

2. Culture of Excellence

Our culture of excellence is integral to all that we do as a Faculty and all that we plan to achieve. We have established ambitious goals in key areas of research, education, outreach and collaboration, as well as resource management. When strengthened together, these components have had an exponential impact on our standing as a leader among the world's very best engineering schools in our discovery, creation and transfer of knowledge and technology through teaching and research.

U of T Engineering is continually ranked as the top Canadian engineering school in all international rankings. This is but one measure we use to demonstrate our excellence. We recently published our eighth *Annual Report of Performance Indicators*, which provides a comprehensive analysis of our tremendous progress over the past decade, and also demonstrates how we are meeting the ambitious goals of this Academic Plan. We use these indicators and metrics as tools in our data-driven decision-making process to not only assess our progress, but also set measurable goals and adjust our actions as required.

Diversity plays a critical role in driving innovation, which is at the heart of engineering. It enhances the student experience and enriches the engineering profession with different perspectives and ideas. Our Faculty has made progress in increasing cultural and gender diversity in both our faculty and student complement. We have exceeded our goal of 25 per cent international students, with an undergraduate total of 27.9 per cent and 33.6 per cent graduate students, respectively. Through proactive recruitment efforts, we have also increased the number of female students and faculty. For the past three years, women have comprised more than 30 per cent of our first-year cohort, reaching an historic 40.1 per cent in 2016, up from 23.2 per cent in 2011. Women now make up 30.0 per cent of all undergraduate students, up from 23.8 per cent five years ago and 21.2 per cent in 2007. We have made more modest gains among our graduate population, with women making up 26.1 per cent of master's and PhD students, up from 24.9 per cent ten years ago. However, we expect that proportion to increase over the next few years as our current undergraduate classes complete their degrees and consider pursuing graduate studies.

Over the past 10 years, our Faculty has increased our women professoriate from 9.5 per cent to 21.0 per cent. This has been accomplished through strategic second-hire faculty lines and broad multidisciplinary searches. In 2013–2014, and again in 2015–2016, we conducted Faculty-wide, multidisciplinary academic searches targeted at interdisciplinary, diversity, research and teaching excellence. Through these searches, we hired seven outstanding women faculty with budgetary cross-appointments in two academic units. Since the beginning of this Academic Plan in 2011, U of T Engineering has hired 18 women

faculty. While we have made much progress, there is still more work to do to make our Faculty a reflection of the community in which we live.

Our faculty continue to distinguish themselves among our peers, consistently receiving more than 20 per cent of the major national and international honours and awards given to Canadian engineering professors, despite accounting for only 5.5 per cent of the nation's engineering faculty. These awards range from early-career to lifetime achievement, and recognize excellence in research and education, as well as contributions to the profession.

Over the past five years, all eight of our departments, institutes and divisions have undergone external reviews as part of the University's quality assurance process. Reviewers all spoke highly of the calibre of our programs and students, as well as the excellence and dedication of our faculty and staff. As part of our commitment to continuous improvement, academic unit heads annually report at Chairs and Directors meetings on progress towards addressing recommendations made in their external review reports. We have taken this process one step further and commissioned internal reviews of programs such as the Institute for Leadership Education in Engineering (ILead), Engineering Communication Program (ECP), Lassonde Mineral Engineering Program (LMEP), and Cross-Disciplinary Programs Office (CDP). These reviews enable us to examine existing programs, set goals for the future and create succession plans.

Over the course of this Academic Plan, we have established a number of task forces and working groups to review and make recommendations on key areas of importance. These include core first-year curriculum, academic and student advising, mental health strategies, makerspaces, and the creation of an Institute for Engineering Education. With the exception of the creation of an Institute for Engineering Education and makerspace review, which are still in progress, we have either implemented or are in the process of implementing recommendations from each report that will have a measurable impact on the student experience.

Professional development support for faculty and staff is another area that our Faculty continues to make progress on. We developed several workshops and luncheon panel series to assist early-career faculty in preparing funding applications, as well as peer review processes within the departments. We also created communities of practice for our student services staff, business officers and communications personnel. In addition to establishing groups from which to draw expertise, each community also sources experts to present workshops in key area of professional development.

Our Skule™ alumni are our ambassadors to the world. We cultivate opportunities for their involvement and rely on their expertise and perspective to strengthen our global reputation and inspire the next generation of engineering innovators and leaders. We

established Engineering Alumni Association chapters in Calgary, the Silicon Valley and Hong Kong, and host professional development, networking and recruitment events around the world. Alumni continue to volunteer as mentors in The Entrepreneurship Hatchery and on advisory and industry boards. Their engagement ensures that we bring the very best of Skule™ to all that we do.

CULTURE OF EXCELLENCE: ACADEMIC PLAN PROGRESS HIGHLIGHTS

2.1 Maintain a strong Faculty vision for excellence in engineering education and research.

- Consistently recognized as the premier Canadian engineering institution and one of the best in the world in all international rankings.
- Received an average of 26% of major national and international awards won by engineering professors in this country from 2011-2015.
- Earned 19 major education awards at university, national and international levels since 2010.
- Advocated the creation of new space on the St. George campus with the design and construction of the Centre for Engineering Innovation & Entrepreneurship (CEIE) to provide a home for multidisciplinary research institutes, prototyping and fabrication facilities as well as a dedicated space for student clubs and teams; the CEIE will set a new standard for engineering education and research.

2.2 Measure our progress in achieving our mission and vision.

- Continuously assessed our progress through the development and publication of our *Annual Report of Performance Indicators*, the eighth edition of which was published in September 2016.
- Annually reviewed our actions and progress towards achieving our Academic Plan goals; shared through Faculty Council presentations, faculty and staff newsletter and website.

2.3 Increase diversity, focusing on gender diversity among students and faculty.

- Progressively increased the percentage of women professors to 21.0% (2016–2017) up from 15.5 % (2011–2012) and 9.5% in 2005–2006; adding 29 women professors to our ranks in the past decade.
- Hired seven outstanding women professors through Faculty-wide, multidisciplinary searches, with budgetary cross-appointments in two academic units.
- Increased gender diversity among undergraduate students: women made up 40.1% of entering first-year engineering students in fall 2016, the third year in a row that women have comprised more than 30% of our entering class; up from 23.2% in fall 2011.
- Made moderate gains in increasing the number of female graduate students to 26.1% compared to 24.9% in 2011.

- Increased the proportion of international graduate students to 31.6% in 2016, up from 19.3% in 2011.
- Surpassed revised goal of 27% international undergraduate students (original goal 25 %) with 27.9% in 2016, up from 19.1% at the start of the Academic Plan and 9.8% in 2006.
- Continued to offer robust outreach initiatives to support strategic recruitment; for example, 91% of the 87 female high school students who attended the 2016 Girls' Leadership in Engineering Experience (GLEE), an event for female high school students with offers of admission to the Faculty, subsequently accepted our offers, (up from 77% in 2013).

2.4 Support the development of faculty members as outstanding engineering educators and researchers.

- Won a remarkable number of major emerging leader/early career awards, including the Ontario Professional Engineers Awards Young Engineer Award and the E.W.R. Steacie Memorial Fellowship.
- Enhanced the nomination process for discipline-specific awards at the departmental/institute level by establishing awards committees in each unit.
- Hosted the biannual Educational Technology Workshop "EdTech" to help instructors share best practices for innovative teaching and learning.
- Created the Percy Edward Hart and Erwin Edward Hart Professorships from proceeds of a \$20-million endowment from the Hart Trust: awarded seven faculty members, each within the first 10 years of his/her academic career, \$75,000 per year for three years for research and graduate student support.
- Established a departmental peer review process and Faculty-wide workshop lunch series to support and guide faculty members in the development of their NSERC Discovery Grant, Discovery Accelerator Supplements and Research Tools and Instruments grant applications.
- Implemented workshops and panel sessions around all major grant programs, featuring experts who served on review committees and/or had great success in the program in the past.

2.5 Support our students by strategic efforts to build upon educational, extracurricular and co-curricular experiences.

- Launched our interdisciplinary graduate collaborative program (MAsc and PhD) in Engineering Education in partnership with Ontario Institute for Studies in Education (OISE) in 2014; currently has 12 graduate students.
- Reached a record 790 engineering students participating in the Professional Experience Year in 2015–2016, up from 581 in 2011–2012 and 447 in 2006-07.
- Continued to increase minor enrolment and completion rates, with 32% of graduating students completing a minor in 2015–2016, up from 19% in 2011–2012.
- Grew the number of students graduating with an Engineering Business minor or certificate to 34% (356 students) since its launch five years ago.

- Created the Entrepreneurship Hatchery in 2011 to nurture and launch a culture of entrepreneurship within the Faculty of Engineering and the University; since inception have accepted 423 students and 219 teams in the summer cohort.

2.6 Maximize the skills of our staff members and create opportunities to strengthen their performance and develop them as integral contributors to the Faculty's mission.

- Continued to recognize the successes and contributions of staff through five Faculty awards since 2009.
- Encouraged secondments throughout the Faculty, as appropriate, to enable staff to develop new skills.
- Contributed to staff skill development for business administrative staff and student support staff through networking groups and presentations from University experts on relevant issues, policies and procedures.
- Established a Human Resources office in 2013, and engaged in discussions with business officers and Chairs and Directors to assess needs and priorities in this area.
- Secured funding and related support from the Office of Student Life for a professional development day for all registrarial staff at U of T; held in November 2012 with more than 300 staff attending from the three campuses.
- Established a series of workshops through the Organizational Development and Learning Centre (ODLC) for staff advisers and student life professionals in 2012–2013; ODLC now has a number of courses to assist staff working closely with students.
- Offered staff sessions on the services/mental health support provided by the Employee and Family Assistance Program and offered a mental health session to chairs and directors to assist in supporting staff and faculty.
- Continued to foster the skills of staff members and faculty through the Engineering Engagement & Development Network. This cross-Faculty group helps staff and faculty engage in and become more aware of activities and events happening across the Faculty and also provides professional development workshops, webinars and discussion forums.

2.7 Increase staff retention and enhance succession planning within the Faculty.

- Fostered collaboration and communication between Human Resources, the Business Administration group and the Engagement & Development Network to share information and best practices.
- Established a working group of business officers and human resources staff who meet regularly to share information and best practices.
- Increased HR service delivery and resources for staff.

2.8 Build upon alumni involvement with the Faculty to share their world-based expertise and perspectives, to strengthen our reputation and to inspire the next generation of U of T engineers towards innovation and excellence.

- Strengthened ties with our alumni throughout the world by establishing Engineering Alumni Association chapters in Calgary, Silicon Valley and Hong Kong.

- Hosted alumni events in North America (San Francisco, Palo Alto, Calgary and Vancouver), Turkey and Asia-Pacific (Hong Kong, Korea, Singapore and Taiwan).
- Held 84 alumni networking and professional development events in 2015–2016, up from 61 in 2013–2014.
- Increased awareness of the positive impact alumni volunteerism has on current students and faculty by launching a communications campaign to promote volunteer opportunities and highlight the benefits of giving back to U of T Engineering.
- Grew our Alumni Mentorship Program in 2015–2016, with 161 mentors and 280 mentees taking part — increases of 33% and 16% respectively over the previous year.
- Expanded engagement with current students — our future alumni — by creating a new Alumni Outreach Director position on the Engineering Society, initiating the inaugural Engineering Society Heritage Awards Celebration of current and past officers of the Engineering Society, and increasing participation in Gratitude, which encourages graduating students to give back for future students.

2.9 Enhance governance processes, cyclical reviews and quality assurance processes.

- Received accreditation through the Canadian Engineering Accreditation Board of all nine engineering programs; next review scheduled for the 2018–2019 academic year.
- Conducted external reviews of all eight of our academic units over the course of the past five years; overall reviewers spoke highly of the calibre of our programs and students, as well as the excellence and dedication of our faculty and staff.
- Conducted several internal reviews at either the Decanal or departmental level for units and programs such as: the Institute for Leadership Education in Engineering (ILead); Lassonde Mineral Engineering Program (LMEP); Cross-Disciplinary Programs (CDP); and the Engineering Communication Program (ECP).
- Reviewed the Faculty Constitution and ensured alignment with University terms of reference and policies, and with editorial updates to modernize and standardize the language.
- Strengthened Faculty governance and external review processes through the development of guidelines, templates and standardized communications (e.g., itineraries, timelines, report outlines).
- Delivered governance orientation sessions to relevant stakeholders.
- Shared annual progress reports on department and institute external review recommendations at regularly scheduled Chairs and Directors meetings.

2.10 Strengthen communications both internally and externally.

- Continued to inform key stakeholders about the Faculty’s activities and progress through regular newsletters to students, faculty and staff, and alumni; recently redesigned templates to better engage with readers through a more user friendly format.
- Redesigned quarterly alumni e-newsletter, beginning with the fall 2015 issue, which resulted in a 37.3% open rate, 15 percentage points higher than the industry benchmark. This led to an additional 1,100 alumni readers per issue.
- Created an online resource for staff and faculty to address e-mail volume concerns raised by students to better communicate with engineering students: uoft.me/engcomms. This resource — which includes a diagnostic tool, best practices, a sample communication plan

and a variety of downloads — was developed in consultation with students, staff and faculty within U of T Engineering.

- Increased collaboration, knowledge-sharing and skills-building for the Faculty communicators who make up the Engineering Communications Network (ECN) through more frequent gatherings, professional development and ongoing use of the ECN online community.
- Continued to disseminate exceptional stories on the achievements of the students, faculty, staff, alumni and industry partners who form our vibrant community via integrated internal and external communications strategies, including enhanced brand journalism, customized pitching and expanded social media reach.
- Refreshed and relaunched Faculty website with a clean look and feel to improve user experience, mobile accessibility and site performance, and continue to unify the Engineering web experience by applying standardized templates, consistent visual branding and improved navigation across all sites.

2.11 Continue to acknowledge the accomplishments of our students, faculty and administrative staff.

- Recognized the excellence of our staff and faculty through a number of awards for research, teaching, leadership and dedication to improving the student experience; these awards are presented at the annual Celebrating Engineering Excellence event, held each spring.
- Increased coverage of student and faculty accomplishments through the U of T Engineering News, *The Engineering Newsletter* and the Faculty's websites.
- Ensured senior administrative staff were nominated for and participated in the University's New Manager Academy and Business Manager Leadership Program.