Our reputation for excellence in engineering education enables us to attract talented and diverse students from around the world. We received the highest recorded number of applications in 2018, more than 13 for each place in our programs. Women made up approximately 40% of our first-year incoming classes for the last three years, and now represent more than 35% of undergraduate students across all years of study. Approximately one in four of our undergraduates come from countries outside of Canada.

We continue to enhance our culture of inclusion through groups such as our Equity, Diversity & Inclusion Action Group and the Eagles’ Longhouse, our Indigenous initiatives steering committee. Our Dean’s Advisor on Black Inclusivity Initiatives and Student Inclusion & Transition Mentor plays a key role in creating a more inclusive learning environment, and chairs our Anti-Black Racism Committee.

In September 2018, we welcomed the first students in our new Engineering Science major in Machine Intelligence, as well as our new minor in Music Performance and certificate in Music Technology. In January 2019, we launched another new certificate and minor in Artificial Intelligence Engineering. These programs further enrich the suite of options available to our students and enable them to customize their degrees.

We have built active learning and experiential education into our physical spaces, such as the flexible design studios, technology enhanced active learning spaces and prototyping facilities in the Myhal Centre. The Myhal Centre is also home to several centres that enable students to complement their technical knowledge with core engineering competencies, such as our Institute for Multidisciplinary Design & Innovation, our Troost Institute for Leadership Education in Engineering and our Centre for Global Engineering.

Our newly created Institute for Studies in Transdisciplinary Engineering Education & Practice (ISTEP) consolidates and expands our programming in technical communication, leadership, business and engineering education. We continue to strengthen our support for thought leadership in engineering education through our Dean’s Emerging Innovation in Teaching Professorships (DEIP), as well as our Hart Teaching Innovation Professorships.
Admissions and First-Year Students

We received a record 13,272 applications to our undergraduate programs in 2018, an increase of 3.0% from 12,880 the previous year. The increase was driven primarily by international applications, which rose by 10.8% over 2017–2018. Domestic applications declined slightly, likely a reflection of a broad demographic trend across Canada that has resulted in fewer prospective university students than in previous years.

**Data in this chapter are presented by academic year (September to August) unless otherwise noted. Highlights are from June 2018 to June 2019.**

**Note 1.1a, b, c:** Student counts are shown as of November 1. Applications and offers are for the fall admissions cycle. Selectivity = offers ÷ applications and represents the proportion of applicants who were offered admission. Yield = registration ÷ offers. Domestic students are defined as citizens (living in Canada or abroad) or permanent residents of Canada.

**Figure 1.1a Applications, Offers, Registrations, Selectivity and Yield of First-Year Undergraduates, 2009 to 2018**

<table>
<thead>
<tr>
<th>Year</th>
<th>Applications</th>
<th>Offers</th>
<th>Registrations</th>
<th>Selectivity</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>7,446</td>
<td>3,329</td>
<td>1,188</td>
<td>0.45</td>
<td>0.36</td>
</tr>
<tr>
<td>2010</td>
<td>7,881</td>
<td>3,347</td>
<td>1,203</td>
<td>0.42</td>
<td>0.36</td>
</tr>
<tr>
<td>2011</td>
<td>8,745</td>
<td>3,149</td>
<td>1,180</td>
<td>0.36</td>
<td>0.37</td>
</tr>
<tr>
<td>2012</td>
<td>9,326</td>
<td>3,042</td>
<td>1,265</td>
<td>0.35</td>
<td>0.38</td>
</tr>
<tr>
<td>2013</td>
<td>10,095</td>
<td>3,203</td>
<td>1,106</td>
<td>0.30</td>
<td>0.36</td>
</tr>
<tr>
<td>2014</td>
<td>10,989</td>
<td>3,126</td>
<td>1,192</td>
<td>0.29</td>
<td>0.37</td>
</tr>
<tr>
<td>2015</td>
<td>11,418</td>
<td>2,983</td>
<td>1,205</td>
<td>0.27</td>
<td>0.39</td>
</tr>
<tr>
<td>2016</td>
<td>12,298</td>
<td>3,109</td>
<td>1,005</td>
<td>0.24</td>
<td>0.34</td>
</tr>
<tr>
<td>2017</td>
<td>12,880</td>
<td>3,109</td>
<td>1,065</td>
<td>0.24</td>
<td>0.32</td>
</tr>
<tr>
<td>2018</td>
<td>13,272</td>
<td>3,380</td>
<td>1,062</td>
<td>0.25</td>
<td>0.33</td>
</tr>
</tbody>
</table>

**Figure 1.1b Applications, Offers, Registrations, Selectivity and Yield of Domestic First-Year Undergraduates, 2009 to 2018**

<table>
<thead>
<tr>
<th>Year</th>
<th>Applications</th>
<th>Offers</th>
<th>Registrations</th>
<th>Selectivity</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>5,612</td>
<td>2,733</td>
<td>967</td>
<td>0.49</td>
<td>0.35</td>
</tr>
<tr>
<td>2010</td>
<td>5,892</td>
<td>2,665</td>
<td>931</td>
<td>0.45</td>
<td>0.35</td>
</tr>
<tr>
<td>2011</td>
<td>6,359</td>
<td>2,400</td>
<td>894</td>
<td>0.38</td>
<td>0.37</td>
</tr>
<tr>
<td>2012</td>
<td>6,662</td>
<td>2,510</td>
<td>938</td>
<td>0.38</td>
<td>0.37</td>
</tr>
<tr>
<td>2013</td>
<td>7,229</td>
<td>2,272</td>
<td>782</td>
<td>0.31</td>
<td>0.34</td>
</tr>
<tr>
<td>2014</td>
<td>7,705</td>
<td>2,302</td>
<td>812</td>
<td>0.30</td>
<td>0.35</td>
</tr>
<tr>
<td>2015</td>
<td>7,588</td>
<td>2,239</td>
<td>843</td>
<td>0.30</td>
<td>0.38</td>
</tr>
<tr>
<td>2016</td>
<td>8,053</td>
<td>2,128</td>
<td>734</td>
<td>0.26</td>
<td>0.34</td>
</tr>
<tr>
<td>2017</td>
<td>7,933</td>
<td>2,206</td>
<td>788</td>
<td>0.28</td>
<td>0.36</td>
</tr>
<tr>
<td>2018</td>
<td>7,791</td>
<td>2,350</td>
<td>780</td>
<td>0.30</td>
<td>0.33</td>
</tr>
</tbody>
</table>
This year, for the first time, domestic students who applied through the Ontario Universities Application Centre (OUAC) were able to indicate their interest in participating in the Professional Experience Year Co-op (PEY Co-op) Program. The proportion of students who indicated their intention to participate in PEY Co-op was 86% (1,214 students).

Our selectivity is high, with offers being made to 25% of students who applied for 2018 admission, compared with 45% a decade earlier. Our yield for 2018 offers of admission was 31%, in the same range as it has been for the past several years.

Figure 1.1c Applications, Offers, Registrations, Selectivity and Yield of International First-Year Undergraduates, 2009 to 2018
Our admitted students are of the highest calibre, with approximately 60% earning merit-based scholarships, both internal and external. These include prestigious accolades such as the Schulich Leader Scholarships, C. David Naylor University Scholarships, Lester B. Pearson International Scholarships and International Engineering Scholar Awards. The mean entering average of Ontario secondary school students has reached a new record level of 93.6%. More than 90% of our incoming students proceed to second year on schedule, reflecting our rich suite of supports and programs focused on student advising and success.

We recognize that grades alone do not provide a complete view of each applicant’s candidacy, and for the last five years we have implemented a broad-based admissions process to account for key engineering qualities such as logical thinking, communication skills, adaptability and perseverance. The process includes submission of online videos and written, timed responses that are evaluated by more than 70 trained alumni screeners both within and outside of the Toronto region.

Our first-year class included 39.8% women, the highest proportion of any engineering school in Canada. International students made up 26.6% of our incoming cohort. A further 47 students (4.4% of the domestic cohort) completed their secondary education outside of Canada, but are Canadian citizens and therefore are considered domestic students (See Fig. 1.4).

We attract accomplished candidates from across Canada and around the world through strategic recruitment events and activities. For the 2018 admissions cycle, key activities included:

- **National recruitment:** We distributed 14,033 *Discover Engineering* viewbooks at the Ontario Universities Fair at the Metro Toronto Convention Centre. We also increased the number of school visits in the Greater Toronto Area to 90 in 2018, up from 72 in 2017. Schools were selected on the basis of historic admission data, with an eye to our enrolment priorities. We continued our traditional recruitment drives in Vancouver and Calgary, as well as our participation in U of T’s Fall Campus Day, where we received 682 visitors.

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*Note 1.2:* Entrance average is calculated based on Ontario secondary school students. Retention rate is the proportion of students who successfully move on to second year in the fall semester following their first year.
- **International recruitment:** We conducted school visits, applicant events and information sessions in 10 countries — Brazil, Colombia, Dubai (UAE), Ecuador, Indonesia, Panama, Singapore, Trinidad and Tobago, Turkey and the U.S.
- **Engineering for Educators:** Thirty-three STEM educators from across the GTA attended this professional development session, which addressed barriers to education and gaps between the high school and first-year curriculum. The goal of this annual event is to smooth the transition between secondary and post-secondary studies in engineering.
- **Girls’ Leadership in Engineering Experience (GLEE):** This annual, weekend-long program inspires and empowers women who have received offers of admission to our programs by connecting them with women faculty members, students and alumnae. It includes a dinner and reception hosted by the Dean as well as a keynote address from one of our women professors. Of the 117 students who attended GLEE in May 2018, 91 accepted their offers, a yield of 78%. In 2019, GLEE was split into two events, one for students from Ontario and one for students from elsewhere, including other Canadian provinces, the U.S. and Latin America. In April, 24 out-of-province students participated in GLEE, with a further 86 Ontario students attending in May.
- **Young Women in Engineering Symposium (YWIES):** YWIES invites talented Grade 11 students from across the GTA to U of T where they learn more about engineering, participate in design workshops and meet current students, faculty and alumni. The event enables us to connect with these promising applicants earlier in their decision-making process. We attracted 84 students to our fifth annual symposium in May 2018, with 54 more joining us in May 2019.

We are committed to equity, diversity and inclusion, and to fostering an environment in which each member of our community can excel, contribute and benefit from different perspectives. Over the past several years, we have created a number of bodies that seek to recognize and challenge power dynamics that lead to exclusion and discrimination, and to increase the representation of students from minority groups — including Black

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**Figure 1.3** Incoming First-Year Undergraduates with Percentage of Women and International Students, 2009 to 2018

Note 1.3: Student counts are shown as of November 1. Domestic students are defined as citizens or permanent residents of Canada. Data on student gender comes from the U of T Enrolment Reporting Cube; the option not to report gender was added in 2017.
students and Indigenous students — within our community. Examples include:

- **Eagles’ Longhouse**: Engineering Indigenous Initiatives Steering Committee: This group was created in 2017 and includes members from across our Faculty and the Oneida Nation. In 2018 it released a Blueprint for Action, which outlines steps toward ensuring a welcoming and supportive environment and to intensify engineering outreach to Indigenous students. The Eagles’ Longhouse is involved in a number of outreach programs in communities such as Northern Ontario and Labrador.

- **Anti-Black Racism Committee (ABRC)**: Created in September 2018, the ABRC takes meaningful action to raise awareness of anti-Black biases in our Faculty and improve the experience of community members — students, staff, faculty and alumni — who identify as Black. ABRC coordinates its actions through the Dean’s Advisor on Black Inclusivity Initiatives and Student Inclusion & Transition Mentor. ABRC chose to launch its first campaign during Black History Month in February, capitalizing on the enhanced attention to achieve two goals: creating a sense of empowerment, community and support among Black students, and highlighting unconscious bias as a barrier to advancing anti-racism. *(For more details on this campaign and the ABRC in general, see Chapter 10 — Equity, Diversity and Inclusion.)*

- **Engineering Equity, Diversity, and Inclusion Action Group (EEDIAG)**: EEDIAG was created in 2018 to advance our Faculty’s commitment to fostering an environment in which each member of our community can excel, contribute and benefit from the diverse range of backgrounds and perspectives that co-exist here. Through monthly open conversations as well as workshops and seminars on EDI issues in engineering education, EEDIAG works to identify barriers to access and inclusion of underrepresented groups in engineering, as well as to build more inclusive spaces within our Faculty.

*For more information on our efforts with regard to equity, diversity and inclusion, see Chapter 10 — Equity, Diversity and Inclusion.*

### Figure 1.4 Incoming First-Year Domestic and International Undergraduates, 2009 to 2018

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic: Ontario</th>
<th>Out of Province</th>
<th>Abroad</th>
<th>International</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>765 (64.4%)</td>
<td>132</td>
<td>70</td>
<td>221</td>
<td>1,188</td>
</tr>
<tr>
<td>2010</td>
<td>719 (59.8%)</td>
<td>140</td>
<td>72</td>
<td>272</td>
<td>1,203</td>
</tr>
<tr>
<td>2011</td>
<td>634 (53.7%)</td>
<td>168</td>
<td>92</td>
<td>286</td>
<td>1,180</td>
</tr>
<tr>
<td>2012</td>
<td>685 (54.2%)</td>
<td>161</td>
<td>92</td>
<td>327</td>
<td>1,265</td>
</tr>
<tr>
<td>2013</td>
<td>558 (50.5%)</td>
<td>147</td>
<td>77</td>
<td>324</td>
<td>1,106</td>
</tr>
<tr>
<td>2014</td>
<td>628 (52.7%)</td>
<td>138</td>
<td>46</td>
<td>380</td>
<td>1,192</td>
</tr>
<tr>
<td>2015</td>
<td>658 (54.6%)</td>
<td>147</td>
<td>38</td>
<td>362</td>
<td>1,205</td>
</tr>
<tr>
<td>2016</td>
<td>538 (53.5%)</td>
<td>158</td>
<td>38</td>
<td>271</td>
<td>1,005</td>
</tr>
<tr>
<td>2017</td>
<td>602 (56.5%)</td>
<td>116</td>
<td>70</td>
<td>277</td>
<td>1,065</td>
</tr>
<tr>
<td>2018</td>
<td>593 (55.8%)</td>
<td>140</td>
<td>47</td>
<td>282</td>
<td>1,062</td>
</tr>
</tbody>
</table>

### Enrolment

In 2018–2019, the undergraduate student population was 5,235. We are progressing toward our goal of a stable undergraduate population of approximately 5,000 students. The proportion of women across all years of study reached 35.4%, up from 33.0% in 2017–2018. We continue to collaborate with Engineers Canada and our peer institutions across the country to achieve the “30 by 30” goal of reaching 30% women among newly licensed engineers by 2030. Our international student population now stands at 27.5% of all undergraduates.

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**Note 1.4**: Student counts are shown as of November 1. Domestic students are defined as citizens or permanent residents of Canada.
**Figure 1.5a** Undergraduate Enrolment with Percentage of Women and International Students, 2009–2010 to 2018–2019

**Figure 1.5b** Percentage of Women by Undergraduate Program, 2009–2010 to 2018–2019

**Note 1.5a:** Includes full- and part-time students and those working full time through the Professional Experience Year Co-op Program (PEY Co-op). Does not count students with special (non-degree) status. Student counts shown as of November 1. Domestic students are defined as citizens or permanent residents of Canada. Data on student gender comes from the U of T Enrolment Reporting Cube; the option not to report gender was added in 2017.
Figure 1.6 Undergraduates by Program, Year of Study and Professional Experience Year Co-op, 2018–2019

<table>
<thead>
<tr>
<th>Engineering Science Majors</th>
<th>Enrolment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Engineering</td>
<td>44</td>
</tr>
<tr>
<td>Biomedical Systems Engineering</td>
<td>41</td>
</tr>
<tr>
<td>Electrical and Computer Engineering</td>
<td>38</td>
</tr>
<tr>
<td>Energy Systems Engineering</td>
<td>11</td>
</tr>
<tr>
<td>Infrastructure Engineering</td>
<td>12</td>
</tr>
<tr>
<td>Machine Intelligence</td>
<td>46</td>
</tr>
<tr>
<td>Mathematics, Statistics and Finance</td>
<td>53</td>
</tr>
<tr>
<td>Engineering Physics</td>
<td>31</td>
</tr>
<tr>
<td>Robotics Engineering</td>
<td>99</td>
</tr>
<tr>
<td>Total</td>
<td>375</td>
</tr>
</tbody>
</table>

Note 1.6: Student counts are shown as of November 1, 2018. Engineering Science Majors show only students in Year 3 and Year 4 and do not count students on PEY Co-op.

Note 1.7: Student counts are shown as of November 1.

Figure 1.7 Undergraduates by Program, 2009–2010 to 2018–2019

Note 1.6: Student counts are shown as of November 1, 2018. Engineering Science Majors show only students in Year 3 and Year 4 and do not count students on PEY Co-op.

Note 1.7: Student counts are shown as of November 1.
Need-Based Funding

Our Faculty is committed to the University of Toronto’s Policy on Student Financial Support, which states that no student offered admission to a program at the University of Toronto should be unable to enter or complete the program due to lack of financial means.

We offer a wide range of student aid options — including scholarships, bursaries and other awards based on merit and need — funded by donors and the University of Toronto Advanced Planning for Students (UTAPS) program. Our financial aid officer helps students prepare personal budgets, learn about funding sources and manage appeals through the Ontario Student Assistance Program (OSAP) process.

The number of undergraduate students receiving need-based awards in 2018–2019 was 1,864, with the total amount of student support reaching $16.2 million. This funding is distributed proportionally across all years of study, and represents an 80% increase over the last 10 years. The amounts reported in Figures 1.8a and 1.8b do not include external merit-based scholarships or awards, or funding from provincial assistance programs, including OSAP.

Figure 1.8a Number of Awards Received by Cohort with Total Number of Undergraduate Need-Based Award Recipients, 2009–2010 to 2018–2019

Note 1.8a: Data comes from the Student Accounts Reporting Cube.
Figure 1.8b Total Value of Undergraduate Financial Assistance and Percentage Distributed by Year of Study, 2009–2010 to 2018–2019

Note 1.8b: Data comes from the Student Accounts Reporting Cube.
U of T Engineering students earn either a Bachelor of Applied Science (BASc) or Bachelor of Applied Science in Engineering Science (BASc EngSci). Both degrees can be completed in four years. Many of our second- and third-year students choose to augment their degrees with a 12- to 16-month job through the Professional Experience Year Co-op (PEY Co-op) Program, which adds one year to their time to completion. (For more information on PEY Co-op, please refer to Chapter 4: Cross-Faculty Education and Experiential Learning.)

Note 1.9a, b: Data reported by academic year (September to August).
Student-to-Faculty Ratios

Figure 1.10a shows the number of undergraduates relative to the number of faculty members in each department. Students in programs that employ a cross-Faculty approach to instruction, such as Engineering Science and TrackOne, are included only in the “Total” bar.

Figure 1.10b shows that the overall undergraduate student-to-faculty ratio has decreased to 16.5, our lowest value in the last decade. Lower undergraduate student-to-faculty ratios allow for smaller class sizes and enhanced interaction between professors and students. *(For more information on student-to-faculty ratios at the graduate level, see Figure 2.2a.)*

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**Note 1.9c:** Data sourced from reports produced by Engineers Canada and the American Society for Engineering Education; 2017 is the most recent year for which reports from both these institutions have been published. Total percentages show U of T as a proportion of all engineering degrees in North America, including those awarded in fields for which U of T does not have a specific degree program (e.g. Biomedical, Environmental, Software, etc.).

**Note 1.10a, b:** Student and faculty counts are shown as of November 1, 2018. For full-time equivalency (FTE), each part-time student is counted as 0.3 FTE. Students with special (non-degree) status or on PEY Co-op are not included. Faculty counts include tenure-stream and teaching-stream faculty.

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**Chapter 1: Undergraduate Studies | Annual Report 2019 | Faculty of Applied Science & Engineering**
Dean's Honour List

To graduate with Honours, a full-time student must achieve a cumulative average of higher than 79.5% across second, third and fourth years and a weighted sessional fourth-year average of 74.5% or higher. The designation of High Honours, created in June 2015, distinguishes students who obtain a cumulative average of 87.5% or higher and a weighted sessional fourth-year average of 82.5% or higher. Both designations provide a measure of the outstanding academic achievement of our students.

In 2019, 1,057 of our students achieved Honours or High Honours, representing 45.7% of the graduating class (Figure 1.11a). This is our highest-ever proportion and reflects the high calibre of our students and the success of our many programs designed to support students throughout all years of study.

Figure 1.10b Undergraduate Full-Time Equivalent Student-Faculty Ratios, 2009–2010 to 2018–2019

Figure 1.11a Number of Students and Percentage of Class Graduating with Honours, 2010 to 2019
Enriching the Undergraduate Engineering Experience

We continually expand our suite of curricular and co-curricular activities, enabling our students to collaborate across disciplines, customize their degrees and develop rich and diverse engineering competencies. In 2018–2019 we added several new programs and initiatives focused on emerging areas and student success.

New programs, courses, and learning opportunities

In September 2018, we welcomed the first students into our new cross-disciplinary minor in Music Performance and a certificate in Music Technology, created in partnership with the Faculty of Music. (For more information on cross-disciplinary minors, see Chapter 4, Cross-Faculty Education and Experiential Learning.)

We also launched an Engineering Science major in Machine Intelligence, the first engineering undergraduate program of its kind in Canada. The new major provides students with a world-class education in the concepts and tools that underlie this rapidly developing field. Students receive a strong theoretical background in machine learning, artificial intelligence and data analytics, and learn to apply algorithms that can make decisions based on data. In its first year, the Machine Intelligence major is already the largest of all the Engineering Science majors in terms of Year 3 enrolment with 44 students.

For comparison, the next largest major is Robotics, which launched in September 2015 and has a Year 3 enrolment of 35 students.

In January 2019, we created a new minor and certificate in Artificial Intelligence Engineering for students in the Core 8 disciplines. These add to a growing list of AI-focused initiatives and experiential learning opportunities at U of T Engineering, in anticipation of the complex challenges that lie ahead.

We created 16 new undergraduate courses in 2017–2018, including several related to our new EngSci major and our new minor and certificate. These courses were:

- CHE334H1: Team Strategies for Engineering Design
- ECE444H1: Software Engineering
- ESC195H1: Calculus II
- ESC204H1: Praxis III
- ESC384H1 Partial Differential Equations
- ECE364H1: Introduction to Machine Intelligence
- MIE429H1: Machine Intelligence Capstone Design

![Figure 1.11b Number of Students on the Dean’s Honour List by Term and Academic Area, Fall 2014 to Winter 2019](image)

Note 1.11b: Students are normally eligible to be considered for Honours standing only if they are carrying a full academic load (2.5 credits per session, excluding extra courses) and if the session is not being repeated. During fourth year, a student may reduce their course load in either semester (but not both) and still be eligible for Honours standing, provided the other conditions are met.
● MIE424H1: Optimization in Machine Learning
● BME445H1: Neural Bioelectricity
● CHE441H1: Engineering Materials
● ESC194H1: Calculus I
● MIE368H1: Analytics in Action
● APS327H1: Special Topics in Creative Writing
● APS511H1: Engineering and Law
● JRE500H1: Negotiations in an Engineering Context
● CHE399H1: Professional Engineering Consultancy

Our First-Year Summer Research Fellowships launched in summer 2016 with an inaugural cohort of eight research fellows. The program provides support to students seeking to gain research experience immediately after their first year of study, and is open to all students enrolled in first-year programs. Ten students were awarded fellowships of $6,000 in summer 2018. In 2019, we increased the amount offered to $7,000, again funding 10 successful applicants.

Student support
In April 2019, we appointed the Joint Task Force on Academic Advising and Mental Health. This task force builds on previous work, including that of the Decanal Task Force on Academic Advising (2016) and the Decanal Task Force on Mental Health (2017). The Joint Task Force will review the reports of these previous task forces as well as actions undertaken to date to make both short-term and long-term recommendations for the Faculty. Areas of focus include:

- Reviewing academic advising resources, staff complement and training
- Strengthening mental health and wellness training for students, staff, faculty and teaching assistants
- Studying faculty policies and resources with a mental health and wellness lens
- Consulting with Health & Wellness Services, Accessibility Services and other service providers and make recommendations for existing or new partnerships
- Considering a permanent committee structure to ensure student experience, wellness and mental health issues are continuously prioritized by the Faculty

In 2018–2019, we further strengthened our on-location supports by adding a full-time Accessibility Advisor to augment the work of our existing student support team. Our online advising portal, launched in 2017–2018, improves records management for advisors. This year, we added a new function that enables students to book appointments with their academic advisors through the portal. The portal serves as a central repository for data related to academic well-being, such as advising notes and resources for advisors.

In partnership with U of T’s Health & Wellness Centre, we promote the online ‘Identify, Assist and Refer’ training to all faculty and staff. This training helps staff and faculty learn what to look for, say and do when responding to a student in distress. We also provide complementary training for staff and faculty through the Engineering Engagement & Development Network. These initiatives reflect the January 2017 recommendations of the Decanal Task Force on Mental Health.

In May 2019, we hosted the fourth EdTech Workshop in the Myhal Centre. Through this biennial event, faculty members and staff engaged with new technologies designed to enhance students’ learning inside and outside the classroom. The theme of EdTech 2019 was *Beyond Hammers: Building a Technology Enhanced Active Learning (TEAL) Toolkit*. We provided a combination of practical and theory-based sessions in three streams:

- **Content Management** – Strategies for introducing active learning activities into a demanding curriculum.
- **Teaching Team Management** – Encouraging collaboration among instructors, TAs, and other stakeholders in active learning classrooms
- **Activity Management** – Selecting the right learning activities for a given course or seminar.

Each year, we offer a robust suite of programs to support our students as they make the transition from secondary school to university. These include:

- **Success 101**: This one-day event is part of the First Year Foundations program that includes courses on engineering design and computer programming. Designed for incoming students, Success 101 runs four times over the summer, providing guidance on time management, effective note taking and effective teamwork strategies.
- **T-Program**: The Transition Program, or T-Program, enables first-year students faced with academic challenges to redistribute their course load, defer courses to the summer session and re-take up to three fall courses in the winter term.
- **GEARS**: Guided Engineering Academic Review Sessions (GEARS) are weekly drop-in sessions led by upper-year students. They provide guidance on both course material and specific strategies for academic success, including study habits and time management skills.
- **Support personnel**: The Faculty’s full-time Learning Strategist develops academic programming and workshops to assess and enhance students’ academic competencies related to task prioritization, note taking, critical thinking, problem solving, exam preparation, and coping with stress and anxiety. In addition, students are able to seek support from our on-location staff team including an embedded Health & Wellness Counsellor, a full-time Accessibility Advisor and a part-time International Transition Advisor.
- **Online courses**: We offer four courses online to enhance the flexibility of the first-year course schedule, including one (APS162: Calculus for Engineers I) held over the summer before first year begins. Enrolment in online courses in the summer of 2018 was 190 in total.
Pre-University Engineering Outreach

For more than a decade, our Engineering Outreach Office has designed and delivered a rich variety of pre-university programs that enable students in Grades 3 to 12 to experience science, technology, engineering and mathematics (STEM) in a way that is tactile and inspiring. Through these programs, we give children the opportunity to experience first-hand the promise and excitement of pursuing studies, and eventually careers, in science and engineering. Our Outreach programs foster positive relationships between the University and the community, and provide a first touch-point in recruiting potential future undergraduate students. In 2018–2019, we reached more than 7,600 pre-university students through our outreach programs. (See Appendix A for a full list of these programs.)

The undergraduate and graduate students who instruct and execute these programs develop valuable competencies in leadership, communications, project management and team building, while deepening their understanding of engineering principles and their application in daily life. We have also implemented a number of programs that seek to share the knowledge we have accumulated about STEM education with teachers at both the elementary and secondary levels.

Every summer, our Da Vinci Engineering Enrichment Program (DEEP) Summer Academy draws talented high school students from around the world to week-long courses, where they explore a variety of engineering, business and science disciplines. We also offer March Break and summer camps, Saturday programs and in-school workshops that inspire elementary school students to explore topics such as aerospace engineering, coding and regenerative medicine. We are particularly proud that our programs successfully connect girls and youth from underrepresented communities — including Black and Indigenous youth — with STEM.

On May 10, 2019, we hosted Go North Youth — the largest STEM event in Canada for pre-university students — for the fourth consecutive year. This year’s theme of artificial intelligence (AI) gave students the opportunity to learn more about how machine learning and AI algorithms are built, as well as to explore the impact that this fast-growing field will have on their future careers. Go North Youth was created in partnership with Google Canada and Actua, a national STEM charity, and attracted more than 1,100 students in Grades 2 through 8 from across the Greater Toronto Area.
Selected Undergraduate Student Highlights

Two first-year students earn prestigious Schulich Leader Scholarships

First-year Engineering Science students Eli Scott and Markus Kunej were among four U of T students to receive the prestigious Schulich Leader Scholarships for 2018–2019. Created by business leader and philanthropist Seymour Schulich, the program recognizes 50 high school graduates across Canada and empowers recipients to make great contributions to society, both on a national and global scale. Scott was an outstanding student at Renfrew Collegiate Institute, where she played hockey and basketball and supported special education programs, including the Special Olympics and a peer-interaction program. She is considering a focus in biomedical engineering. Kunej has developed a smart belt, which he called the Echo Belt, that helps people with low vision navigate obstacles in 360 degrees using sonar. He has tested the device at a school for the visually impaired in his hometown of Brantford, Ont. He plans to specialize in either robotics, aerospace or machine intelligence.

Seven first-year students earn Pearson scholarships

Seven U of T Engineering students arrived from outside of Canada to take up their Pearson scholarships in September 2018. Named after Canada’s 14th prime minister, Nobel Peace Prize laureate and U of T graduate Lester Bowles Pearson, the awards recognize exceptional academic achievement, creativity, leadership potential and community involvement. A total of 40 scholars from 24 countries received these scholarships. The 2019 U of T Engineering recipients, along with their home countries are:

Atom Arce, Year 1 TrackOne, United States
Alana Bailey, Year 1 CivMin, Jamaica
Adriana Díaz Lozano Patiño, Year 1 EngSci, Mexico
Camilo Dugand, Year 1 CivE, Colombia
Munachi Jachike Ernest-Eze, Year 1 EngSci, Nigeria
Devansh Khare, Year 1 MechE, India
Mikel Rajiv Rajkumar, Year 1 EngSci, Trinidad and Tobago

Eleven U of T Engineering students have received the Pearson Scholarship since its creation in 2017.

High performance: Two elite student athletes choose U of T Engineering

Mehdi Essoussi (ECE Year 1) and Kirti Saxena (MechE Year 1) are two elite athletes who compete on the world stage, and who have chosen U of T Engineering for their undergraduate degree programs. Essoussi is a midfielder with the Toronto Football Club feeder team TFC III. Before being recruited by Toronto FC Academy, he played for Team Ontario. He plans to continue playing while he studies at U of T Engineering. Saxena is a seasoned wrestler who has represented Team Canada at several world championships, including the Cadet World Championships in Tbilisi, Georgia, where she was ranked fifth in the world and received the award for “Best Cadet Wrestler” in all of Canada. She is currently training for a spot at the Olympic trials in either 2020 or 2024.