

Office of the Vice Chancellor

The mission of the [Office of the Vice Chancellor \(OVC\)](#), led by Vice Chancellor for Undergraduate and Graduate Education Ian A. Waitz, is to advance academic innovation and foster the growth of all MIT students, empowering them to make a positive impact at MIT and beyond. Formed in 2017, OVC was created by combining the Office of the Dean for Undergraduate Education and the Office of the Dean for Graduate Education.

Review of Major Organizational Changes

- The Office of Undergraduate Advising and Academic Programming became the Office of the First Year (OFY). The Assistive Technology Information Center moved to the Division of Student Life.
- A new Office of Experiential Learning (OEL) was created, comprising the Undergraduate Research Opportunities Program (UROP), the Edgerton Center, D-Lab, Global Education, and the Priscilla King Gray Public Service Center (PKG Center). Kate Trimble, the former associate dean for the PKG Center, was appointed as the new senior associate dean and director of the OEL. She succeeds Kim Vandiver, who remains the director of the Edgerton Center.
- Global Education and Career Development became Career Advising and Professional Development (CAPD) and took on a broader mission, focusing on mentoring, career services, and professional development. An interim leader was appointed: Deborah Liverman became director of career development, following Melanie Parker's retirement in January 2019.
- The Office of Graduate Education (OGE) remained a dedicated unit.
- The International Students Office (ISO), formerly reporting to OGE, became a separate unit under OVC.

Priorities and Progress

As outlined to the Undergraduate and Graduate Education Visiting Committee in May 2018, the vice chancellor is making progress toward meeting his office's top three priorities.

Transform the First-Year Undergraduate Experience

The focus on transforming the first-year undergraduate experience has been on community engagement and building consensus around a core set of needs, and pursuing pilot programs and experiments to assess options for addressing these needs. Based in part on student input from the Designing the First-Year Experience class, which ran in the spring of 2018, four overarching needs have been identified: more support for exploring and choosing a major, better advising, more inspiring experiences that cultivate a love of learning, and greater flexibility (or fewer requirements) to enable the other things to happen. The most prominent efforts in response to these needs are two phases of an educational experiment approved by the Committee on the Undergraduate Program.

Phase One allows students who entered in fall 2018 to take up to three science General Institute Requirements (GIRs) as pass/no record after the first semester. This has enabled many students to reframe their approach to the first semester and to spend more time exploring interests and adjusting to college life. Data from Phase One indicated that students are, in fact, exploring more. They also reported reduced stress associated with selecting a major. Overall, class grades were unchanged, with small increases in Humanities, Arts, and Social Sciences (HASS) GIR grades and small decreases in science core GIR grades.

The Phase Two experiment, which applies to students entering in fall 2019, aims to address the needs of this group of students through a new category of first-year discovery subjects. These subjects are one to three units and offer students a brief taste of departments across the Institute. They will be counted under a separate nine-unit limit, outside the normal first-year credit limit.

Another key aspect of Phase Two is that students entering in fall 2019 will not be offered early sophomore standing. Removing early sophomore standing will help address the notion that a student should declare a major after only one semester at MIT. It will also give every student access to advice in departments of interest and shift the responsibility for determining how many units a student should take to the student and his or her advisor.

Smaller efforts are also underway. In fall 2019, there will be a pilot program to test a network advising approach; students will be assigned a staff advisor in OFY, a faculty mentor, and a student associate advisor. And the first-year learning communities are being used to test methods for embedding more inspiring learning experiences in the first year.

Lead in Research-based Advising and Professional Development of Graduate Students

A major effort was made over the past year to take a holistic look at the experience of being a graduate student at MIT. To that end, a Graduate Student Roadmap was developed that lays the foundation for change.

Financial security has been a particular priority. The Graduate Student Council recommended addressing this issue to help enable progress in everything from advising to culture to housing. With the council's insights, and informed by the 2018 Academic Climate Survey and other data, a commitment from each MIT school was secured to implement policies and practices to help reduce financial insecurity among specific populations of graduate students, particularly those on nine-month appointments or with nonresident status.

In addition, the Graduate Family Support Working Group was created to understand the specific challenges of graduate students with families. The goal was to provide an interim report for community feedback in the late summer of 2019.

With regard to improving graduate advising, MIT Institutional Research did a meta-analysis and found that the graduate student–advisor relationship is the biggest single factor that is correlated with student satisfaction. Senior leadership, deans, department heads, and others are now even more engaged with addressing graduate advising issues. At the same time, OVC headquarters, OGE, the Teaching and Learning

Laboratory, and MindHandHeart are working with Paula Hammond, David H. Koch Professor and head of the Department of Chemical Engineering, to develop and run a pilot series of workshops intended to help faculty understand best practices in managing and mentoring in an academic laboratory. School of Engineering Dean Anantha Chandrakasan charged Professor Hammond with the task. In a parallel effort, OVC staff have collaborated with MindHandHeart on its continuing Department Support Project pilot program. This is an effort in several academic departments to share best practices and coordinate enhancements to strengthen the welcoming and inclusive nature of the academic climate.

Progress has also been made on graduate student professional development. The Graduate Student Professional Development Working Group recently created professional development competencies that graduate programs have adopted into their learning goals. The group is currently assessing programs and gaps to be addressed. A full report and action plan are due in the summer of 2019. Other efforts to improve the graduate experience include new and improved orientation programming as well as expanding orientation programming into the fall semester to engage a larger group of students.

Lead and Manage the Office of the Vice Chancellor

The creation and reorganization of the OVC has entered a new phase. The focus has shifted to an office-based evaluation of work priorities to eliminate efforts that do not advance strategic goals and to create capacity for new programs. The most visible activities to support office-wide and Institute-wide endeavors have been through the creation of cross-functional teams, discussed in more detail below.

The vice chancellor led work on other accomplishments this year. These included updating the academic calendar and the timing of Commencement and the hooding ceremony; aligning key messages for the annual Campus Preview Weekend event for prospective students; and finding solutions for students affected by work authorization delays when filing for F-1 Optional Practical Training petitions.

Office Updates

Headquarters

The OVC headquarters provides foundational support to OVC staff, enabling them to fulfill the organization's mission. Headquarters staff members deliver administrative and operational support across the organization in the following areas:

- human resources
- finance
- communications
- desktop support (shared with the Division of Student Life)
- project management
- cross-functional team oversight

Headquarters staffing was bolstered by the addition of Kate Weishaar '18, coordinator of the first-year experience program. Steve Burke retired. Donyatta Small was promoted to director of administrative computing for OVC and the Division of Student Life.

Cross-functional Teams

Several cross-functional teams and working groups are advancing the chancellor's work. Their progress is monitored by OVC's headquarters staff. Their efforts include:

- Graduate Family Support Working Group
- Wellness Committee
- Designing the First Year at MIT
- Office of Vice Chancellor—Council on Diversity and Inclusion
- Graduate Housing (with the Division of Student Life and the Graduate Student Council)
- Career Explorations
- Graduate Student Professional Development Working Group
- Interphase EDGEx online (led by the Office of Minority Education)
- Future learning management systems (led by the Registrar's Office)
- Graduate student orientation and onboarding (led by staff; includes students)
- International/domestic undergraduate student orientation and onboarding team

Key Accomplishments

In addition to helping advance the vice chancellor's key priorities, the OVC headquarters team:

- ran and refined leadership team meetings, all-staff meetings, retreats, and other programmatic events to build staff community;
- produced internal communications, from e-letters to announcements, to keep staff informed and engaged; managed crisis and external communications;
- managed the renovation of OVC's headquarters;
- managed the curricular practical training and optical practical training response to delays;
- launched the diversity, equity, and inclusion module;
- completed a successful fiscal year 2020 budget cycle, resulting in higher headcounts for Admissions, CAPD, and OGE; and
- conducted office prioritization exercises.

Affirmative Action Goals and Successes

The OVC staff, which is 66.3% women and 30.8% members of minority groups, is one of the most diverse organizational units at MIT, with an ongoing commitment to developing a workforce that reflects the rich diversity of the communities the office serves. The OVC leadership team is expected to show leadership in the area of diversity, equity, and inclusion. Every OVC employee shares responsibility for fostering an inclusive work environment in which all employees may do their best work.

As a result of the efforts of the leadership team and hiring managers throughout the organization, OVC succeeded this year in attracting and hiring members of underrepresented minority groups and women to fill open positions across the division. This year, OVC met all of its placement goals for minorities; there is one unmet placement goal for women in the secretarial/administrative/clerical job category. The availability for females in this category is 90% and OVC's current utilization is 79.4%.

For the period July 1, 2018, through June 30, 2019, 60% of all new OVC hires were women and 48.6% were members of minority groups. During the same period, OVC promoted 21 staff members: 19 (90.5%) were women and eight (38.1%) were members of minority groups.

Office of Admissions

MIT upholds a commitment to meritocracy and fair access to the admissions process for students from all backgrounds. The [Office of Admissions](#) enrolls a diverse and talented undergraduate student body composed of some of the world's most intelligent and creative individuals interested in an education centered on science and technology.

Current Events

Several very high-profile events took place in US college admissions in academic year 2019. In the fall, the lawsuit that challenged Harvard's use of race in its admissions process (*Students for Fair Admissions v. Harvard*) went to trial, a three-day public airing and critique of the Harvard admissions process. As of the end of June 2019, the judge had not yet made a ruling. In March, just before MIT released its admissions decisions on Pi Day (March 14), the so-called Varsity Blues scandal broke. A number of wealthy parents were indicted for trying to bribe athletic coaches to add their children's names to the coaches' recruiting lists, despite the fact that the children had neither talent nor (in some cases) any experience in the sport. Some parents also cheated by having someone else take the SAT for their children. MIT was not implicated in any of the scandals. The Institute's admissions process does not offer special treatment for so-called legacy students, donors, or athletes.

Key Accomplishments

- Early action applications rose 4.4%; the number of applicants from underrepresented minorities applying early rose 19.9%.
- MIT received 21,312 applications for the first-year class entering in fall 2019, down 1.8% from the past year.

- Admitted students totaled 1,427, representing 6.7% of the applicant pool.
- The yield on admitted students increased to 77.6%.
- Women make up 47% of the first-year class. The yield on women was 73%, versus 83% for men.
- There were 17 students admitted from the wait list; 16 of them enrolled.
- Almost 700 (686) students applied for transfer admission. Twenty-three were admitted, including three US military veterans. Of the 23 admitted, 21 are expected to enroll, and one MIT-Wellesley double degree program student will enroll in fall 2020.
- The MIT Admissions website was redesigned in concert with the new Student Financial Services website, aligning the two more closely to serve prospective students and families.
- As part of MIT's ongoing commitment to enrolling a diverse student body, OVC became a member of the American Talent Initiative, a nonprofit organization that brings top colleges and universities together to expand access and opportunity for talented low- and moderate-income students.

Class Profile and Commitment to Diversity

- The composition of the Class of 2023 reflects MIT's ongoing commitment to the diversity and excellence of its student body. Of the first-year students entering in 2019, 47% are women, 19% are in the first generation of their families to graduate from college, and 11% are international citizens.
- Students come from 49 US states and 63 countries. Eighty-nine percent of incoming class members have been leaders of an organization (president, captain, and so on) and more than a third (35%) have founded an organization or business.
- The mean SAT scores for first-year students are 745 on the verbal portion and 789 on the mathematics—the highest mathematics mean score ever.
- Nineteen percent of the class are Pell Grant recipients, which is the same proportion as in the previous year.
- MIT continues to partner with QuestBridge, a nonprofit organization that recruits high-achieving students from low-income backgrounds. Ninety-six QuestBridge finalists will attend in the fall, up from 85 for the previous class.
- Enrolling students who are US citizens or permanent residents are asked to self-identify race or ethnicity within categories established by the US Department of Education. The Class of 2023 is composed of the following groups: American Indian/Alaskan Native 3%; Asian American 41%; African American 10%; Hispanic/Latinx 14%; Native Hawaiian/Pacific Islander 2%; White/Caucasian 42%. Twenty-six percent self-reported as a member of an underrepresented minority. (Note: Students may identify with more than one racial or ethnic group. International students do not report race or ethnicity; however, they are included when calculating percentages of the class as a whole.)

Recruitment Travel and Outreach

- Domestic recruitment travel consisted of visits to 31 states plus Washington, DC, and Puerto Rico.
- OVC conducted 65 information sessions on the road, of which 49 were MIT-only and 15 were group meetings in collaboration with Pomona College, the California Institute of Technology, and Yale University.
- International recruitment travel included trips to Argentina, Brazil, Chile, Colombia, Ecuador, India, Peru, Saudi Arabia, Ukraine, and the United Kingdom.

Visitor Programs

OVC welcomed more than 45,000 visitors to campus for information sessions. The office provided 1,368 tours to prospective students, parents, and other visitors to the Institute. Campus Preview Weekend, MIT's largest enrollment-yielding event, was on the same weekend as the Boston Marathon. It drew 1,113 admitted students and more than 1,100 parents.

Educational Council

- The Educational Council Office increased the number of alumni interviewers to 5,942.
- More than 15,000 interviews were conducted.
- OVC made two changes to the alumni interviewing process:
 - The interview process was adapted so that the educational counselors reached out to students to set up interviews. Previously, students were responsible for reaching out to their assigned educational counselors directly.
 - Students were required to submit both parts of the admissions application to be eligible for an interview. Previously, students could schedule an interview at any time in the fall.
- Educational counselors included members from the classes of 1941 to 2019, with 30% of the volunteers hailing from the past 10 graduating classes.

Awards, Recognitions, and Staffing

- Michael Ming Yang was named director of admissions, replacing Matthew McGann.
- Jessica Ch'ng was awarded the Infinite Mile Award for her dedication and excellent work with the Multicultural Recruitment Team.
- In AY2019, the Admissions Office was composed of 26 administrative staff positions, including several shared positions with Student Financial Services, and nine support staff positions. Eighty percent of the staff were women, 20% were men, and 37% percent were members of underrepresented minorities (Hispanic, Asian, and African American).

Career Advising and Professional Development

The mission of [Career Advising and Professional Development \(CAPD\)](#) is to empower students, postdoctoral associates, and alumni to explore their life and career goals by helping them to develop core competencies and build professional networks. The goal is to engage students and alumni in self-discovery to craft lives that are intellectually challenging, personally enriching, and of service to the world.

Key Accomplishments

- CAPD combined with the Distinguished Fellowships Office as a result of recent organizational changes, strengthened internal coordination, used technology to improve workflows and communications, and enhanced collaborations with key offices.
- Professional development was a top priority. CAPD wrote a graduate professional development report that included a review of institutional data, collaborated in the development of core competencies that promote MIT students' lifelong success, conducted an internal and external scan of professional development practices, and created a model for program delivery. In addition, CAPD organized four pilot programs, including MIT's inaugural Graduate Student Professional Development Week, in which 15 offices participated.
- To address the recommendations of the report by the Career Exploration Committee and increase the diversity of opportunities available to MIT students, CAPD gained greater oversight of the Fall Career Fair and adopted a new career management platform. This career fair transition resulted in CAPD's direct oversight of 12 student career fair directors and involved collaborating with the students' new faculty advisors.
- CAPD launched new and coordinated communication efforts for first-year students, graduate students, [prehealth students](#), administrators, and employers to increase awareness of resources and communicate ongoing efforts.

Notable Statistics and Data

- Overall, CAPD completed 11,894 MIT student, alumni, and postdoctoral scholar engagements through 4,988 career, distinguished fellowship, and prehealth advising and online sessions. There were 4,559 attendees at 200 workshops, presentations, speaker panels, employer events, and information sessions; 2,291 recruitment interviews; and 56 student attendees at various company site visits. Additionally, CAPD submitted 56 prehealth committee letters and 42 distinguished fellowship endorsement letters.
- To engage a larger cohort of first-year students, CAPD expanded first-year programming and the Freshman/Alumni Summer Internship Program was stopped. CAPD saw 297 first-year students in one-on-one advising, with a total number of 457 advising appointments, a 50% increase from AY2018. Of the 1,143 students of the first-year class, 552 (48.3%) engaged with CAPD through at least one event or program.

- Twenty first-year students participated in the Prehealth Pre-Orientation Program.
- The First-Year Prehealth Peer Mentor Program consisted of four events with 36 attendees.
- Among those of the Class of 2018 who sought immediate employment, 91% of bachelor's degree graduates, 84% of master's degree graduates, and 73% of PhD graduates reported obtaining a job within three months of graduation. Reported mean salaries were \$89,710 for SB; \$105,238 for MS; \$119,473 for MEng, and \$145,598 for MBA. Reported doctoral mean salaries were \$64,258 for postdoctoral positions and \$122,755 for other positions.

Prehealth Advising

- An increase of 12% from the previous year, 88 students and alumni—28 undergraduates, four graduate students, and 56 alumni—applied to medical school in the 2018 cycle with an 80% acceptance rate.
- Two new programs were created to assist students in exploring medicine: the Peer Mentor Program and the MIT–Harvard Medical School MD–PhD Mentoring Program. The latter program had 24 participants.
- Ninety undergraduates participated in “physician shadow” experiences at local hospitals, including Massachusetts General Hospital, Boston Children’s Hospital, Tufts Medical Center, and Beth Israel Deaconess Medical Center. Twelve of the 90 were part of the Beth Israel Physician Surgical Shadowing program.

Career Services

- Career Services implemented a Quick Queries pilot program that replaced the Drop-In service. The pilot program successfully met high student demand in the early fall; in the first two weeks, 87% of the 657 appointments offered were used.
- Career exploration pilot programs continued for the second year:
 - Three Designing Your Life workshops were offered and 16 students attended. The approach was also presented in the OVC-supported first-year advising seminar, 16.A01 Designing Your Life.
 - Infinite Careers highlights the nonlinearity of career decision making through networking events between students and alumni. Career Services facilitated 11 events with speakers representing careers from choreography to corporate law. There were 98 attendees, of whom 99% were satisfied with the content.
 - Events under the heading of Me in the Future were offered by CAPD and the Fall Career Fair Committee to kick-start career exploration for first-year undergraduates by educating students on career resources, the Fall Career Fair, and career paths—both expected and unexpected. These events included opportunities such as employer site visits, Career Fair preparation workshops, and undergraduate panel discussions. There were 1,096 attendees at various events.

- Career Services hosted 129 employers conducting 2,291 on-campus interviews and posted 2,042 internships and jobs. Career Services plans to increase employers recruiting on campus and diversify opportunities through its new career platform, office hours, and tech talks.
- The Employer Connection Program had 12 employers.

Distinguished Fellowships

- In AY2019, the Distinguished Fellowships team supported 242 applications for Churchill, Fulbright, Gates, Knight-Hennessy, Marshall, Mitchell, Rhodes, and Schwarzman fellowships. Of the MIT applicants, there were 23 winners.
- With the Media Studies Department, the team co-created a credit-bearing class MAS.S10: Artificial Intelligence and Equality (Special Subject in Media Technology) in the fall of 2018.

Awards and Recognition

- Ten staff members served in leadership roles for professional associations, made presentations in regional and national conferences, or did both.
- Nine CAPD staff participated in OVC Institute-wide committees.
- Josh Nagle and Tavi Sookhoo received OVC Infinite Mile Awards. Amanda Pickett was awarded the 2019 Change Makers Award for the faculty and staff division.

Office of Experiential Learning

The [Office of Experiential Learning \(OEL\)](#) was reconfigured in the spring of 2018 as part of the overall reorganization of the vice chancellor's office. Comprising five programs—D-Lab, Edgerton Center, the Experimental Study Group, Global Education, and UROP—OEL leverages hands-on educational experiences, inside and outside the classroom, to expose students to different ways of thinking and solving problems, broaden their communications skills, and help them develop a stronger sense of self.

Kate Trimble, who had previously served as associate dean of the PKG Center, took the helm of OEL in December 2018 as senior associate dean and director. Former OEL director J. Kim Vandiver stepped down to take on a new role, focusing his primary efforts on the Edgerton Center and student clubs and teams.

The five OEL programs' activities for the past year are reported below.

D-Lab

Founded in 2002 by Senior Lecturer in Mechanical Engineering Amy Smith, [D-Lab](#) works with people around the world to develop and advance collaborative approaches and practical solutions to global poverty challenges. The mission is pursued through an academic program of more than 20 MIT courses and student research and fieldwork opportunities (Academics); six research groups spanning a variety of sectors and

approaches (Research); and a group of participatory innovation programs called Innovation Practice. Academics, Research, and Innovation Practice are the three pillars of D-Lab's mission. In August 2018, D-Lab said goodbye to its first website, which had been in service some 10 years, and launched a clean, light, content-rich, mobile-friendly website.

Education

Led by Faculty Director for Academics Professor Maria Yang and Academic Program Manager Libby Hsu, D-Lab offered 16 MIT subjects, eight in each semester, during AY2019. Ten classes carry alternate graduate course numbers. All D-Lab courses carry an Edgerton Center course number; some are cross-listed with departments such as the Urban Studies and Planning (two classes), Media Arts and Sciences (one class), Mechanical Engineering (four classes), the Sloan School of Management (two classes), and Architecture (one class).

Students and Projects

More than 230 students enrolled in D-Lab classes this past year. In AY2019, 32% of students enrolled in D-Lab classes were graduate students; 68% were undergraduates. D-Lab classes remain popular with cross-registering students from Harvard University and Wellesley College, with these students representing 28% of enrollment. D-Lab also continues to enroll a high number of women, with 74% of enrolled students identifying as female.

D-Lab students worked in teams on 58 unique projects with community partners in 25 countries. Fifty-eight D-Lab students traveled to 14 countries to perform fieldwork related to their class and research projects. Thirty-five students engaged in UROPs supervised by D-Lab instructors and research staff.

Research

D-Lab's lean, collaborative, and interdisciplinary research team is led by Faculty Director for Research Dan Frey and Associate Director for Research Kendra Leith. The team creates, shares, and uses collaborative research practices, actionable findings, and practical solutions to address global poverty challenges.

Highlights

- **Advancing Sustainable Charcoal Enterprises at Scale (ASCHES):** In October 2018, with private foundation support, D-Lab worked with The Charcoal Project to host a five-day convention for a group of 26 charcoal briquette producers from nine countries. The ASCHES meeting, held in Naivasha, Kenya, developed the capacity of the participants to implement their businesses effectively and launched an international community of practice to support briquette businesses.
- **New Entrepreneurs Xchange for Transformation: Idea to Impact (NEXTi2i):** With support from the US Agency for International Development (USAID), D-Lab's Lean Research team has been collaborating with a new social impact incubator—NEXTi2i—at Ashesi University in Ghana. The D-Lab team has trained more than 400 students, faculty members, fellows, and practitioners in the approach. This is the first year of a three-year collaboration.

- **Comprehensive Initiative on Technology (CITE):** In the fall of 2018, the USAID-funded CITE, a highly successful program launched by D-Lab and consortium partners, administered by the Department of Urban Studies and Planning for five years, moved to D-Lab. This past year, D-Lab received USAID funding to take on six additional projects under the auspices of CITE.

In the fall of 2018, D-Lab received a grant from the National Science Foundation to create and evaluate a co-creation toolkit for graduate students working in humanitarian settings.

Innovation Practice

The third pillar of D-Lab, Innovation Practice, was formed in spring 2017 to develop, advance, and apply participatory innovation as a methodology for tackling poverty. To achieve this, the Innovation Practice team conducts design trainings, fosters global communities of practice, and partners with other development actors to implement local innovation programs in complex settings. This year, the Innovation Practice team began to tackle a new question across all of its programs: how can D-Lab support local innovators by strengthening the innovation ecosystems they inhabit?

- The D-Lab Scale-Ups Fellowship supports social entrepreneurs to bring poverty-alleviating products and services to emerging markets at scale. This past year, six new fellows were selected—all founders of homegrown, high-impact ventures in underserved markets in Kenya, Tanzania, and Uganda. To date, the fellowship has supported 39 fellows who have reached 1.5 million people with goods and services.
- The Humanitarian Innovation program is spearheaded by D-Lab Founding Director Amy Smith and humanitarian relief expert Martha Thompson. The team engages refugees and displaced persons in the design process so that they can create the things they need to improve their lives and ultimately improve the way humanitarian work is delivered. This year, the Humanitarian Innovation team delivered design workshops and established innovation centers in Greece and El Salvador.
- The Inclusive Markets program engages with regional and community leaders to develop inclusive businesses, markets, and economies that promote equity, resourcefulness, and resilience for people living in poverty. In AY2019, this group has leveraged D-Lab's creative capacity-building and co-design methodologies to engage with waste pickers in Ghana and artisanal miners in Colombia, facilitating opportunities for these workers to co-create new market systems alongside government and industry leaders.
- The Innovation Ecosystem Building program at D-Lab seeks to support grassroots informal sector entrepreneurs addressing local and global challenges by bringing together diverse regional actors to support innovation and entrepreneurship. This year, that D-Lab team held catalytic innovation ecosystem meetings through the NEXTi2i program in Accra, Ghana; the Creación de Comunidades Creativas (Creation of Creative Communities) program in Oaxaca, Mexico; and at the Practical Impact Alliance (PIA) Co-Design Summit in Laayoune, Western Sahara (administered by Morocco).

- PIA is a membership organization of leaders from diverse organizations with aligned missions who learn, collaborate, and develop best practices together. Members in 2019 members included Danone S.A., Johnson & Johnson, OCP Phosboucraa Foundation, Pact, SC Johnson, Siemens Stiftung, USAID, and World Vision. Members participated in working groups, resulting in two reports:
 - The Demand Engine: Growth Hacking Strategies for Scaling Demand at the BoP (base of the pyramid), by Amanda Epting, Emile Schmitz, and Valéria Varga (May 2019)
 - Understanding Innovation Ecosystems: A Framework for Joint Analysis and Action, by Elizabeth Hoffecker and Molly Wenig Rubenstein (June 2019)

Staffing Changes

D-Lab Instructor Martha Thompson joined the full-time staff to co-lead the growing Humanitarian Innovation program with Amy Smith. D-Lab also welcomed two new development staff members in the spring of 2019. Thais Bessa joined as program development officer (full time) and Ellen Peck joined as development officer (half time).

Edgerton Center

The [Edgerton Center](#) upholds the legacy of Harold “Doc” Edgerton—inventor, entrepreneur, explorer, and MIT professor, in many ways. The center promotes hands-on and project-based learning, offers subjects in engineering and imaging, supports student clubs and teams, manages student machine shops, upholds MIT’s expertise in high-speed and scientific imaging, and offers a year-round program for students from kindergarten through high school (K–12 program).

Clubs and Teams

The Edgerton Center provides the infrastructure that MIT students rely on when undertaking engineering projects of significant scope. Although success can be measured by a first-place performance in a competition, it can also be measured by how well a team manages a challenge. There were 338 participants this past year, and some notable examples come to mind.

- Ten days before the Formula SAE Lincoln competition, the MIT Motorsports team completely rebuilt the battery pack for the team’s single-seat electric Formula-style race car. They placed second in the acceleration event and third in the skidpad event.
- A severe battery fire in June damaged the pod that the MIT Hyperloop team was building. Within a month, the team had recreated its pod to enter the SpaceX Hyperloop Pod Competition, which will take place July 21, 2019, in Hawthorne, California.

Student Machine Shops

MIT students have the opportunity to learn how to design, build, and manufacture in 10,000 square feet of staff-supervised shop space facilities.

The Edgerton Student Shop will move to the ground floor of Building 6C to make room for the Stephen A. Schwarzman College of Computing. By mid-September 2019, the Edgerton Student Shop in Building 44 will move to the basement of Building 6C. Parker Andrew Goud SM '14, PD '19, PhD '19, who has worked at the Edgerton Student Shop since 2014, remarked, "Without the equipment available at the Edgerton Student Shop and the boundless advice of Mark Belanger, my research at MIT simply would not have been possible."

Subjects

The Edgerton Center is the administrative home for subjects offered by the Edgerton Center and D-Lab. In AY2019, 416 students participated in 39 for-credit subjects, ranging from Edgerton's iconic Strobe Project Lab, through D-Lab offerings, to student-initiated UROPs and independent projects.

K-12 Programs

With little or no cost to participants, the Edgerton Center's K-12 programs execute the Institute's larger goals of creating educational opportunities for students from all backgrounds and removing barriers to participation.

- Now in its 22nd year, the Edgerton Center's daily, no-cost, three-hour, project-based lessons in science and engineering for fourth-through eighth-grade students drew more than 2,500 students from public, private, and home schools in the Greater Boston area and nearby New England states.
- The Greater Lawrence Technical School and Advanced Functional Fabrics of America collaborated with the Edgerton Center on the creation of an engineering curriculum program in which students develop and prototype an idea using advanced functional fabrics. The Greater Lawrence Technical School Innovation program entered its third year with a second cohort of science, technology, engineering, arts, and mathematics (STEAM) students.
- Edgerton staff worked with the teachers and students of TechBoston Academy in the [STEAM Studio](#) collaboration. Center staff supported four cycles of hands-on projects, engaging more than 100 students.
- The five-week summer Engineering Design Workshop for high-school students, intended for local students, is in its 13th year. Admission was split almost equally between the 27 male and female students who participated this year.
- In collaboration with General Electric and its Lynn, MA, plant, the GE Girls summer program, in its ninth year, hosted 25 rising seventh- grade girls from the Lynn Public Schools. The program for rising ninth-grade girls, YouGo Girl, is now in its 17th year.
- Close to 200 K-12 educators took part in 27 professional development workshops integrating maker activities into K-12 curricula. The Edgerton Center also offered an online course on Makerspaces and Making, attended by 24 educators. A collaboration with Autodesk, Inc., and UROP students resulted in 12 published online tutorials.

- International visitors to the center included middle- and high-school students from Bayan Gardens School, Alkhobar, Saudi Arabia; US China SciTech, Beijing, China; and Wahaha Bilingual International School, Hangzhou, China. Instructors traveled to the Mustakis Foundation in Recoleta, Chile, for workshops, and Edgerton Center Instructor Ed Moriarty traveled to Ferrara, Italy, and Barcelona, Spain, in conjunction with MIT's Global Teaching Lab.
- The Edgerton Center's DNA, Proteins, and tRNA curriculum sets were provided to the Boston Public Schools for all 31 high schools. The center also began to put the supporting teacher training online.

Fundraising

Engagement of parents and students increased the number of donors from 153 in 2018 to 241 in 2019 on the annual Pi Day appeal.

Awards and Recognition

Cheyenne Hua '19, former team captain of MIT Motorsports, received the Sontheimer: Creativity and Innovation in Design Award from the Mechanical Engineering Department.

Global Education Office

The Global Education Office (GEO) contributes to MIT's mission to help students develop the ability and passion to work wisely, creatively, and effectively for the betterment of humankind. GEO accomplishes this work through two programmatic areas: [Global Education](#) and [Study Abroad](#). For Global Education, the office provides student advising and manages programming and services in support of all global education opportunities across the Institute. The office oversees events such as the Go Global Fair and Institute-level data collection and reporting of participation in global education across programs. For Study Abroad, GEO prepares students for and sends them on Independent Activities Period (IAP), semester abroad, and summer study abroad programs. This includes advising, recruitment, predeparture, health and safety preparation, in-country support, and welcome back services.

Since July 1, 2018, the Global Education Office reports to the Office of Experiential Learning, part of the Office of the Vice Chancellor.

Notable Statistics and Data

Overall Global Education participation: In AY2019, 1,172 undergraduates (a 7.9% increase from the prior year) participated in global opportunities within 57 countries, with 739 students in internships, 169 in study abroad, 127 in research, 53 in public service or service learning, and 84 in short educational trips. Based on the results of the 2018 Graduating Student Survey, 54.4% of graduating seniors (a 1.1% increase from the prior year) reported completing at least one global experience while at MIT.

Study Abroad participation: In AY2019, 169 MIT undergraduates (a 2.4% increase from the prior year) participated in study abroad opportunities. Participation in academic exchanges grew by 53.8% because a new exchange pilot with Imperial College London was added to the portfolio and participation in the University of Tokyo exchange increased. IAP Spanish III in Madrid was not offered but Humanistic Co-Design in India,

a new faculty-led course, was added. Ongoing faculty-led courses and semester study abroad programs maintained or slightly increased participation.

Study Abroad scholarships: GEO provided \$186,308 in Study Abroad scholarships (a 0.1% decrease from the prior year) to 76 eligible students (a 27% decrease from the prior year).

Student engagement: During AY2019, 782 students attended 28 GEO-sponsored group sessions and events. In addition, GEO served students through 146 advising and drop-in appointments and engaged with students through 3,833 email advising communications.

Key Accomplishments

Imperial-MIT Academic Exchange pilot program: In collaboration with MIT academic departments and with counterparts at Imperial College London, GEO started a two-year pilot program for the multi-departmental undergraduate academic exchange with Imperial College London in AY2019. Eight academic departments and seven MIT undergraduates participated in the pilot this past year. The multi-departmental exchange grew out of two existing exchanges with Imperial College London: the Imperial-MIT Summer Research Exchange, involving 10 academic departments, and an Imperial-MIT departmental academic exchange in two departments.

Successful transitions in GEO: GEO went through significant staff transitions in AY2019. Two new staff members joined GEO—Ellen Reid is the new assistant dean for global education, and Ariel Ackermann is the new program assistant. Ashlee Andrews was promoted to the position of global education coordinator. During the same time period, GEO transitioned organizationally to the new Office of Experiential Learning. Through the transitions, the team maintained a high level of service and continued expanding programs.

Priscilla King Gray Public Service Center

The [PKG Center](#) taps and expands MIT students' unique skills and interests to prepare them to explore and address complex social and environmental challenges. The center educates students to collaborate ethically and effectively with community partners to engage in meaningful public service, today and in their lives beyond MIT. Academic year 2019 marked the PKG Center's 30th academic year connecting MIT students with public service opportunities locally, nationally, and globally. Although the center works with MIT students from all majors and academic levels, it has recognized that the greatest opportunity to increase social impact within the MIT community lies with undergraduate students who have not yet developed projects of their own or who are newly exploring the public service and community landscape. In AY2019, the PKG Center focused on three primary goals:

- increasing and diversifying undergraduate student demand for and participation in PKG Center programs;
- increasing experiential and co-curricular opportunities for undergraduate student engagement; and
- implementing new center-wide systems and tools to streamline and standardize the center's work and enhance students' and partners' access and data collection.

More than 2,300 MIT undergraduate and graduate students engaged with the PKG Center through programs and events this year (up from 946 in AY2018), largely because of more fervent and strategic outreach to students, a greater emphasis on entry points for the center's programs, and new partnerships across the Institute that have raised the PKG Center's visibility.

PKG also added three new staff members. Danny Becker, program coordinator, is spearheading student engagement with groups and clubs on campus, serving as staff advisor for the MITvote and MIT Civic Organizers student groups, and coordinating the Get Good Stuff Done series. Bianca deLeigh, program assistant, joined the PKG Center team in December and oversees finance and reporting, in addition to supporting logistics for programs such as PKG Spring Break and other center events. Rebecca Obounou joined the center in April and oversees the Innovation, Development, Enterprise, Action, and Service (IDEAS) program as the center's assistant dean for social innovation.

Key Accomplishments

Using the PKG Center's new strategic plan as a guide, the center added and expanded several initiatives during AY2019 specifically designed to increase undergraduate involvement in public service and civic engagement while maintaining a robust set of opportunities and support for graduate students. These programs included:

- **Social Impact Internships:** Building on the PKG Center's established federal work-study model, social impact internships place students with nonprofit organizations, government agencies, and social enterprises. These mutually beneficial relationships allow MIT students to build their résumés and apply what they have learned in the classroom, while community partners gain access to skilled MIT talent that they may otherwise have been unable to access. The center expects to build and expand this program significantly in the coming year.
- **PKG Center and Terrascope collaboration:** The center and Terrascope have created an exciting new model for the integration of public service and academic engagement. Terrascope engages dozens of first-year students in complex, public-spirited problem solving every year and is well positioned to build knowledge and interest among these students. The PKG Center and Terrascope are working together to focus the topics that Terrascope students will tackle in order to engage them with issues, locations, and populations where the center has created or plans to create long-term partnerships.
- **PKG Center summer immersion:** Building on the relationships of the partnership with Terrascope, the PKG Center launched two new summer programs in the Navajo Nation in 2019. PKG Connect sent a group of undergraduate students to the reservation for a week to meet community members and stakeholders and to learn about important social and technical issues on the reservation. Students spent two days collaborating with DigDeep's Navajo Water Project and helped assemble one of DigDeep's home water systems. The more immersive Team Internship Program placed students in 8- to 10-week internships in partnership with Community Outreach and Patient Empowerment, a partnership with the Navajo Nation Community Health Representative Outreach Program. Teams of MIT students were placed in full-time internships to support the partnership's

mission to eliminate health disparities and improve the well-being of American Indians and Alaska Natives. Projects addressed themes such as food access and insecurity, nutrition, and training and outreach.

- **Community Conversations:** This spring, the PKG Center hosted two Community Conversations events, one focused on climate change and one on health and healthcare. Some 122 guests registered to attend the climate change event and nearly 200 MIT students, staff, and community partners signed up to attend the health-focused event.
- **PKG spring break:** The PKG Center added a new spring break track focused on criminal justice in Greater Boston. In partnership with The Educational Justice Institute (TEJI), participating undergraduates explored Boston's criminal justice system from multiple perspectives, from those of formerly incarcerated individuals to those of professionals in the field. Students also visited community and government organizations in the justice system.
- **Civic engagement:** The PKG Center has become a touchstone for civic engagement at MIT. PKG Program Coordinator Danny Becker now serves as staff advisor to MITvote. Through their collective outreach efforts and multiple voter registration drives, MIT ranked ninth out of 134 campuses nationwide for percentage of new voters registered in 2018. Additionally, the PKG Center funded and facilitated eight civic dialogue dinners focused on identity politics, housing policy, technology and privacy policy, and other issues.

Awards and Recognition

The PKG Center was awarded a number of significant grants, including continued support from the Bose Corporation and a new partnership with Acumen and the Rockefeller Foundation to support the IDEAS program. The center also received a number of individual gifts from alumni and supporters of public service.

The center recognized two students for excellence in public service at the annual MIT Awards Convocation this spring: Sarah Tress '19 and graduate student Lisa Volpatti. The PKG Center also recognized Ceasar McDowell as the winner of its second Paul Gray Faculty Award for Public Service.

Undergraduate Research Opportunities Program

The [Undergraduate Research Opportunities Program](#) remains the standard-bearer in experiential learning at MIT. In its 50th year, UROP continues to offer undergraduates pivotal, transformative experiences in research. It is MIT's most popular avenue for practical learning, with the vast majority of students participating at least once, and more than half the faculty active as mentors. Participation at such high levels is expected; through UROP, students partner with MIT faculty at the forefront of research, and faculty make use of the enthusiasm and initiative undergraduates bring to the research enterprise.

The UROP office (part of the Office of Experiential Learning) is MIT's central administrative unit for UROP, providing advocacy, programming, and funding for undergraduate researchers, and support for the faculty and departments, laboratories, and centers that regularly host UROP students. UROP office staff issue final approval

of all UROP projects (approximately 4,600 annually), oversee an endowment and gifts portfolio that generates close to \$3 million annually for student researchers, and are active in UROP fundraising and stewardship of donors. The office maintains UROP student records dating back several decades and provides participation statistics to all areas of the Institute.

Notable Statistics and Data

The OVC's efforts to create greater flexibility for first-year students for academic exploration has resulted in greater numbers of entering students participating in UROP.

- During AY2019 and the summer of 2019, 64% of first-year students (Class of 2023) participated in UROPs, compared with 61% of first-year students (Class of 2022) in AY2018 and summer 2018.
- The Class of 2022 saw 19% of students participate in fall 2018, compared with 12% of the Class of 2021 participating in fall 2017.
- Almost twice as many Class of 2022 students (91) received UROP office funding in fall 2018 as had Class of 2021 (48) students in fall 2017.
- Of the Class of 2019 first undergraduate degree recipients, 90% participated in UROP at least once during their undergraduate years.
- From the summer of 2018 to the spring of 2019:
 - More than half of the MIT undergraduate population (56%) participated in UROP, with 60% of undergraduate women and 51% of undergraduate men participating.
 - More than three-quarters of UROP projects (76%) were conducted for pay; the remainder were conducted for academic credit (21%) or were unpaid internships (3%).
 - The Institute committed \$10,266,718 to undergraduates engaged in UROP, with \$5,423,459 (53%) allocated directly from the UROP office.

Key Accomplishments

- Teamed with CAPD on professional development on presentations and workshops for UROP students.
- Customized workshops and presentations for specific student populations, including first-year and first-generation students. Delivered programming for increased engagement of underrepresented minority students (the Chocolate City residence and the Laureates and Leaders and Project Interphase programs of Office of Minority Education).
- Collaborated with academic departments on discipline-specific UROP programming (the Department of Aeronautics and Astronautics, the Program in Media Arts and Sciences, the David H. Koch Institute for Integrative Cancer Research, and others).
- Launched an Instagram social media presence in fall 2018, cultivating 628 followers since launch.

- Held the IAP UROP Expo as part Departmental Exploration programming. Similar in structure to a career fair, the event connected students with faculty, students, and staff from MIT majors and interdisciplinary laboratories and centers to discuss UROP opportunities. Nearly 150 students attended.
- Partnered with the Graduate Student Council on events for mentoring-skills enhancement that were hosted at the Sidney-Pacific dormitory.

Awards and Recognition

Professor Iain Cheeseman of the Biology Department and the Whitehead Institute for Biomedical Research, and Angela Q. Zhang, graduate student in Health Sciences and Technology at the Koch Institute (Darrell Irvine's laboratory), won the 2019 Outstanding UROP Mentor Award. The 2019 Office of the Vice Chancellor Infinite Mile Award for Innovation and Creativity was given to J. Alex Hoyt.

Office of the First Year

The mission of OFY is to provide excellent services and programs that catalyze student exploration and promote the academic success and personal development of undergraduates. These programs enrich and support undergraduate education at the Institute, including

- first-year programming (e.g., orientation, freshman pre-orientation programs);
- first-year advising; and
- the Committee on Academic Performance.

In addition to first-year programming and the Committee on Academic Performance, OFY includes three first-year learning communities: Concourse, the Experimental Study Group (ESG), and Terrascope.

Notable Statistics and Data

- Faculty members advised or mentored 99% of the Class of 2022 during the students' first year at MIT.
- In the fall 2018 semester, 8.8% of the Class of 2022 was flagged; 79% of flagged students recovered and passed their flagged subjects. In the spring 2019 semester, 13% of the class was flagged; 58% of flagged students recovered and passed their flagged subjects.
- First-year pre-orientation programs saw participation by 630 students.

Key Accomplishments

- The office changed the process around training first-year advisors. An effort was made to meet in small cohorts over three months to facilitate specific conversations around the experiment and concerns. The program was well received; in all, 177 out of 184 advisors participated.
- The office created new programming specific to choosing a major.

Awards and Recognition

2019 First-Year Student Award Recipients

- Performing Arts: Sophia Fang
- Academics: William Luo
- Leadership: Ritaank Tiwari and Yu Jing Chen
- Research: Amanda Vanegas
- Service: Christian Rios
- Diversity and Culture: Stacy Godfreey-Igwe
- Athletics: Eva Then and Robert Law

2019 First-Year Advisor Award Recipients

- Creative Advising Activity Award: Professor Alan Oppenheim, Department of Electrical Engineering and Computer Science
- Outstanding Rookie Advisor Award: Professor Andrew Babbin, Department of Earth, Atmospheric, and Planetary Sciences
- Alan J. Lazarus (1953) Excellence in Advising Award: Professor Lorna Gibson, Department of Material Science and Engineering
- Excellence in Mentoring Award: Provost Martin Schmidt, Ray and Maria Stata Professor of Electrical Engineering and Computer Science
- Student Champion Award: Elizabeth Vogel Taylor, Concourse Program
- Innovative Seminar Award: Professor Yufei Zhao, Department of Mathematics

2019 Outstanding Associate Advisor Award Recipient

- Katie O’Nell, Class of 2019, Brain and Cognitive Sciences

Concourse

[Concourse](#) is a first-year learning community of students and instructors dedicated to exploring questions at the heart of humanistic inquiry and the relationship of these questions to their MIT education. The curriculum covers the science core (mathematics, physics, and chemistry), offers a foundational humanities course, and integrates the sciences and the humanities into a larger context in the program’s weekly Friday lunches and seminars.

Key Accomplishments

- Received renewal of the Concourse annual T. W. Smith award. This helps fund upper-level seminars and educational experiences outside the classroom, such as the joint venture with the History Section to send students to Ancient Rome and Greece, as well as the annual Concourse curriculum-planning retreat.
- Completed an update of the online educational tools for the Concourse physics courses.
- Led a second annual student and faculty spring break trip to New York City for an immersive cultural and historical experience.
- Continued to use the spring seminar, CC.011 Thinking Across the Disciplines, to expose Concourse's first-year students to a diverse range of faculty at MIT.
- Continued the alumni outreach initiative with a second alumni dinner in New York City and a first alumni dinner in San Francisco, CA.
- Continued to offer sailing as a Concourse physical education option.
- Hosted a weekly breakfast seminar for discussion of current events.
- Continued to work with OVC on improving the first-year experience; developed an exploration-themed pilot program to run in fall 2019.

Notable Statistics and Data

- Fall first-year enrollment at the fifth week was 46 students.
- Spring first-year enrollment at the fifth week was 41 students.
- Concourse employed 26 upper-level program alumni as tutors, teaching assistants (TAs), and graders.

Experimental Study Group

The [Experimental Study Group \(ESG\)](#) offers instruction in the core first-year subjects of biology, chemistry, mathematics, physics, and humanities through small, discussion-based classes designed for students who are interested in taking an active role in their education. Academics are supplemented by a variety of community activities, including weekly luncheons, evening study sessions, and weekend trips.

Key Accomplishments and Initiatives

- OVC first-year experimentation pilot project: ESG staff have developed a teaching pilot combining GIR teaching with team- and project-based experiences. Although GIR subject material will be largely unchanged, the pilot program represents a pedagogical shift. It allows students to engage in more real-world learning, echoing the experience that many achieve in UROP activities, where goals and the tools needed to reach them are not defined a priori. In addition, the pilot will weave multidisciplinary topics through the curricula of all the GIR material taught in ESG, in both formal classwork and project-based activities.

- Math with Python: Throughout the past year, Jeremy Orloff continued his work to develop a 15-unit course that integrates basic programming and differential equations, which will be offered as a seminar in fall 2019.
- Chemistry GIR problems with a climate science focus: With additional funds from the MIT Environmental Science Initiative, ESG staff members Patti Christie and Nicholas Boekelheide continued their work on developing biology and chemistry GIR problems with a climate science focus. They were joined by ESG staff members Paola Rebusco, Analia Barrantes, and Jeremy Orloff in this effort to develop climate and environmental science modules that can be incorporated in GIR across the disciplines.
- ESG undergraduate seminars: In fall 2018, ESG offered two freshman advising seminars: ES.A72 Where Is Everybody? (Paola Rebusco and Wade Roush) and ES.S10 Many Interesting Things (Christian Cardozo). Additional fall seminars included ES.200 ESG Teaching Seminar (Patti Christie) and ES.S70 Already Starting Everything (Cardozo). In spring 2019, ESG offered ES.010 Chemistry of Sports (Christie, Steve Lyons); ES.200 ESG Teaching Seminar (Gabrielle Stoy); ES.S10 Many Interesting Things (Cardozo); ES.S40: Why Can't We All Get Along? (Henry Lieberman, Christopher Fry); ES.S70 Already Starting Everything (Cardozo); and ES.S71 How to Get off the Struggle Bus (Carter Jernigan). Three seminars were taught by ESG alumni (Henry Lieberman '75, Carter Jernigan '07, and Christian Cardozo '17).
- *Experimental*, the ESG documentary: ESG Associate Director Graham Ramsay has filmed more than 100 ESG students, alumni, staff, and other notable people for *Experimental*. Now in post-production, the documentary will premiere at the 50th Anniversary ESG Day of Learning on April 3, 2020.
- The Educational Justice Initiative (TEJI): TEJI has organized the Massachusetts Prison Education Consortium, a statewide consortium that supports continuing postsecondary education for currently and formerly incarcerated people and now numbers more than 200 members, including academic institutions, criminal justice agencies, government agencies, and community-based organizations. TEJI continues to provide MIT students with the opportunity to take courses with incarcerated individuals in prisons and jails, in addition to supporting MIT students who teach coding and brain science courses to, and tutor, incarcerated individuals. During IAP 2019, 10 MIT students created, alongside incarcerated women, an augmented reality mural inside a women's jail in Boston. Over the summer, TEJI joined with the Edgerton Center to present a week-long taste of college for 25 Boston-area youths involved with the criminal justice system. The week included an interactive ethics workshop at ESG and hands-on activities at the Edgerton Center.

Awards

- Winners of the annual Peter and Sharon Fiekowsky Community Service Award (for outstanding contributions to the ESG community) included Marisa Gaetz '20 and C. Rios '22.

- The winner of the annual Peter and Sharon Fiekowsky Excellence in Teaching Award (given to graduating seniors who have demonstrated excellence in teaching at ESG over a sustained period of time) was Rianna Jitosh '19. Winners of the Peter and Sharon Fiekowsky Distinguished Teaching Awards included Dylan Hendrickson '19, Elizabeth Chang-Davidson '19, and Tamar Grey '19.
- In spring 2019, Lee Perlman and Carole Cafferty won the Irwin Sizer Award for Most Significant Improvement to MIT Education.

Notable Statistics and Data

- Sixty first-year students were enrolled in the ESG this year. Of those, 67% were female, 28% were members of underrepresented minority groups, and 10% were international students from many countries, including Israel, Jamaica, Kazakhstan, Rwanda, St. Vincent, and Taiwan. Approximately 21 non-ESG students enrolled in the three humanities classes offered at ESG. Another 28 students (most of whom were never in ESG) enrolled in five Pass/No Record undergraduate seminars sponsored by ESG in the fall and spring terms.
- In addition, 49 undergraduate TAs in the fall and 40 in the spring provided excellent support for the first-year students while learning valuable teaching and leadership skills.

Terrascope

At the core of the [Terrascope](#) program is one basic, important idea: MIT students, even in the first year, are ready to take control of their own education and to tackle big problems. Every year, Terrascope explores a different sustainability-related issue. In our hands-on, project-based classes, the students take charge to develop solutions, drawing on diverse perspectives, interdisciplinary research, and a supportive Terrascope community. Members of Terrascope also bond as a community in a shared common space on campus and over meals, outings, advising, and a spring break field experience.

Key Accomplishments

In the fall semester 12.000 Solving Complex Problems, Terrascope students completed an especially challenging task: proposing water security plans for the Navajo Nation that integrate western science and technology with traditional Navajo practice and belief. The Navajo review panel praised the students for their innovative ideas, and in particular for their endeavor to understand and incorporate cultural knowledge into complex environmental problem solving.

As part of OVC's increased emphasis on discovery-based experiences for first-year students, the Terrascope program created a new Discovery subject, SP.361 Majors and Careers through a Terrascope Lens, during IAP. Instructors brought in (or videoconferenced with) seven MIT alumni over the course of eight two-hour class sessions.

In the spring semester, students in the Terrascope design class 2.00C/1.016/EC.746 Design for Complex Environmental Issues developed and prototyped engineering solutions for a variety of water contamination and scarcity issues and presented the prototypes to the public and to a panel of experts. Students in SP.360 Terrascope Radio

created a radio program on water security and contamination on the Navajo Nation that focused on complex questions about tradition, change, language, and spirituality. The program premiered on MIT's WMBR and then was released for national distribution via the Public Radio Exchange. Within a week of its initial broadcast, the program was picked up by the Pacifica Radio Network and aired on dozens of public, college, and community radio stations.

In this year's Terrascope field experience, students, faculty, and staff visited sites within the Navajo Nation, including uranium-affected sites, experimental farming plots, a Diné family farm that uses traditional farming techniques, and culturally significant sites such as Canyon de Chelly. They also met with Navajo Nation government officials (including the president of the Navajo Nation) and local environmental activists, and participated in field work activities with DigDeep, a nonprofit organization working to expand water access. This year's field experience had an extraordinary degree of engagement with local individuals, in part because of Terrascope's emerging partnership with the PKG Center.

The Terrascope community continued to strengthen, with increased participation in co-curricular events, intramural sports, and Terrascope sections of physical education classes.

As part of a growing focus on alumni engagement and resource development, Terrascope participated for the second time in the MIT 24-Hour Challenge and solicited donations to match a \$20,000 challenge gift. The results were most encouraging—\$18,500 of the \$20,000 match was raised, securing \$37,000 for the program—and Terrascope looks forward to another \$20,000 match next year.

Terrascope staff continued meeting with the program's newly formed advisory board, which provided continued input on program direction and evaluation.

This marked the first full-implementation year of what is expected to be a long-term partnership between Terrascope and the PKG Center. Under this partnership, Terrascope and the PKG Center jointly conduct research on possible Terrascope core problems, ultimately constructing problems in such a way that the PKG Center can develop and sustain long-term partnerships with organizations directly involved in the regions and problems chosen. Terrascope thus serves as a kind of on-ramp and recruiting tool for the PKG Center's public service activities, and the PKG Center provides next steps for members of Terrascope who have developed an interest in the topic that they wish to extend beyond their first-year Terrascope experience. This year, joint research by Terrascope and PKG Center staff led to the development of highly relevant partnerships and a challenging and important Terrascope problem. Experience during the spring Terrascope field trip then led to another important partnership.

Notable Statistics and Data

Terrascope had 61 students this fall and added five new students in the spring. Fall enrollment saw an increase of 20 students over the past year and the highest enrollment since changing to a new program director. The program continued to increase student participation in the spring semester; the spring enrollment was 40% of the fall enrollment in AY2019, compared with only 29% five years ago.

Awards and Recognition

Terrascope is increasingly recognized across campus for the important roles it plays in offering student-centered learning experiences and in offering a foundation of sustainability education to first-year students. This includes the Terrascope director's role as co-chair of MIT's Pathway to Sustainability Leadership Group Steering Committee.

Office of Graduate Education

The [Office of Graduate Education \(OGE\)](#) supports, consults, and collaborates with graduate students, faculty, and other community members on the stewardship of policies and procedures; the promotion of student financial well-being; the enhancement of the graduate personal support network; and the cultivation of an inclusive and diverse community.

Supporting Educational Innovation and Excellence

OGE staff members played a leadership role in drafting subsections of MIT's extensive self-study document as part of the Institute's accreditation process. The 100-page study speaks to each of the nine standards of accreditation established by the New England Commission on Higher Education and will be published in August 2019, in preparation for the commission's site visit in September 2019.

The Committed to Caring program continued to celebrate excellent faculty mentors through a broad publicity campaign, and began weaving the recently defined mentoring guideposts through these materials. In addition, planning was conducted for a pilot Faculty Peer Mentorship Program to support new faculty members in their role as mentors for graduate students, which will be launched in fall 2019.

The fall 2018 Path of Professorship workshop saw strong participation by 46 women graduate students across 22 departments in the Schools of Architecture and Planning, Engineering, Science, and the Sloan School of Management. Twenty-seven faculty members shared knowledge on diverse topics within the categories of finding one's place in the academy, getting the desired position, and surviving the first year as junior faculty.

In spring 2019, OGE solicited nominations for the biennial celebration of Graduate Women of Excellence. Fifty honorees were selected on the basis of their leadership and service contributions, dedication to mentoring, and efforts to improve the student experience.

Graduate Funding

In FY2019, the OGE administered approximately 1,000 fellowships valued at roughly \$48 million, including an internal competitive fellowship process, fellowships awarded in support of diversity, and special-case fellowships. Highlights this year included co-administration of the Martin Fellowships for Sustainability with the MIT Energy Initiative and the Lemann Fund Fellowships with the MISTI Brazil Program. In addition, the director of graduate fellowships worked with the Egyptian Ministry of Finance to loosen the restrictions on the award process for the Endowed Fellowships of the Arab Republic of Egypt. The adjustments will allow 15 awards, rather than 10, for AY2020, and will be funded completely by surplus funds from earlier years. MIT has the

second highest number of National Science Foundation Graduate Research Fellowship recipients in the country (551), and has more National Defense Science and Engineering Graduate Fellows (40) than any other US university.

OGE offered a series of eight workshops on topics such as budgeting, investing, retirement, and US banking for international students. The online financial literacy platform, iGrad (co-sponsored by OGE and the MIT Federal Credit Union), saw an increase in active users from 1,223 to 1,738. A section on financial concerns was added to the OGE website and the financial literacy section was expanded. The director of graduate fellowships conducted workshops on applying to graduate fellowships. The workshops were intended for both a general student audience and, specifically, for international students. There were also presentations to individual departments.

OGE provided financial support for a wide range of student-run activities through the annual Graduate Student Life Grants, as well as through an ongoing request-for-funds process used by student groups and some offices to subsidize activities that benefit graduate students, their spouses and partners, and their children. The OGE funded the Science Policy Initiative's annual trip to visit Congress and an IAP boot camp to prepare participating students. During the visit, 29 graduate students from the Science Policy Initiative met in groups with 69 congressional offices over two days in Washington, DC, to advocate for science research, education, and funding. This year's congressional visit was particularly important because it took place not only at the peak budget consideration period for FY2020, but also while two other important issues were being considered: a bill in the House of Representatives (H.R. 36, Combating Sexual Harassment in Science Act of 2019) and the potential revival of the Office of Technology Assessment.

OGE continued to provide emergency financial assistance during the past year to individual graduate students who had acute needs, particularly international families who live on one stipend because the spouse cannot work in the US. The increased visibility of the Accessing Resources at MIT Coalition directed students to OGE for assistance with unexpected financial difficulties and budgeting challenges.

Administration and Policy

In September 2018, MIT began to offer parental leave to graduate students. The policy and its implementation were coordinated with updates to the existing childbirth accommodation leave, with a view toward consistency and ease of use for students and administrators. The first year saw 17 approved applications for the parental leave; 10 came from birth parents and seven from other parents. The use of the childbirth accommodation leave fluctuates, but it saw solid use in AY2019 by 14 birth parents.

An online process was launched for late add and drop petitions for classes, and roughly 90% of these petitions were handled in the new process. The new system went smoothly, with the overall numbers of drops and adds and changes continuing to rise, but less precipitously than in the prior two years.

In 2019, of the 29,114 applications for graduate study, 3,670 (13%) offers of admission were made. Of the admitted students, 2,317 (63%) matriculated into advanced degree

programs. The steady climb in applications is likely to be related to the continued strength of MIT's graduate programs across varied fields and disciplines.

For matriculating students, the information and functionality in the New Atlas Portal for Graduate Students interface (launched by OVC in summer 2018) was expanded and updated.

In June 2019, changes were made to the structure of the MIT Undergraduate Special Student Program as it had been run through OGE. The program has been limited to undergraduate institutions with which MIT has current standing agreements.

Building and Sustaining Diversity

Increasing Diversity through Outreach and Recruitment

The GradCatalyst, a workshop that helps participants plan for graduate school, hosted six sessions this year (four online and two in person) for approximately 50 prospective graduate students currently enrolled at MIT, Tufts University, Harvard University, the University of Miami, Florida International University, Brown University, and Morehouse College. The Graduate Application Assistance Program matched 10 current MIT graduate students (mentors) with 15 MIT Summer Research Program—General (MSRP) alumni to review the statements of objectives, essays, and résumés that were in preparation for submission to MIT graduate programs.

Recruitment travel consisted of attending 10 national and regional diversity science, technology, engineering, and mathematics (STEM) conferences, plus two meetings in collaboration with OGE's partnerships with the Ivy+ graduate deans and the Massachusetts Consortium of STEM Programs. In total, OGE collected 781 prospective graduate students' contact information, which was shared with MIT graduate administrators for departmental-level recruitment. Digital recruitment outreach consisted of maintaining a list of 6,253 members of underrepresented minority groups and of 13,512 underserved prospective graduate students. Information about these prospective students came from the Educational Testing Service's Graduate Record Examination Search Service and four national partners—the National Graduate Engineering Minorities Consortium, the Ronald E. McNair Postbaccalaureate Achievement Program, and the National Name Exchange. The OGE then sent prospective students on this extensive list a recruitment email message that pointed to MIT's graduate programs and the MIT Summer Research Program.

Graduate Admissions Office staff processed 769 requests for waivers of the graduate application fee from 650 prospective applicants applying to 33 different departments across the Institute. The applicants who requested waivers represented 300 undergraduate institutions from across the country; 95% were US citizens or legal permanent residents and 5% were from other countries. Reasons for application fee waiver requests received were: financial hardship (304 requests, 47%); other diversity programs (228 requests, 35%); MIT-sponsored diversity programs, events, or conferences (72 requests, 11%); and member of the US armed forces (46 requests, 7%).

MIT Summer Research Program—General

In AY2019, OGE prepared a detailed request for funding from the deans of the Schools of Engineering, Science, Architecture and Planning, and Humanities, Arts, and Social Sciences. The request represents a 61% increase (from \$184,000 in 2012 to \$297,000 in 2019) in funding requested from the schools to alleviate some of the financial burden of MIT Summer Research Program (MSRP) on OGE. The MSRP Application Review Committee involved 90 members of the MIT community, including 17 MIT faculty members, 15 MIT alumni, 33 current MIT graduate students, and 33 program alumni. They reviewed a total of 418 eligible applications using OGE-designed holistic admissions guidelines. The admitted intern pool totaled 39 (8.5% of the applicant pool) who were placed in 17 departments in the four schools that supported the effort.

The 2019 MSRP cohort included 87% who self-identify as members of US underrepresented minority groups, 54% women, 49% Pell Grant recipients, and 5% who are the first generation in their families to graduate from college. All had earned a cumulative grade point average (GPA) of 3.5 or higher, 82% had conducted research prior to MSRP, 79% were advanced undergraduates (rising seniors), and 33% attended minority-serving institutions.

According to the 2019 exit survey, the interns expressed a 37% increase (from 50% to 87%) in having strong interest in pursuing a doctoral degree after participating in MSRP. Those specifically interested in pursuing an MIT doctoral degree rose by 42% (from 34% to 76%).

Cultivating a Vibrant and Empowering Community

The Ignite community series promotes the academic, professional, and personal development of graduate students, and frames each discussion topic in terms of the graduate students' racial and intersectional identities. Over the course of the year, OGE hosted five events for graduate students exclusively and two events in collaboration with the Office of Minority Education (OME), the Office of Multicultural Programs, and the Institute Community and Equity Office. These included the Graduate Students of Color Welcome; Ignite Your Comeback from Racial Blowback with Ebony McGee of Vanderbilt University, and Lasana Kazembe of Purdue University; Ignite Your Wellness: What to Do When You Don't Know What to Do, with Dr. Cecil R. Webster, MIT Mental Health and Counseling; the MIT Multicultural Awards Banquet; Ignite Your Leadership: Accelerate Your Grad Org with Nina DeAgrela and Joseph Granado, Division of Student Life; and MIT Outstanding Scholars. Achieve. Inspire. Change (MOSAIC, formerly known as the Graduating Minorities Luncheon).

The [Graduate Diversity Ambassadors](#) partnered with OGE Diversity Initiatives to co-create a more diverse, equitable, and inclusive community at MIT. In AY2019, 27 current graduate students from across all five schools served in various capacities in multiple outreach and recruitment programs, including the Graduate Application Assistance Program, GradCatalyst, the Graduate Students of Color Advisory Council (GSOC-AC), MSRP mentors, the MSRP Application Review Committee, and recruitment conferences. The ambassadors receive training to enhance their professional development in areas outside the classroom and research group on topics such as coaching prospective applicants on writing a statement of objectives; describing the MIT graduate application process; the landscape of MIT, its policies, and how it functions as an organization; team leadership; and holistic graduate admissions.

In fall 2018, OGE convened graduate students who were members of underrepresented groups to provide a space for more honest, open, and direct action centering diversity, equity, inclusion, access, and social justice: the GSOC-AC. Throughout the year, the GSOC-AC met nine times and engaged in discussions with several MIT senior leaders, including the provost, the vice chancellor, the interim Institute community equity officer, and the executive administrator of the MindHandHeart Department Support Project to discuss and advise on current and future MIT policies.

At the recommendation of the vice chancellor and GSOC-AC, the OGE pilot-tested a set of graduate diversity yield activities targeting 156 newly admitted students who self-identified as underrepresented minority group members or took part in MSRP or Converge. Short videos were produced congratulating newly admitted students, welcoming first-year graduate students, and highlighting graduate affinity groups. New website content was added to showcase the expanding portfolio of programs, activities, and collaborative efforts with organizations at MIT and beyond MIT. Email outreach to this target group showed “open” rates of 86% on the message from OGE, and 83% on the note from graduate diversity ambassadors. Additional efforts included a third email that featured a congratulatory video from graduate diversity ambassadors (77% open rate and 316 video views), and the creation of an opt-in Facebook group for these newly admitted students, shepherded by a subset of the graduate diversity ambassadors and monitored by OGE staff. Fifteen percent of the target group opted in.

University Center of Exemplary Mentoring

This year’s community of University Center of Exemplary Mentoring (UCEM) Sloan Scholars included 44 current graduate students from underrepresented minorities within four cohorts of nine to 11 students each. In 2019, three PhD candidates graduated, bringing the total of program alumni to 10. Of the respondents to a UCEM program alumni survey, most indicated that the Sloan financial support (75%) and personal support from faculty (50%) had greatly affected their graduate career. UCEM alumni indicated that the academic support from faculty (62.5%) and UCEM programming (62.5%) moderately affected their graduate career. After graduating from MIT, 62.5% of UCEM alumni work in business or industry, 25% are postdoctoral fellows, and 12.5% have faculty positions.

One focus of UCEM staff this year was cultivating community among the scholars. Several students maintained that the monthly Sloan Scholar Circles were critical in their personal development and positively affected their academic year. Other scholars noted that these luncheons were often the only opportunities to congregate with their peers. A full-time program coordinator for Diversity Initiatives and UCEM started in June 2019. This is a significant increase in the capacity of the program to effect change.

Climate and Community

During AY2019, 22 new Graduate Student Life Grant proposals were funded, as were two renewal proposals for successful projects entering their second or third year. The projects were as varied as MIT’s students and included a weekly coffee hour for women in political science and a festival celebrating Latin American culture and talent at MIT. Established in 2002, the Graduate Student Life Grant program enables creative ideas for community-building activities among graduate students.

The Graduate Community Fellows program completed its 12th year and has grown to 30 fellows working in OVC and offices across the Institute. New [profiles on the website](#) showcase the fellows and their work, whose projects affect graduate students and the larger MIT community. Two new positions were created: Community Wellness now has a fellow focused on stress management and healthy sleep habits, and OVC and the Teaching and Learning Lab work with a fellow on a graduate advising project.

In April 2019, the OGE led a robust celebration of Graduate Student Appreciation Week, including fun events, such as goat yoga and plant your own bamboo; self-care events, such as guided meditation and free chair massages; and helpful workshops on topics such as growth mindset and the CliftonStrengths assessment. Every academic department participated at some level and more campus partners joined in than ever before.

Holistic Support of Graduate Students

In partnership with the Title IX office, OGE administered an online Sexual Assault Prevention for Graduate Students module, whose completion was mandatory for all incoming graduate students and for those enrolled prior to 2016. A total of 3,608 students completed the module.

Collaborating with various offices to provide workshops and trainings became a highlight for the year. Partners included the Coordination, Assistance, Response and Education (CARE) team, Student Support Services, the Office of Multicultural Programs, LGBTQ@MIT, the Division of Student Life, Violence Prevention and Response, and the Title IX and Bias Response Office. Presentations were made to audiences including graduate resident advisors, OVC staff, Resources for Easing Friction and Stress, Advanced Studies Program students, the Graduate Student Council, and various departmental faculty, student groups, and gatherings of TAs.

OGE staff served on Institute-wide committees and teams, conducting work on the Committee on Graduate Programs, the Enrollment Management Group, the Bias Response Team, the President's Committee on Sexual Misconduct Prevention and Response, the CARE Team Network, the Behavioral Assessment and Response Team, the Diversity Think Tank, the Committee on Race and Diversity, the Academic Council Working Group on Community and Inclusion, and the Martin Luther King, Jr., Celebration Planning Committee. An OGE staff member served as Title IX deputy coordinator for graduate students and OVC. The senior associate dean was honored for 20 years of service to the Committee on Discipline.

As part of the year's budget cycle, approval was given to add a new assistant dean for Graduate Support, Advising, and Programming. This will allow the OGE to better support a student body that is growing both in number and in need, in a reflection of national trends.

International Students Office

The [International Students Office \(ISO\)](#) serves all incoming and currently enrolled international students (graduate, undergraduate, and non-degree) and alumni at the Institute. The office assists them in maintaining their legal status in the US, provides

support for their dependents, and promotes interaction with and integration into the MIT community at large.

Internships and experiential learning subjects in academic departments—curricular practical training eligibilities

Student demand for additional off-campus internship opportunities has been the predominant issue communicated by students and colleagues across the Institute. Through increased outreach, ISO and Institute partners (especially graduate administrators) have been able to advocate for and support the academic departments as they review their curricula to provide opportunities for their students. There were significant delays in processing F-1 Optional Practical Training applications over the spring and summer of 2019 by US Citizenship and Immigration Services (USCIS), delays that resulted in some students having to cancel internship opportunities because they did not receive employment authorization. This has prompted academic programs to review their curricula and explore the development of new experiential learning opportunities for academic credit or as curricular requirements for completion of a degree. The ISO will partner with multiple Institute stakeholders and the academic departments and programs in developing such opportunities. An OVC cross-functional team on internships and experiential learning in the curriculum is in its early stages.

Outreach to USCIS on employment benefit processing delays

International students across the US faced longer than normal processing delays for employment benefit petitions related to their student visa status (specifically, for F-1 Optional Practical Training petitions). Usual application processing times had been within 90 days; in the spring and summer 2019, that processing time grew to an average of 112 days, and some applications took more than 150 days. These delays, which were beyond the students' control (they had applied as early as they were allowed by regulation) resulted in some students losing their summer internship opportunities. The ISO staff spent an immeasurable amount of time supporting students with delayed applications, including reaching out to the USCIS National Customer Service Center, the Office of the Citizenship and Immigration Services Ombudsman, and staff at the offices of the appropriate congressional delegation, to try to expedite processing times for delayed applications. USCIS errors in processing increased, including using wrong authorization dates, misspelling students' names on employment authorization documents, and simply losing employment authorization documents. Staff spent additional time speaking with students' employers to provide information and guidance on the processing delays. In addition to continued support to students, and providing guidance for planning for processing delays with future applications, ISO will continue outreach through congressional offices, the Office of the Citizenship and Immigration Services Ombudsman, and professional associations to advocate for the establishment of set processing maximums and earlier filing windows.

Outreach to US Department of State on visa processing delays

New and continuing international students across the US faced delays in visa processing at US embassies and consulates abroad during the spring and summer of 2019. The delays were attributed to extended administrative processing through the

US Department of State and government security agencies (e.g., the Federal Bureau of Investigation, the National Security Agency, the Department of Homeland Security, and so on) that must be completed before a visa may be issued. MIT worked with six continuing students who were delayed in returning to the US for the spring 2019 term, and then worked with eight new students (and one continuing student) who, because of administrative processing delays, were unable to obtain their student visas to arrive for the start of the fall 2019 term. The ISO also worked very closely with the US Department of State in support of two undergraduate students from Syria whose visa applications took two years to arrive. The ISO and other Institute offices provided extensive outreach to students affected by these delays and provided accommodations and deferred start dates, where appropriate, for later arrival at MIT. ISO has expanded online resources to provide guidance and lists of required documents for visa application processing for students who will be appearing at US embassies and consulates, including support letters from academic departments regarding the nature of student research and resident advisor or TA appointments. The ISO will continue outreach through congressional contacts and professional association advocacy to urge improved visa processing times for future academic terms.

Contributions to Institute committees and their recommendations to the MIT administration

ISO staff have served on OVC and Institute committees, working groups, and cross-functional teams, including the Institute Committee on Discipline; The Engine Visas for Entrepreneurs Working Group; the OVC Leadership Team; the OVC Values Working Group; the OVC Council on Diversity and Inclusion; International Students of Color Orientation and Onboarding Team; MIT Tax Workshops; the MIT OME Mentor Advocate Program; and other cross-Institute collaborations in support of our community.

Website Resources in Support of the MIT Community ISO maintains a number of web-based resources for the MIT community, including the following:

- ISO [Major Immigration Updates web page](#)—this web page is continually updated with resources for the Institute in response to presidential executive orders and additional government regulatory and policy changes;
- enhanced online resources for accessing advising resources to reduce the need for on-campus visits for basic information and resources;
- updated format of the ISO E-newsletter, including dividing news from program offerings in alternate publication dates;
- making regulatory and policy information easier to understand;
- increasing consistency of advising among all advisors using the same resources;
- providing MIT academic departments and administrators with the same information provided to students; and
- transferring 95% of all ISO service requests to online submissions through iMIT and Sunapsis.

Notable Statistics and Data

Members of MIT's international student community come from 132 countries (including the US):

- Undergraduate: 459 (10.06%)
- Graduate: 2,878 (42.05%)
- Non-degree (calendar year 2018)
 - Special and exchange: 291
 - Visiting students: 1,023

Many find post-degree employment (on MIT student visa sponsorship—as of September 15, 2019):

- F-1 optional practical training (OPT) or STEM OPT: 1,223
- J-1 Academic Training: 49

In AY2019, 13,489 international students used ISO's walk in or appointment service.

Awards and Recognition

- The ISO staff was awarded a 2019 MIT Excellence Award for Bringing Out the Best.
- Emily Cheng, ISO assistant director for operations and advising, was awarded the Freak of the Year award for excellent service to the Sunapsis community at the 2019 Sunapsis Users Conference in Indianapolis, IN.
- Antoinette Browne, ISO operations associate, was awarded the Mentor of the Year award in the OME Mentor Advocate Program.
- Sylvia Hiestand, ISO assistant director for advising outreach, was a session presenter at the Association of International Educators (NAFSA) Region XI (New England) conference.

Office of Minority Education

The [Office of Minority Education \(OME\)](#) promotes academic excellence, builds strong communities, and develops professional mindsets among students of underrepresented minority groups, with the goal of developing leaders in the academy, industry, and society. The OME supports MIT's academic mission while also serving the nation's need to increase the number of underrepresented minority students pursuing careers in STEM disciplines.

Key Accomplishments

- The OME's newest signature program, The Standard, focuses on enhancing the overall success of undergraduate men of color. There are now 42 first- and second-year students in the program. The faculty liaisons for The Standard are Ceasar McDowell, Jaime Peraire, and Larry Sass. This year, Chevron donated \$10,000 to The Standard for the program's first overnight retreat. In October 2019, 15 young men will join the program.

- The OME and the Office of Digital Learning entered the second phase of a joint pilot program, Interphase. During AY2019, Interphase lead instructors refined the MITx online curriculum and integrated it into Interphase summer physics and mathematics courses. The Interphase EDGEx hybrid online and on-campus program will be launched in summer 2020.
- In AY2019, there were 2,939 visits to the Talented Scholars Resource Room; 85% of the visits were from members of underrepresented minority groups. Over the same period, 113 students participated in Seminar XL (72% were from members of underrepresented minorities). These data points are key accomplishments, because the OME has worked diligently to ensure that minority and nonminority students use our services. We are making significant progress here.
- Momentum (a six-unit IAP design class) and General Motors collaborated this year to explore the passenger experience in autonomous vehicles. Thirty-one (first- and second-year) students enrolled in the IAP class. Companies affiliated with OME's Industrial Advisory Council for Minority Education (IACME) made five offers (for internships) to three students who participated in the class. Ninety-five percent (71% response rate) of participants reported that they gained valuable teamwork skills from their Momentum experience.
- Forty-five protégés (first-year students) and 45 mentors (MIT faculty, staff, postdoctoral associates, and graduate students) participated in the OME's Mentor Advocate Partnership (MAP) program. This year, in addition to qualitative data on the mentor-protégé experience, the OME also tracked first-year academic flag data for MAP students to identify academic differences. The fall 2018 data showed similar recovery rates for MAP students relative to the overall MIT class (MAP 80%; overall class 79%).
- IACME partners voted to increase their giving to the OME. At the highest tiers, they doubled their giving from \$5,000 to \$10,000; the lowest tier doubled contributions from \$2,000 to \$4,000. Overall IACME giving grew to approximately \$175,000 annually (from approximately \$85,000).

Notable Statistics and Data

- The Standard's end-of-year survey (79% response rate) indicated that 91% of the 33 young men who responded felt a strong sense of community within this newly established group. Of the respondents, 94% reported that they would recommend The Standard to other students.
- The Laureates and Leaders program served 74 students this year. Twenty students graduated from the program in June 2019. Of those, 75% planned to enter STEM graduate programs directly following graduation (53% will pursue doctorates in STEM, 27% will pursue a combined doctoral and medical program, and 20% will pursue a master's degree in engineering).
- The Interphase EDGE Program officially supports 140 students each year (70 first-year and 70 second-year students) by offering advising and other academic and professional development resources. One indicator of the academic success of Interphase students is fifth-week flags. In fall 2018, 11% of the Interphase 2018

cohort received a fifth-week academic flag with a 63% recovery rate. The overall academic flag rate for MIT was lower at 8.8% with a 79% recovery rate. In the spring, 14% of the Interphase cohort received an academic flag; however, 90% of those students recovered. The overall MIT spring academic flag rate was similar at around 13%, but the spring overall MIT class recovery rate was lower at 58%. Of course, it is difficult to assign causation either way. Many aspects of the MIT environment influence academic outcomes; Interphase is just one factor.

- In AY2019, 131 students participated in Seminar XL. Ninety-five percent of students passed the course for which they took a Seminar XL class; in the spring, it was 90%. The recovery rate for students who took a Seminar XL/LE class in a flagged subject was 78% in the fall (for MIT overall, it was 79%). No Seminar XL students received flags in the spring.
- In AY2019, 94% of students who used the Talented Scholars Resource Room's academic resources passed the class in which they sought assistance.

Awards and Recognition

Four Laureates and Leaders program students were featured in *MIT News*: Kerrie Green '19, Hector Vazquez Martinez '20, Jordan Benjamin '19, and Amnahir Pena-Alcantara '19. Four 2019 Laureates and Leaders graduating seniors received NSF Graduate Research Fellowships, and three Laureates and Leaders alumni received fellowships.

The OME staff received the OVC Infinite Mile Award for Diversity and Inclusion in June 2019.

Registrar's Office

The [Registrar's Office](#) fosters curricular innovation and educational community building; ensures the integrity of academic information; and develops and maintains a robust infrastructure that is responsive to the evolving needs of students, faculty, staff, and alumni.

Key Accomplishments

- Facilitated the experimental grading policy to increase flexibility for exploration and discovery in the first year proposed by the OVC and licensed by the Committee on the Undergraduate Program. This included updating systems to accommodate the experiment; working closely with and providing data to the assessment team; and collaborating with the Office of the First Year to communicate changes.
- In support of the experimental grading policy, the Registrar's Office approved seven new "exploratory" subjects—designed to help students understand what different majors are like—and six new "discovery" subjects, which are intended to expose students to various fields of inquiry.
- Partnered with the vice chancellor on the faculty-approved changes to the academic calendar. Produced long-range, what-if scenarios to anticipate issues that might arise from the condensed timeframe of the spring semester. Engaged with the community through a variety of presentations before the faculty vote.

- Collaborated with several offices to include diploma distribution as part of the doctoral ceremony for the first time.
- Through a concerted communications effort, more than doubled the digital diploma adoption rate for June graduates, from around 32% in June 2018 to 65% in June 2019.
- Facilitated the nominations and awards of four new MacVicar Fellows. Partnered with the vice chancellor in the development of the MacVicar Day symposium: *The Educated Student: Thinking and Doing for the 21st Century*.
- Facilitated the following curricular changes:
 - Course 6-9 bachelor of science (SB)—new undergraduate degree
 - Course 6-9P—new master’s in engineering degree
 - Course 22-ENG SB—new flexible track leading to bachelor of science degree
 - Course 7-A SB —degree no longer offered
 - Course 1-ENG SB and minor—transition from six-unit modular offerings to 12-unit, full-term format for several subjects
 - Course 6 minor—addition of several advanced subjects as electives
 - Course 7 SB—significant restructuring of laboratory communication intensive subject component
 - Course 17 SB—revision to make thesis optional
 - Course 21L—revision to minor to include a Film Studies track
 - Course 21W—removal of SB and minor’s three pre-defined tracks (creative writing, science writing, and digital media) in favor of a more flexible structure
- Conducted biennial review of subjects that fulfill the restricted electives in science and technology and Institute laboratory requirements.
- Collaborated with the Undergraduate Association Committee on Education to develop and analyze results from its survey on improving subject evaluation.
- Enabled the first full review of HASS concentrations, resulting in the report issued by the Subcommittee on the HASS Requirement.
- Digitized the process by which conflicting examination times are identified.
- Partnered with Information Systems & Technology to create a student dashboard, providing students with a personalized and coherent experience that unites a number of key student systems.
- Completed the renovation of Room 37-212 and Room 1-190; began renovation of Rooms 24-112, 24-115, and 24-121. Enhancements—such as new carpet, shades, audiovisual systems, projectors, and chairs—were made to 33 other classrooms.
- Rooms 26-302 and 26-310 were reassigned from the registrar’s classroom inventory.

Notable Statistics and Data

- The Registrar’s Office has issued 2,450 digital diplomas, including 1,916 to June 2019 graduates, since the pilot program in June 2017.
- The dynamic nature of MIT’s curriculum was illustrated by the addition of 130 subjects (70 undergraduate, 60 graduate), coupled with revisions to 925 existing subjects (476 undergraduate, 449 graduate). In addition, 87 subjects were removed from the catalog, and 17 were reinstated. MIT begins AY2020 with a regular curriculum that boasts 5,228 subjects (46% undergraduate, 54% graduate).
- The Committee on Curricula, which the Registrar’s Office supports, reviewed 280 applications for double majors, 14 restricted electives in science and technology requirement petitions, and five Institute laboratory petitions.
- The d’Arbeloff Fund for Excellence and the Alumni Class Funds financed 21 projects, from all five MIT schools, totaling more than \$629,000.
- Students completed 41,231 evaluations across eight evaluation windows in AY2019; 2,319 subjects and 4,879 instructors were evaluated. Forty-two departments (unique subject prefixes) participated.

Awards and Recognition

Deb Boldin and Alison Trachy received a 2019 Infinite Mile Award for Innovation and Creativity for their work on the Registrar’s Office website redesign project.

Reserve Officer Training Corps—Air Force

The mission of the MIT [Air Force Reserve Officer Training Corps \(Air Force ROTC\)](#) Detachment 365 is to develop leaders of character for tomorrow’s US Air Force. The Air Force ROTC staff of five—an MIT administrative assistant, an Air Force active-duty noncommissioned officer and three Air Force active-duty officers—trains a growing number of cadets from MIT and Harvard University, Tufts University, and Wellesley College. Our cadets organize and execute a weekly leadership laboratory in addition to a multitude of special events throughout the academic year (i.e., dining in, military ball, field training exercises, notable guest speakers, commissioning, and so on). Additionally, members of the officer cadre teach academic courses based on the Air Force ROTC curriculum. A generous budget increase from MIT allowed us to continue to provide high-quality, formative opportunities to cadets, despite a continuing increase in the number of cadets.

Key Accomplishments

In AY2019, Air Force ROTC continued to expand its integration and presence in the MIT community. Cadre members led or assisted in leadership training for one of the Sloan School’s IAP courses as well as the undergraduate advisors. Additionally, for the second year in a row, the cadre taught a stand-alone first-year advising seminar, Leadership for Young Professionals.

Air Force ROTC was able to leverage MIT resources and relationships to provide great opportunities for the cadets, including visits from General John Hyten, current commander of the US Strategic Command, and Fred Kennedy, director of the Tactical Technology Office at the Defense Advanced Research Projects Agency. Air Force officers attending MIT for graduate school or as Fellows also brought a variety of Air Force experience directly to the cadets.

Three new second lieutenants were commissioned this year. One of them (Aerospace Engineering) was an Air Force Distinguished Graduate—an honor reserved for the top 15% of graduates in all of Air Force ROTC. The other two were selected for prestigious scholarships that will allow them to stay at MIT for their first active-duty assignment while working on their graduate degrees.

One of the most formative opportunities for the cadets is the opportunity to experience Air Force operations firsthand. This year, the cadets visited an Air National Guard base in Massachusetts for their first-year orientation. Other cadets were able to participate in a visit to a base in New Jersey and see the everyday operations of positions that they one day might hold. Eight lucky cadets hopped in the back seats of T-38 Talon trainers in Texas to experience part of the Air Force’s Introduction to Fighter Fundamentals course.

Because of the unique nature of Detachment 365, the program’s enrollment has been consistently driven by the award of full-tuition scholarships. Unfortunately, despite consistent engagement with headquarters, fewer full-tuition scholarships were awarded this year to cadets admitted to MIT. However, with a strong recruiting effort, we are continuing to grow and look forward to our largest class this fall, made up of students with both full and partial scholarships.

Notable Statistics and Data

- Detachment 365’s cadets had the highest GPA in all of the Air Force’s Reserve Officer Training Corps.
- They also had the fourth highest average physical fitness test scores.
- AY2018 total enrollment was 48; in AY2019, it was 52. The detachment is expecting more than 30 incoming first-year students in the fall of 2019.

Awards and Recognition

- Cadets were recognized with multiple national-level awards, including the Society of Military Engineers and the Daedalian Scholarship.
- A number of students were selected for internships at the Lawrence Livermore National Laboratory, Boeing Company, Lockheed Martin Corporation, Northrup Grumman, the US Department of State, and others.
- A third-year cadet in the detachment was selected as the “number one” third-year cadet in the entire Northeast region.

Reserve Officer Training Corps—Army

The mission of the [Army Reserve Officers Training Corps \(Army ROTC\)](#) is to select, retain, train, and commission cadets from MIT, Harvard University, Tufts University, Lesley University, Wellesley College, Salem State University, Gordon College, Gordon-Conwell Theological Seminary, Endicott College, and the New England Conservatory of Music in a two-, three-, or four-year program to prepare them for future leadership roles in the US Army, the nation, and the world. The Army ROTC vision is to develop agile and adaptable leaders of character who use critical and creative thinking skills to solve complex, ambiguous problems.

Accomplishments

Army ROTC commissioned 14 officers this year. Eight of these 14 cadets earned the honor of Distinguished Military Graduate, which placed them in the top 20% of all cadets nationwide.

As of May 1, 2019, 77 students were enrolled in the Army ROTC program. More than \$2,600,000 was awarded in scholarships for all students in the consortium, a notable increase from last year. The graduating class of 2020 is expected to commission 15 officers, which means Army ROTC will meet the Army directed commission mission for the second year in a row. The classes of 2021 and 2022, as well as the incoming class of 2023, have seen significant growth in Army ROTC participation from previous years, particularly with regard to MIT students. The class of 2022 currently has six MIT students, with four on full ROTC scholarship. Although 14 students have initially indicated they will attend MIT in the fall with an Army ROTC scholarship, the class of 2023 is expecting 10 MIT students with full scholarships.

Year-End Enrollment for Army ROTC, as of May 1, 2019

	First-years	Sophomores	Juniors	Seniors	Total
MIT	6	7	8	4	25
Harvard	6	6	2	2	16
Wellesley	1	3	3	2	9
Tufts	5	1	3	1	10
Other affiliates	6	5	1	5	17
Total	24	22	17	14	77

Army ROTC cadets continue to achieve excellence academically, physically, militarily, and morally and ethically. In April 2019, one of the cadets in Army ROTC won the Military Historical Society of Massachusetts annual essay competition. The winner, a Harvard cadet, received a \$4,000 prize. The second- and third-place winners are also cadets in the program. At the annual Advanced Camp conducted at Fort Knox, KY—attended by more than 5,000 rising seniors nationwide—cadets from this program exceeded local, regional, and national averages in nearly all measurable areas, with 75% of those cadets placing in the top half of their peer group. The program has sent several cadets to West Point throughout the year to participate in the Student Council on US Affairs, the National Conference on Ethics in America, the West Point Negotiations Conference, and the West Point Mission Command Conference. One cadet was selected

to participate in the Cultural Awareness and Leadership Program and Project Global Officer programs over the summer, spending up to two months abroad. Three cadets were selected to attend air assault and airborne schools this summer. Five cadets will serve with an active-duty unit during the summer and shadow an officer as part of the Cadet Troop Leadership Training program.

Army ROTC instructors continue to excel at classroom leadership instruction and in hands-on training of cadets and of students not in ROTC. Army ROTC remains a foremost source of high-quality leadership instruction at MIT. During the fall semester, Army ROTC taught a first-year advising seminar made up entirely of non-cadet MIT students. During IAP, the cadre participated, for the 17th year, in facilitating a capstone exercise for 90 students in the Sloan School's IAP course, Leadership Lessons Learned from the Military. Army ROTC has partnered with the MIT football team to host a team leadership workshop in the fall, and with the MIT volleyball team to provide leadership training for team leaders in the spring. With the MIT Innovation Initiative, Army ROTC worked to run a presentation by a panel made up of general officers and senior Army Research Laboratory officials on innovation in the Army. The presentation was attended by MIT undergraduate students, graduate students, and faculty.

In this past academic year, Army ROTC conducted a number of major events, from orientation to commissioning. These included new cadet orientation in September; field training exercises at Fort Devens in September and in Bog Brook, Maine, in April in conjunction with the ROTC program at the University of Maine; a military ball in March; an innovation panel event with cadets and flag officers in April; and commissioning ceremonies at MIT, Harvard University, Tufts University, Wellesley College, Salem State University, and Endicott College.

Staffing Changes

The Army assigned two new full-time instructors during the past year: Lieutenant Colonel David Stalker, commander, and Master Sergeant David Barrera, senior military science instructor. Two new full-time administrative staff were also assigned: Mallory Sain, human resources administrator, and David Zablatsky, supply technician.

Reserve Officer Training Corps—Navy

The mission of the [Navy Reserve Officer Training Corps \(Naval ROTC\)](#) is to develop our midshipmen into well-rounded leaders by serving with honor, courage, and commitment. The [Naval Science](#) staff thanks those who contributed to another tremendous year of support and growth for the Naval ROTC program. As nine graduates from the Naval ROTC in 2019 move on, Naval ROTC is preparing for a class of 21 incoming students.

Key Accomplishments

There were nine Naval ROTC graduates from three universities in 2019—persons of outstanding accomplishment and commitment. The graduates and their post-graduation plans were:

Alana Davitt (Harvard University)—submarines

Andrea De Abreu (MIT)—Naval Postgraduate School, followed by aviation

Matthew Luerman (MIT)—Naval Postgraduate School, followed by aviation

Adrian Magana (Harvard University)—aviation

Quinn Magendanz (MIT)—graduate student at MIT, followed by cyber engineering

Shannon McCoy (MIT)—Naval reactors engineering

Edward Natkin (Tufts University)—submarines

Gabrielle Person (MIT)—submarines

David Schachman (Harvard University)—submarines

Notable Statistics and Data

The Naval ROTC enrollment for fall 2019 shows a strong trend toward growth.

Naval ROTC Enrollment by School for the Class of 2020–2023

	Class of 2023	Class of 2022	Class of 2021	Class of 2020
MIT	10	8	6	8
Harvard	10	1	2	6
Tufts	2	2	3	1

Recognition

A number of new staff members joined the Naval Science Department:

- Garrett Gangarossa, administrative assistant II
- George Montgomery, supply technician
- Jeffrey Hollenbach, technical instructor and commander
- Catherine Philbin, lieutenant and technical instructor, Naval ROTC and Harvard University Class of 2014

Student Financial Services

[Student Financial Services](#) makes the dream of attending MIT a reality by providing students and families the resources necessary to meet their financial obligations.

Key Accomplishments

Financial Aid, Loans, and Affordability

A new First Year Grant has been created to assist with the one-time costs of moving from home to college. This new financial aid policy was implemented for students from households with incomes of \$65,000 or less (and typical assets). The grant was in effect for AY2019.

Student Financial Services changed its disbursement process for private-lender loans for the 2019–2020 aid year to increase consistency in the process. The disbursement process has been automated, and loans are now disbursed as soon as the funds are received and the student is registered for classes. By automating, it takes less time to apply the loan funds to the student account once the funds arrive.

US military veterans are now treated as independent students for the purpose of awarding financial aid. The financial aid award letter was redesigned to improve the clarity of offered aid and to make it easier for families to compare awards across institutions.

Student Financial Services implemented Heartland ECSI, a division of Global Payments, Inc., to manage loan repayment and streamline loan services for students. Results so far have been mixed. Improvements include converting exit counseling from a paper process to a combination of in-person and online options, resulting in a 92% attendance rate for eight in-person exit counseling sessions and a 96% completion rate of the online exit requirement (compared with a roughly 45% completion rate in AY2018). However, management of the MIT Education Loan program has been problematic, characterized by unresponsiveness, disregard for and mishandling of MIT requests, and generally poor customer service. Consequences have included incorrect emails and letters being sent to more than 600 borrowers in direct contradiction of MIT's wishes, and a handful of borrowers being inappropriately reported to credit bureaus.

The cost of MIT's Extended Student Health insurance will be paid by the Institute for any incoming student from a household with an income of \$65,000 or less (and typical assets) who needs to purchase health insurance. Insurance coverage will be implemented with first-year students during academic year 2020 and will eventually roll out to all undergraduates.

Student Financial Services has also implemented a new financial aid calculator in partnership with MyinTuition. This new calculator, with six simple questions, gives prospective undergraduates an estimate of what their aid package from MIT might look like. MyinTuition is used by most universities that are MIT's peers. It will help to share MIT's affordability messaging and to allow prospective students to compare aid offers across institutions.

Customer Service, Operations, and Communications

- The payment plan enrollment fee was reduced from \$70 per term to \$35 per term. This is below the average cost of peer institutions. Other procedural changes make enrollment easier for international families.
- The Student Financial Services website was redesigned in concert with the MIT Admissions website to better serve current and prospective students and their families.
- The accounts receivable software was upgraded to the cloud-based Banner 9, allowing for single sign-on integration with MIT's Kerberos, among other features.
- Student Financial Services implemented OnPlanU, moving the outstanding student balance pre-collections process online.
- Only one degree was withheld for financial reasons in FY2019.

Notable Statistics

Financial Aid

- In AY2019, MIT awarded \$127.9 million in need-based institutional grants to 2,688 undergraduates with an average family income of \$109,422. The median grant was \$53,414, nearly 80% of the cost of tuition, fees, and room and board.
- More than 31% of MIT undergraduates received an institutional grant sufficient to allow them to attend the Institute tuition-free. The average total family contribution (not including student term-time work) for those receiving an institutional grant was \$16,766.
- Fifty-nine percent of the 4,550 undergraduates received need-based financial aid from the Institute. Eighteen percent received Federal Pell Grants, which are typically awarded to US students with family incomes below \$60,000.
- Seventy-one percent of undergraduates (3,230 students) earned wages totaling nearly \$11 million from on-campus employment and employment under the federal work-study program, including both on- and off-campus programs.
- The percentage of undergraduates taking out loans decreased slightly from 12% in AY2018 to 11% in AY2019. Among seniors graduating in 2019, 76% graduated with no debt; of those with debt to finance their education, median indebtedness at graduation was \$13,481, 9% lower than for the Class of 2018 (the fifth consecutive year of decline).

Customer Service and Operations

- The customer service team received 34,136 emails and more than 9,400 calls in FY2019.
- In FY2019, more than 700 families used the MITPAY integrated monthly installment payment plan implemented in FY2018 to pay \$28.6 million in charges.
- Tuition and fees for the Institute totaled \$724,395,084 in AY2019. Graduate tuition and fees were \$431 million or 60% of total tuition. Undergraduate tuition and fees were \$234 million or 32% of total tuition; and non-degree tuition and fees were \$59 million, just over 8% of the total.

Teaching + Learning Lab

The [Teaching + Learning Lab \(TLL\)](#) partners with MIT educators to create engaging and supportive learning environments. In academic year 2019, TLL did this by:

- proactively pursuing projects that support and enhance the foundational undergraduate experience (especially the first year);
- collaboratively developing, supporting, and assessing academic advising (both graduate and undergraduate);

- collaboratively developing, supporting, and assessing graduate student professional development opportunities around teaching and learning;
- supporting diversity, inclusion, and academic well-being across educational experiences at MIT; and
- informing policy decisions that impact the educational experiences of undergraduate and graduate students at MIT.

Key Accomplishments

Strategic Prioritization

TLL undertook a strategic prioritization process to align TLL projects and workflow more closely with the priorities of the vice chancellor. This reprioritization led to new and renewed efforts to support teaching and learning and assessment and evaluation. This work is described in associated subsections, below. Input and support from the vice chancellor was critical in this process.

Personnel

2019 saw several exciting and positive changes to TLL staff.

- Ryan MacDowell joined TLL as communications director and project coordinator. His skills and knowledge have had a huge impact on the success of several new projects, and in optimizing TLL's workflow.
- Benjamin Hansberry joined TLL as assistant director of graduate teaching. He brought a wealth of knowledge about professional development for graduate students, and has spearheaded the pilot program of the Teaching Development Fellows Network.
- Anne Marshall's position as associate director for assessment and evaluation was "hardened." This has provided added stability, and allowed for more effective long-term planning of assessment and evaluation projects and workflow.

Programming

- TLL Speaker Series—TLL launched a reconceived and revitalized seminar series (formerly known as DUE Talks). In support of the strategic priorities of the OVC, the theme of the AY2019 speaker series was "Supporting the First-Year Undergraduate Experience."
- Data Talks Series—TLL staff, as part of the OVC cross-functional data and survey team, now lead a group of staff from across the Institute to develop a workshop series to help educate and inform the MIT community on topics related to data acquisition and use. The series will run through AY2020.
- MITeaches: Fostering Inclusion—With support from an anonymous donor, TLL will host a keynote presentation in the early fall of 2019 and is planning a set of seminars and workshops for AY2020, to support diversity and inclusion in the classroom and laboratory.

Office Infrastructure

TLL embarked on a complete overhaul of its website, consistent with its new set of priorities, programs, resources, and services. Ryan MacDowell, the communications director and project coordinator, is leading this effort and has been central to the process.

Faculty Groups

The Dean's Action Group facilitated monthly meetings and supported collaborations among cohort members.

- Approximately four faculty or instructor cases were developed and presented per month
- A showcase and wrap-up event was held in late August. Approximately 35 faculty and lecturers attended.

The Exploratory Subjects Design cohort provided support for faculty developing and offering first-year exploratory subjects.

- Met one-on-one with cohort members during the fall of 2018.
- Facilitated two meetings with the cohort.
- A final meeting was held in May 2019.

Advising Initiatives

First-Year Undergraduate Advising. TLL's work in 2019 included environmental scans of practices at peer institutions, documentation of past and current practices at MIT, and the design of a pilot study of an alternative first-year undergraduate advising model for students of the class of 2023. The lab was also involved with the freshman advising seminar 6.A01 Mens et Manus: Building on the Science Core. A TLL staff member continues to develop and teach the biology-based research module that makes up about half of the subject.

Graduate Advising. TLL is working with the Department of Chemical Engineering to develop a set of faculty workshops on effective graduate advising and mentoring. TLL and OVC staff worked together to identify effective practices at peer institutions and to document past and current practices at MIT. They continue to work with staff from across the Institute and with national experts in graduate student mentoring. It is anticipated that the advising program will be launched in AY2020 and will eventually be expanded to the entire School of Engineering.

Flipping Failure

With funding from an anonymous donor, TLL has launched a campus-wide, digital storytelling initiative designed to help students build resilience in the face of academic challenges. The project helps students to see that their peers and faculty have struggled at some point academically and professionally, and provides a means for students to share strategies for overcoming mistakes and failures. A progress report was submitted to the MIT Development Office in the spring of 2019. To date, seven students have recorded their stories.

Graduate Student Development

Teaching Development Fellows Network. This TLL capacity-building, professional development opportunity for graduate students interested in improving their teaching and leadership skills appeared in a pilot program in 2019. Teaching development fellows focus their activities on addressing the teaching needs of peers in their departments. With support from Ben Hansberry, TLL's assistant director for graduate teaching, fellows are expected to complete two departmental projects. The seven 2019 fellows came from six different departments across the Institute: Architecture (history, theory, and criticism); Biology; Chemical Engineering (two fellows); Linguistics; and Nuclear Science and Engineering.

Eleven fellows have been selected for AY2020 and will begin work in the fall of 2019. This new group of fellows comes from 11 different departments across four schools (the School of Science, the School of Engineering, the School of Humanities, Arts, and Social Sciences and the School of Architecture and Planning), 10 departments, and the Office of Minority Education within OVC.

TA Days: Workshops for New Teaching Assistants. TLL developed and offered a two-day set of workshops for TAs in August 2018. Workshops were facilitated by TLL staff, along with other experts from across the Institute. Topics included active learning strategies, creating an inclusive classroom, recognizing student stress, leading recitations, and growth mindset (among others). In January 2019: TLL offered a one-day set of workshops for new TAs. Graduate students from the pilot group in the Teaching Development Fellows Network facilitated discipline-specific break-out sessions during this IAP offering.

Kaufman Teaching Certificate Program. The Teaching and Learning Lab continues to offer its flagship program for MIT graduate students and postdoctoral associates, with one nine-workshop program offered in the spring and one eight-workshop program in the summer. In AY2019, 215 individuals graduated from the program. By role, the program's graduates were:

- Graduate students: spring and summer—96
- Postdoctoral associates: spring and summer—107
- Other (visiting faculty, researchers, staff): spring—12

In addition, TLL developed and distributed a Kaufman Teaching Certificate Program alumni survey. The previous survey had been administered in 2013 to a relatively small number of program alumni (for the first four years, the program graduated 351 students, compared with more than 1,450 from 2013 to 2018).

Better Blending. TLL has been designing and filming mock recitation videos in collaboration with the mathematics department with funding from the Abdul Latif Jameel World Education Laboratory. The videos highlight best practices for facilitating a recitation and will be used in settings such as workshops for TAs. They will also be available on the TLL website. The products of the Better Blending project will help TLL achieve its strategic goal of building capacity for teaching assistant development across campus.

TLL TA Resource Development Fellow. TLL has been fortunate to offer a TA Resource Development Fellowship through OGE's Graduate Community Fellowship program. The fellow has been working with TLL staff to identify video examples of evidence-based teaching from MIT classes in a range of disciplines. Leveraging the classroom footage already captured by MIT OpenCourseWare, the fellow is identifying clips that could be used in workshops for TAs and in the Kaufman Teaching Certificate Program. In line with TLL's strategic goal of building capacity for the training of TAs across campus, the fellow is also drafting workshop facilitator guides containing hyperlinks to the clips, suggested reflection questions to pose after watching the clips, and notes about interesting features of the clips.

- TLL staff provided instructional support and pedagogical guidance for IAP 2019 subject 2.S974/2.S790 Designing the First-Year Experience: Fun-Sized.
- TLL staff developed and taught four sessions of the Growth Mindset Workshop in IAP 2019.
- TLL has produced an overview of practices in evaluating the faculty contribution to teaching at other institutions and compiled a range of alternative options for evaluation of faculty.
- One-on-one consultations and pedagogical support for faculty, staff, and TAs. TLL also provided departmental workshops and trainings for TAs. TLL staff provided one-on-one consulting and support for approximately 35 faculty, students, and staff during 2019.

Notable Statistics and Data

- The Kaufman Teaching Certificate Program received funding from the Office of the Vice President for Research (\$22,905), from OVC (\$8,898), from OGE (\$10,275), and from MIT-Empowering the Teachers (\$1,000), for a total of \$43,078.
- Funding of \$90,000 came from an anonymous donor for the Flipping Failure project and funding of \$20,000 came for the MITeaches: Fostering Inclusion initiative.
- Funding for the instructor working on the biology-based research module of the freshman advising seminar 6.A01 Mens et Manus: Building on the Science Core was \$19,313.
- TLL received an IMPACT grant (funding for assessment and evaluation) of \$41,724.
- Fly-by-Wire funding for the TLL project lead was \$27,081.
- Alumni Class Funds contributed funding for assessment and evaluation of faculty grants of \$1,616.
- The d'Arbeloff Fund for Excellence contributed \$496 in funding for assessment and evaluation of faculty grants.
- The Institute Community and Equity Office contributed \$12,500 for MITeaches.

- The OVC contributed \$15,000 for the first-year undergraduate experience exploratory course cohort.
- Five teaching development fellows (from five different departments), who were mentored by TLL's assistant director for graduate teaching, were funded by their home departments in AY2019. Each received \$1,000. TLL supported a sixth, at-large, fellow.

In addition, TLL funded three additional projects from its funds for one-time projects:

- TLL Speaker Series: \$7,332.
- Seminars and Workshops for TAs and Graduate Student Development: \$8,483.
- Teaching Development Fellows: \$3,017. This amount includes the \$1,000 cost of the at-large fellow along with books, supplies, and materials for TD Fellows workshops and meetings.

Ian A. Waitz

Vice Chancellor for Undergraduate and Graduate Education