International Initiatives

The field of engineering is driving economic development, spurring innovation and offering solutions to some of the world’s biggest challenges. The remarkable contributions U of T Engineering’s talented researchers and students to both education and research continue to elevate our international standing.

Our Faculty is ranked as the top engineering school in Canada by a significant margin in all international rankings, and we place 12th on the 2013 Academic Ranking of World Universities (ARWU). This reputation, in turn, enables us to attract some of the brightest faculty and students to our ranks.

Our collaborative and interdisciplinary research agenda has a direct impact on society and quality of life across the globe. One example is the multidisciplinary research on Ambulance Emergency Response Optimization (AERO), carried out by the Centre for Global Engineering (CGEN), which received funding from Grand Challenges Canada for its research to reduce ambulance response times in the developing world’s bustling major cities.

U of T Engineering is dedicated to educating global engineers and enriching our student experience. We are the world-leading participant in Brazil’s Science without Borders (SwB) program, hosting more SwB engineering students than any other school. We also created a cross-cultural capstone course that allows undergraduate students from our mechanical and industrial engineering programs to work on client-based projects in collaboration, both in person and virtually, with counterparts at Peking University in China. The tremendous opportunities for our students to collaborate across fields and geographic boundaries serve to prepare the next generation of engineers to be global leaders.
Professor Brews Life-Saving Tea

ChemE Professor Emeritus Levente Diosady has created iron-fortified tea leaves to help fight iron deficiency, which is responsible for nearly 600,000 perinatal deaths and more than 100,000 maternal deaths a year. Professor Diosady was awarded a $250,000 grant for his research from the prestigious competition, Saving Lives at Birth: A Grand Challenge for Development. The international competition is designed to identify transformative prevention and treatment approaches for pregnant women and newborns in the developing world.

New Insights Into How Materials Transfer Heat Could Lead to Improved Electronics

Integrated circuits and other electronic parts have been shrinking in size and growing in complexity and power for decades. As circuits get smaller, it is increasingly difficult to dispel waste heat. Further advances in electronics will require ways of tracking heat transfer in products ranging from smart phones to computers to solar cells. In partnership with Carnegie Mellon University, Dan Sellan (MIE PhD 1T2) and Dean Cristina Amon from Mechanical & Industrial Engineering, have published new insights into how materials transfer heat through atomic vibrations in packets called phonons. Their findings could eventually lead to smaller, more powerful electronic devices.

U of T Engineers Win Grants from Grand Challenges Canada

U of T Engineering professors received strong support for health-related research in the developing world through grants from Grand Challenges Canada (GCC), a Government of Canada initiative to support bold ideas that promise to create a significant impact on global health. Four of eight grants awarded to U of T went to our professors: Timothy Chan (MIE), Radhakrishnan Mahadevan (ChemE), Javad Mostaghimi (MIE) and Edmond Young (MIE). Their research applications range from implementing a low-cost test for diagnosing malaria in Tanzania to reducing ambulance response times in Bangladesh. The U of T researchers received a collective $890,095 from GCC, through its Stars in Global Health program.

EngSci Students Win Spot in International Engineering Competition

A team of four Engineering Science students earned a spot to compete at the first-ever International Engineering Competition in September 2013 after placing second in the senior design team category at the Canadian Engineering Competition in March 2013. The team was made up of Jun Tao Luo (EngSci 1T4), Zane Luo (EngSci 1T4), Aleck Wu (EngSci 1T4) and Ling Zhong (EngSci 1T4). The competition was organized by the Canadian Federation of Engineering Students and featured 150 teams competing in seven categories – extemporaneous debate, consulting engineering, engineering communications, innovative design, junior design team, senior design team and re-engineering.

Centre for Global Engineering Unites Grad Students in Fight Against Malnutrition

The Interdisciplinary Approach to Global Challenges course offered through our Centre for Global Engineering (CGEN) brought together graduate students from across the University to explore solutions to childhood malnutrition in Bangladesh. Women in Dhaka earn a living primarily through full-time work in the city's garment industry, which limits their ability to breastfeed. The team of Marta Blackwell from the Munk School of Global Affairs; Micaela Collins from the Dalla Lana School of Public Health; Scott Genin (ChemE) from U of T Engineering; and Puja Madhok from the Rotman School of Management designed a multi-user breast pump with a sand-based heating device. The device pasteurizes breast milk, allowing it to be stored longer without refrigeration. The group proposed partnering with local clinics to give mothers working in the garment industry access to the pump twice a day.

International Symposium on Technology and Society Comes to U of T

U of T Engineering hosted a three-day conference in July 2013 entitled, ‘Smart World: People as Sensors,’ organized by the International Symposium on Technology and Society. The event attracted future-minded thinkers from around the globe, including ECE Professor Steve Mann, an innovator in computational photography. Attendees also heard from Ray Kurzweil, director of engineering at Google, and Marvin Minsky, co-founder of the Massachusetts Institute of Technology’s artificial intelligence laboratory. Participants debated a range of possibilities and implications of a ‘smart world,’ including its impact on daily life, privacy and government policy.
Global Cities

The University of Toronto is collaborating with the University of Sao Paulo (USP) on Global Cities, a proposed research plan to improve transportation systems – thereby enhancing the functioning, quality of life and productivity of cities. A delegation, including CivE Professor Eric Miller – research director of the University of Toronto Transportation Research Institute (UTTRI) – visited USP to plan a conference for October 2014. The conference will bring together researchers from both institutions to create the joint research program around the themes of innovation and the role of universities; infrastructure, resilience and sustainability; healthy cities; socio-economic polarization; and social diversity and economic development.

Globex Summer Program at Peking University

The Global Educational Exchange – Globex – is an initiative for educational exchange and research collaboration between Peking University (PKU) in Beijing, China, and select foreign schools of engineering (including Stanford University in the US and the University of Cambridge in the UK). Mechanical & Industrial Engineering (MIE) is the first Canadian partner, with seven MIE students participating in 2013. Through the program, our students were given the opportunity to take part in an intensive four-week summer program at PKU, exposing them to new ideas, research, people and culture. PKU is the top university in Mainland China, renowned for both teaching and research. It ranked among the top 50 schools internationally according to the Times Higher Education World University Rankings.

MIE Cross-Cultural Capstone Design Projects

Select undergraduates in our mechanical and industrial engineering programs collaborated with students at Peking University (PKU) in Beijing, China, throughout the year for their fourth-year course requirement in capstone design. Teams of students from both countries worked collaboratively on client-based projects, bringing together different global perspectives to create solutions to problems presented by companies such as General Motors, Bombardier Inc., Litens Automotive Group and Siemens. Our students travelled to China in November 2013 to meet their cross-cultural project teams and supervisors, with whom they were communicating virtually during the fall. PKU students visited Toronto in April 2014 for final group presentations. Incorporating this international element into the capstone design course further prepares our students to become innovative and globally-minded engineers.

Can Plants Teach us How to Build Better Solar Cells?

ECE Professor Ted Sargent, the Faculty’s vice-dean, research, has garnered $1 million through the Connaught Global Challenge to investigate what we can learn from plants about making the best use of the sun's energy. The funding allows Professor Sargent and co-investigators to merge previously disparate fields of study, potentially opening up a new avenue for creating inexpensive, efficient and clean energy capture technologies. Part of the funding will be directed towards hosting a distinguished visitor and a symposium. These endeavours promise to create new partnerships and research ventures in a groundbreaking field.

Science without Borders Sends Brazilian Students to U of T

The Faculty hosted 340 students from Science without Borders (SwB), a Brazilian government program that sends Brazilian university students for one year to study at the best international schools. The program enables our students and those from Brazil to share diverse perspectives, deepen knowledge and form collaborations that can lead to enriching experiences. U of T Engineering was the top program choice in the world for SwB applicants. Some students so enjoyed the program they extended their exchange by a year. In addition, U of T recently approved participation in SwB's PhD program. In March 2014, Dean Cristina Amon and several senior staff and faculty toured Brazil to help promote the new program. We are prepared to welcome our first group of doctoral students in fall 2014.