

Department of Electrical Engineering and Computer Science

The [Department of Electrical Engineering and Computer Science \(EECS\)](#) is MIT's largest department, with 129 faculty conducting research in four affiliated labs: the Computer Science and Artificial Intelligence Laboratory (CSAIL), the Laboratory for Information and Decision Systems (LIDS), the Microsystems Technology Laboratories (MTL), and the Research Laboratory of Electronics (RLE).

EECS is also home to a growing portion of MIT's student body. In the 2017–2018 academic year, 1,291 undergraduates and 229 master of engineering (MEng) students were enrolled in the department. As of June 30, 2018, the department had 684 active graduate students.

Department Leadership Changes

Professor Asuman Ozdaglar was named EECS department head effective January 1, 2018, replacing Professor Anantha Chandrakasan, who became dean of the School of Engineering in July 2017. Professor Ozdaglar had served as interim department head from July through December 2017 and as an associate department head from January through June 2017. She is also the former director of the EECS-affiliated Laboratory for Information and Decision Systems.

Professors Saman P. Amarasinghe and Joel Voldman were named associate department heads in January 2018. Professor Nancy A. Lynch, who had previously served as an associate department head, was named to the new position of associate department head for strategic directions, also in January 2018.

Professors Dennis M. Freeman and Elfar Adalsteinsson were named EECS education officers, effective in April and August 2018, respectively. Katrina L. LaCurts was named undergraduate officer in April 2018.

Yong Rong Huang, previously senior financial officer for MIT's Institute for Medical Engineering and Science, joined EECS as administrative officer in December 2017, replacing Mary Ellen Sinkus, who became administrative officer in the School of Engineering.

Undergraduate Program

Overall Enrollment

As noted above, 1,291 undergraduate students were enrolled in the department in AY2018. The department also enrolled 246 MEng students (this figure includes participants in the 6-A Master of Engineering Thesis Program, described below).

Undergraduate enrollment was split across the department's five majors:

- 59 students (about 4%) in 6-1 (electrical science and engineering)
- 380 students (about 29%) in 6-2 (electrical engineering and computer science)
- 757 students (about 59%) in 6-3 (computer science and engineering)
- 73 students (about 6%) in 6-7 (computer science and molecular biology)
- 22 students (about 2%) in 6-14 (computer science, economics, and data science)

Class Enrollment

The department has also seen increased enrollments in subject offerings. The introductory programming sequence of 6.0001 Introduction to Computer Science Programming in Python and 6.0002 Introduction to Computational Thinking and Data Science is especially popular, with 1,024 registered students taking 6.0001 last year and 675 taking 6.0002 (see Figure 1).

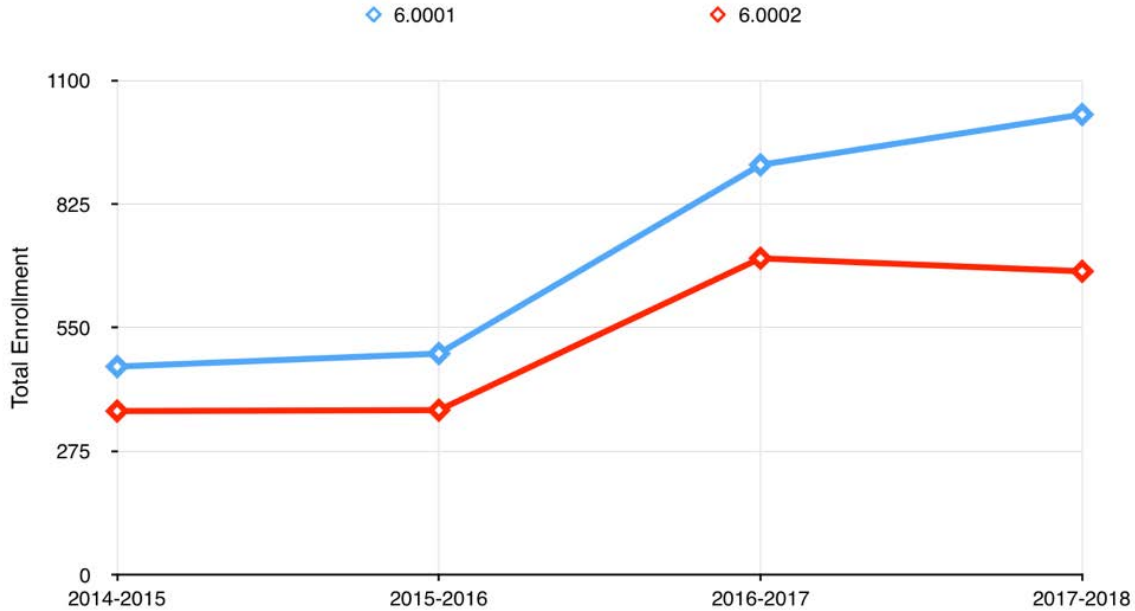


Figure 1: Enrollment growth in EECS courses.

The department has also seen rapid growth in 6.036 Introduction to Machine Learning. In AY2018 839 students took 6.036, up from 505 in the previous academic year (see Figure 2). The 6.867 Machine Learning graduate course has seen large enrollments as well, with 461 students last year.

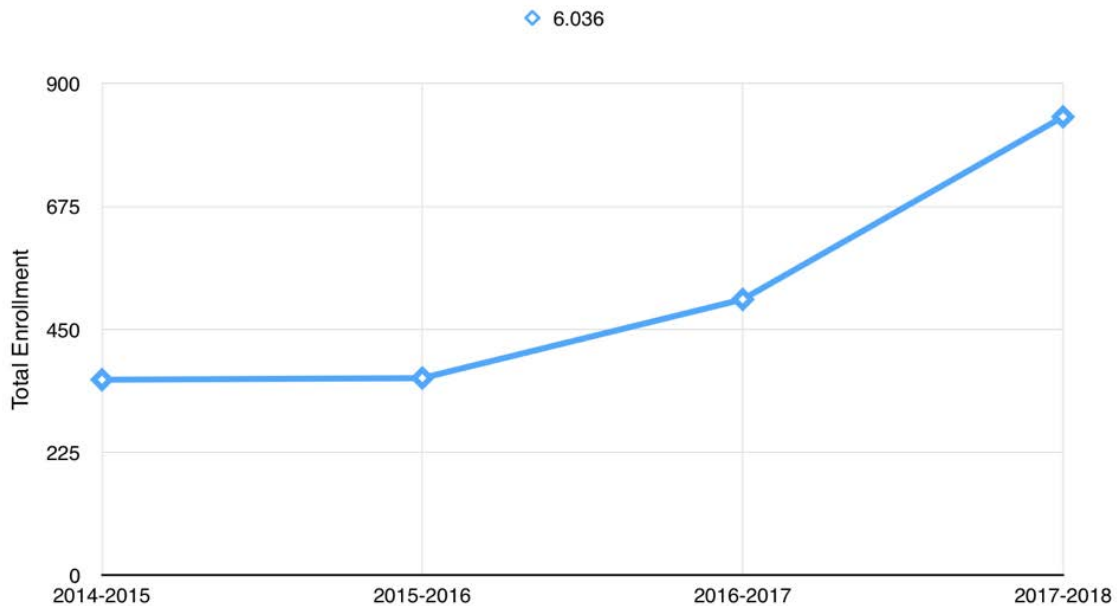


Figure 2: Enrollment growth in the EECS machine learning course 6.036.

New and Revamped Courses

As part of our ongoing efforts to improve our undergraduate curriculum, we have made significant changes to our introductory subjects in electrical engineering. These changes, recommended by our Committee on the Future of Electrical Engineering, are intended to provide a more integrated and engaging introduction to key concepts, not only fostering intellectual interest in these approaches but also demonstrating their value in solving contemporary problems of interest.

In fall 2017, EECS undertook the first major revision of 6.002 Circuits and Electronics in about 20 years. The goal was to rethink content and delivery. We refocused the class on processing signals and energy and on linear devices, placing less emphasis on circuitry for computation as the prime motivator. We added a weekly lab component that includes authentic examples building on course content, culminating in a multi-week lab that uses the Doppler effect to infer velocity from ultrasound waves. We also moved the homework to the online CAT-SOOP system (detailed below) to provide instant feedback and remove the need for manual grading.

The 6.003 Signals and Systems course was originally designed more than 40 years ago as the launching point for the study of signals and systems, which continues to be of broad interest not only in EECS but in virtually every engineering field, as well as in physics.

Over the years, new content has been added to 6.003, most significantly in the area of discrete-time signals and systems, which has become increasingly important as digital electronic systems have become widely available. To make room for this new material, hands-on activities were reduced in scope and ultimately removed entirely from 6.003.

To better communicate both the technical content and its utility, we have refactored the content in 6.003 and its follow-on subjects so that signal processing theory (which has always been a part of 6.003) and its applications (which had traditionally been reserved for higher-level subjects) are combined in one subject (6.003) and the feedback and control component and its applications are combined in another subject (6.302).

The new 6.003, with its focus on signal processing and applications, is currently being piloted. Students who took the first offering during spring 2018 articulated enthusiastic appreciation for a series of newly developed laboratory exercises that build directly on the signal processing concepts retained from the previous version of 6.003.

In the ongoing second edition, the staff is focusing on streamlining the hands-on activities and developing more explicit connections between the theoretical ideas and practical applications.

The EECS introductory subject on digital design and computer architecture, 6.004 Computation Structures, has undergone substantial revision as well. This foundational subject, needed for all subsequent systems subjects in EECS, is also a popular one, taken by more than 500 students each year. The major change is making the subject much more hands on by using modern hardware design tools, specifically a hardware design language called Bluespec. The design of Bluespec is informed by the latest developments

in the programming languages and embodies a novel approach to concurrency issues in hardware design. Starting from basic combinational and sequential circuits, students end up building several versions of pipelined RISC-V processors and their associated memory systems from scratch.

The objective of the new 6.S077 Introduction to Data Science course, launched in spring 2018, is introducing basic statistical concepts through a rich collection of applications and hands-on experience with real data. It is intended to provide a solid conceptual foundation in the field of data-driven modeling, prediction, and inference.

The course introduces students to mature and informed approaches, including a discussion of the main and common statistical pitfalls that a modern-day data scientist should understand. Rather than covering a long list of popular statistical methods and algorithms, the course highlights the key conceptual ingredients of sound methods developed in the context of applications drawn from electrical engineering, computer science, social science, and the life sciences.

The 6.012 Microelectronic Devices and Circuits course has been completely revamped with lectures, recitations, problem sets, a final project, optional labs, and tests. Key changes are as follows:

- The content of the class emphasizes cross-layer interactions. We begin by examining key metrics of a realistic computing system and derive how low-level device physics are critical for determining the specifications of a computing system. This motivates the majority of the coursework, which focuses on understanding device physics.
- The class ends with a new final project that challenges students to modify a starting transistor to realize the most energy-efficient commercial processor core. This project uses industry-standard computer-aided design tools and connects device design all the way up through system performance.
- The second half of the class includes an optional lab (in which most students choose to participate) where students fabricate their own transistors and small logic gates, giving them a unique hands-on experience with nanofabrication.
- The class focuses on developing intuition and understanding practical problems rather than crunching numbers and matching equations to problems.
- The class delves into advanced state-of-the-art devices and technology, and we teach the remarkable progression of semiconductor technology over the decades: from bulk devices to SOI (silicon on insulator) to finFETs (fin field-effect transistors) and the advanced semiconductor physics that motivated this work (short-channel effects and so on).

The CAT-SOOP learning-management system, in development since 2011, also serves as a tool for automatic collection and assessment of online exercises. It is currently used in Course 6 subjects including 6.01, 6.02, 6.08, 6.002, 6.003, 6.004, 6.006, 6.009, 6.036, 6.302, 6.145, and 6.A01. Both traditional and lab classes are using the system for a wide variety of subjects (e.g., circuits, signal processing, Python programming, and machine learning).

CAT-SOOP was initially developed for 6.01 when that was one of the largest courses on campus (the name evolved from “Automatic Tutor for Six-Oh-One Problems”). Features related to blended learning and management of laboratory environments include, among others:

- Automatic assessment of a broad range of question types (including symbolic math, Python code, and circuit schematics)
- Sectioning to manage release and due dates of assignments for students in various sections
- An online queueing system to help staff manage in-person requests for help in busy environments
- Live displays of student progress on laboratory exercises to help staff find students in need of help

CAT-SOOP was developed primarily for residential courses, but also with an eye toward flexibility (in part because it was originally designed for a non-standard class structure). For that reason, it can be adapted to subjects with very different course content and structure. It integrates multiple features into a single website and, with wider adoption, also provides a reasonably similar look and feel for students across multiple classes they are taking. Next steps include making the system easier to use and set up and improving documentation and examples.

New Majors

Designing the Virtual Marketplaces of the Future

In fall 2017, EECS and the Department of Economics launched a new joint major in computer science, economics, and data science (6-14). The program got off to a strong start, graduating its first three students in spring 2018 and enrolling 67 students for fall 2018.

The new major is designed to meet the increasing need for graduates with skills in both computer science and economics. Specifically, employers are seeking graduates who can apply machine learning, data analysis, and other computer science skills to the complex economic problems that have emerged from e-commerce, online social networks, and other aspects of the digital economy.

For example, applications of the “sharing economy” — from Airbnb to Uber and beyond — depend on bringing algorithms and market design tools together to facilitate market exchanges. In addition, graduates of 6-14 might design algorithms for school-choice programs, manage data-heavy government spectrum auctions, or even optimize systems for allocating donor kidneys.

To prepare students to address such challenges, 6-14 combines coursework in algorithms, statistics and probability, data science, and microeconomics. Specific classes required for 6-14 include 6.042J Mathematics for Computer Science, 14.32 Econometric Data Science, and 14.01 Principles of Microeconomics, among others. Program leads expect the collaboration between the two departments to increase as interest in the major grows.



David Autor, Ford Professor and associate head of the Department of Economics, discusses the joint 6-14 major with Asu Ozdaglar, School of Engineering Distinguished Professor of Engineering and EECS department head. (Photo: Lillie Paquette/School of Engineering)

Combining Urban Planning and Computer Science

EECS and the Department of Urban Studies and Planning launched a new major, urban science and planning with computer science (11-6), in fall 2018. This undergraduate major, the first of its kind in the United States, combines urban planning and public policy, design and visualization, data analysis, machine learning, artificial intelligence, pervasive sensor technology, robotics, and other aspects of both computer science and city planning.

The program will reflect how urban scientists are making sense of cities and urban data in ways never before imagined—and using what they learn to reshape the world in real time. Although this field draws on existing disciplines, the combination will shape a unique new area of knowledge. Practitioners are neither computer scientists nor urban planners in a conventional sense but bilingual experts with two sets of tools and methodologies. In areas as diverse as transportation, public health, and cybersecurity, MIT researchers and practitioners are already pioneering work along these lines, demonstrating the potential for collaborative efforts.

The major is the first example of the “N with CS” model for new majors, in which the CS component is standardized using the CS minor as a blueprint and the major is offered by the other department. This will reduce the burden on EECS in initiating and managing the major, and thus it will be scalable as multiple departments would like to create such bilingual students.

However, substantial commitment was required from EECS in getting the major approved, including presentations to the Committee on Curricula, the Committee on the Undergraduate Program (CUP), CUP’s Subcommittee on the Communication Requirement, the Engineering Council, the Academic Council, and two MIT faculty meetings. The faculty approved the new major at the second meeting in May 2018.

Curriculum Revision Update

In 2015, new undergraduate degree requirements were approved for electrical engineering and computer science majors beginning with the class of 2020 (students entering MIT as freshmen in fall 2016). Students who entered under the old curriculum have the option of switching to the new curriculum if they wish. The new curriculum puts more choice in students' hands while providing a solid grounding in the essential elements of an education in electrical engineering and computer science. As of May 2018, roughly 75% of our majors were using the new curriculum.

Minor in Computer Science

Knowledge of computer science is becoming more important in other fields, including the physical sciences, the humanities, and economics. It is clear from the significant increase in computer science enrollments in recent years that students majoring in fields outside of electrical engineering and computer science feel the need to learn computer science. Introduced by EECS in fall 2016, the computer science minor provides a structured, simple, and flexible program for students who want to major in other fields but become proficient in computer science.

During the 2017–2018 academic year, 23 students were certified as having completed the computer science minor. Another 81 have declared the minor but have not yet completed the requirements. These students are majors in 16 different departments; roughly 67% are seniors, 30% are juniors, and 3% are sophomores.

Departmental Exchange Programs

EECS now has two departmental exchange programs: one with [ETH Zürich](#) and one with [Imperial College London](#). Students in these programs spend one or both semesters of their junior year abroad, taking subjects that will transfer for core or restricted-elective subjects in EECS. In the 2017–2018 year, five students studied abroad at ETH. In the upcoming year, three will study abroad at ETH and four will study at Imperial.

Contributions to MITx

Over the past year, EECS offered a variety of classes through the [MITx](#) online portal. Subjects ranged from 6.002x Circuits and Electronics 1 to 6.041.2x Introduction to Probability: Part 2—Inference & Processes. Among the most popular were 6.00.1x Introduction to Computer Science and Programming Using Python and 6.00.2x Introduction to Computational Thinking and Data Science, which ran as self-study classes this year. A list of subjects follows, with the enrollment and completion numbers for each:

- 6.00.1x Introduction to Computer Science and Programming Using Python (registered: 341,251; explored: 19,273; completed: 7,017)
- 6.00.2x Introduction to Computational Thinking and Data Science (registered: 35,478; explored: 1,788; completed: 933)
- 6.002.1x Circuits and Electronics 1: Basic Circuit Analysis (registered: 94,795; explored: 8,434; completed: 877)

- 6.002.2x Circuits and Electronics 2: Amplification, Speed, and Delay (registered: 24,523; explored: 1,985; completed: 303)
- 6.002.3x Circuits and Electronics 3: Applications (registered: 23,598; explored: 1,236; completed: 203)
- 6.041.1x Introduction to Probability: Part 1 – The Fundamentals (registered: 17,202; explored: 1,432; completed: 252)
- 6.041.2x Introduction to Probability: Part 2 – Inference & Processes (registered: 17,202; explored: 1,432; completed: 252)

Department Teaching Laboratories

The EECS Department Teaching Laboratories supply faculty, students, and staff with the necessary workspace and resources to apply theory from research and classes directly to practical implementations. They also contain one of the major campus maker spaces, providing students from across the Institute with access to facilities for electronics fabrication and testing, mechanical assembly, and 3D printing, among many other hardware capabilities.

The 2017–2018 academic year led to the maturing of several subjects, including the movement from special subject to regular subject status of 6.S08 Interconnected Embedded Systems and the third EECS offering of the popular Media Laboratory course 6.943 How to Make (Almost) Anything. These classes continue to expose undergraduates to the techniques and challenges in the design, manufacture, testing, and debugging of physical hardware in addition to traditional problem sets and exams.

More than 30 classes across the EECS spectrum use the teaching laboratories, with most students using the space several times each week. The 25,378-square-foot space remains open and staffed with instructors for more than 14 hours per day, six days per week, to serve as a regular classroom location and study area.

During the academic year, EECS often highlights the Department Teaching Laboratories through alumni donor and prospective student tours, community outreach efforts, and industry events. The lab area continues to shine through the between-terms Independent Activities Period (IAP) with technical competitions such as MASLAB (Mobile Autonomous Systems), which provides students across the campus with an outlet to develop extensive systems that integrate both hardware and software. The Office of Engineering Outreach offers several workshops and seminars during IAP and over the summer to engage local middle and high school students; the Minority Introduction to Engineering and Science (MITES) program continues to use EECS laboratory space throughout the summer for workshops and seminars focusing on introductory robotics, circuits, and programming.

The teaching labs also support students engaged in individual practical work, either informally or through a formal special projects course. In these cases, lab staff work to coordinate safety and other concerns, find space, and establish guidelines for lab use.

Finally, the labs are critical to supporting the demo infrastructure in the department. We support the construction and storage of a large number of in-class demonstrations for courses such as 6.002 Circuits and Electronics, 6.003 Signals and Systems, 6.013 Electromagnetics and Applications, and 6.014 Electromagnetics and Applications.

Engineering Design Studio

The Engineering Design Studio (EDS) within the Department Teaching Laboratories remains a campus hub for students to design and fabricate ideas that require professional and high-power equipment. As a machine shop and maker space tailored toward electrical engineering and computer science education, EDS continues to develop its in-house capabilities with additional 3D printers and milling machines for full printed circuit-board design and manufacturing.

EDS also provides a unique capability in that it can be configured as a classroom for lecture-style courses but can simultaneously host equipment for testing and fabrication so that students can move back and forth seamlessly between practical work and listening to an instruction. This environment serves as an optimal model for practical teaching spaces going forward. To that end, EDS reserves a number of high-quality testing elements that can be brought out and used in the space on request.

EDS continues to host a section of the highly popular class How to Make (Almost) Anything. This 18-unit course delves into technologies ranging from laser cutting to embedded programming. With the addition of this new section, under subject 6.943J, electrical engineering and computer science students and others from the School of Engineering can participate in an intensely demanding course that began in the Program in Media Arts and Sciences and quickly became oversubscribed. The class meets weekly in the fall with three other class sections across campus and at Harvard, giving School of Engineering students exposure to peers with a variety of academic backgrounds.

Through MIT's Project Manus and the Mobius mobile application, EDS also has its full equipment catalog and capabilities available for any user to explore. EDS has steadily received new visitors from EECS and beyond, with FIXME unique users signing in to use the space since June 2016.

Graduate Program

The EECS graduate program offers high-quality academics with a broad range of advanced course offerings. Moreover, our graduate students make leading contributions to a wide range of research activities in all areas of science and nanoscience, health care and medical instrumentation and imaging, energy and energy efficiency, business, manufacturing, robotics, management of big data, and advances in technology.

In areas impacted by computer science, implementation of machine learning with data from science, business, social networks, technology, medicine, and environmental sensing and monitoring is under intense investigation. The exciting research opportunities for our graduate students continue to attract outstanding and highly accomplished applicants striving to change the world in collaboration with their student peers and our faculty and research staff supervisors.

Introducing the Professional Perspective

During the 2018 spring term, EECS faculty approved an additional graduate-degree requirement for a three-year trial to begin in June 2019: the Professional Perspective. This requirement is designed to assist graduate students in understanding the multitude of options that will be available to them when they graduate with advanced degrees.

The Professional Perspective requires the completion of one unit for the master of science (SM) or master of engineering (MEng) degree and the completion of two units for the doctoral degree. Completing the units required can be accomplished in multiple ways, including industrial, academic, or government lab internships; attendance at industrial colloquia; participation in specialized training to prepare for an academic career; or participation in the creation of a company.

Current graduate students are allowed to “opt in” to the Professional Perspective; to date, more than 50 have signed up to complete this additional degree requirement. In the summer of 2021, the faculty will review the Professional Perspective and determine its future. The other doctoral degree requirements include completion of the technical qualification evaluation, the research qualification examination, a minor program, a teaching assistantship, a doctoral thesis, and a successful doctoral thesis defense.

Graduate Applications and Admissions

During the 2018 admissions season, EECS received 3,458 applications from all over the world, representing a 17% increase over applications from 2017. Ultimately, 214 students (about 6% of applicants) were admitted.

In the fall 2018 semester, 129 new students will join our doctoral graduate program; 10 additional students will join the program in the spring term of 2019. The 2018 class of graduate students includes 29 women and four underrepresented minority students. Approximately 55% of the new students will be funded by prestigious fellowships including MIT Presidential Fellowships, departmental fellowships sponsored by EECS alumni, and externally awarded fellowships such as National Science Foundation (NSF) Graduate Research Fellowships, industrially sponsored fellowships, and fellowships received from other countries.

These internally and externally funded fellowships not only are important for financial support but also provide incoming graduate students with flexibility in selecting the research groups and projects that best meet their interests and career goals. All admitted graduate students are provided full financial support in the form of fellowships, research or teaching assistantships, or financial support from EECS. Financial support includes tuition, a monthly living allowance or stipend, and medical insurance for the first year of students' graduate education (their remaining years are typically funded by the research supervisor).

As of June 30, 2018, there were 684 active students in the EECS graduate student population, with 143 women students (21% overall); 56% of these students have international citizenship. The graduate student body is 51% electrical engineering (22% women) and 49% computer science (20% women). Our graduate student body is highly accomplished, receiving a wide assortment of fellowship awards; roughly 188 current students are supported by fellowships, training grants, and internships.

In addition to the fellowships awarded at the time of admission (EECS departmental, Institute, and MIT Presidential Fellowships), EECS graduate students receive fellowships from the US government, US industry and training grants, and fellowships from foundations and foreign countries.

Our graduate students have also won many scholarship awards, including the prestigious Hertz Fellowship, the Ford Foundation Fellowship, Alfred P. Sloan Foundation Scholarships, Siebel Scholarships, and two Dimitris N. Chorafas Foundation Prizes. In addition, EECS graduate students have received highly competitive industrial fellowships from Analog Devices, Facebook, Google, HP, IBM, Microsoft, Qualcomm, Samsung, and Texas Instruments.

In AY2018, EECS graduated students in September, February, and June. Total numbers of advanced degrees awarded were as follows: 213 master of engineering (MEng) degrees (up 25% from last year), 88 master of science (SM) degrees, 107 PhD degrees, and two electrical engineering degrees.

EECS awarded 18 joint SM degrees with departments and programs including the Department of Architecture, the Department of Civil and Environmental Engineering, the Department of Mechanical Engineering, the Department of Materials Science and Engineering, the Center for Biomedical Engineering, the Computation for Design and Optimization program, the Health Sciences and Technology program, Leaders for Global Operations, and the System Design and Management program.

In summary, 410 students obtained an advanced degree from EECS in 2018, up 15% from last year.



EECS reception following the Investiture of Doctoral Hoods, June 2018. (Photo: Gretchen Ertl)

Increasing Graduate Program Diversity

Along with a graduate student body that is nationally diverse, EECS strives for diversity in gender, ethnicity, and race. To make inroads to support applicant diversity, the EECS Graduate Office staff and faculty regularly participate in MIT's Institute-wide recruiting efforts. EECS supports MIT's Minority Summer Research Program (MSRP), the GEM (National Consortium for Graduate Degrees for Minorities in Engineering and Science) GRAD (Getting Ready for Advanced Degrees) Lab for underrepresented engineering and science graduate students, and other initiatives.

Networking and mentoring seminars are offered each fall (with reunions in the spring) for women as well as for individuals who may benefit from weekly group meetings and discussions. Three different networking seminars are currently offered for various groups of incoming graduate students.

Visit Days for Newly Admitted Graduate Students

EECS organizes annual visit days for all admitted graduate applicants. The events provide an opportunity for admitted applicants to envision their lives as graduate students working on research and academics and to view firsthand the opportunities provided by MIT and the greater Boston area.

Most importantly, the events give admitted applicants the chance to meet and interact with potential research supervisors, view laboratories, chat with research groups and potential classmates, and visit graduate dormitories and living spaces. One-to-one interactions are viewed as especially critical, and thus there are a variety of opportunities for such interactions in the event schedule.

Visit days begin with a Tuesday evening dinner and reception organized by the current EECS graduate student body, led by the [EECS Graduate Student Association \(GSA\)](#). On Wednesday morning EECS formal sessions begin, including one dubbed "three-minute madness," in which the EECS faculty and research staff each share their research goals and philosophy—in no more than three minutes apiece. The session becomes increasingly exciting as presenters describe their research visions as concisely and quickly as possible, resulting in an exceptionally impressive range of research activities being highlighted. One-to-one meetings with faculty and research staff follow as admitted applicants have their first experience navigating MIT's "infinite corridor," moving from office to office and meeting prospective research groups.

Wednesday afternoon includes several laboratory tours and a reception hosted by faculty and lab directors. Finally, the day closes with several dinners arranged by research area or by research group, offering more opportunities for informal interactions and discussion of research activities.

On Thursday, the EECS graduate officer describes the graduate program's academic requirements, followed by a panel of current students who discuss graduate life and answer visitors' questions. The admitted applicants depart MIT on Thursday afternoon with the information they need to make important decisions about graduate schools and research direction.

Graduate Student Organizations

Graduate student organizations include GSA and [Graduate Women in Course 6 \(GW6\)](#). All current graduate students are invited to participate in these organizations' events, including informational panels on thesis proposals and informal dinners with EECS faculty guests.

During the summer, GSA organizes social events such as rock-climbing expeditions and movie nights. GSA student volunteers play an instrumental role in the success of EECS visit days and the new student orientation in August by organizing and delivering a multitude of welcoming activities for newly admitted graduate students.

GW6 also offers numerous activities for socializing and networking as well as for intellectual enlightenment. During the 2017–2018 year, GW6 welcomed EECS faculty to join in conversation at the Women in Tech breakfast series, held in collaboration with the EECS Communication Lab. In these sessions, GW6 members learned the art of the elevator pitch and practiced other communication skills. Social activities organized and offered by GW6 included a paint night, an outlet-mall shopping excursion, a jewelry-making night, and kayaking and hiking trips.

In addition, for the fourth year, GW6 organized the Graduate Women's Community Dinner in memory of Erin M. Aylward '06. The community dinner is an annual event to promote community and networking among graduate women in EECS.

6-A Master of Engineering Thesis Program

The department's [6-A Master of Engineering Thesis Program](#), now in its 101st year, is a partnership between MIT and some of the world's most innovative companies. It allows students to work on industry projects while simultaneously completing their MEng theses. Students typically join the program as juniors and seniors, completing three- and six-month assignments at their companies. Each participant is assigned a faculty advisor and an industry mentor, and students' work for their companies is used toward their MEng thesis. In some cases, the program also covers the full tuition for the MEng degree and pays competitive salaries during work assignments. Students receive academic credit for assignments and are able to graduate with their class.

More than 2,500 alumni have completed the 6-A program over the years. The program currently has two industrial tiers: core partners and affiliate partners. Core partners commit to supporting students both during their company internships and in their final term at MIT. Affiliate partners cover students' expenses only during their internships. Current core and affiliate partners include Akamai, Analog Devices Inc., Cadence, Cambridge Mobile Telematics, Cell Signal Technology, Draper, eBay, First Republic Bank, the Lawrence Livermore National Laboratory, MIT Lincoln Laboratory, the National Aeronautics and Space Administration (NASA), NetApp, Oracle, Sumo Logic, and Uber.

The highly competitive program holds orientation sessions twice annually, once in September and once in April. Forty-eight EECS students applied during the fall recruitment and 14 during the spring; 42 received offers from various 6-A companies. Twenty-four accepted 6-A company offers and were admitted into the program. Of those students, 10 were undergraduates on work assignments during the summer

term, while 14 were MEng students admitted in 2018 who will work on assignments during the summer and fall 2018 terms. In addition, six students from the previous year have continued on to their MEng work assignments. The program currently has 10 undergraduates and 20 MEng students; 14 MEng students graduated in June 2018.

During the May 2018 EECS spring awards ceremony, the J. Francis Reintjes Excellence in VI-A Industrial Practice Award was presented to Alex Sloboda in recognition of outstanding performance during three work assignments at Analog Devices in Chelmsford, MA.

EECS professor Tomás Palacios serves as director of the 6-A program.

Educational and Outreach Initiatives

Envisioning the Future of Signal Processing

On October 23, 2017, top researchers from around the world gathered at MIT for the [Future of Signal Processing Symposium](#). The event, and a celebratory dinner the previous night, marked the 80th birthday of an EECS pioneer in digital signal processing (DSP): Ford Professor of Engineering Alan V. Oppenheim.

During the daylong symposium, more than a dozen speakers and panelists defined the next wave of problems that this field will tackle, including applications in security, forensics, and health. The researchers also described some unexpected areas of science that will help propel the field: quantum physics, 19th-century algebra, and noise, a signal's customary nemesis.



Alan V. Oppenheim, Ford Professor of Engineering, during the Future of Signal Processing Symposium, October 2017.

(Photo: Gretchen Ertl)

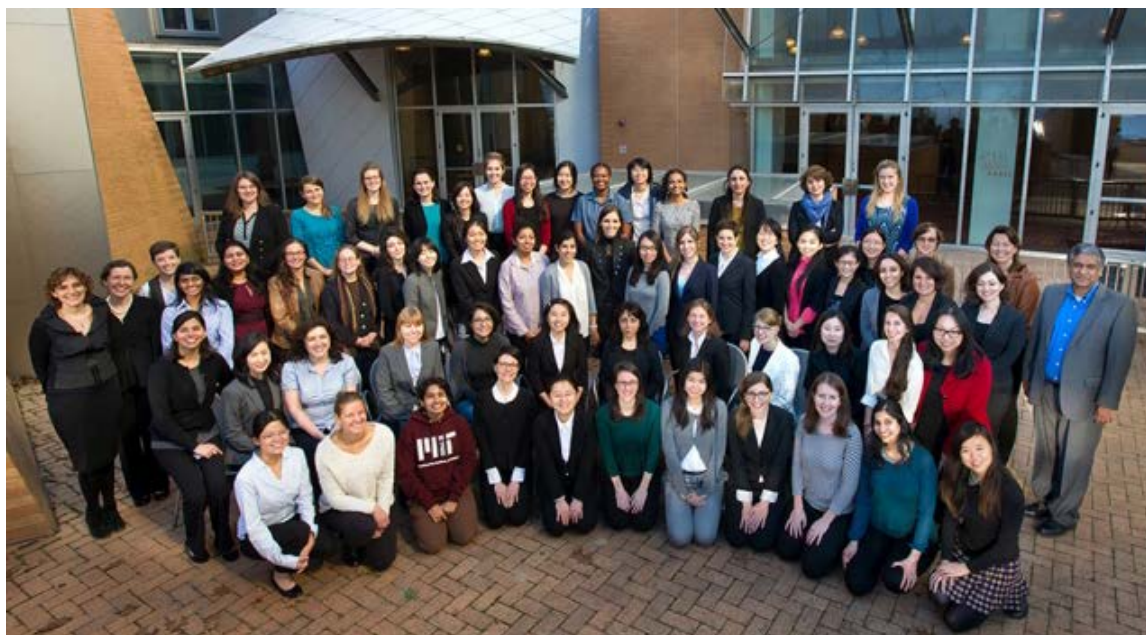
The lead organizer for the dinner and symposium was Tom Baran, a research affiliate in MIT's DSP group and co-founder of Lumii. Organizing committee members included Petros Boufounos, senior principal research scientist at Mitsubishi Electric Research Laboratories; Anantha Chandrakasan, dean of the School of Engineering and Vannevar Bush Professor of Electrical Engineering and Computer Science; and Yonina Eldar, a professor of electrical engineering at Technion. (Baran, Boufounos, and Eldar are all MIT alumni and Oppenheim's former students.) Asu Ozdaglar, now EECS department head and School of Engineering Distinguished Professor of Engineering, and other EECS faculty members were among the event's speakers and panelists.

Rising Stars Workshop for Women Returns to MIT

The [Rising Stars](#) workshop for early-career women in EECS returns to MIT in October 2018. The intensive two-day event will bring together 76 top graduate students and postdoctoral researchers who are interested in academic careers.

During the 2017–2018 year, EECS faculty and staff planned for the intensive two-day event. Rising Stars participants will hear about career-related issues from invited speakers and panelists, present their work in a poster session, meet with faculty and researchers, and, of course, network with each other.

EECS launched the Rising Stars workshop for 38 participants in 2012 with the goal of helping demystify the “black box” of academic hiring and the tenure process. In 2013 the workshop attracted 40 participants, and other schools asked to host future events. In 2014, the University of California, Berkeley, hosted the workshop (with MIT as a co-sponsor); in 2015, MIT again hosted the event, attracting 61 participants. Carnegie Mellon University hosted the workshop in 2016; the event moved to Stanford University in 2017.



Rising Stars in EECS, 2015. The workshop returns to MIT in October 2018 after being held at other universities in 2016 and 2017. (Photo: Gretchen Ertl)

Where do Rising Stars alumnae end up? Of the 309 women who participated in Rising Stars workshops between 2012 and 2017, more than 30% held faculty positions as of June 2018, according to EECS research. Slightly more than 20% worked in industry; about the same percentage were in postdoctoral positions. The rest were students or in other academic roles.

SuperUROP at MIT: New Opportunities for Student Researchers

The Advanced Undergraduate Research Opportunities Program, better known as [SuperUROP](#), is designed to provide a more in-depth experience for juniors and seniors who have already completed a traditional UROP project. Through participation in graduate-level research and attendance at weekly guest lectures presented by

distinguished speakers, the EECS-hosted program prepares students for work in academia, industry, and start-ups. The 12-credit seminar in undergraduate advanced research (6.UAR), offered in conjunction with SuperUROP, teaches students technical communication skills.

SuperUROP participants present their results at live events such as the December 2017 Proposal Pitch and the April 2018 SuperUROP Showcase poster sessions (the latter were co-located with Masterworks, the annual EECS celebration of master's thesis research). Many SuperUROP scholars go on to present at professional conferences or publish in top journals in their fields. Each student is eligible to receive a named stipend funded by gifts from industry sources and alumni.

Launched by EECS in 2012, SuperUROP is now open to all School of Engineering students. In 2017–2018, thanks to a generous donation from an anonymous donor, the program was extended for the first time to the School of Humanities, Arts, and Social Sciences (SHASS), supporting projects applying computer science to SHASS fields. Overall, more than 130 students completed the SuperUROP program in 2017–2018, including nine inaugural CS+HASS Undergraduate Research and Innovation Scholars who worked on projects combining computer science with music, political science, theater, and other areas.



SuperUROP scholars presented the results of their yearlong research projects during a well-attended poster session in April 2018. (Photo: Gretchen Ertl)

Communication Lab: Scientists Helping Scientists

Launched as a peer-coaching resource in September 2016, the [EECS Communication Lab](#) had served 400 students by June 2018. The lab's goal is assisting students in working on their technical communication skills. To that end, in its second full year, the lab expanded its offerings and outreach.

Over the past year, the lab hosted four workshops covering the following topics:

- Preparing for the research qualifying exam
- Presenting at the MTL annual research conference
- Writing an MEng thesis proposal
- Creating a compelling poster for Masterworks, the annual poster competition for EECS master's degree students

The lab also offered targeted coaching for students working toward particular event or course deadlines, including the following:

- A resume blitz for the fall 2017 Career Fair, with 10-minute rapid-fire coaching sessions
- Previous-night presentation practice for the MTL annual research conference
- Oral presentation coaching for Center for Integrated Circuits and Systems (CICS) research reviews in fall 2017 and spring 2018
- Poster presentation coaching for MIT's Quest for Intelligence launch
- Partnerships with faculty in six classes (Professors Erik Demaine, Luca Daniel, Manolis Kellis, Charles Leiserson, Tomaso Poggio, and Julian Shun) to coach their students in communication assignments

Finally, the lab launched new outreach initiatives including one-on-one meetings with faculty to better understand their needs and ideas, peer interviews with students to learn more about their writing processes and the support they are looking for, and, in coordination with the broader School of Engineering Communication Lab ecosystem, the design of an ongoing educational study to quantify the lab's impact.



EECS Communication Lab peer coaches help students polish their presentations for an upcoming research conference. (Photo: Alison Takemura)

Women's Technology Program

Founded in EECS in 2002, the [Women's Technology Program \(WTP\)](#) marked its 17th summer during 2018. WTP's mission is encouraging high school girls with demonstrated math and science talent to pursue engineering and computer science by introducing them to these subjects in a hands-on, team-based format. WTP runs each year over four weeks in June and July.

WTP added a mechanical engineering curriculum track in 2006. The two tracks have separate classes, staff, and budgets, and keep separate alumnae statistics, but share admissions and operate as one interdepartmental program. WTP director Cynthia H. Skier '74, SM '81, who is based in EECS, manages many administrative operations for both tracks.

For summer 2018, 60 students (40 for WTP-EECS and 20 for WTP-ME) were selected from a record applicant pool (up 12% from 2017) of 700 high school juniors nationwide. WTP selects students who have not had prior opportunities to explore engineering or computer science as a possible career direction. WTP allows them to learn more about their potential interest in and aptitude for these fields and introduces them to research being done at MIT.

The WTP-EECS curriculum includes hands-on, lab-based, college-level classes introducing topics in electrical engineering, computer science, and mathematics, all designed and taught by a dedicated staff of female MIT graduate students and undergraduate students from both MIT and Wellesley College. WTP provides a unique professional development experience for these instructors and tutors, encouraging them to pursue academic careers, and also connects the high school students with female mentors.

In total, 666 students have attended WTP-EECS since it began. The 40 summer 2018 students are still finishing high school, and the 626 others are college-age or older. Of the 560 who have declared college majors or earned undergraduate degrees, more than 66% are in engineering or computer science fields. Another 22% are in math or science fields, and the 66 students without declared majors are mostly college freshmen and sophomores along with a few students whose status is unknown.

Typically, WTP-EECS students develop an interest in MIT (although this is not a stated goal). Of the 626 college-age WTP-EECS alumnae, 249 (39%) have chosen to attend MIT. They also return as staff to mentor current WTP students; in summer 2018, two WTP-EECS staffers and one WTP-ME staffer were WTP alumnae. ITT Career Development Assistant Professor Tamara Broderick, an alumna of the 2002 WTP program, spoke to students about her career path and her work in machine learning.

Entrance and exit surveys administered to WTP-EECS students indicate that the four-week program also has a significant short-term impact. One 2018 student noted: "The classes we took here were absolutely amazing. I am so much more knowledgeable about many STEM [science, technology, engineering, and mathematics] fields than I was when I got here, and I now have hands-on experience in those fields."



High school students take college-level courses and gain hands-on experience in STEM fields during MIT's annual summer Women's Technology Program. (Photo: WTP)

The Quest: Seeking to Understand Human and Artificial Intelligence

In announcing the MIT Quest for Intelligence in February 2018, MIT president L. Rafael Reif noted that the campus-wide research initiative seeks answers to two overarching questions: "How does human intelligence work, in engineering terms? And how can we use that deep grasp of human intelligence to build wiser and more useful machines to the benefit of society?"

To address those questions, The Quest relies on research in its two linked entities: The Core, which focuses on fundamental research designed to advance the science and engineering of both human and machine intelligence, and The Bridge, which will connect MIT discoveries in natural and artificial intelligence to a variety of other disciplines.

Several EECS faculty members were among those named to [The Quest's leadership team](#) in June 2018:

- Professor Antonio Torralba, who is also MIT director of the MIT-IBM Watson Artificial Intelligence Lab, was appointed as director of The Quest.
- Aude Oliva, a principal research scientist in CSAIL and MIT executive director of the MIT-IBM Watson Artificial Intelligence Lab, was appointed as The Quest's executive director.
- CSAIL director Daniela Rus, the Andrew (1956) and Erna Viterbi Professor of Electrical Engineering and Computer Science, is associate director of The Core.
- Leslie Kaelbling, the Panasonic Professor of Computer Science and Engineering, is scientific director of The Core.

StartMIT: An Introduction to Entrepreneurship

Founded in EECS in 2014 as Start6, [StartMIT](#) is an intensive workshop on entrepreneurship held annually during IAP in January. It has been growing steadily, with 130 students from all five schools at MIT enrolled in 2018. During this year's session—among many other activities—students took a one-day tour of start-ups and established

businesses in New York City, honed their creativity during a one-hour crash course in improvisational theater, and engaged in a lively “ask me anything” session with two MIT deans: Anantha Chandrakasan of the School of Engineering and David Schmittlein of the MIT Sloan School of Management. Later, during spring break, some StartMIT participants traveled to San Francisco and Silicon Valley to visit leading companies and meet with alumni and other professionals.

A 2018 program highlight came during StartMIT Innovation Night, featuring guest speaker Sue Siegel, chief innovation officer at GE and CEO of GE Ventures. In her talk, Siegel emphasized the importance of teamwork in entrepreneurship. “I have learned over the years that you can take an awesome team with a mediocre technology and it will win over an awesome technology with a mediocre team,” Siegel told about 300 would-be entrepreneurs and guests. “The team that’s willing to walk through walls to show that the entity can scale is pretty remarkable.”

To encourage collaboration between students and entrepreneurship programs across the campus (and as noted by Chandrakasan, who launched Start6 when he was EECS department head), the 2018 StartMIT program was co-sponsored for the first time by the School of Engineering and MIT Sloan under the leadership of the Martin Trust Center for MIT Entrepreneurship and the Sandbox Innovation Fund. EECS, as the founding department, continued to provide support for the program.

Faculty Notes

Faculty promotions:

- Full professor: Konstantinos Daskalakis, Nickolai Zeldovich
- Associate professor with tenure: Adam Chlipala, Dirk R. Englund, David A. Sontag, Yury Polyanskiy, Vinod Vaikuntanathan
- Associate professor without tenure: Ruonan Han, Caroline Uhler

Faculty on sabbatical leave:

- Harold Abelson
- Regina Barzilay
- Karl K. Berggren
- Sangeeta N. Bhatia
- Qing Hu
- Tommi S. Jaakkola
- Daniel Jackson
- Timothy K. Lu
- Wojciech Matusik
- Silvio Micali
- Pablo A. Parrilo

- Rajeev J. Ram
- Gerald J. Sussman
- Lizhong Zheng

Faculty on junior research leave:

- Mohammadyeza Alizadeh-Attar (Mohammad Alizadeh)
- Thomas Heldt
- Aleksander Madry
- David A. Sontag
- Caroline Uhler

Faculty on family release:

- Dirk R. Englund
- Ruonan Han
- Stefanie S. Jegelka
- Yury Polyanskiy
- Collin M. Stultz

Faculty on leave:

- William T. Freeman
- David K. Gifford
- Shafrira Goldwasser
- Russell L. Tedrake
- Michael Watts

Retired faculty:

- Jeffrey H. Shapiro

The department notes with sadness the passing of faculty members Paul Gray and William Peake.

New Faculty

Eight new faculty members have been hired during the past year:

- Song Han (PhD, Stanford) will join the faculty as an assistant professor in July 2018.
- Phillip J. Isola (PhD, MIT) will join EECS as an assistant professor in July 2018.
- Tim Kraska (PhD, ETH Zürich) joined EECS as an associate professor without tenure in January 2018.

- Farnaz Niroui (PhD, MIT) will join EECS as an assistant professor in November 2018.
- Kevin O'Brien (PhD, University of California, Berkeley) will join the faculty as an assistant professor in July 2018.
- Arvind Satyanarayan (PhD, Stanford) will join EECS as an assistant professor in July 2018.
- Julian Shun (PhD, Carnegie Mellon) joined the faculty as an assistant professor in July 2017.
- Suvrit Sra (PhD, University of Texas-Austin) joined the faculty as an assistant professor in January 2018.

Career Development Chair Appointments

- Stefanie S. Jegelka was reappointed as the X-Consortium Career Development Assistant Professor in January 2018.

Faculty Chair Appointments

- Dennis M. Freeman was appointed as the Henry Ellis Warren (1894) Professor in July 2017.
- Robert C. Miller was appointed as the Distinguished Professor in Electrical Engineering and Computer Science in July 2017.
- Joel E. Schindall was reappointed as the Bernard M. Gordon Professor in Product Engineering in July 2017.

Awards and Honors

Faculty Awards and Honors

EECS faculty received several awards and honors over the past year, as follows.

Mohammadyeza Alizadeh-Attar

- Rising Star Award, Association for Computing Machinery (ACM) Special Interest Group on Data Communications (SIGCOMM)
- NSF CAREER Award

Saman P. Amarasinghe

- Best Student Paper Award, 2017 IEEE (Institute of Electrical and Electronics Engineers) International Conference on Big Data
- Distinguished Paper Award, ACM Special Interest Group on Programming Languages (SIGPLAN) Conference on Systems, Programming, Languages and Applications: Software for Humanity

Regina Barzilay

- 2017 MacArthur Fellow, MacArthur Foundation
- Fellow, Association for the Advancement of Artificial Intelligence
- Fellow, Association for Computational Linguistics

Sangeeta N. Bhatia

- Catalyst Award, Science Club for Girls
- Innovation at the Intersection Award, Xconomy
- Game Changer 365 Award, Women at the Frontier

Tamara A. Broderick

- Army Research Office Young Investigators Program Award
- NSF CAREER Award
- Sloan Research Fellowship, Sloan Foundation

Michael J. Carbin

- NSF CAREER Award

Luca Daniel

- 2017 Best Paper, *IEEE Transactions on Components, Packaging and Manufacturing Technology*
- Paper “Ultimate Signal-to-Noise Ratio in Realistic Body Models” featured on the cover of the November 2017 issue of the *Journal of Magnetic Resonance in Medicine*

Konstantinos Daskalakis

- Rolf Nevanlinna Prize, International Mathematical Union
- Simons Investigator Award, Simons Foundation

Srinivas Devadas

- Bose Award for Excellence in Teaching, MIT School of Engineering
- Charles A. Desoer Technical Achievement Award, IEEE Circuits and Systems

Dennis M. Freeman

- Innovative Seminar Award, Freshman Advisors Awards, MIT Office of the Vice Chancellor

Shafira Goldwasser

- Fellow, ACM
- Frontiers of Knowledge Award, BBVA Foundation

Martha L. Gray

- 2018 Program Award for a Culture of Excellence in Mentoring, Harvard Medical School
- Memorial Award, Civil Servants Social Security and Services Institute

Qing Hu

- Kenneth J. Button Prize, International Conference on Infrared, Millimeter, and Terahertz Waves

Daniel Jackson

- Martin Luther King Jr. Leadership Award, MIT

Stefanie S. Jegelka

- Young Faculty Award, Defense Advanced Research Projects Agency
- Sloan Research Fellowship, Sloan Foundation
- Joseph A. Martore Award for Exceptional Contributions to Education, MIT Institute for Data, Systems, and Society (IDSS)

Dina Katabi

- ACM Prize in Computing
- Honorary degree, Catholic University of America
- Professor Amar G. Bose Research Grant, MIT

Charles E. Leiserson

- Network Systems Award, ACM SIGCOMM (for the Akamai Content Delivery Network [CDN])

Barbara Liskov

- Computer Pioneer Award, IEEE Computer Society
- Honorary doctorate, Technical University of Madrid

Luqiao Liu

- Young Scientist Prize in the Field of Physics, International Union of Pure and Applied Physics
- William L. McMillan Award, Department of Physics, University of Illinois at Urbana-Champaign

Tomás Lozano-Pérez

- Fellow, ACM

Aleksander Madry

- Presburger Award for Young Scientists, European Association for Theoretical Computer Science

Muriel Médard

- Edwin Howard Armstrong Achievement Award, IEEE Communication Society

Silvio Micali

- Fellow, ACM
- Frontiers of Knowledge Award, BBVA Foundation

Stefanie Mueller

- Dissertation Award for Best PhD Thesis in Computer Science, German Society for Informatics
- Outstanding Dissertation Award, ACM Special Interest Group on Computer-Human Interaction (SIGCHI)
- Doctoral Dissertation Award, ACM (honorable mention)

Pablo A. Parrilo

- Fellow, Society for Industrial and Applied Mathematics

David Perreault

- Second-Prize Paper Award, *IEEE Transactions on Power Electronics*

Ronald L. Rivest

- Frontiers of Knowledge Award, BBVA Foundation
- Inductee, International Inventors Hall of Fame

Daniela L. Rus

- Pioneer in Robotics & Automation Award, IEEE Robotics & Automation Society

Julian Shun

- Early Career Award, US Department of Energy

Justin Solomon

- Professor Amar G. Bose Research Grant, MIT

Vivienne Sze

- Engineering Emmy Award (with JCT-VC team), Television Academy

Russell L. Tedrake

- Inaugural Paper of the Year Award, *International Journal of Robotics*

Christopher J. Terman

- Gordon Y. Billard Award (for special services of outstanding merit), MIT

John N. Tsitsiklis

- IEEE Control Systems Award
- Honorary degree, Athens University of Economics and Business
- Saul Gass Expository Writing Award, Institute for Operations Research and the Management Sciences (INFORMS)

Caroline Uhler

- Joseph A. Martore Award for Exceptional Contributions to Education, IDSS

Vinod Vaikuntanathan

- Harold E. Edgerton Faculty Achievement Award, MIT

Gregory W. Wornell

- Leon K. Kirchmayer Graduate Teaching Award, IEEE

Nickolai Zeldovich

- Faculty Research and Innovation Fellowship, EECS
- Mark Weiser Award, ACM Special Interest Group on Operating Systems (SIGOPS)

Departmental Awards

Students, faculty, staff, and special guests came together for EECS Celebrates, the department's annual awards ceremony and reception, on May 18, 2018. The department presented nearly 60 awards during the event.

A highlight of the 2018 celebration was the new Seth J. Teller Award for Excellence, Inclusion, and Diversity. Named for [the late EECS professor](#), the award honors members of the MIT community who embody those three values through work, research, or educational innovation. The inaugural winners were Irene Chen, a PhD candidate in EECS, and Marzyeh Ghassemi, a postdoctoral associate in CSAIL. Both were honored for serving as mentors and undertaking other activities to improve diversity and inclusion. Teller's widow, Rachel Zimmerman, and daughters, Sophia and Julia, attended the ceremony to present the awards.

Faculty Awards

- Frank Quick Faculty Research and Innovation Fellowship: Devavrat Shah
- EECS Faculty Research and Innovation Fellowship: Nickolai Zeldovich
- Louis D. Smullin ('39) Award for Excellence in Teaching: Joseph D. Steinmeyer
- Jerome H. Saltzer Award for Excellence in Teaching: Robert C. Berwick
- Burgess (1952) & Elizabeth Jamieson Prizes for Excellence in Teaching: Erik D. Demaine and Dennis M. Freeman
- Ruth and Joel Spira Awards for Excellence in Teaching: Regina Barzilay and John N. Tsitsiklis

- EECS Outstanding Educator Awards: Stefanie Mueller and Tao B. Schardl
- Capers and Marion McDonald Award for Excellence in Mentoring and Advising: Ronitt Rubinfeld
- IEEE/ACM Best Advisor Award: Gim P. Hom
- HKN Best Instructor Award: Hari Balakrishnan
- Department Head Special Recognition Awards: Igor Gilitschenski (senior postdoctoral associate, CSAIL), Lukas B. Murmann (PhD candidate), and Feras Saad (PhD candidate)
- Richard J. Caloggero Award: Robert C. Miller

Student Awards

- Paul L. Penfield Student Service Award: Alex Jordan Hanson
- Carlton E. Tucker Teaching Award: Megan Marie Fuller
- Harold Hazen Teaching Award: Fabian A. Kozynski Wasserman
- Frederick C. Hennie III Teaching Awards: Timothy Kaler, Anne K. Kelley, Remi Mir, Tally Portnoi, Shraman Ray Chaudhuri, Mayuri Sridhar, Xuhong (Lisa) Zhan
- Undergraduate Teaching Assistant Award: Olivia Brode-Roger
- Jeremy Gerstle UROP Award: Uma Roy (Distributed Uncertainty Estimation for Variational Inference; Tamara Broderick, supervisor)
- Morais (1986) and Rosenblum (1986) UROP Award: Rujie Yao (Continuous Removal of Nonviable Suspended Mammalian Cells and Debris from Bioreactors Using Inertial Microfluidics; Jongyoon Han, supervisor)
- Anna Pogoyants UROP Award: Douglas Stryker (Splines in Shape Difference Space; Justin Solomon, supervisor)
- Licklider UROP Award: Xin Wen (ColorMod: Recoloring 3D Printed Objects Using Photochromic Inks; Stefanie Mueller, supervisor)
- Robert M. Fano UROP Award: Ekin Karasan (An Enhanced Mechanistic Model for Capnography, with Application to CHF-COPD Discrimination; George Verghese, supervisor)
- 2017–2018 SuperUROP Awards: Andrew Ilyas (Training GANS with Optimism; Konstantinos Daskalakis, advisor), Andrew Rouditchenko (The Sound of Pixels; Josh McDermott, advisor), Diana Wofk (Energy-Efficient Deep Neural Network for Depth Prediction; Vivienne Sze, advisor)
- George C. Newton Undergraduate Laboratory Prize (6.111): Katherine Shade and Melinda Szabo (Virtual Softball)

- Northern Telecom/BNR Project Award (for the best 6.111 project): Nicholas Waltman and Mike M. Wang (Live-Action Pong)
- David A. Chanen Writing Awards (for writing in 6.033): David J. Amirault (system critique: MapReduce), Temi T. Taylor (system critique: MapReduce)
- Morris Joseph Levin Awards for Masterworks Thesis Presentation: Mazdak Abulnaga (“Visualizing the Placenta in a Familiar Way”; Polina Golland and Justin Solomon, supervisors), Tathagata Srimani (“Energy-Efficient Computing: From Nanotubes to Negative Capacitance”; Max M. Shulaker, supervisor)
- David Adler Electrical Engineering MEng Thesis Awards: Catherine Medlock (first place; “Optimality of Empirically Generated Receiver Operating Characteristic Curves”; Alan V. Oppenheim, supervisor), Saamil Bandyopadhyay (second place; “Frequency Down-Conversion for Quantum Networking with Nitrogen-Vacancy Center in Diamond”; Dirk Englund, supervisor)
- Charles and Jennifer Johnson MEng Computer Science Thesis Awards: Andres Erbsen (first-place tie; “Crafting Certified Elliptic Curve Cryptography Implementations in Coq”; Adam Chlipala, advisor), Jade Philipoom (first-place tie; “Correct-by-Construction Finite Field Arithmetic in Coq”; Adam Chlipala, advisor), Bowen Baker (second place; “Towards Practical Neural Network Meta-Modeling”; Cesar Hidalgo and Nikhil Naik, advisors)
- Francis Reintjes Excellence in 6-A Industrial Partnership Award: Alex Sloboda (AC-Coupled Ripple Reduction Method for Chopper-Stabilized Amplifiers; Charles G. Sodini, supervisor)

Several students from EECS and other departments also received [StartMIT awards](#) during the EECS Celebrates ceremony.

Department Leadership

EECS department leadership during AY2018 included Asuman Ozdaglar, department head; Saman P. Amarasinghe and Joel Voldman, associate department heads (both since January 2018); Nancy A. Lynch, associate department head for strategic directions (since January 2018); Elfar Adalsteinsson (effective September 2018), Dennis M. Freeman, Robert C. Miller (through September 1, 2018), and Antonio Torralba (through September 1, 2018), co-education officers; Christopher J. Terman (through April 15, 2018) and Katrina L. LaCurts (since April 15, 2018), undergraduate officers; Leslie A. Kolodziejcki, graduate officer; and Karl K. Berggren, undergraduate laboratory officer.

Asuman Ozdaglar

Head

School of Engineering Distinguished Professor of Engineering