

YTech: CASCON STEM Outreach Workshop

CASCON 2024

Toronto ON. Canada

Miriam Capretz, Western University, Canada

mcapretz@uwo.ca

Kostas Kontogiannis, York University, Canada

kkontog@yorku.ca

Abstract

Collectively, we face significant challenges to our well-being and overall future existence as a society — climate change, healthcare, liveable cities, transportation, finance — the list goes on. But there are solutions on the horizon, and this is going to take an “all-hands-on-deck” approach.

According to Statistics Canada, more than 140,000 Canadians graduated with a STEM degree in 2021. Furthermore, a survey by Randstad found that 65% of Canadians between the ages of 45 and 67 would focus on a career in STEM if they were 18 again.

STEM careers include much more than sitting in front of a computer. With science, we can develop materials that make the colour of our cars stay shiny. With math we can optimize the schedules of city buses. With industrial processes we can develop materials that make airplanes lighter so they consume less fuel.

This workshop aims to bring together in one virtual space students, professors, and admission officers so that Grade 9-12 students can get a glimpse of exciting STEM areas and consider these in their possible career paths.

The workshop will be held as a virtual Zoom event.

Workshop Theme

STEM (Science, Technology, Engineering, and Mathematics) is essential for individual and societal growth. It drives economic growth through innovation, offers high-paying jobs, and keeps nations competitive. STEM education fosters problem-solving and analytical skills, benefiting both STEM and non-STEM fields. It also addresses global challenges like sustainability and healthcare. Understanding STEM empowers individuals in a tech-driven world and encourages lifelong learning. Promoting diversity in STEM breaks barriers and creates equitable opportunities. Additionally, STEM literacy supports informed decision-making and civic engagement on critical societal issues. Overall, STEM equips people to solve real-world problems and build a sustainable future.

The workshop aims to present to students the exciting field of STEM and allow them to interact with University professors, industry leaders, and University admission officers to discuss the paths and opportunities in a STEM related career. In this workshop we will discuss how is to work in a STEM

related job, how to break barriers, and how to prepare for it. The workshop is aimed to be an outreach activity so that young students can consider a career path that is both rewarding and exciting.

Workshop Structure

The workshop will be structured in four main panel-oriented sections. The first section focuses on STEM related professions with emphasis on Computer Science and Engineering. This section will be led by University professors and industry leaders. The second section focuses on university admissions and how to prepare for a STEM degree. This section will be led by University admission officers (e.g. Western, UW, UofT, York, OntarioTech). The third section focuses on Equity with emphasis on women and under-represented groups in STEM. This section will be led by industry and academic leaders who share their motivational stories and paths in STEM related careers. Finally, the fourth section will be an open Q&A section where the students can ask questions about coursework, how is to be a student in a STEM program, opportunities for research and internships, possible career paths. Each section is scheduled to be 45 minutes long. Schools will have to pre-register and obtain the Zoom link. Students will participate from their classes under the supervision of their teachers. We plan to follow the same format as the workshop held in 2022. This is planned to be a half day workshop.