

6. Outreach, Collaboration and Influence

Successful collaborations and outreach allow us to influence and engage within our Faculty and the University of Toronto, and with our external community. U of T Engineering continues to nurture and establish new relationships and initiatives that strengthen our ability to create innovative learning environments, shape best practices in engineering education, recruit the most promising students and support groundbreaking research and knowledge translation.

To achieve our goals, we pursue strategic collaborations with industry, individuals, government and peer academic organizations to grow and communicate our expertise as educators, researchers and global leaders in advancing solutions to the world's most critical challenges. The Faculty's activities and partnerships extend across sectors and borders to attract internationally renowned scholars, enhance linkages with prospective donors and alumni and build strong connections with other stakeholders.

As Canada's premier engineering school and one of the world's best, we recruit top exchange students from around the globe. In 2014–2015, we welcomed 147 students from more than 30 peer institutions and sent 94 of our own students to 26 partner universities in 17 countries including Australia, Japan, China, Germany and Ireland. Our partnership with Brazil's *Ciência sem Fronteiras* program (formerly Science without Borders) continues to be successful and we remain the first choice for students studying in science, technology, engineering and math (STEM). Since the program's inception, 490 students have come to U of T Engineering. Whether inbound or outbound, educational exchanges allow for cross-cultural learning, diverse experiences and an enhanced world view of today's pressing issues. Exchanges are also a form of outreach that allow us to engage and influence internationally. We know that when students leave U of T Engineering they act as ambassadors in their home countries, disseminating information about our outstanding educational programs and student experience.

We continue to create opportunities to bring our outstanding research to the world and ensure our students expand their global fluency through dedicated initiatives for a fulfilling and comprehensive experiential education. In 2014–2015 we solidified relationships with peer universities in Brazil, China, Japan and Poland. We also signed a letter of intent (LOI) with CAF, the development bank of Latin America, to explore sustainable urban development. This past year we strengthened relationships in China by signing a memorandum of understanding (MOU) with Shanghai Jiao Tong University (SJTU) to support aerospace research and education collaboration. We also developed a 3+1+1 pilot program with Tianjin University that will allow some of the brightest students from Tianjin

to complete their fourth year of undergraduate studies at U of T Engineering and gain conditional acceptance to our MEng program in Electrical and Computer Engineering. We also signed an MOU with the Faculty of Transport at Poland's Warsaw University of Technology, to further educational and research collaboration. In conjunction with U of T Engineering's Department of Materials Science & Engineering, we also established an MOU with the National Institute for Materials Science (NIMS) in Tsukuba, Japan, in the area of nanomaterials and nanotechnology to promote the exchange of personnel and scientific and technical information, host joint symposia and expand research opportunities.

In addition to formal agreements with other peer institutions, we have numerous opportunities within the Faculty for students to address today's complex world issues. Through the Centre for Global Engineering (CGEN), we offer the Engineering and Globalization Certificate which enables our students to develop the wide range of professional skills necessary to solve the evolving technological challenges in an increasingly global society. The Interdisciplinary Approach to Global Challenges course — JRC1000Y — has worked on several initiatives including air pollution and childhood malnutrition in developing countries.

Outreach includes building meaningful relationships with other University of Toronto Faculties. This year, in addition to the Canada First Research Excellence Fund (CFREF) grant for *Medicine by Design* with the Faculties of Medicine, Pharmacy and Arts & Science, we also established the Translational Biology and Engineering Program (TBEP) within the Ted Rogers Centre for Heart Research (TRCHR) in collaboration with the Faculties of Medicine and Dentistry. We also established two new certificates in Communication and Renewable Resources, with course options in the Faculty of Arts & Science and the Faculty of Forestry.

The U of T Engineering alumni community is truly global and includes more than 47,000 graduates across North America, South America, Africa, Europe, Asia and Oceania. Our passionate alumni are proud of our Faculty, and we continue to build and cultivate these important relationships. Skule™ alumni are our ambassadors to the world, acting as our representatives and advocates and ensuring we are successful globally with our outreach, collaborative initiatives and resulting influence. Our Faculty's dedicated alumni contribute back to Skule™ in myriad ways, in time, expertise and financial gifts. Our alumni participate in a range of initiatives, such as assessing applications through our broad-based admissions process, mentoring student startups through The Entrepreneurship Hatchery and through generous donations to student scholarships, awards and now the Centre for Engineering Innovation & Entrepreneurship (CEIE). In 2014–2015, more than 167 alumni

participated in various committees and advisory boards at both the Faculty and University level, making a difference to U of T Engineering and our broader community.

Engaging new strategic industry partnerships and strengthening existing ones expands sources of funding and other resources that are available for Faculty initiatives. These partnerships are mutually beneficial, with industry collaborators gaining access to our cutting-edge research and the best academic researchers and facilities to create, test and commercialize new products, technologies and processes. Through departmental open houses, topic-specific research days and Faculty-wide programming, we continue to foster our relationships with industry, while increasing our outreach efforts to establish new ones. For example, this year we hosted the third annual U of T Engineering Industry Partners Reception, and will be holding a fourth event in November 2015. We also produced several new research inserts to support corporate outreach activities and industry partnerships.

We strengthened outreach and engagement with our alumni not only through strategic events and topical seminars throughout the Asia-Pacific, Middle East, U.S. and across Canada, but also through the creation of a new program that connects professors emeriti and retired staff with recent graduates. To build and support U of T Engineering alumni communities across the globe, in 2014–2015, Dean Amon hosted alumni events in North America (San Francisco, Palo Alto, Calgary and Vancouver), Turkey and Asia-Pacific (Hong Kong, Korea, Singapore and Taiwan). In Dubai, we hosted the first Dean's reception for parents, in conjunction with an alumni event. This was very well received and will act as a model for future events to engage parents of current international students in strategic regions. On campus we expanded engagement with current students — our future alumni — by creating new outreach initiatives and increasing participation in Graditude, our program for fourth-year graduates to give back to future students. This year we will increase the number of topical events held in the Asia-Pacific region and continue our efforts to strengthen the ties and traditions that connect us to our largest alumni base outside of Canada. We also aim to build a stronger sense of community among our alumni, and impact philanthropic giving in a positive and substantive way. To continue philanthropy in the region, in fall 2015 the Dean will travel to Hong Kong and Singapore to host several advancement events and meet with donors, alumni and other supporters of U of T Engineering and the University. Part of the focus of the trip will be to continue fundraising for the remaining \$20 million for the CEIE.

In 2014–2015, U of T Engineering experienced a highly successful fundraising year, securing another \$34.9 million in philanthropic and research gifts, including support of entrepreneurship in our aerospace program through a generous \$1 million gift from

Francis Shen, one of our dedicated and committed alumni, and a \$20.5 million gift from the Rogers Family — part of the unprecedented \$130 million gift to create the TRCHR. To date we have secured more than \$80 million towards the CEIE, which is one of the cornerstones of our Boundless Campaign. Our philanthropy success is a testament to the strong commitment of our alumni, friends, faculty, staff and students to our shared vision for our Faculty's future. We are committed to our fundraising to fully offset the remainder of the CEIE financing, drive research innovation, further enhance the student learning experience and pursue other Faculty initiatives, such as supporting endowed chairs and student scholarships.

OUTREACH, COLLABORATION AND INFLUENCE: YEAR 4 PROGRESS HIGHLIGHTS

6.1 Better understand the breadth of the Faculty's current outreach, collaborative and influencing efforts, then efficiently manage, support, develop and communicate these activities.

- Completed our main Faculty website redesign, meeting with stakeholders to assess their perceptions and needs of the site and working with test groups on the launch
- Started a survey for staff and faculty to assess the level to which different groups are communicating with students as part of a Faculty-wide initiative to enhance and create best practices for student communications
- Conducted a readership survey for our *Skulematters* alumni magazine, following the completion of the issue on entrepreneurship and commercialization, to ensure we are meeting the needs and interests of our alumni; feedback gathered was used to enhance the content and layout in the fall 2015 *Skulematters* highlighting "Women in Engineering: A Tradition of Excellence"
- Created a marketing insert distributed through *Skulematters* to more than 600 alumni in the Asia-Pacific region that demonstrates our many research, student and alumni connections in the region, fostering stronger ties between Asia-Pacific alumni and U of T Engineering
- Partnered with U of T Alumni Relations and Advancement Communications to refresh the Engineering Alumni Association's word mark; the renewed design will be launched after consultation with the U of T Engineering alumni community and will reflect the Association's new identity as the U of T Engineering Alumni Network
- Continued analysis and increased targeted media pitching of research stories along four key strategic communications themes by proactively offering our professors as experts for media
- Produced several new research inserts on water, advanced manufacturing, healthcare engineering, nanoengineering and sustainable mining to support corporate outreach activities and industry partnerships

6.2 Continue building meaningful involvement and relations with Engineering alumni.

- Hosted 68 alumni events, including 13 outside of Canada (USA, Turkey, Dubai and the Asia-Pacific (Hong Kong, Korea, Singapore and Taiwan))
- Showcased engineering leadership through BizSkule events in San Francisco, Calgary and Toronto that featured compelling speakers and panelists
- Strengthened outreach and engagement through strategic events and topical seminars in the Asia-Pacific, Silicon Valley and Middle East regions, and through a new initiative that connects professors emeriti and retired staff with recent graduates
- Continued supporting alumni volunteerism, with more than 167 alumni participating in various committees and advisory boards at both the Faculty and University level
- Partnered with the Engineering Society to launch Skule™ Alumni Outreach (SkuleAO), a student-run program to assist alumni who wish to support and enhance the experiences of current students
- Engaged 30 alumni with the alumni assessor program to review applicant personal profiles as part of the Faculty's broad-based admissions process

6.3 Strengthen relationships with other University of Toronto Faculties.

- Established two new certificates in Communication and Renewable Resources, with course options in the Faculty of Arts & Science and the Faculty of Forestry
- Launched the Master's/PhD collaborative program in Engineering Education with the Ontario Institute for Studies in Education (OISE)
- Signed an Interdivisional Teaching Agreement with the Faculty of Arts & Science, which includes an academic framework to enable the two Faculties to work together to achieve our educational mission for the benefit of students and faculty, and allow us to focus on pedagogy rather than funding (June 2015) — including a number of course slots guaranteed at the Faculty of Arts & Science for engineering students
- Collaborating with the Faculties of Medicine, Pharmacy and Arts & Science, and other partners, was awarded the Canada First Research Excellence Fund (CFREF), resulting in a \$114 million grant to the U of T for *Medicine by Design* (July 2015)
- Offered through the Centre for Global Engineering (CGEN), JRC1000Y — the Interdisciplinary Approach to Global Challenges course which brought together graduate students from U of T Engineering, the Dalla Lana School of Public Health, the Rotman School of Management and the Munk School of Global Affairs
- Established the Translational Biology and Engineering Program (TBEP) in collaboration with the Faculties of Medicine and Dentistry (April 2015)

6.4 Further develop sustainable collaborations with industry partners, and expand established partnerships with affiliated hospitals and research institutes.

- Hosted the third annual U of T Engineering Industry Partners Reception to celebrate existing collaborators and welcome new ones, with more than 120 people attending, with a fourth event planned (November 2014)
- Actively pursued opportunities with top corporate prospects to leverage partnerships and add value to research and technology development
- Engaged through the University of Toronto Institute for Multidisciplinary Design & Innovation (UT-IMDI), numerous industry clients such as Pratt & Whitney and Magellan Aerospace for summer projects and multidisciplinary capstone design projects
- Continued to offer mentorship and sponsorship opportunities for alumni in industry through The Entrepreneurship Hatchery
- Established *Medicine by Design*'s inaugural international partners, including China's Peking University, Technion Israel Institute of Technology, the United Kingdom's Regenerative Medicine Program, Sweden's Karolinska Institutet and Germany's REBIRTH Cluster of Excellence at Hannover Medical School
- Published our second external annual report, *Innovation Lives Here – Year in Review 2015*, in summer 2015 to share key achievements with industry partners, alumni and prospective donors

6.5 Further develop connections with local communities, businesses and the City of Toronto.

- Contributed to better urban development through the creation of the upcoming iCity, which will allow planning officials to demonstrate how different transportation projects, such as a new subway or LRT line, or building “complete streets,” will affect communities and the surrounding city
- Worked to improve social services with the Centre for Social Services Engineering (CSSE), which applies industrial and systems engineering techniques — including mathematical analysis, big data and machine learning — to improve the delivery of goods and services to vulnerable populations in urban centres
- Participated in Scotiabank's Nuit Blanche, highlighting the CEIE's 276-foot street art installation (October 2015)
- Continued for a fifth year the Sky Garden, a roof-top garden on the Galbraith Building that in 2015 donated more than 225 kilograms of vegetables to local charitable organizations
- Engaged and worked with local communities through the University of Toronto Transportation Research Institute (UTTRI), with several initiatives including a workshop on Travel Methods for the Greater Golden Horseshoe (October 2014), the Intelligent Transportation Systems Research Day (December 2014) and the fourth Freight Day Symposium (February 2015)

6.6 Build upon high school outreach and continue to assess our pre-university activities with the goal of optimizing faculty and student involvement.

- Inspired more than 7,000 youth through our pre-university outreach programs, including the In-School Workshop program for students in grades three to eight, March Break programs, Saturday workshops, and the Da Vinci Engineering Enrichment Program (DEEP), reaching students in Grades 3 through 12 and allowing participants to explore cutting-edge engineering applications such as sustainable energy, biomedical engineering and robotics
- Contributed to the engagement of faculty and staff with the first “Engineering Family Outreach Day”, inviting children of staff and faculty from Grades 1 through 8 to take part in engaging, hands-on activities related to STEM
- Offered for a fourth year the Girls’ Leadership in Engineering Experience (GLEE), which drew 88 female students with offers of admission and engaged them in a weekend of community-building activities; 78 of these participants accepted their offer of admission (a ratio of acceptances to attendees of 89% in 2015 vs. 77% in 2014)

6.7 Develop strategic relationships with desirable peer, national and international Engineering schools.

- Participated for the third year in the Global Educational Exchange (Globex) initiative with Peking University
- Established U of T Engineering as a leading partner in Brazil’s *Ciência sem Fronteiras* program, welcoming 490 students from September 2012 through December 2015
- Hosted 64 exchange students from universities around the world and sent 94 U of T Engineering students outbound to 26 different partner institutions in Europe, Asia, Australia, India, Mexico, Turkey and Israel
- Enhanced our partnership with Technion Israel Institute of Technology for graduate student/postdoctoral fellow exchanges and accelerated joint research initiatives, supported by a \$1 million gift from alumnus donor Lyon Sachs
- Further strengthened our relationship with Shanghai Jiao Tong University (SJTU), China through an MOU to support aerospace research and education collaboration
- Developed a 3+1+1 pilot program with the School of Electronic Information Engineering, Tianjin University, China that will allow select top students from Tianjin to complete their fourth year of undergraduate studies at U of T Engineering, with conditional acceptance to our MEng program in ECE
- Signed a LOI with CAF — the development bank of Latin America — to explore innovative methods for sustainable urban development
- Hosted a high-level delegation from Poland that included members of Parliament, the Senior Trade Commissioner, Commercial Department, Embassy of Canada in Warsaw, and professors from the Faculty of Transport, Warsaw University of Technology; culminated in the signing of an MOU to further education and research collaboration

- Established an MOU with the National Institute for Materials Science (NIMS) in Tsukuba, Japan

6.8 Increase influence in government and public policy decisions.

- Worked with the Office of the Vice-President, Research and Innovation (OVPRI) and the Ontario Council of University Research (OCUR) to successfully make the case to Ontario's Ministry of Research and Innovation to improve transparency in its review process for the Ontario Research Fund-Research Excellence (ORF-RE) program
- Continued engagement with the Ontario Centres of Excellence to provide matching support for the Heffernan Entrepreneurship Fellowships
- Presented highlights of U of T Engineering sustainability research to NSERC staff in Ottawa (February 2015)

6.9 Develop a culture of stewardship and gratitude to the alumni and donors who provide philanthropic support to the Faculty.

- Publicly recognized major donors through communications and celebration events
- Organized our fourth Annual Dean's Dinner to recognize donors and acknowledge their generous gifts in support of the Faculty (September 2015)
- Celebrated eight alumni at the U of T Arbor Awards (September 2015)
- Fostered dialogue with alumni and friends in support of our Engineering Campaign goals
- Planned and hosted a dynamic groundbreaking ceremony for the Centre for Engineering Innovation & Entrepreneurship (CEIE) that engaged donors and the broader U of T community (June 2015)
- Held the Engineering Alumni Association Awards Dinner to celebrate and recognize alumni for their outstanding achievements (November 2015)

6.10 Encourage the participation of administrative staff in professional associations related to their area of expertise, and in the mentoring programs offered by the University.

- Ensured that senior administrative staff were nominated for and participated in the University's New Manager Academy and Business Manager Leadership Program
- Through regular meetings of departmental business officers and our new Human Resources office, explored opportunities for formal and informal initiatives to encourage staff development
- Continued to foster collaboration and communication between Human Resources, the Business Administration group and the Engagement & Development Network to share information and best practices