



Guelph Engineering Society



Report on the Professional Engineers of Ontario Student Conference at the University of Toronto, November 2-4, 2007.

Prepared By: Jenn Suke, Student Delegate

1. Purpose of Conference

The third annual Profession Engineers of Ontario Student Conference (PEO-SC) was attended by various representatives from engineering schools across Ontario. A large portion of the conference was run by the Professional Engineers of Ontario (PEO) itself. As the licensing body of engineers across Ontario they are an integral part of an engineering career both before and after graduation. PEO-SC was organized by the Engineering Student's Societies Councils of Ontario (ESSCO) and was hosted by the University of Toronto. ESSCO began organizing this annual conference in order to enhance the visibility of the PEO.

This conference offered a chance to gain a further understanding of current issues within engineering surrounding the PEO, the theme of the conference was improving the quality of life. The involvement of the PEO in engineering is important to all undergraduates as it will be a central part of their career following graduation should they decide to pursue a professional engineering license.

2. Personal Goals for Conference

The lectures presented at the conference were very well organized and conducted. I came to the conference hoping to learn more about the PEO itself as well as current issues and developments in engineering.

3. Summary of Events

Professionalism

- George Comrie
- Emphasized the unique quality of Canada's self-regulating professionals as well as the responsibility acquired through practicing as an engineer in Canada
- Many of the PEO regulating people are volunteers
- Illustrated the many benefits of obtaining your P.Eng following graduation (rights, prestige, public trust)
- Discussed the importance of becoming involved as an engineer in public policy decisions.

- This lecture indicated to me that it is very important to the PEO that graduating students work towards a P.Eng following graduation.
- It is also a goal I will work towards in order to gain the status and responsibility of a professional engineer

Rehabilitation Engineering

- Keynote speech by Tom Chau
- Various devices and continuing research areas for those with disabilities
- Many of the examples given were on devices to enhance communication with patients that have little to no means of communication on their own
- Devices such as the virtual piano provide entertainment, exercise and musical skills for the disabled
- Sensory communication through the skin and muscle twitch prosthetics were provided as examples of ways providing movement for those that were paralyzed or had no reliable use of their muscles.
- This presentation was quite inspirational, showing the possibilities of design and the power of innovation and creativity

Building Science Engineering & Sustainable Architecture

- Ted J. Kesik
- Operating energy analysis calculates the overall energy performance of a building
- Well-insulated durable house envelopes must be integrated into designs
- Solar energy is capable of providing a significant amount of power through reusable energy
- Must consider durability, energy efficiency and performance of design
- When re-designing a building the amount saved through increased energy efficiencies determines the amount which should be invested into the project
- Buildings across Toronto need to be retrofitted! This would lead to a large savings of both money and CO₂
- In designs, future renovations must be considered, buildings should be easy to renovate and update only the necessary components

- Storm water sewers can be avoided by using deep gravel basins with plants for stormwater collection with a large amount of vegetation for increased evapotranspiration
- Instead of replacing the stormwater pipes with continuing high maintenance costs, we can simply remove their need
- As an environmental engineer it was interesting to hear such a powerful stance on energy efficiency and designs with the long-term in mind
- The speaker brought to my attention the fact that environmental engineers are not the only stream focusing on preserving and protecting the environment through design

Improving Our World Through Our Professional and Volunteer Work

- Helen Wojcinski
- Stressed the importance of getting and maintaining your P.Eng as it is applicable in various life situations
- Large scale engineering projects such as the development of the 407 provide you with many transferable skills (Project Management, Innovation, Problem Solving, Teamwork, Communication, etc.)
- Volunteer work is a great place to apply skills gained through practicing as a professional engineer
- Volunteering both in the community and the profession helps society, must think about what it is that you want to improve.
- This main point illustrated by the lecture was that many transferrable skills are gained in engineering which should be applied to helping society through volunteer work

Human Factors

- Deborah Fels
- A disability is when you are faced with a situation where you do not fit your designed surroundings (may be permanent or temporary)
- Many commonplace designs, such as a curbcut, are intended for those with disabilities but used by everyone
- Designs must be inclusive for all
- Illustrated the improvements made to closed captioning (a technology intended for the disabled but used by everyone)

- Creativity is key in designing
- The many ways that creativity and engineering design can be used to enhance the quality of life was clearly illustrated by this speaker.

Finance and Engineering: Pricing & UV Operation

- Yuri Lawryshyn
- Illustrated the direct parallels to analyzing UV disinfection and investments
- Calculations only provide half the story, the other half must be illustrated through a consideration of human factors
- UV disinfection rates are not linear, a doubling of the intensity of UV does not mean a doubling of the dose
- Modelling stocks and option pricing is similar to UV disinfection
- A negative present value does not necessarily equate a bad investment
- The speaker clearly illustrated the similarities in calculations of two seemingly different subjects. Many formulas are available to complete a quick mathematical analysis but the results are meaningless until they are accompanied with consideration of human factors.

4. Evaluation

i) Conference Organizers

PEO-SC was very well organized and ran very smoothly. A professional manner was upheld throughout the conference both through the student delegates and the speakers presenting at the conference. The speakers covered a wide range of interests while maintaining a focus on the theme of the conference.

As recommendations to improve the conference, OPSE was not as well illustrated as I expected it to be, nor were the current programs in place by the PEO for undergraduate students in engineering.

ii) Delegate

I feel I have taken a lot away from the conference. The knowledge I gained with respect to current industry was enlightening, inspiring and motivating, even applicable to current projects. I look forward to further conferences and discussing my experience with my peers at the University.