Selected Achievements Under the Academic Plan

The Faculty of Applied Science & Engineering's five-year *Academic Plan, 2011–2016* provides a framework that guides us in our vision to be a leader among the world's very best engineering schools. Approved by Faculty Council in October 2011, the Academic Plan was developed through a highly consultative planning process involving faculty, staff, students, alumni and University stakeholders.

As we enter the final year of the Academic Plan, we have already made tremendous progress in achieving, and in many cases exceeding, the ambitious goals we set out in this pivotal document. This section highlights our accomplishments in 2014–2015 in seven key areas: positioning; culture of excellence; educating future engineers; student experience; research foci; outreach, collaboration and influence; and resource allocation.

The full Academic Plan is available at: uoft.me/engacademicplan. Our *Year Three: Progress and Achievements* report is available at: uoft.me/yearthreeprogress.

Positioning

Effectively sharing U of T Engineering's success stories, research advances and education innovations is crucial to increasing our profile and reputation as a leader among the top global engineering schools. In 2014–2015, we focused and refined our communication strategies to support the Faculty's priorities and seize emerging opportunities. We also enhanced and upgraded the channels we use to implement our communication strategies, including our family of websites and social media presence.

Progress Highlights

- Distinguished ourselves as the top engineering school in Canada and among the top 10 among North American public universities across all international rankings.
- Launched a "Women in Engineering" media campaign, which yielded 120 media stories across Canada and around the world and reached more than 653,000 people through social media.
- Unveiled our new Faculty website in May 2015 with a more responsive, mobile-friendly design and improved navigation, content and marketing.
- Grew media coverage to 12,985 stories, an increase of 38 per cent from 2013–2014, with more than half in international media outlets.
- Expanded use of social media, increasing average monthly Twitter impressions by 14 per cent to 50,000 (from 44,000 in 2013–2014) and doubling engagement to 2 per cent (from 1.1 per cent in 2013–2014). We also increased our Facebook followers by 105 per cent to 2,043 (from 999 in 2013–2014) and launched an Instagram account managed by Engineering Strategic Communications to reach a broader audience.
- Published our second external *Year in Review*, a strategic piece for key donors, industry partners and secondary external audiences, such as parents, media and the general public.

Culture of Excellence

Promoting and nurturing a culture of excellence is central to our Faculty's vision. Our outstanding reputation attracts the brightest faculty, researchers and students from Canada and around the world. The increasing international recognition of our faculty, students and alumni reflects the high calibre of our knowledge creation and transfer, education, research innovation and impact.

Progress Highlights

- Earned 25.0 per cent of major awards received by Canadian engineering Faculties in 2014 — three times as many as any other Canadian engineering school — with only 5.5 per cent of overall faculty members. In 2013, we won 21.3 per cent of major awards with 5.6 per cent of faculty members.

- Received major international recognition for excellence, including:
  - the 2015 L'Oréal-UNESCO "For Women in Science" Laureate for North America;
  - the American Society for Engineering Education's Top 20 under 40;
  - the Alexander von Humboldt Fellowship for Experienced Researchers; and
  - a fellowship from the Institute of Medicine of the U.S. National Academies.
- Garnered early career awards from the Ontario Professional Engineers Young Engineer Award and the Natural Sciences and Engineering Research Council's E.W.R. Steacie Fellowship.
- Recognized for excellence within the University of Toronto, including:
  - Mark Fox (MIE): Distinguished Professor of Urban Systems Engineering;
  - Frank Kschischang (ECE): Distinguished Professor of Digital Communications;
  - Chul Park (MIE): Distinguished Professor of Microcellular Engineered Plastics; and
  - Ted Sargent (ECE): University Professor.
- Increased diversity among our student body, with women comprising nearly one-third of the first-year undergraduate class in 2014–2015, the highest percentage of any entering engineering class in Canada.
- Attracted students from 109 countries representing every continent except Antarctica. We reached 27.1 per cent international enrolment at the graduate level, exceeding our goal of 25.0 per cent.
- More than doubled the number of female faculty members to 44 since 2005–2006, increasing the overall proportion of women professors to 18.0 per cent. Women now comprise 31.6 per cent of the Faculty's assistant professors and 25.0 per cent of associate professors.
- Strengthened admission selectivity, with the entering average of Ontario high school students in our first-year class rising to 92.4 per cent, from 91.7 per cent in 2013 and 85.1 per cent in 2005.
- Enhanced the undergraduate admissions process by introducing a personal video profile to gain a more complete understanding of each applicant's strengths and potential.
- Published the seventh *Annual Report of Performance Indicators* to assess the progress we have made against our Academic Plan goals.

Educating Future Engineers

Building on the success of our innovative undergraduate and graduate programs, we attracted a diverse and high-achieving cohort of students from across Canada and internationally. We have reviewed and enhanced our leading-edge offerings to ensure our students graduate with the technical and professional competencies, entrepreneurial experience and multidisciplinary and cross-cultural outlook they need to become global engineering leaders.

Progress Highlights

- Increased graduate enrolment to 2,194 students after surpassing in 2013–2014 our Academic Plan goal of 2,000 graduate students, two years ahead of schedule. This growth drove our undergraduate-to-graduate ratio closer to our goal of 3 to 2 by 2030.
- Developed a new MEng in Biomedical Engineering and emphases in the cutting-edge areas of Sustainable Energy and Advanced Manufacturing.
- Launched collaborative program for master's and doctoral students in Engineering Education with the Ontario Institute for Studies in Education.
- Received recommendations from the Dean's Task Force for Core Curriculum Review in December 2014 and appointed a working group to guide and oversee the implementation of these recommendations to improve our first-year curriculum and overall student experience.
- Increased undergraduate recruitment efforts in South and Central America, with events in Peru, Colombia, Costa Rica, Guatemala and Brazil, to ensure a geographically diverse student body with a global outlook.
- Experienced tremendous growth in minor enrolment and completion. For example, nearly one-third of all graduating students in 2014–2015 completing a minor or certificate in Engineering Business.
- Launched several undergraduate cross-disciplinary programs in 2014 to enhance opportunities for students to customize their degrees, including:
  - a minor in Biomedical Engineering;
  - a certificate in Engineering Leadership; and
  - a certificate in Renewable Resources Engineering.
- Developed and received governance approval for several new programs to begin in 2015, including:
  - a minor in Nanoengineering;
  - a certificate in Engineering Communication; and
  - an EngSci major in Robotics.
- Enhanced experiential learning opportunities with team-based, industry-sponsored multidisciplinary design project course. More than 150 students participated in 37 projects sponsored by 23 clients.

Student Experience

In addition to academic excellence, one of the differentiating features of our Faculty is our commitment to provide a superb student experience. This extends beyond what happens in the classroom to the diverse co- and extra-curricular opportunities our students have to develop professional and leadership competencies, gain international experience and nurture their interests and passions.

Progress Highlights

- Increased Professional Experience Year (PEY) placements to 724, from 705 in 2013–2014 and 374 in 2005–2006, with more than 60 of these students completing their work terms outside Canada.
- Enhanced teaching and design facilities, upgraded undergraduate laboratory space, provided more study space and streamlined the process for student club funding.
- Increased the first-to-second-year retention rate to 96.3 per cent by enhancing student success programs, including Success 101, First-Year Foundations and Peer-Assisted Study Sessions (PASS).
- Added online versions of select courses to provide more flexibility to students.
- Supported 42 student entrepreneurs through The Entrepreneurship Hatchery's summer program, culminating in investor pitches in September 2014 at Demo Day.
- Launched a new Coursera course called Wind, Waves and Tides: Alternative Energy Systems in October 2014, which enrolled more than 11,000 people.
- Supported initiatives through our Engineering Instructional Innovation Program (EIIP) to:
  - create parallel classrooms that will enable UTIAS and MIE to offer integrated and complementary courses to MEng students; and
  - enhance engineering education and re-energize engineering mathematics instruction through improved and focused teaching techniques.

Research Foci

With a reputation for excellence and innovation in research and more intensive efforts in fundraising, the Faculty garnered record research funding in 2013–2014 from industry, government, international funders and other sources. We also enhanced multidisciplinary collaborations within our community, supported undergraduate- and graduate-student research, built external partnerships, increased our funding base and encouraged donor support to further enable research priorities.

Progress Highlights

- Attracted $81.6 million in research funding in 2013–2014, our highest annual total to date and a 21 per cent increase from the previous year.
- Achieved a new record of $27.4 million in Tri-Council funding, putting the Faculty on track to meet our revised goal of $32 million by 2015–2016. We set this new target after reaching our previous goal of $25 million in 2012–2013, three years earlier than anticipated.
- Succeeded in major provincial and federal research grant competitions, including two new NSERC CREATE grants in 2014–2015, bringing the total number of CREATE grants our Faculty leads to nine.
- Earned four new Canada Research Chairs.
- Enhanced multidisciplinary research by establishing the Ontario Centre for Characterization of Advanced Materials (OCCAM) in summer 2014 and the Translational Biology and Engineering Program (TBEP) in 2015, and ramping up the Toronto Institute of Advanced Manufacturing (TIAM) and University of Toronto Transportation Research Institute (UTTRI).
- Created meaningful opportunities for faculty to learn best practices in research, build relationships with industry partners and prepare successful proposals through forums such as lunch-time panels.
- Joined researchers and clinicians from U of T and partner hospitals in Medicine by Design. Funded by a $114-million grant from the Canada First Research Excellence Fund, this groundbreaking initiative will enhance U of T's position as a leader in regenerative medicine.

Outreach, Collaboration & Influence

The Faculty's activities, collaborations and impact extend across institutions, sectors and borders. They help us attract academically successful students and internationally renowned scholars, build strong industry partnerships and enhance relationships with alumni and prospective donors.

Progress Highlights

- Added value to alumni communities around the world through strategic events and topical seminars in Asia-Pacific, the Middle East, the United States and across Canada, and through a new program that connects professors emeriti with recent graduates.
- Expanded our popular BizSkule speaker series to Calgary, increasing opportunities to connect successful, business-savvy engineering alumni at different stages of career development. BizSkule topics ranged from the future of wearable technology to leadership for challenging times.
- Hosted in Dubai the first Dean's reception for parents and alumni, which will serve as a model for future events to engage parents of current international students in strategic regions.
- Enhanced focused recruitment efforts and events, such as the Girls' Leadership in Engineering Experience (GLEE) and the new Young Women in Engineering Symposium (YWIES), which offer admitted and prospective female students important opportunities to interact with our extraordinary students, faculty and alumni.
- Inspired more than 7,000 pre-university students through DEEP Summer Academy, Saturday workshops, March Break programs, in-school workshops and special events.
- Increased efforts to attract excellent Canadian master's and doctoral students through cross-country graduate fairs and a Faculty-wide recruitment weekend.
- Gained momentum in our $200 million fundraising campaign for Boundless: The Campaign for the University of Toronto by adding another $27.9 million in donations in 2014–2015.
- Increased undergraduate student engagement in the Graditude campaign to 42 per cent, up from 33 per cent in 2014.
- 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.

Resource Allocation

Our resources have a direct impact on our ability to achieve the ambitious goals in our Academic Plan. In 2014–2015, we creatively and strategically used all our resources, including budget, space, infrastructure and personnel, to support progress toward achieving our Academic Plan goals.

Progress Highlights

- Maintained a strong financial position, with total revenue increasing by 7.5 per cent to $197.6 million, from $183.8 million in the 2013–2014 fiscal year.
- Awarded $4.9 million in 2014 and more than $4.5 million in 2015 from the Dean's Strategic Fund (DSF) for projects and collaborations that have a broad impact within the Faculty.
- Began construction on the Centre for Engineering Innovation & Entrepreneurship (CEIE) in June 2015.
- Maximized our spaces and strategically renovated and repurposed select facilities. Examples include a Technology Enhanced Active Learning (TEAL) room in the Sandford Fleming Building that serves as a prototype for active and collaborative learning spaces in the CEIE, and new study seating and studying spaces in the Bahen Centre and the Wallberg Building.