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Diversity is critical to the engineering profession and a core value of our Faculty. A vast array of perspectives and ideas deepen the creative process, enrich our learning environment, accelerate innovation and prepare our students for the global marketplace.

We have made tremendous progress in advancing diversity and inclusivity within both our Faculty and the broader profession. In fall 2016, our incoming first-year class included 40% women – the highest proportion of any engineering school in Canada – bringing the total proportion of women across all of our undergraduate programs to 30%. These advances are driving Engineers Canada toward its ‘30 by 30’ objective of 30% female representation among newly licensed engineers by 2030.

Among our faculty, women engineers lead many of our multidisciplinary research centres and institutes, and hold positions of senior leadership at the University level. Twelve of the Faculty’s 31 Canada Research Chairs are women, and in the past year, we hired 14 outstanding professors, nine of whom are women. Their areas of expertise span the breadth and depth of the profession.

We are committed to working with Indigenous communities to address educational gaps between Indigenous and non-Indigenous peoples. Building on our established outreach and recruitment activities that inspire students to engage in STEM subjects, we have created a steering committee for the discussion of ideas, information and initiatives to ensure a welcoming and supportive environment for Indigenous students, faculty, staff and communities, and to improve access to engineering education for Indigenous peoples.

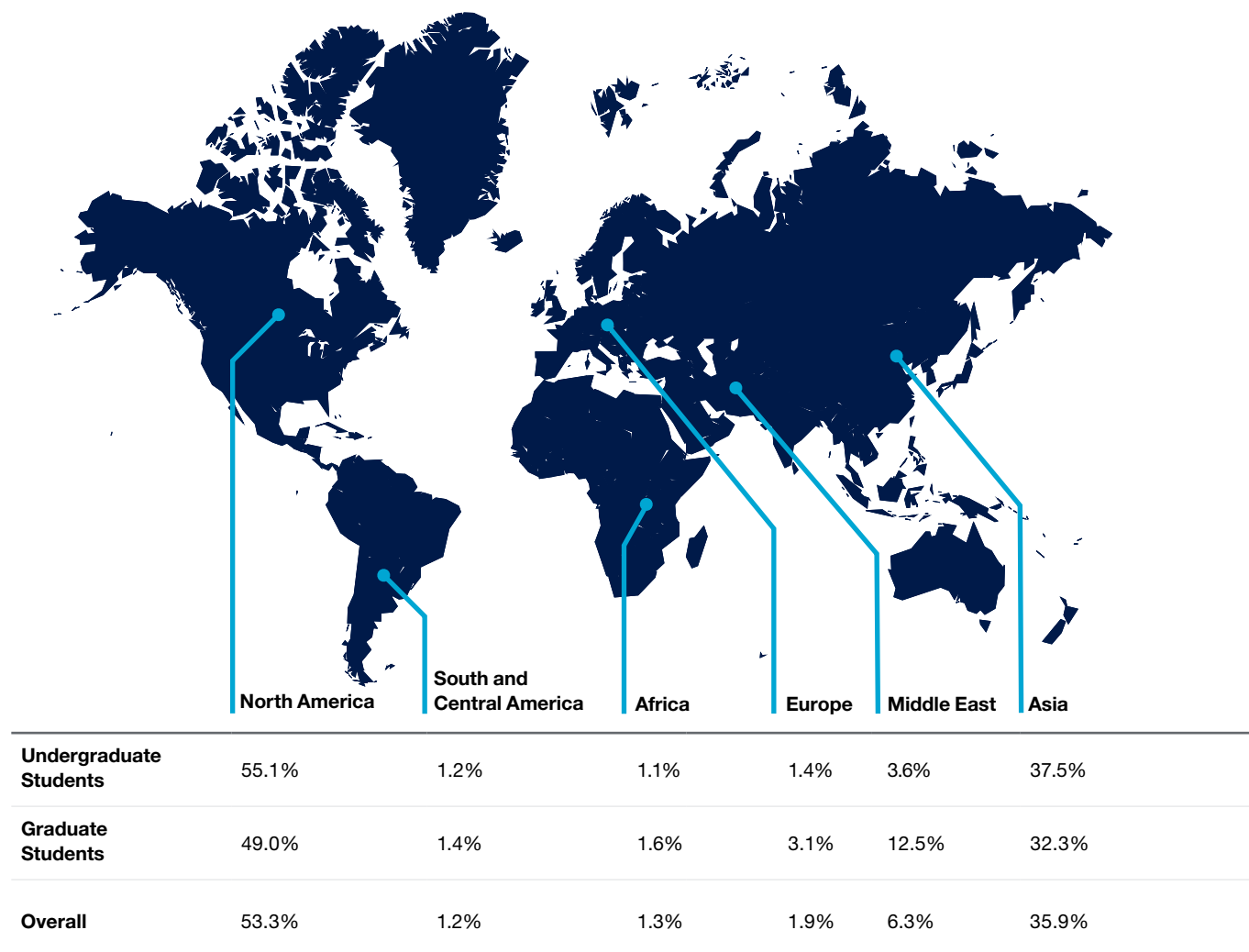
U of T Engineering is located at the heart of one of the world’s most diverse cities, and our students, staff and faculty represent more than 100 countries around the globe. Together, our vibrant community shares an array of perspectives, cultivates innovative ideas and contributes to the prosperity of the region, Canada and the world.

# Diversity: Measures of Progress

## International Diversity

In 2016–2017, international students comprised 28.0% of all undergraduates, up from 11.3% a decade ago, while among our graduate students, 33.7% were international students, up from 17.4% in 2007–2008. To further increase the geographic and cultural diversity among our international undergraduate students, we enhanced strategic recruitment in key regions, including Brazil, Colombia, Costa Rica, Ecuador, India, Malaysia, Mexico, Peru, Singapore, Turkey, the United Arab Emirates and the United States. *(For more information about our international recruitment initiatives, please see Chapter 9: International Initiatives.)*

Figure 10.1 Continent of Origin: Undergraduate and Graduate Students, Fall 2016



Data and highlights in this chapter are from September 2016 to August 2017.

**Note 10.1:** Not shown—0.1% of undergraduate and graduate students from Oceania, which includes Australia, New Zealand and other countries in the Pacific Ocean. Country of origin is derived from a combination of citizenship, location(s) of previous studies (e.g., elementary school, high school and university) and permanent address. This information does not indicate current Canadian immigration status, which is used to determine domestic/international student status for tuition and funding purposes.

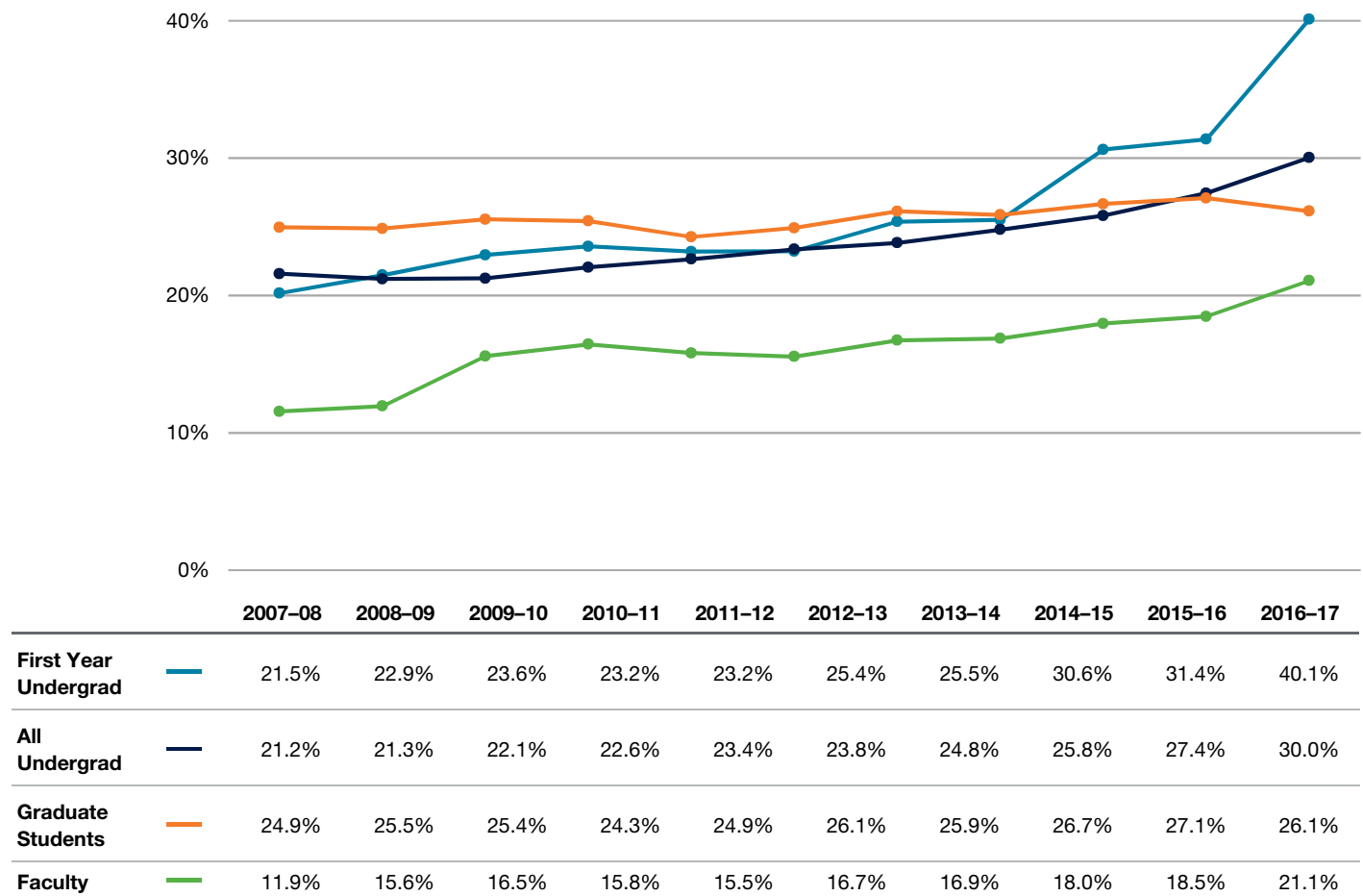
## Outreach and Inclusivity

Many of our Faculty's strategic outreach and recruitment initiatives focus on increasing the number of talented women who apply to and enrol in our programs. Our approach builds awareness of the profession and enhances students' understanding of U of T Engineering and its role as a global leader in research and education.

Events such as the Young Women in Engineering Symposium (YWIES) and the Girls' Leadership in Engineering Experience (GLEE) inspire students as they learn more about the impact they can make as engineers in fields from sustainable energy to health care. In October 2016, we welcomed 53 top female Grade 12 students from the Toronto area to the third annual YWIES, which enabled them to participate in experiential workshops on topics ranging from sustainable energy to engineering leadership. Thirty-one of the attendees applied to the Faculty for September 2017.

GLEE, a weekend-long program for top female applicants who have received offers of admission to U of T Engineering, inspires students to learn more about the contributions they can make as engineers and the many opportunities our Faculty provides. It enables talented young women to meet with the Dean, professors, alumni and current students and to learn about their experiences studying and working in engineering. This year, 99 of the 115 students who participated in GLEE accepted their offers of admission.

Figure 10.2 Percentage of Women Students and Faculty, 2007–2008 to 2016–2017



In 2016–2017, we engaged more than 10,000 pre-university students, about half of whom are girls, through our innovative and robust outreach programs, such as:

- **Da Vinci Engineering Enrichment Program (DEEP) Summer Academy**, which provides high school students from around the world with the opportunity to engage in experiential learning activities in a variety of engineering, technology, business and science disciplines;
- **Jr. DEEP and Girls' Jr. DEEP** summer day camps and Saturday programs, which enable students in Grades 3 to 8 to explore engineering;
- **Go Eng Girl and Go CODE Girl** workshops, which enable girls in middle and high school to explore engineering and computer coding;
- **ENGage**, a collaboration between between the U of T chapter of the National Society of Black Engineers and the Faculty of Applied Science & Engineering, which highlights black role models, encourages literacy in science, technology, engineering and math (STEM), and promotes academic and social growth.

U of T Engineering undergraduate students, including members of the Engineering Society's Hi-Skule outreach group and Women in Science and Engineering (WISE), also visit schools throughout the province each year. These STEM ambassadors lead students in immersive workshops on engineering topics, acting as mentors and sharing the boundless possibilities of an engineering education with students of all backgrounds.

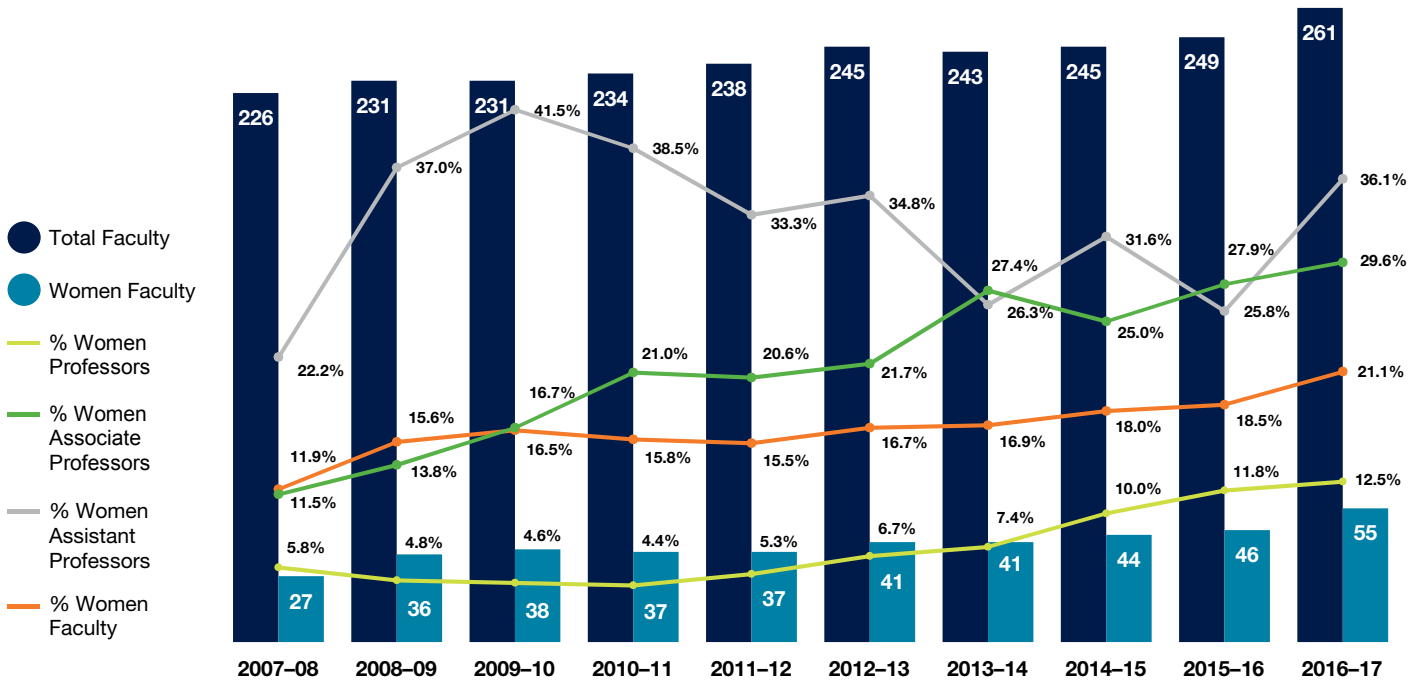
In 2016–2017, WISE ambassadors visited 13 high schools, delivering as many as three presentations at each school, and gave five presentations to organizations such as Big Brothers Big Sisters. Hi-Skule held six outreach events throughout 2016–2017, highlighted by the Back to Hi-Skule event, which included presentations by student ambassadors at 21 high schools in the Greater Toronto Area. Hi-Skule also hosted several events that drew more than 500 pre-university students, including two Mentorship Coffeehouses, a networking event for high school students, a robotics workshop for middle school students, and a high school design competition that drew more than 200 students.

## Indigenous Youth and STEM

We are working with U of T's First Nations House and with Indigenous peoples and communities to increase the number of Indigenous students who apply to and enrol in U of T Engineering programs, and to ensure a welcoming, supportive and inclusive environment for students, faculty and staff. Following the Truth and Reconciliation Commission (TRC) of Canada's call to eliminate educational gaps between Indigenous and non-Indigenous peoples, the University of Toronto published a report, *Answering the Call: Wecheehetowin*, which called on the U of T community to take action in six key areas: Indigenous spaces, Indigenous faculty and staff, Indigenous curriculum, Indigenous research ethics and community relationships, Indigenous students and co-curricular education, and Institutional leadership and implementation.

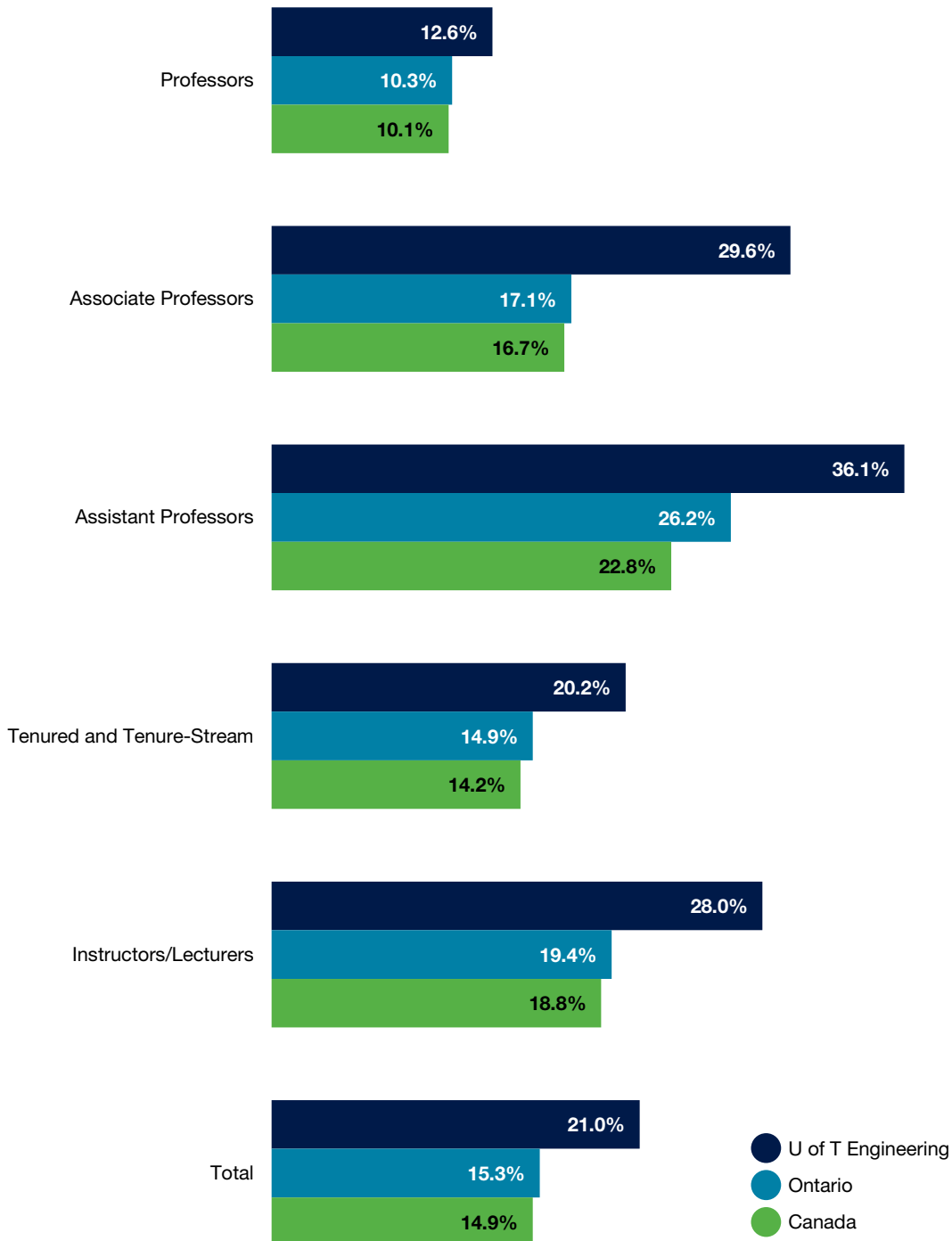
In response to *Answering the Call*, U of T Engineering established the Eagles' Longhouse: Engineering Indigenous Initiatives Steering Committee, with members from across the Faculty and the Oneida Nation, in winter 2017. The steering committee has a mandate to engage Indigenous representatives and engineering educators to design a *Blueprint for Action* to effect immediate and ongoing improvements in the relationship between the Faculty and Indigenous communities, including facilitating greater integration of existing outreach, recruitment and retention initiatives, both within the Faculty and across the University, that affect Indigenous engineering students. The steering committee is establishing a series of working groups, including an Indigenous Hiring Working Group, Indigenous Spaces Working Group, Anti-discrimination Hiring Process Working Group and Indigenous Advisory Network Working Group. In fall 2017, the steering committee will present its recommendations.

Figure 10.3 Total Number of Faculty with Percentage of Women, 2007–2008 to 2016–2017



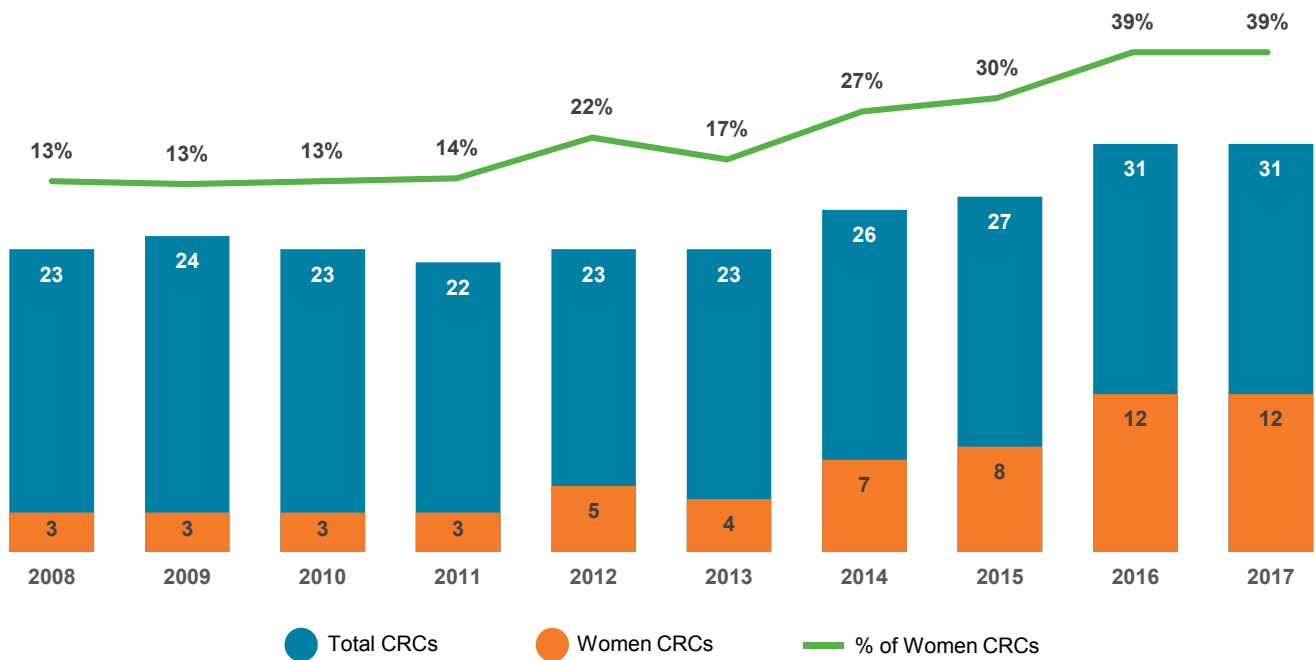
Note 10.3: Data for this figure are based on headcount.

**Figure 10.4 Percentage of Women Faculty at U of T Engineering Compared with Women Faculty in Ontario and Canadian Engineering Faculties, Fall 2016**



**Note 10.4:** Data in this figure comes from Engineers Canada. Counts are based on full-time equivalent (FTE) faculty as of November 15, 2016.

Figure 10.5 Canada Research Chairs with Number and Percentage of Women Chairholders, 2008–2017



## Diversity: Selected Highlights

### WISE conference highlights professional and personal development

More than 300 leading academics, industry professionals and students from universities across Canada convened at U of T Engineering in January 2017 for the fifth-annual Women in Science and Engineering (WISE) national conference. The two-day event serves as a catalyst to inspire and empower young women to pursue their passions, broaden their horizons and form meaningful connections. This year's theme was *Ignite Your Passion*, and the program included professional and personal development opportunities, including Women Creating Impact research and technology panels, sessions on breaking the glass ceiling, storytelling, job interviewing and networking, a Three-Minute Thesis competition, a business consulting case competition, and a career fair.

### Dean Amon appointed U of T's Provostial Advisor on STEM

Dean Cristina Amon will serve in the role of U of T's Provostial Advisor on Women in Science, Technology, Engineering and Math (STEM) beginning July 1, 2017. She fosters a rich culture of diversity and inclusivity within the U of T Engineering community and the profession, and has championed strategic recruitment initiatives that have resulted in greater diversity among new students and faculty members. In this newly created role, Dean Amon will advise on matters related to women in STEM at the University and will work with the vice-provosts and divisions to develop strategies for recruitment, retention and professional development.

## U of T Engineering ENGages students in under-served communities

A unique partnership between U of T Engineering and the U of T Chapter of the National Society of Black Engineers (NSBE) provides opportunities for black youth to experience engineering. ENGage on Campus, which is in its seventh year, is a week-long day camp for students in Grades 3 to 8 that provides participants with hands-on activities that demonstrate engineering principles and practices. ENGage in Schools, now in its third year, partners with the Toronto District School Board to bring 30 black students with an interest in STEM from schools in a priority community to the University for engineering-oriented classes taught by U of T Engineering students who are from the same neighbourhood. ENGage in Your Community, which was piloted in 2016–2017, offers both in-school workshops and one-week camps in schools and community centres in areas identified as under-served. While not limited to black participants, this program, like all ENGage programs, operates on a barrier-breaking model and all participants come from under-represented communities. In addition to ENGage programs, the Engineering Outreach Office also delivers the Urban In-school Workshop program (ISW), which has been running for more than 20 years. The Urban ISW program provides more than 100 STEM-related workshops each May and June that are delivered in schools that are defined as sitting in at-risk communities.

## U of T Engineering hosts 2016 Young Women in Engineering Symposium

More than 50 aspiring female engineers gathered at U of T for the annual Young Women in Engineering Symposium (YWIES) in October 2016. Now in its third year, the symposium brought together high-achieving high school students for a day of hands-on workshops, talks and discussion panels designed to inspire young women to choose U of T Engineering. Current U of T Engineering student ambassadors led YWIES delegates in icebreaker activities, Professor Jason Foster (EngSci) and Professor Chirag Variawa of the First Year Office facilitated workshops in the Faculty's Technology Enhanced Active Learning (TEAL) room, and University Professor Molly Shoichet (IBBME, ChemE) delivered the keynote address.

## Nine women among 14 new U of T Engineering faculty members

Nine women working at the forefront of engineering education and research were among the 14 professors who joined the Faculty in 2016–2017. Each brings a unique passion for experiential engineering education and research expertise that addresses important challenges facing people around the world, from sustainability in the mining sector to optimizing health-care systems. The nine include:

- **Professor Fae Azhari** (MIE, CivE), who specializes in structural health monitoring of bridges, aircraft, wind turbines and other engineering systems to advance sustainable infrastructure management.
- **Professor Erin Bobicki** (MSE, ChemE), who aims to improve the sustainability of mining operations by developing enhanced techniques for mineral processing that reduce energy and water use, as well as overall environmental impact.
- **Professor Merve Bodur** (MIE), whose research focuses on new mathematical methods and big-data analytics to optimize complex processes, including staffing, decision-making and resource allocation.
- **Professor Jennifer Farmer** (ChemE), a teaching-stream faculty member with expertise in synthetic and organometallic chemistry.
- **Professor Naomi Matsuura** (MSE, IBBME), whose research focuses on the application of nanotechnology, including injectable nanoparticles used as imaging agents, to the diagnosis and treatment of cancer.
- **Professor Alison Olechowski** (MIE, ILead), a teaching-stream faculty member who uses a systems engineering approach to develop improved methods for corporate processes, such as product development and risk management.
- **Professor Shoshanna Saxe** (CivE), who is an expert on public transit, in particular the impact of public infrastructure investments on society and the environment.
- **Professor Patricia Sheridan** (ILead), who has developed novel tools to teach and evaluate team effectiveness and leadership competencies in undergraduate engineering courses.
- **Professor Marianne Touchie** (CivE, MIE), whose research focuses on improving the energy performance and indoor environmental quality of existing buildings through comprehensive retrofits.

## U of T Engineering observes Pink Shirt Day

Our Faculty continues to raise awareness of LGBTQ perspectives and experiences, and we have had representation on the U of T Positive Space Committee since its inception in 1996. The committee promotes safe and inclusive spaces for LGBTQ students, staff, faculty, alumni and allies. These spaces are marked by rainbow triangle stickers posted on doors and in offices across campus. We also hold a number of events, including Pink Shirt Day and Pride Month, that celebrate diversity and inclusivity, and that demonstrate our commitment to ensuring that all engineering space is positive space. Students, staff and faculty gathered in the atrium of the Sandford Fleming Building on Feb. 22, 2017, to observe Pink Shirt Day. The annual event, which aims to end bullying, began after students at a Nova Scotia high school wore pink shirts to support a boy who had been bullied for wearing a pink shirt. Members of the U of T Engineering community posted photos of themselves on social media using the hashtag #pinkskule.