

Professional Engineers Ontario Student Conference (PEO-SC) 2016 Report

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Introduction

The Engineering Student Societies' Council of Ontario (ESSCO) and Professional Engineers Ontario (PEO) facilitate the annual Professional Engineers Ontario Student Conference (PEO-SC). This years PEO-SC was hosted by Carleton University with the theme "the Power of the P.Eng". The University of Waterloo Engineering Society, sponsored by the Dean's Office of Engineering was able to send 8 students to this conference. Delegates became well informed on the benefits of achieving their P.Eng as well as the systems in place to support them after graduation.

Parliament Hill Lunch

Response by Gabrielle Klemt

On Friday morning, the students attending the lunch met up at Parliament's Centre Block. After introducing ourselves, we met our parliamentary guide, Benjamin who works in the office of Marilyn Gladu, the first and only female MP in Canadian parliament. Benjamin brought us around the building, showing us the Senate chamber, the library and the Memorial Chamber, and sharing interesting facts about the building with us. Soon, we had to pass through security for a second time, this time in order to get into the balcony to watch question period take place below us. I found the discussion really interesting, since it was mostly about infrastructure spending which I am witnessing being put into use now, as someone working for the federal government. I also found it fascinating how raucous the opposition would get whether cheering on a member who had just spoken or drowning out a member on the other side who was trying to defend a point; it really gave me a new insight into the political process and just how showy it truly is.

Next, we headed to the parliamentary dining room for lunch and a Q & A with Marilyn in a special side-room (where Trudeau has held dinners!). She answered all our questions, told us about the incredible series of jobs that led her to Ottawa, and encouraged us to consider running for office one day. With lunch concluded, some of us headed to the Engineers Canada head office to chat with some people from PEO and the CEO of EngCan about educating engineers and why it's important to have lots of people studying the field.

PEO and Licensing – Tracy Caruana

Response by Rachel Malevich

Tracy delivered a presentation on licensing requirements to be a professional engineering in Ontario. She outlined the required elements for the 4 years of engineering experience we must gain after graduating, with the exception of 1 year of applicable experience that can be gained during co-op opportunities. She gave us resources to prepare for the ethics and law exam (another licensing requirement). Finally, some of the resources and benefits that PEO provides to students and engineers in training were summarized including SMP, FCP, and the EIT program. Tracy finished the presentation by offering to deliver this presentation to any schools that expressed interest.

Response by Celine O'Neil

Tracey Caruana's presentation focused on the Ontario professional engineering licensing process. She described the reasons one might become a Professional Engineer: to fulfil legal requirements, to have the right to use the title "engineer", to have one's knowledge and training officially recognized, or to demonstrate commitment to the engineering profession. She also outlined the licensing requirements for the P. Eng: a CEAB-accredited education, a professional practice exam, good character, references from supervisors (with at least one P. Eng), and 48 months of work experience. The professional practice exam (PPE) is made up of two exams, ethics and law, which together form a three-hour exam. The 48 months of work experience can include up to 12 months of pre-graduation experience (acquired after the midpoint of the degree), and must also include at least 12 months of experience within Canada, supervised by a P. Eng, which must be acquired post-graduation. The work experience must apply theory and practical experience, and demonstrate experience in management of engineering, communication skills, and the social implications of engineering. Tracey cautions against cross-disciplinary work experience and suggests sticking close to the specific engineering discipline learned in school for these 48 months—and certainly to avoid jobs that could be described as "any degree could do this."

Tracey also summarized PEO resources available to students and recent graduates in order to facilitate earning the P. Eng. PEO offers a student membership, and for recent graduates offers the Engineering Intern Program (EIT). EIT provides support through the 48 months of pre-licensure work experience, including offering annual work experience reviews. Individuals applying within six months of graduation from a CEAB-accredited program will have their initial EIT registration fee and license application fee waived by PEO.

21st Century Job Hunt - Joel Voutour

Response by Tejinder Singh

Joel Voutour, Talent Acquisition Advisor of Yellow Pages started his talk on application tracking systems (ATS) used in modern industries to filter applications. He gave recommendations for job hunters to get the application acquired by some actual recruiter. He mentioned that the ATS systems were created to reduce the burden of recruiters and to prescreen the candidates by applying filters. He presented the statistics of 2016, that around 72% of CVs aren't viewed by employers. To get the CV prescreened and pass through the ATS, he recommended to customize the CV based on keywords/buzzwords, meet the basic qualifications, use a cover letter and most importantly, portray yourself correctly on online media.

He advised that 80% of employers google your name before inviting you for an interview. Thus, job seekers should carefully look into their social profiles. He talked about leveraging LinkedIn and employer branding. He provided do's and don't for CVs. He gave some tips on during, before and after the interview. In a nutshell, I believe that the tips and recommendations given by Joel are very useful and would definitely step up the job seeking game.

Engineering and Politics – Jeannette Chau

Response by Jared Gour

Jeannette Chau presented on the topics of professional engineers in both the Ontario Provincial Parliament and in the Federal Parliament. As general background information, only about 7% of all politicians worldwide are engineering. In Canada, this number is much lower. Within the Ontario Provincial Parliament, there are 4 Members of Provincial Parliament (MPPs) who hold a Professional Engineering License. In the Federal Parliament, there are only two Members of Parliament (MPs) who hold a Professional Engineering License. Furthermore, both MPs are part of the official opposition party and are therefore not part of the current government. Jeannette Chau wanted to point out that this is alarming as this is the first time in the history of the P.Eng Designation in Ontario whereby there hasn't been a professional engineering as part of the federal government.

Jeannette then went on to describe why P.Eng holders should be MPs and MPPs and why P.Eng holders are excellent political candidates. Engineers as a whole are known to be highly proficient in the areas of problem solving, seeing the big picture, putting the public good first, and being knowledgeable about complex topics. Furthermore, Engineers are also known to be hard workers, fast learners, and diligent professionals. Jeannette Chau would go on to describe how she used these characteristics to run to be the candidate for a Mississauga riding in the Provincial Parliament.

To end the talk, Ms. Chau wanted us to know who are the most trusted professionals in Canada? With nurses and doctors taking the top two spots, engineers were found to be the 7th most trusted professionals with 88% of Canadians saying they trust engineers. Comparatively, politicians are ranked 24th with only 30% of Canadians saying that they trust politicians.

Change and Opportunity – John Gamble

Response by David Kong

Mr. Gamble's talk covered the topics of the trends and challenges affecting the profession of Engineering today, and provided advice and guidance on how we, as students and soon-to-be professional engineers need to shape the profession to become better, more useful members of society. The first lesson that I found extremely useful was the revelation of how the profession itself has slid from being value-oriented to being price-oriented. According to Mr. Gamble, we as a profession face challenges such as easy access to technical knowledge through the internet, rapidly evolving technologies and the increasing focus on pure results, rather than solutions. By highlighting the things that keep us relevant and valuable, such as risk transference and the formal, technical training we receive, we can maintain and extend our importance to society as a whole. The second important topic was that of the importance of keeping the general public aware of our role and what we do. By emphasizing public education about engineering as a concept and profession, we can emphasize our value to society and attain the necessary resources/support to ensure a strong base for the profession in the future.

Engineers of Tomorrow - Erica Lee Garcia

Response by Jared Gour

Ms. Lee-Garcia is an awe-inspiring individual with a fantastic life story. In her presentation, she shared with us her life story through exploring the different options that one has upon graduation from an undergraduate engineering program. She also used a decision matrix to show why she made the choices that she did. She defined her decision matrix through the lens of “what is the criteria for short-term success?”. Her personal criteria were adventure/challenge, learning/growth, fun/enjoyment, purpose/Meaning, and financial gain/prestige and for every option she presented, she evaluated them using this guide.

The ultimate goal of this methodology is to engineering one’s life through making optimal life choices. Ms. Lee-Garcia wanted to emphasize that engineering students already have the tools necessary to accomplish this goal and was demonstrating where it might lead you.

A couple of examples from Ms. Lee-Garcia’s presentation include starting one’s own business, working for an established consulting firm, travelling abroad, volunteering abroad for charity, and returning to school.

Response by Natalie Pinchin

Ms. Lee-Garcia shared her life story, highlighting the key decisions and life events that got her to the point she’s at now and impacted the kind of person she is. She shared her method of making decisions, and how she applies engineering principles to her life. When making a decision, she examines it like an engineering problem. You have to take into consideration design parameters, for example where you live, and design criteria, what you want out of life. For example, she needs something that provides the opportunity for continuous learning and growth. One of Ms. Lee-Garcia’s three businesses is a consulting business, where she helps companies apply different continuous improvement ideologies, for example lean manufacturing. She applies similar concepts to one of her other businesses, Engineer Your Life, which helps engineering graduates optimize their life, and their decisions. Finally, Ms. Lee-Garcia spoke about the importance of how engineers present themselves to society, which is what her third company, Engineers of Tomorrow, focuses on.

Professional panel - John Gamble, Erica Lee Garcia, Adrian Chan

Response by Rachel Malevich

John Gamble, Erica Lee Garcia, and Adrian Chan opened the room to questions pertaining to their lifestyle, how they came to be in their position, and past experiences, among other topics. Some of the most notable lessons learned from this panel include how to make career decisions, why we should become professional engineers, and why it is important that we step into positions where we can make real change. Adrian Chan spoke to the importance of not planning every step of your life or career - regardless of which fork in the road you take, you'll find a way to be happy. Erica believes that as a woman, earning a professional engineering license is part of the reason that she was able to pave a road of success and gain the respect that she needed to do so. Finally, John spoke to his dislike of how the engineering profession operates in Canada with the main concern being that in some ways, our undergraduate education is devalued. We, as students, are in a position to inspire that change.

EWB Change Lab - Himel Don Khandker

Response by Hillary Lui

Himel aimed to present a very broad range of ideas related to engineering careers, and hoped the students would draw substantial, progressive conversation from said ideas. His method included a brief introduction about himself, the Change Lab and lastly handouts with a variety of listed statements. While the intention had potential, it did not prove to be very effective, as understanding of an objective was lost through miscommunication. The next day, Himel ended his session by recapping his initial objective and verbally communicating the gist of his material. The session still proved beneficial though it seems, as the Change Lab is all about trial, error and improvement and feedback was provided.

Keynote Speaker at Banquet – Howard Brown

Response by Tejinder Singh

Howard Brown started his talk on engineering and responsibilities. He, being the firm believer and supporter of professional engineers of Ontario licensing, gave two examples where engineering design malfunctioned due to design flaws. He detailed the 2012 Elliot Lake fatal mall collapse case and it took more than two years of public inquiry to find that it was merely an "human error in the design". He quoted another example of the Nipigon Bridge collapse, where the bolts and cables used in the design were found not in compliance and was again an engineering design flaw. He mentioned that the bolts that hold the million-dollar bridge intact were sent to research labs for testing to find the cause of failure.

He put some light on the recommendations for such design failures, and how PEO put efforts to ensure that engineers should practice their profession before getting license. He mentioned that licensed engineers should inspect and analyze the designs before confirming the product to be used in real life scenarios. People rely on engineers and such minute overlooked flaws can lead to catastrophic loss of life, money and efforts.

He concluded his talk, by motivating future engineers, as he mentioned that it needs courage to stand up and take such huge initiative that can improve the life of people. Engineering designs are the backbone of any infrastructure in a country. All the possible errors should be carefully looked into before the actual implementation. He encouraged us to become not just engineers but to become a responsible engineer of their country.

OSPE Session

Response by Gabrielle Klemt

Mike talked to us about advocacy for engineers, which is what OSPE does. Whereas PEO is the group that regulates our profession and dictates who can say “I’m an engineer”, OSPE advocates for engineers, helps those in the community network and find jobs. According to Mike, OSPE was born about 16 years ago when it was decided that the regulatory body and the advocacy body should be separate groups, avoiding conflicts of interest. OSPE is composed primarily of volunteers, but there are 16 full time employees which is partly where the membership fees go. As far as memberships, according to Mike being a member of PEO and OSPE is fairly low cost when compared to other professional organizational bodies.

OSPE advocates for engineers by lobbying Queen’s Park on our behalf, since the majority of MPPs do not have a science/engineering background, they ensure that expertise is heard and understood in order to help the government make well-informed decisions. Mike says there is lots of advocacy going on right now where energy is concerned, from green energy technologies to the new Ring of Fire developments.

Mike encouraged us to get involved in the profession by volunteering or getting involved in committees. “Engineers create change”, he said, our engineering degrees are powerful tools that can help us change the world and drive development in the years to come. For their entrepreneurship programs, he encouraged us to check out the Research and Innovation tab on the OSPE website. Additionally, there will be more information up soon about the Ryerson Women’s Conference that he encouraged us to check out and sign up for. Finally, of course, he told us to sign up for the student OSPE membership to stay involved and connected to the community.

ESSCO Session

Response by Natalie Pinchin

This talk focused on explaining what ESSCO is and how it benefits individual engineering student societies at different schools. ESSCO's purpose is to represent and assist student societies. They can provide a unified standpoint and perspective to external societies, which helps engineering students as a whole be taken more seriously. Getting involved in ESSCO provides the opportunity to travel and interact with different schools. It is also a forum for schools to interact and helps facilitate discussions. The more engineering societies from different schools interact with each other, the better each society will be. A reliable forum for communications between schools means that when societies are dealing with issues, they can ask other schools how they approached similar problems and what worked best for them. This means that each school has more of a support system than they would otherwise. As a single society, rather than one from each engineering school, ESSCO is able to be part of larger discussions. For example ESSCO is a part of the change lab. It is important for us to have a voice in a forum like this, since discussions often lead back to education, and how it can be improved to result in better engineers. A lot of the decisions made will impact us, so it is vital for us to be part of making them.

EWB Workshop

Response by Hillary Lui

Himel distributed two different handouts containing information regarding the future of engineering careers in relation to technology. The information was deemed by most students, as biased towards the standpoint that technology has a high potential to threaten the value of engineering jobs. Discussion amongst groups of 5-6 students occurred for a short period of time while thoughts were shared, notes were taken and then this was followed up by an exchange of information between groups. The objective was not too clear for this session, however Himel provided further insight to the purpose with his second session.

How to Retire a Millionaire – Mike Lavdas

Response by David Kong

In this talk Mike covered some basics about savings and investment. He covered topics such as TFSAs and RRSPs, as well as investments such as GICs and Mutual/Low-Cost Index Funds. Content focused on how these accounts and investments function practically. The first thing I learned was that the 5k/year contribution limit to a TFSA stacks upon your 18th birthday, such that you can “make up” for your past missed contributions since then. This way, you don’t need to worry about lost savings right after high school. Secondly, I learned the pros/cons of Mutual funds/Low-Cost Index funds, and ETFs, where the former is preferable for small, regular contributions (monthly/bi-weekly) due to the flat % rates for the various fees, whereas ETFs are better for larger, long term contributions due to the low % fee coupled with the per-transaction fee.