relationship with [my mentor] has allowed me to make wiser career decisions specifically with day-to-day steps at work. Additionally, [my mentor] has provided me with guidance towards steps to achieving my P.Eng. designation further down the line."



Applying international skills and experience in Canada

It takes tremendous energy, persistence and hard work for IEGs to find employment in Canada. Too often, they must convince Canadian employers of the validity of their international degrees and job experience and face even greater difficulty than CEGs in securing the crucial Canadian engineering experience required to become licensed.ⁱⁱⁱ



Even when they find their way into Canadian workplaces, they often experience issues of “fit” and must contend with different notions of identity related to being a professional engineer in Canada. A mentor can help them rally when these challenges threaten to delay or even thwart their progress towards licensure and professional status in the engineering profession.^{iv}



As an internationally-trained engineering grad, I got more information about the engineering field and working culture in Canada through this mentorship program...My mentor shared his experiences of career transformation from China to Canada and applying for PEO as well. I feel it is probably the way that I can follow. He told me the similarity and difference between the engineering work of his discipline here and there. It eliminates some of my concerns. He also looked through my resume and corrected some of my inappropriate wording.”

ⁱⁱⁱOntario Society of Professional Engineers (2014). *From the World to the Workforce: Hiring and Recruitment Perceptions of Engineering Employers and Internationally-Trained Engineers in Ontario*. Ontario Society of Professional Engineers. http://c.ymcdn.com/sites/www.ospe.on.ca/resource/resmgr/DOC_advocacy/2014_REPORT_From_World_to_Wo.pdf

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Powerful Connections that are Already Making a Difference

Program participants rated their matches very highly and felt there was an excellent fit in terms of professional qualifications, needs, and interests.

They also felt very satisfied with their interactions:



Protégées cited customized guidance, connection to professional networks and promising employment opportunities as notable outcomes. Mentors appreciated the opportunity to give back, and some felt the experience also helped them refocus their own career plans.

In addition to honing vital communication and leadership skills, many protégées made significant strides in their careers during the pilot period.



14 found contract or permanent work in their field, which will provide vital experience toward obtaining a professional licence.



55% of protégées indicated in the follow-up survey that they have made concrete progress towards engineering licensure. This is a powerful indicator of success. Given that the pilot only ran for 18 months, OSPE didn't expect to see outcomes related to licensure.



Five have chosen to become mentors.



One made the decision to leave a job at which she was struggling to fit in, and found a new position.



Another started an informal meet-up with other female engineering graduates in her region.

OSPE's ability to deliver on the features of the program that participants identified as important was also a critical measure of success. The table below provides a snapshot of the steps taken to deliver on the recommendations that informed the program design.

WHAT RESPONDENTS WANTED	WHAT WAS DELIVERED
Connect Engineering Community	<ul style="list-style-type: none"> • Webinars on Pre-Graduate Licensure and Leveraging LinkedIn to Improve Professional Marketability • Stories of Professional Pride and Identity from Women in the Field • OSPE Summit for Female Engineering Graduates and Mentors, focused on leadership, communication, gender issues and negotiation • Online, facilitated book discussion
Promote Flexibility	<ul style="list-style-type: none"> • Consideration of individual needs and flexibility for both mentors and protégées • Mentorship models suited to each individual, based on work schedules, preference of online or in-person meetings, gender preferences for mentors, area of expertise and engineering discipline
Facilitate Problem-Solving	<ul style="list-style-type: none"> • Participants provided feedback that they were inspired by and valued the advice they received from their mentors • Anecdotal evidence revealed that protégées found the program enhanced their confidence in making decisions and solving problems
Support Decision-Making	<ul style="list-style-type: none"> • Mentors shared information about their career paths to encourage protégées to pursue career goals and licensing • OSPE worked closely with Professional Engineers Ontario in the design of <i>Engineering Professional Success</i>. It is modeled after and designed to complement PEO's Licensure Assistance Program • In addition to pointing them to PEO resources, mentors coached protégées on licensure to assist them in preparing for the required Professional Practice Examination (PPE) that all licensed engineers must take to obtain their P.Eng. • Protégées mentioned that it was important to learn about decisions that mentors made to achieve success, and found it helpful to have a sounding board as they worked through their own decisions
Build on Existing Initiatives	<ul style="list-style-type: none"> • OSPE collaborated with Professional Engineers of Ontario (PEO), PEO York Chapter, Ontario Network of Women in Engineering (ONWiE) and the Canadian Centre for Women in Science, Engineering, Trades and Technology (WinSETT)

“

I don't naturally gravitate to management positions. I normally am not that interested. That doesn't mean that I'm not able. Now I have a different perspective on how I feel about perhaps taking on this kind of role in the future.” – Mentor

“

Since I started the mentoring program, I started going to more events to meet people in the industry. My mentor showed me how important and helpful your professional network would be throughout your career, so I pay attention to this aspect every day in my interactions with my peers/colleagues. By going to industry events with my mentor, I was also able to observe her, and how she handled conversations with others. This greatly helped me overcome some inhibitions I had about networking before.”



One of the highlights of the pilot program was the formation of an Ottawa Women in Engineering group.

Members have met several times since late 2016. An event in January 2017 brought eight female engineering graduates together to share tips and tricks for networking and job searching, including tapping into the hidden job market, strategically leading information meetings, and standing out among other applicants. The group also worked on managing difficult conversations and used role-playing to practice responding to praise and criticism.

Fueling Success and Changing Lives

Participating in this program was a transformational experience for many participants. **Not only did it reaffirm their commitment to engineering, it also had a profound impact on their confidence, resilience, and success.**

In the post-pilot survey, the 38 protégées who responded noted that gaining support and guidance from an engineer, getting support for navigating workplace culture and issues, and building a network of engineering contacts were the top reasons for their participation.

The top three for the 34 mentors who responded were **supporting a young woman in navigating the early stages of her engineering career, giving back to the community, and enhancing leadership skills.**

When asked how this program changed them, protégées' top responses were:



I am more confident



I have become more professional in my attitude and behaviour



I made concrete progress towards engineering licensure



I enhanced my engineering networks



I have a much clearer career plan

Mentors' top responses were:

- o Greater commitment to promoting women's advancement in engineering
- o Enhanced engineering network
- o Improved mentoring skills.



Having an engineering mentor has made a concrete difference in my life. I realize now that my intuition to leave the engineering field was primarily related to gender issues in the engineering profession. The insight and support offered by my mentor and meeting other women who struggle with similar issues has made me realize I'm not alone...finding this amazing space through this program gives me the energy and encouragement to keep fighting the good fight."

Continuing Success

The results of this pilot demonstrate that a formal mentorship program is essential to achieving a more diverse engineering profession.

In a mere 18 months, the pilot program bolstered confidence, engagement and commitment to the engineering profession among both protégées and mentors.

OSPE needs support from sponsors like you to ensure that these successful outcomes continue. By sponsoring OSPE's *Engineering Professional Success Mentorship Program*, you will:

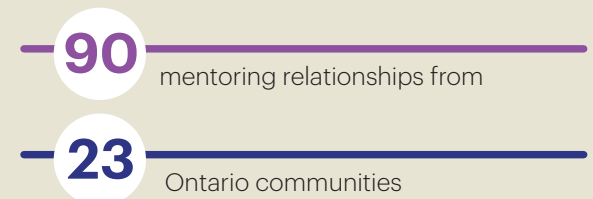
- ✓ **Demonstrate your organization's commitment to building a diverse engineering profession. Research shows that employers who are champions of diversity benefit in terms of recruitment and retention of engineering talent.**
- ✓ **Help individuals with academic training in Canada and elsewhere to become successful engineers.**
- ✓ **Support Engineers Canada's 30 by 30 goal in Ontario.**

To learn more about the mentorship program and sponsorship opportunities, please contact:

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Results at-a-Glance

THE PILOT RESULTED IN THE LAUNCH OF:



WITH AN ENROLLMENT OF:



59 mentors

39 Female, 20 Male
44 CEGs
15 IEGs



76 protégées

50 CEGs
26 IEGs

RESULTING IN:

55%

of protégées indicated that they have made concrete progress towards engineering licensure

14

finding contract or permanent work in their field

5 have chosen to become mentors

1 made the decision to leave a job at which she was struggling to fit in, and found a new position

1 Another started an informal meet-up with other female engineering graduates in her region

IN THE FOLLOW-UP SURVEY:



of mentors and protégées said the program met or exceeded their expectations



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