MIT Facts 2020

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Massachusetts Institute of Technology

77 Massachusetts Avenue
Cambridge, Massachusetts 02139-4307
617.253.1000

web.mit.edu

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An online version of *MIT Facts*, with links to additional information about the topics covered here, is available at web.mit.edu/facts.

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Center spread: Campus map by MIT Department of Facilities and Wing-Ip Ngan, with ship by Marius Ursache.

Contents

MIT at a Glance

History

Incorporated by the Commonwealth of Massachusetts on April 10, 1861

Motto

Mens et manus—
"mind and hand"

Campus

168 acres (0.68 km^2) in Cambridge, Massachusetts
18 student residences on campus
26 acres (0.11 km^2) of playing fields
30+ gardens and green spaces
60+ public works of art

Employees

12,852, including faculty

Faculty

Professors (all ranks): 1,067
Other teaching staff: 948
Student-faculty ratio: 3:1

Selected Honors

(Current and Former MIT Community Members)

95 Nobel Laureates
77 MacArthur Fellows
59 National Medal of Science winners
29 National Medal of Technology and Innovation winners
15 A.M. Turing Award winners

Undergraduate Financial Aid 2018–2019

Students attending tuition-free: 31%
Students awarded need-based MIT scholarship: 59%
Average need-based MIT scholarship: $47,593
Class of 2019 graduates with no student loan debt: 76%

First-year Admission Class of 2023

Applicants: 21,312
Admits: 1,427 (6.7%)

Students, 2019–2020

Total: 11,520

Undergraduates: 4,530
Women: 2,123 (47%)
Minorities: 2,331 (51%)

Graduate students: 6,990
Women: 2,529 (36%)
Minorities: 1,337 (19%)

Undergraduate Costs, 2019–2020

Tuition and fees: $53,790
Housing and meals: ~$16,390
Books and personal expenses: ~$2,980

Undergraduate Majors and Minors

Major programs: 54
Minor programs: 58
Pirate certificate: 1

International Students, 2019–2020

Undergraduate students: 458
Graduate students: 2,873
Exchange, visiting, special students: 644

Mission

The mission of MIT is to advance knowledge and educate students in science, technology, and other areas of scholarship that will best serve the nation and the world in the 21st century.

The Institute is committed to generating, disseminating, and preserving knowledge, and to working with others to bring this knowledge to bear on the world's great challenges. MIT is dedicated to providing its students with an education that combines rigorous academic study and the excitement of discovery with the support and intellectual stimulation of a diverse campus community. We seek to develop in each member of the MIT community the ability and passion to work wisely, creatively, and effectively for the betterment of humankind.

Leadership

Origins

The Institute admitted its first students in 1865, four years after the approval of its founding charter, and admitted its first woman student shortly thereafter in 1871. MIT's opening marked the culmination of an extended effort by William Barton Rogers, a distinguished natural scientist, to establish a new kind of independent educational institution relevant to an increasingly industrialized America. Rogers stressed the pragmatic and practicable. He believed that professional competence is best fostered by coupling teaching and research and by focusing attention on real-world problems. Toward this end, he pioneered the development of the teaching laboratory.

Today, MIT is a world-class educational institution. Teaching and research—with relevance to

the practical world and transforming society for the better as guiding principles—continue to be its primary purpose. MIT is independent, coeducational, and privately endowed.

Presidents of the Institute

2012		L. Rafael Reif
2004	2012	Susan Hockfield
1990	2004	Charles Marstiller Vest
1980	1990	Paul Edward Gray
1971	1980	Jerome Bert Wiesner
1966	1971	Howard Wesley Johnson
1959	1966	Julius Adams Stratton
1948	1958	James Rhyne Killian, Jr.
1930	1948	Karl Taylor Compton
1923	1930	Samuel Wesley Stratton
1921	1922	Ernest Fox Nichols
1909	1920	Richard Cockburn Maclaurin
1900	1907	Henry Smith Pritchett
1897	1900	James Mason Crafts
1881	1897	Francis Amasa Walker
1879	1881	William Barton Rogers
1870	1878	John Daniel Runkle
1862	1870	William Barton Rogers

Administrative Organization

The Institute's chief executive officer is the president. Senior academic and administrative officers include the provost, chancellor, executive vice president and treasurer, vice president and secretary of the Corporation, associate provosts, deans of the schools and college, vice chancellor, vice presidents, chancellor for academic advancement, director of libraries, and Institute community and equity officer.

MIT's academic departments and institutes—each under the leadership of a head or director—are organized within five schools and one college that encompass numerous degree-granting programs and interdisciplinary centers, laboratories, and programs whose work cuts across traditional departmental boundaries.

The MIT faculty determines the Institute's educational policy. The faculty meets monthly and conducts much of its business through elected standing committees.

The Institute's board of trustees, known as the Corporation, includes 73 distinguished leaders in engineering, science, industry, education, and other professions, and (ex officio) the MIT chairman, president, executive vice president and treasurer, secretary of the Corporation, CEO of the Alumni Association, and three representatives of the Commonwealth of Massachusetts. The Corporation also includes some 36 emeritus members. Approximately 70% of the members of the Corporation are MIT alumni.

Faculty and Staff

12,852

Faculty and staff

1,067

Faculty (professors of all ranks)

266

Women faculty

3:1

Student:faculty ratio (undergraduates only)

Minority group representation among faculty includes **American Indian or Alaska Native**, **Native Hawaiian/Pacific Islander**, **Black**, **Hispanic**, and **Asian**.

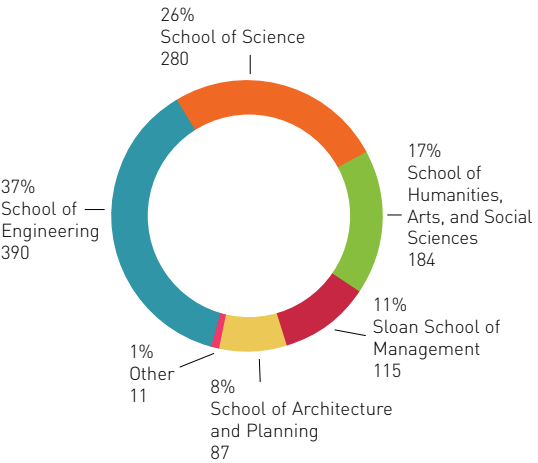
Faculty and Staff, October 2019

Category	Number
Faculty	1,067
Other academic staff	4,486
Research staff	1,766
Administrative staff	2,921
Support staff	1,621
Service staff	841
Clinical/Medical staff	150
Total	**12,852**

The MIT faculty instructs undergraduate and graduate students and engages in research.

Teaching Staff, October 2019	
Category	**Number**
Professors	678
Associate professors	232
Assistant professors	157
Senior lecturers, lecturers, and professors emeriti	738
Instructors (including technical instructors)	175
Professors of the practice and adjunct faculty	35
Total	**2,015**

Distribution of Faculty by School, October 2019*



*Launched in September 2019, the Schwarzman College of Computing had no faculty appointments in October 2019.

International Scholars

Many MIT staff are international scholars (i.e., non-US citizens, non-US permanent residents) from around the world who come to the United States for teaching, research, collaboration, and other purposes. This diverse group of professionals includes visiting scientists, professors, artists, and scholars, as well as postdoctoral fellows and associates, lecturers, instructors, research associates and scientists, and tenure-track faculty. During academic year 2018–2019, MIT hosted 2,456 international scholars (75% men, 25% women) from 99 countries.

International Scholars, by Region, October 2019

Region	%
Asia	44%
Europe	35%
Middle East	9%
North America	5%
Mexico, Latin America, and the Caribbean	5%
Africa	1%
Oceania	1%

Awards and Honors

Members of the MIT community have received accolades too numerous to list. Several of the most notable honors and awards won by MIT community members over the years are highlighted below, with winners currently on faculty and staff listed.

95

Nobel Prizes

Faculty members **Abhijit Banerjee**, economics (2019), **Esther Duflo**, economics (2019), **Bengt Holmström**, economics (2016), **H. Robert Horvitz**, medicine/physiology (2002), **Wolfgang Ketterle**, physics (2001), **Robert C. Merton**, economics (1997), **Phillip A. Sharp**, medicine/physiology (1993), **Susan Solomon**, peace (co-chair of IPCC Working Group One recognized under Intergovernmental Panel on Climate Change, 2007), **Samuel C. C. Ting**, physics (1976), **Susumu Tonegawa**, medicine/physiology (1987), **Frank Wilczek**, physics (2004), and staff member **Jean Marcel Tirole**, economics (2014).

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National Medals of Science

Faculty members **Sallie W. Chisholm** (2012), **Ann M. Graybiel** (2001), **Rudolf Jaenisch** (2011), **Robert S. Langer** (2006), **Phillip A. Sharp** (2004), **Susan Solomon** (1999), and **Robert A. Weinberg** (1997).

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National Medals of Technology and Innovation

Faculty member **Robert S. Langer** (2012).

19

John Bates Clark Medals

Faculty members **Daron K. Acemoglu** (2005), **Esther Duflo** (2010), **Amy Finkelstein** (2012), and **Parag Pathak** (2018).

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A. M. Turing Awards

Faculty members **Timothy Berners-Lee** (2016), **Shafi Goldwasser** (2012), **Silvio Micali** (2012), and **Ronald Rivest** (2002), and staff members **Butler W. Lampson** (1992) and **Michael Stonebraker** (2014).

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Pulitzer Prizes

Faculty members **Junot Díaz** (2008) and **John H. Harbison** (1987), and staff member **Deborah Blum** (1992).

2

Millennium Technology Prizes

Faculty members **Tim Berners-Lee** (2004) and **Robert S. Langer** (2008).

77

MacArthur Fellows

Faculty members **Regina Barzilay** (2017), **Angela M. Belcher** (2004), **Tim Berners-Lee** (1998), **James J. Collins** (2003), **Erik D. Demaine** (2003), **Junot Díaz** (2012), **Esther Duflo** (2009), **Amy Finkelstein** (2018), **Linda G. Griffith** (2006), **John H. Harbison** (1989), **Dina Katabi** (2013), **Laura Kiessling** (1999), **Eric Lander** (1987), **Heather N. Lechtman** (1984), **Nergis Mavalvala** (2010), **John A. Ochsendorf** (2008), **David C. Page** (1986), **Lisa Parks** (2018), **Daniela L. Rus** (2002), **Sara Seager** (2013), **Peter W. Shor** (1999), **Marin Soljačič** (2008), **Joshua B. Tenenbaum** (2019), **Frank Wilczek** (1982), **Jack Wisdom** (1994), and staff members **Sendhil Mullainathan** (2002) **Amy B. Smith** (2004), and **George Zweig** (1981).

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Institute Professors

The title of **Institute Professor** is the highest honor awarded by the faculty and administration at MIT. The current Institute Professors are **Daron Acemoglu, Suzanne Berger, Sallie W. Chisholm, Ann M. Graybiel, John H. Harbison, Robert S. Langer, Thomas L. Magnanti, Ronald L. Rivest, Phillip A. Sharp, Marcus A. Thompson, Daniel I. C. Wang,** and **Sheila Widnall**. Institute Professors emeriti are **Emilio Bizzi, Noam Chomsky, John M. Deutch, Peter A. Diamond, Jerome I. Friedman, Barbara H. Liskov, John D. C. Little, Mario J. Molina, Joel Moses, Isadore M. Singer,** and **Robert M. Solow**.

237
National Academy of Sciences Members

631
National Academy of Engineering Members

56
National Academy of Medicine Members

197
Guggenheim Fellows

33
Fulbright Scholars

Schools and Departments

School of Architecture and Planning

Architecture (Course 4)
Media Arts and Sciences (MAS)
Urban Studies and Planning (Course 11)

School of Engineering

Aeronautics and Astronautics (Course 16)
Biological Engineering (Course 20)
Chemical Engineering (Course 10)
Civil and Environmental Engineering (Course 1)
Electrical Engineering and Computer Science (Course 6)*
Institute for Medical Engineering and Science
Materials Science and Engineering (Course 3)
Mechanical Engineering (Course 2)
Nuclear Science and Engineering (Course 22)

* Electrical Engineering and Computer Science (Course 6) reports jointly to the dean of engineering and the dean of computing.

School of Humanities, Arts, and Social Sciences

Anthropology (Course 21A)
Comparative Media Studies/Writing (CMS/Course 21W)
Economics (Course 14)
Global Languages (Course 21G)
History (Course 21H)
Humanities (Course 21)
Linguistics and Philosophy (Course 24)
Literature (Course 21L)
Music and Theater Arts (Course 21M)
Political Science (Course 17)
Science, Technology, and Society (STS)

MIT Sloan School of Management

Management (Course 15)

School of Science

Biology (Course 7)
Brain and Cognitive Sciences (Course 9)
Chemistry (Course 5)
Earth, Atmospheric, and Planetary Sciences (Course 12)
Mathematics (Course 18)
Physics (Course 8)

MIT Stephen A. Schwarzman College of Computing

Electrical Engineering and Computer Science (Course 6)*
Institute for Data, Systems, and Society

* Electrical Engineering and Computer Science (Course 6) reports jointly to the dean of engineering and the dean of computing.

Degrees Offered

Bachelor of Science (SB)
Master of Applied Science (MASc)
Master of Architecture (MArch)
Master of Business Administration (MBA)
Master of Business Analytics (MBAn)
Master in City Planning (MCP)
Master of Engineering (MEng)
Master of Finance (MFin)
Master of Science (SM)
Engineer (each degree designates the field in which it is awarded)
Doctor of Philosophy (PhD)
Doctor of Science (ScD)

Admission

The selection process at MIT is holistic and student centered: each application is evaluated within its unique context. No school, state, or regional quotas are applied, and we do not consider legacy/alumni relations in our process. Selection is based on outstanding academic achievement as well as a strong match between the applicant and the Institute, including:

- Alignment with MIT's mission
- Collaborative and cooperative spirit
- Initiative and risk taking
- Hands-on creativity
- Intensity, curiosity, and excitement
- Balancing hard work with downtime

Selected Class of 2023 Undergraduate Admissions Statistics

21,312

Applications for first-year admission

1,427 (6.7%)

Offers of admission

1,107

First-year students enrolled

47%

Female

70%

Attended public high schools

49

US states represented

11%

International citizens from 62 countries

19%

Among the first generation in their family to attend college

For more information, visit mitadmissions.org.

Graduate Admission

Applicants for graduate degree programs are evaluated for previous performance and professional promise by the department in which they wish to register.

Selected 2019 Graduate Admissions Statistics

29,114

Applications for graduate study

3,670 (12.6%)

Offers of admission

2,312 (63%)

First-year students registered in advanced degree programs

37%

Female

42.5%

International citizens from 85 countries

For more information, visit gradadmissions.mit.edu.

Enrollments, 2019–2020

11,520
All students

4,530
Undergraduates (39%)

2,123
Women (47%)

2,331
US minority groups (51%)

6,990
Graduate students (61%)

2,529
Women (36%)

1,337
US minority groups (19%)

In 2019–2020, MIT students come from all 50 states, the District of Columbia, three territories, and 118 foreign countries.

For more information, visit registrar.mit.edu.

Undergraduate Enrollment, 2019–2020		
First-year, undeclared second-year, and special undergraduate students		**Number**
First-year*		1,107
Undeclared second-year*		10
Special undergraduate students		14
By school	**Majors**	**2nd Majors**
Architecture and Planning	58	7
Engineering	2,451	76
Humanities, Arts, and Social Sciences	74	71
Management	110	18
Science	706	118

*MIT students do not enroll in an academic department until the start of their sophomore year, and may defer decision on a course of study until the end of that year.

Graduate Enrollment, 2019–2020			
School	**Master's**	**Doctoral**	**Special**
Architecture and Planning	439	206	0
Engineering	1,006	2,134*	136
Humanities, Arts, and Social Sciences	27	291	0
Management	1,402	169	9
Science	10	1,161	0
Total	**2,884**	**3,961**	**145**

*Includes 174 students working on Harvard degrees only through the Harvard-MIT Health Sciences and Technology Program.

Minority Group Representation among Students, 2019–2020		
Minority group	**Undergraduate**	**Graduate**
African American	280	144
American Indian or Alaska Native	9	9
Asian American	1,340	801
Hispanic	699	383
Native Hawaiian or other Pacific Islander	3	0
Total	**2,331**	**1,337**

International Students

There are 3,331 international students enrolled in degree programs at MIT—458 undergraduates (10%) and 2,873 graduate students (41%)—for the current academic year. Additionally, there are 644 exchange, visiting, cross-registered, and special international students on campus.

International Students, by Region, 2019–2020*	
Region	**%**
Asia	53%
Europe	23%
Latin America and the Caribbean	8%
North America	6%
Middle East	6%
Africa	3%
Oceania	1%

*Percentages are rounded.

Tuition and Financial Aid

Undergraduate Tuition and Living Expenses

$53,790

2019–2020 tuition and fees (9 months)

~$16,390

Housing and meals, depending on housing and dining arrangements

~$2,980

Books and personal expenses

Undergraduate Financial Aid

The Institute's undergraduate financial aid program ensures that an MIT education is accessible to all qualified candidates regardless of their financial circumstances. MIT provides financial aid to meet the full price of an MIT education, based on the calculated financial need of the family. In 2018–2019, 90% of undergraduates received $160.3 million in financial aid from all sources, with MIT being the largest source. For students with a family income under $90,000, the Institute ensures that scholarship funding from all sources will allow them to attend MIT tuition-free.

Financial need is the difference between the cost to attend MIT and the family's ability to pay that amount. Need is determined using information parents provide on the Free Application for Federal Student Aid (FAFSA) and the College Scholarship Service (CSS) Profile. The first $3,400 of financial need is designated as self-help and can be met through a combination of term-time work, outside scholarships or grants (including Pell Grants), or student loans. The remaining need, if any, is met with an MIT Scholarship. Students receiving scholarships and grants from sources outside MIT may use that aid to replace the student self-help.

Selected Undergraduate Financial Aid Statistics, 2018–2019	
Average need-based MIT Scholarship	$47,593
Students awarded a need-based MIT Scholarship	59%
Students attending tuition-free	31%
Class of 2019 graduates with no student loan debt	76%
Average student loan debt for those who borrowed	$23,226
Average yearly earnings for those who worked	$3,398

Graduate Tuition and Living Expenses

Graduate students generally incur greater expenses than undergraduates. Most attend the Institute for a calendar year rather than an academic year, increasing the cost of tuition.

$53,790

2019–2020 tuition and fees (9 months) (specific programs and departments may have different tuition amounts)

$17,800

2019 summer tuition for students enrolled in courses

MIT's residential system can accommodate 38% of its graduate students; the rest find housing in the Boston/Cambridge area. Graduate students' costs for housing, food, books, medical insurance, and incidentals vary widely depending on marital status, quality-of-life expectations, and housing arrangements. For example, monthly charges for on-campus housing range from $838 to $2,148 depending on housing type and location.

Graduate Financial Aid

Financial aid for graduate students is in large part provided by individual departments, and the amount of aid varies significantly. Financial support includes fellowships, traineeships, teaching and research assistantships, and loans. Most forms of support are granted for merit, while others are granted for financial need or a combination of merit and need.

Doctoral Student Support, by Type and School, 2018–2019

School	RA	FE	TA	Other or none
Architecture and Planning	53%	14%	21%	13%
Engineering	58%	21%	8%	13%
Humanities, Arts, and Social Sciences	28%	37%	19%	17%
Management	34%	49%	14%	3%
Science	49%	36%	13%	3%
Total	**51%**	**28%**	**11%**	**10%**

RA=research assistantship, FE=fellowship, TA=teaching assistantship

Academics

MIT's strength—as represented by its official seal and motto, *mens et manu*s, mind and hand—is the fusion of academic knowledge with practical purpose.

Undergraduate Education

MIT believes the best education occurs when students are self-motivated and engaged participants in a dynamic community of learners. Thus, an MIT undergraduate education combines rigorous academics with a "learning-by-doing" approach.

One avenue for student engagement is the Undergraduate Research Opportunities Program (UROP), pioneered at MIT in 1969 and now emulated in academic institutions around the world. UROP offers students the opportunity to join a faculty-led research team or to initiate their own research project.

Students may also choose to participate in the Undergraduate Practice Opportunities Program (UPOP), which provides them with coaching, experiential workshops, company field trips, one-on-one counseling, networking events, exclusive panel discussions with major companies, and access to internships with more than 2,000 employers.

Another unique feature of an MIT education is the Independent Activities Period, a special four-week term in January that encourages students to set their own agenda within a creative and flexible environment.

As part of a complete MIT experience, undergraduates are encouraged to add an international dimension to their education. Students may choose from Institute-wide or departmental study-abroad programs. They may also conduct research abroad, assist with building sustainable communities overseas, or venture out on fieldwork or internships arranged through MIT International Science and Technology Initiatives or the International Development Initiative.

Leadership training opportunities include the Bernard M. Gordon–MIT Engineering Leadership Program and ROTC programs in the United States Army, Navy/Marine Corps, and Air Force. In addition, Career Advising and Professional Development guides all students as they explore and prepare for careers, graduate study, and life after MIT.

Selected Undergraduate Facts

- MIT offers 54 undergraduate major and 58 minor programs.
- The first semester at MIT is graded on a pass/no record basis, giving first-year students time to adjust to the rigor of MIT before receiving letter grades.
- General Institute Requirements are designed to give every student a broad and strong foundation in core fields of human knowledge, including mathematics; physical, natural, and social sciences; and the humanities and arts.
- First-year students can choose to participate in a first-year learning community such as the Concourse Program, Experimental Study Group, or Terrascope.
- More than 50% of graduating seniors in the Class of 2019 reported participating in an international experience while at MIT.

- Each year nearly 60% of MIT undergraduates participate in UROP, with more than 90% having done so by the time they graduate.

Majors

Aerospace Engineering
American Studies*
Ancient and Medieval Studies*
Anthropology
Archaeology and Materials
Architecture
Art and Design
Asian and Asian Diaspora Studies*
Biological Engineering
Biology
Brain and Cognitive Sciences
Business Analytics
Chemical Engineering
Chemical-Biological Engineering
Chemistry
Chemistry and Biology
Comparative Media Studies
Computation and Cognition
Computer Science and Engineering
Computer Science and Molecular Biology
Computer Science, Economics, and Data Science
Earth, Atmospheric and Planetary Sciences
Economics
Electrical Engineering and Computer Science
Electrical Science and Engineering
Engineering**
Finance
Global Studies and Languages (French, German, or Spanish)
History
Humanities
Humanities and Engineering

Humanities and Science
Latin American and Latino/a Studies*
Linguistics and Philosophy
Literature
Management
Materials Science and Engineering†
Mathematical Economics
Mathematics (General, Applied, or Pure)
Mathematics with Computer Science
Mechanical Engineering
Mechanical and Ocean Engineering
Music
Nuclear Science and Engineering
Philosophy
Physics†
Planning
Political Science
Russian and Eurasian Studies*
Science, Technology and Society††
Theater Arts
Urban Science and Planning with Computer Science
Women's and Gender Studies*
Writing

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* Option within Humanities major
** Offered by the departments of Aeronautics and Astronautics, Chemical Engineering, Civil and Environmental Engineering, Mechanical Engineering, and Nuclear Science and Engineering
† Multiple options available
†† Available as a double major only

Graduate Education

MIT's graduate students and postdocs represent one of the most talented and diverse cohorts of scholars in the world.

The Institute's graduate programs provide collaborative environments and cutting edge facilities, such as MIT.nano, for advanced study. Students work together with faculty to extend the boundaries of knowledge in fields ranging from quantum computing to medicine to political science to the arts.

MIT boasts globally prominent doctoral programs in engineering, mathematics, architecture, management, the social sciences, and the humanities. Students interested in developing their teaching skills can take advantage of the Kaufman Teaching Certificate Program.

The Institute for Medical Engineering and Science, the Institute for Data, Systems, and Society, the Center for Real Estate, the Program in Media Arts and Sciences at the MIT Media Lab, and other programs offer interdisciplinary graduate degrees. The Harvard-MIT Health Sciences and Technology Program and the MIT-Woods Hole Oceanographic Institution Joint Program in Oceanography/Applied Ocean Science and Engineering provide opportunities for graduate students to engage with other local institutions.

MIT Libraries

The MIT Libraries are an engine for creating, sharing, and safeguarding knowledge at the Institute and beyond. The Libraries work to improve access to the world's collective knowledge in many ways.

Equipping scholars with the best content and the skills to use it. The Libraries provide access to tens of millions of items, both physical and digital, and to collections from libraries worldwide. Library specialists help people navigate resources, manage data, or think critically as consumers and creators of information, and play a critical role in supporting computational research across MIT.

Offering a vital community space. The Libraries welcome over 500,000 visitors annually to use collections and for quiet study, collaborative work, and the creation of new knowledge. Hayden Library's renovation in 2020 will provide more than 10,000 square feet of 24-hour accessible space, a café, group study rooms, and event space.

Sharing knowledge with the world. The Libraries work to ensure that research is openly and equitably available to the broadest possible audience. Since 2009, articles by Institute authors made freely available have been downloaded nearly 15 million times, with close to 50% of faculty articles shared openly. Launched in 2019, the Center for Research on Equitable and Open Scholarship investigates how disparate communities can participate in scholarship with minimal bias or barriers.

Stewarding collections unique to MIT. Distinctive Collections preserves and fosters the use of unique and rare items, both tangible and digital, including MIT-produced materials, archival collections, rare books, visual materials, and the Aga Khan Documentation Center collections.

For more information, visit libraries.mit.edu.

Computing on Campus

The computing environment at MIT includes a wide range of information technologies and resources. Information Systems and Technology (IS&T) supports MIT's education, research, and administration by providing infrastructure, services, systems, and support for the community's computing needs.

MITnet. MIT's network infrastructure in the Cambridge/Boston area is made up of more than 7,500 mi (12,070 km) of fiber, over 7,100 wireless access points, and 4,000 switches that provide on-campus wired connectivity. The MIT Kendall Wi-Fi network covers approximately 1,000,000 ft^2 (92,903 m^2) of outdoor space in the Kendall Square area and surrounding neighborhoods. The MIT Regional Optical Network—a 2,500 mi (4,023 km) optical ring—connects the MIT network to New York City and about 10 other locations, including the Massachusetts Green High Performance Computing Center. MIT's 100-gigabit backbone supports connections to Internet2 and the Energy Sciences Network, which in turn provides access to the CERN Large Hadron Collider. MIT also has 10-gigabit dedicated connections to Amazon, Comcast, and Apple, as well as dual redundant 10-gigabit links to the commodity internet.

Services and software. IS&T provides extensive IT services and software to the MIT community:

- Email, productivity applications, and collaboration services
- Enterprise cloud platforms and secure computing services and software
- Managed servers through a hybrid cloud environment

- Athena, MIT's academic computing environment, which provides a variety of software for students, faculty, and staff

Systems. IS&T maintains core systems, including SAP (MIT's administrative system of record), the MIT Student Information System, the Stellar course management system, the Data Warehouse, and MIT's identity and access management systems.

Support. The IS&T Service Desk handles approximately 25,000 telephone calls, 10,000 in-person requests, and 55,000 emails per year. Support teams provide desk-side support to over 50 departments, labs, and centers. The Knowledge Base draws on the cumulative IT expertise at MIT to deliver close to 10,000 self-help articles.

For more information, visit ist.mit.edu.

Open Learning

MIT Open Learning works to transform teaching and learning at MIT and around the globe through the innovative use of digital technologies by:

- Supporting MIT faculty and students in bold digital teaching and learning experiments to enhance residential education.
- Promoting and enabling quantitative, rigorous, and interdisciplinary research on teaching and learning.
- Providing platforms for technological advances in education.
- Sharing research and best practices by convening and partnering with teachers, schools, universities, companies, governments, and nongovernmental organizations.

- Extending MIT's knowledge and classroom to the world.

MIT Open Learning has funded 53 faculty members and researchers in 66 research projects at MIT to advance the fields of teaching and learning. MIT Open Learning also offers an array of programs and services.

- **Residential MITx** facilitates on-campus online teaching and learning in MIT courses. More than 99% of MIT undergraduates have used the MITx residential platform for their coursework.
- **MITx courses on edX** extend MIT learning to the world through courses developed and taught by MIT instructors. More than 3.8 million unique learners from over 200 countries earned more than 195,000 MITx course certificates on edX.
- **OpenCourseWare** offers free, open, publicly accessible web-based materials from more than 2,450 MIT courses.
- **MITx MicroMasters** programs provide an affordable, accelerated, and convenient path to a master's degree. Learners who pass a set of MITx graduate-level courses and exams earn a MicroMasters credential and can apply to an accelerated, on-campus, master's degree program.
- **MIT xPRO** provides professional development opportunities to a global audience via online courses and programs.
- **MIT Horizon** offers bite-sized articles, videos, and podcasts for workforce learning on emerging technologies.
- **MIT Bootcamps** offers intensive week-long programs that challenge participants

to develop a sustainable new venture. Innovators come from around the world to learn from MIT faculty and MIT-trained mentors.

- **MIT Integrated Learning Initiative** furthers our understanding of learning and education through rigorous, interdisciplinary research.
- Through the **Jameel World Education Lab**, MIT Open Learning leads a consortium of 30 members to promote excellence and transformation in education worldwide.
- **Digital Learning Lab** scientists and fellows advance learning strategies and initiatives across campus.
- The **MIT Playful Journey Lab** designs and investigates new ways to prepare schools and teachers to thrive in a rapidly changing world.

MIT Open Learning leads a group of nine universities in building an infrastructure for digital academic credentials that can support the education systems of the future.

For more information, visit openlearning.mit.edu.

Makerspaces

"Learning by doing" is a cornerstone of MIT's educational philosophy, and "making" is an important part of the MIT experience. Makerspaces located throughout the campus offer access to tools and space for members of the MIT community to invent, prototype, and bring their ideas to physical life. MIT has over 40 design/build/project spaces that add up to over 130,000 ft^2 (12,077 m^2). Tools and facilities for CNC routing, 3D printing, glassblowing, wood and metal working, moldmaking and casting, robotics, circuitry, textiles, ceramics, biomaking, and more are available for class and personal projects.

Recognizing the importance of the maker experience to an MIT education, the Institute initiated Project Manus (housed within MIT's Innovation Initiative) in 2016 with the goal of creating the gold standard in next-generation academic maker systems. Current projects include MakerLodge, a first-year maker training program; The Deep and Metropolis, open-access makerspaces optimizing hands-on trainings for the MIT community; Mobius, an app for locating maker resources on campus as well as paying for materials; and the Make Impact Consortium.

Campus Life

The Campus

168
Acres (0.68 km^2)

30+
Gardens and green spaces

18
Residence halls on campus

60+
Public works of art

In 1916, MIT relocated from Boston to Cambridge, where the campus now extends more than a mile (1.6 km) along the Cambridge side of the Charles River. The heart of the campus is a group of interconnecting buildings, designed by architect W. Welles Bosworth (Class of 1889), that facilitate interaction and communication among MIT's schools and departments.

The campus architecture showcases a range of styles, from neoclassical through modernist, brutalist, and deconstructivist. Among the timeless landmarks on campus are buildings designed by leading architects such as Alvar Aalto, Frank Gehry, Steven Holl, Fumihiko Maki, I. M. Pei '40, and Eero Saarinen. Inside, state-of-the-art facilities support MIT's ongoing research efforts in multiple disciplines. These facilities range from wet labs, clean rooms, and makerspaces to wind tunnels, robot and drone test labs,

and a 237,777 ft^2 (22,090 m^2) nanotechnology and advanced imaging center.

For students, the campus has 18 residence halls, each with its own distinctive personality and community. Urban and walkable, the campus encourages sustainable practices in many ways, offering gardens and green spaces, bike-share stations, and free shuttles. At its edges, it merges with various Cambridge neighborhoods, including Kendall Square—where the close association of industry and research expertise has made this area the most innovative square mile on the planet.

Housing

Undergraduate Students

Most undergraduates live on campus in one of MIT's 10 Institute houses, or in one of 37 MIT-affiliated fraternities, sororities, and independent living groups (FSILGs). All unmarried first-year students must live in one of the Institute's residence halls. Each on-campus dormitory has a live-in head of house who is usually a senior faculty member. Students may elect to remain on campus following their first year or move to an FSILG. The current number of undergraduates living on campus is 3,345.

In 2019–2020, approximately 2,000 students were affiliated with an FSILG; approximately 1,000 of them chose to live in an FSILG community as an alternative to a traditional residence hall.

Graduate Students

More than 2,000 single graduate students live in MIT's six campus graduate houses. Three of those houses are able to accommodate graduate

students and partners. Two campus apartment complexes accommodate over 400 graduate and undergraduate students with partners and/or children. Approximately 90 graduate students live in undergraduate dorms as graduate resident tutors.

The Arts

60+
Music, theater, visual arts, writing, and dance groups

12
Museums and galleries on campus

68%
Incoming first-year students with training in the arts

>50%
Undergraduates enrolled in arts courses each year

The arts at MIT are rooted in experimentation, risk taking, and imaginative problem solving. The Institute offers highly regarded degree programs in architectural design; art, culture, and technology; comparative media studies; history, theory, and criticism of architecture and art; music; theater arts; and writing. Undergraduate minors are also offered in several of these fields. Many MIT faculty have received awards in recognition of their work in the arts, including the Pulitzer Prize, Grammy Award, Guggenheim Fellowship, and MacArthur Fellowship. MIT students are also strong contributors to the vibrant arts culture that permeates campus life.

The MIT Museum draws nearly 170,000 visitors each year to programs, exhibitions, and events that explore the foundations and frontiers of science and technology. The Institute's past achievements are celebrated through the Museum's extensive and unique collection, while MIT's current research, innovation, and design provide a catalyst for rotating exhibitions and ongoing programs. Key collection areas include science, technology, architecture, art, MIT history, holography, marine technology, and photography. The museum also produces the annual Cambridge Science Festival, featuring 10 days of programs and activities at 110 locations across Cambridge and greater Boston serving over 125,000 people.

The MIT List Visual Arts Center is the contemporary art museum at the Institute. Its core mission is to exhibit, collect, and commission visual arts for MIT. The List presents six to eight exhibitions annually in conjunction with a broad range of education programs free to both the MIT community and the general public. It also maintains and adds to MIT's permanent collection of more than 3,500 artworks that includes over 60 public sculptures and hundreds of paintings, prints, photographs, and drawings located throughout MIT's campus. The List Center commissions new works for the MIT Public Art Collection through the MIT Percent-for-Art Program, and oversees the Student Lending Art Program that allows MIT students to annually borrow original works of art from the collection to hang in their living spaces.

The MIT Center for Art, Science & Technology facilitates and creates opportunities for artists at MIT and beyond to exchange ideas and collaborate with engineers and scientists. The center fosters

a culture where the arts, science, and technology thrive as interrelated, mutually informing modes of exploration, knowledge, and discovery.

The Eugene McDermott Award in the Arts at MIT celebrates innovative talents in all arts disciplines and is one of the most generous cultural honors in the United States. Recent recipients of the award include designer Thomas Heatherwick (2020), singer and actress Audra McDonald (2018), and architect David Adjaye (2016).

Athletics and Recreation

33
Varsity sports (16 men's, 15 women's, 2 coed)

35
Club teams, with 800+ participants

18
Intramural sports, with 4,000 participants from the MIT community

>25
Different classes to satisfy GIRs

MIT's Athletics, Physical Education, and Recreation Department offers opportunities for sports instruction and participation at all levels.

As part of the General Institute Requirements (GIRs), each student must earn eight points through physical education and wellness courses and complete the swim requirement. Seasonal offerings include golf, sailing, broomball, and ice-skating, while additional specialty courses include

scuba, backpacking, top-rope climbing, kayaking, downhill skiing, and snowboarding.

- Approximately 25% of undergraduates join a team during their time at MIT.
- MIT competes mainly against Division III New England colleges, but also routinely participates in regional and national championships.
- The Institute has earned 318 Academic All-America citations, the most for any Division III program in the nation.
- MIT provides group exercise and wellness classes, personal and group training, a variety of aquatic classes, and sport skill instruction for those who wish to engage in other recreational programs.

With 10 buildings and 26 acres (0.11 km^2) of playing fields, MIT boasts one of the most expansive athletic complexes in New England. The Zesiger Sports and Fitness Center on the west side of campus features two swimming pools, a fitness center, international-scale squash courts, and a multi-activity court. Roberts Field and Barry Field, lighted sports-turf venues, are adjacent to the Zesiger Center. In the summer of 2018, the duPont Outdoor Tennis courts were outfitted with a new playing surface, fencing, and top-level lighting for all 12 courts. The east side of campus is served by the Alumni Pool and Wang Fitness Center, located in the Stata Center at the edge of Kendall Square.

MIT Traditions

Hacking

MIT culture distinguishes itself not only for its seriousness of purpose but also for its unique sense of humor, as expressed through "hacking." Hacks at the Institute are elaborate but benign practical jokes, perpetrated anonymously—on campus, around Cambridge, or even farther afield—that amaze for their creativity, cleverness, and difficulty of execution. A 1958 prank in which the Harvard Bridge was measured in increments of fraternity pledge Oliver Smoot has achieved such fame that "smoot" has been incorporated into the American Heritage Dictionary and is included as a unit of measure in Google Earth. The bridge still displays its quirky unit of measure today.

Though not officially sanctioned, hacks can be appreciated for their technical prowess and humorous digs at rival institutions, for example in the astonishing emergence of a large black weather balloon with MIT written all over it in the middle of a Harvard-Yale football game in 1982, or in the 2006 cross-country theft of Caltech's Fleming Cannon.

Pirate Certificate

Not content to just produce exceptional graduates in the usual fields of study, the Institute also offers its swashbuckling students the opportunity to become certified pirates. Students who complete four physical education courses—archery, fencing, pistol (or rifle), and sailing—are eligible to receive a Pirate Certificate, officially awarded by the Department of Athletics, Physical Education, and Recreation. In addition to receiving a certificate printed on faux parchment, newly minted pirates are rumored to swear a secret oath.

Brass Rat

In a ritual long enjoyed by MIT undergraduates, a committee of sophomores gathers each year to design their class ring, which is ceremoniously revealed during the spring term. The history of MIT's class ring dates back to 1929 when a student committee convened to design what is formally known as the "Standard Technology Ring." Featuring a beaver on top (an industrious, nocturnal, American animal), the Boston and Cambridge skylines on the sides, and the MIT seal and dome on the shank, the ring also incorporates unique design elements related to each individual graduating class. Made of gold, the ring's nickname, "the Brass Rat," derives from its color (similar to brass) and the prominence of the beaver mascot (resembling a rat). A concrete symbol of an MIT education, the distinctive Brass Rat is recognized worldwide and instantly identifies MIT alumni to one another.

MIT Mystery Hunt

The MIT Mystery Hunt is a puzzlehunt competition that takes place in January. The hunt challenges participating teams to solve a series of puzzles that lead to "the coin" (physical or virtual) hidden somewhere on campus. Puzzles can be as creative, complex, collaborative, unusual, physical, and solvable as hunt organizers decide to make them. The winning team gets to write the subsequent year's hunt—and redefine the rules.

The Mystery Hunt was launched in 1981 by then-graduate student Brad Shaefer. Today the tradition is as strong as ever and is widely regarded as one of the oldest and most complex puzzlehunts in the world, attracting as many as 2,000 people annually

and inspiring similar competitions at universities, companies, and cities around the world.

Pi Day

In true MIT fashion, the Institute typically releases admission decisions on Pi Day (March 14), an annual celebration of the mathematical constant. Frequently, these admissions decisions are released at 6:28 p.m., which is known colloquially as "Tau time" (πx2). An exception was made for the release time of early decisions on March 14, 2015—known as "Super Pi Day" as the date reflects the full first five digits of Pi (3.1415)—when admissions decisions were released at 9:26 a.m. in order to continue with the next three digits of Pi. MIT Admissions creates a humorous video to accompany the announcements and celebrate the tradition, and posts it to the MIT Admissions Blog.

MIThenge

The Infinite Corridor—a 251 m long (825 ft/0.16 mi/147 smoot) hallway—connects the east and west ends of the MIT campus, running through parts of Buildings 7, 3, 10, 4, and 8. The corridor was created as the central axis of the original set of buildings designed by William W. Bosworth back in 1913. But that is not all that makes it noteworthy.

Twice a year, an astronomical event lights up the corridor. In November and again in January, the setting sun aligns with the Infinite Corridor. Flooding through the corridor's third-floor windows, a stream of direct sunlight dazzles spectators observing from the west end of Building 8. The assumed azimuth is 245.75 degrees. Now an annual tradition known as "MIThenge," this phenomenon was originally discovered, calculated, and publicized in 1975–1976 by students from the Architecture Department.

MIT and the Community

MIT is an integral part of the city of Cambridge, a diverse and vibrant community of approximately 110,000 residents noted for its history, intellectual life, and thriving innovation climate. The city hosts nearly 35,000 college and university students, many of whom live within its 6.43 mi^2 (16.2 km^2).

The city is pedestrian- and bicycle-friendly. Its six subway stations, commuter rail line, 21 bus routes, multiple shuttles, 48 bike sharing stations, and numerous dedicated bicycle lanes and bikeways, enable visitors and students to get around the city and the MIT campus without a car.

Service to the community. Since its founding, MIT has maintained a commitment to be a good neighbor and serve the local community. The Institute actively supports nonprofit organizations that address local challenges by providing educational programs, financial resources, representation on boards and committees, volunteer engagement, and the use of MIT facilities. In addition, members of the MIT community support the Institute's Community Service Fund, which provides assistance for nonprofits where MIT volunteers are at work.

Departments, labs, and centers at MIT often create programming to inspire K-12 student interest in science, technology, engineering, and math. The Institute is working to increase awareness of these offerings to local schools and ensure equitable access.

The Institute's Priscilla King Gray Public Service Center provides programming, guidance, information, and support to students, faculty, and

staff interested in public service, and serves as a resource for both MIT and the community at large.

Economic impact and innovation catalyst. MIT has a far-reaching impact on the economy of the region. The Institute is Cambridge's second largest employer and largest taxpayer, representing 14.6% of the city's revenue stream. MIT pays taxes on its commercial property and provides an annual voluntary payment in lieu of taxes (PILOT) for property that is used for academic purposes and is legally tax exempt. In fiscal year 2019, the Institute made a PILOT contribution of approximately $2.1 million to the city and paid approximately $60 million in real estate taxes.

The research, startups, and talent pool that MIT generates are a magnet for investment, catalyzing and fueling the local innovation economy. Kendall Square, at the eastern end of MIT's campus, is the seat of a thriving innovation hub. The Institute's Kendall Square Initiative and Volpe mixed-use development projects will enhance the life and character of the area by adding over 2.5 million ft^2 (232,257 m^2) of retail, office, and residential space and more than four acres (16,187 m^2) of open space. Planning and construction is ongoing, with the first building set to be completed in 2020.

For more information, visit ogcr.mit.edu.

Sustainability

MIT is committed to leadership in sustainability and strong climate action at the local level, making strides to reduce the greenhouse gas emissions of the MIT campus, using the campus itself as a test bed for sustainability innovation and education, and partnering with the cities of Cambridge and Boston.

MIT has many offices, programs, and initiatives working to address sustainability and climate change issues, including the MIT Office of Sustainability, the Environmental Solutions Initiative, the MIT Energy Initiative, and the Abdul Latif Jameel Water and Food Systems Lab.

MIT also has a vibrant ecosystem of student and staff groups promoting sustainability on campus, including the Graduate Student Council and Undergraduate Association's committees on sustainability as well as the staff Working Green Committee. Initiatives range from the monthly Choose to Reuse swapfest to hackathons that engage students, industry, and thought partners in finding real-life solutions to sustainability challenges.

As a founding member of the Cambridge Compact for a Sustainable Future, MIT works with Cambridge, Harvard University, and more than 15 local businesses and organizations to achieve a more healthy, livable, and sustainable future. MIT is also a member of the Boston Green Ribbon Commission.

Sustainability Facts

- In 2015, MIT set a goal to reduce its campus greenhouse gas emissions by at least 32% below 2014 levels by 2030 and to strive to reach carbon neutrality as soon as possible.

- From 2014 through 2019, MIT reduced its greenhouse gas emissions by a total of 18%, taking into account the purchase of solar power from Summit Farms.
- Through its Access MIT program, the Institute provides generous subsidies for low-carbon commuting—including subway, bus, bicycling, and commuter rail—which has resulted in a 12% decrease in parking at gated facilities on campus.
- MIT sponsors four Bluebike stations on campus, with a total of 106 docks. The MIT community has completed more than 787,000 bike share trips since 2017.
- New construction and major renovation projects on campus aim to meet the national LEED Gold (version 4) certification standard. To date, MIT has completed 12 LEED projects on campus, ranging from new residence hall construction to renovations in the Main Group.
- In 2019, MIT created a pollinator-attracting sustainability garden with plants to support birds, bees, moths, and butterflies that are beneficial to our local ecosystems.
- An Environment and Sustainability Minor offers undergraduates an opportunity to delve into interdisciplinary coursework and investigations into real-world challenges facing people and the planet.

In 2019, MIT received two awards for its work in sustainability: the Henry P. Kendall Foundation's 2019 New England Food Vision Prize and the Norman B. Leventhal Excellence in City Building Awards 2019 Environment Award.

Visit sustainability.mit.edu and datapool.mit.edu to learn more.

Research

The soul of MIT is research. For more than 150 years, the Institute has married teaching with engineering and scientific studies—and produced an unending stream of advancements, many of them world changing. Examples of some of MIT's historical achievements follow:

1930s Pioneering high-speed photography

1940s Engineering practical microwave radar

1950s Building the magnetic core memory that made digital computers possible

1960s Developing the inertial guidance systems for the Apollo space program

1970s Inventing the first workable public key cryptographic system

1980s Discovering the smallest known, most abundant photosynthetic bacteria in the ocean

1990s Using new genetic and multiple-cell monitoring technologies to demonstrate how animals form memory about new environments

2000s Creating a new type of matter, a gas of atoms that shows high-temperature superfluidity

This stream of discovery continues. Here are just a few accomplishments from this decade:

2010 Designing computer techniques that automatically decipher ancient languages

2011 Building a new radar technology system that can see through walls up to 60 ft away

2012 Demonstrating experimentally the existence of a fundamentally new magnetic state called a quantum spin liquid

2013 Developing a new steelmaking process that produces no emissions other than pure oxygen

2014 Designing a new paper strip diagnostic test to rapidly diagnose Ebola and other viral hemorrhagic fevers

2015 Designing a bandage that incorporates temperature sensors, LED lights, and tiny drug-delivering reservoirs that can release medicine in response to skin temperature changes and light up if medicine is running low

2016 Making the first direct detection of gravitational waves reaching the Earth (in collaboration with Caltech and others around the world), confirming Albert Einstein's prediction from 100 years ago

2017 Adapting a CRISPR protein that targets RNA, rather than DNA, for use as a rapid, inexpensive, highly sensitive diagnostic tool with the potential to transform research and global public health

2018 Developing with scientists from Brigham and Women's Hospital a way to power and communicate with devices implanted within the human body. The implants are the size of a grain of rice, have no batteries, and are powered by radio frequency waves.

2019 **Capturing the first direct image of a black hole as part of an international team of over 200 scientists**

Undergraduates can plunge directly into this world of exploration through the Undergraduate Research Opportunities Program, which offers students a chance to collaborate on cutting-edge research as junior colleagues of Institute faculty.

During the academic year, approximately 3,820 researchers (including some 1,530 postdoctoral scholars and 475 visiting faculty and scientists) work with MIT faculty and students. Approximately 2,660 graduate students are primarily supported as research assistants and 680 are appointed as teaching assistants; 1,720 are supported on fellowships. Postdoctoral scholars pursue a program of research and training under the direction of an MIT faculty member.

Distribution of Postdoctoral Scholars, by School/Area, October 2019

School/Area	Number of postdocs	%
School of Engineering	522	34%
School of Science	445	29%
Vice President for Research area	400	26%
School of Architecture and Planning	56	4%
Provost and other areas	54	4%
Sloan School of Management	26	2%
School of Humanities, Arts, and Social Sciences	26	2%
Total	**1,530**	**100%**

As an institution, MIT encourages interdisciplinary research across department and school boundaries while focusing on tackling great societal challenges. More interdisciplinary teams are found off-campus in nearby Lexington, Massachusetts, at MIT Lincoln Laboratory, a federally funded research and development center focused on national security.

Research Expenditures, by Primary Sponsor, Fiscal Year 2019

Primary sponsor	Expenditures (in millions)	%
Industry	$169.61	22%
Department of Defense	$136.74	18%
Department of Health and Human Services	$134.77	17%
Foundations and other nonprofits	$104.47	13%
National Science Foundation	$79.62	10%
Department of Energy	$66.97	9%
NASA	$32.43	4%
State, local, and foreign governments	$21.05	3%
All other federal agencies	$14.18	2%
MIT internal	$14.05	2%
Total	**$773.90**	**100%**

*Figures are rounded.

Research Centers, Labs, and Programs

Today's researchers tackle complex problems that cannot be resolved within a single academic discipline—and MIT constantly creates and evolves academic organizations that foster interdisciplinary work.

Abdul Latif Jameel Clinic for Machine Learning in Health
Abdul Latif Jameel Poverty Action Lab
Abdul Latif Jameel World Education Lab
Abdul Latif Jameel World Water and Food Systems Lab
Center for Archaeological Materials
Center for Bits and Atoms
Center for Collective Intelligence
Center for Computational Engineering
Center for Energy and Environmental Policy Research
Center for Environmental Health Sciences
Center for Global Change Science
Center for Information Systems Research
Center for International Studies
Center for Real Estate
Center for Transportation and Logistics
Clinical Research Center
Computer Science and Artificial Intelligence Laboratory
Concrete Sustainability Hub
Deshpande Center for Technological Innovation
Division of Comparative Medicine
Edgerton Center/D-Lab
Haystack Observatory
Initiative on the Digital Economy
Institute for Data, Systems, and Society
Institute for Medical Engineering and Science
Institute for Soldier Nanotechnologies

Institute for Work and Employment Research
Internet Policy Research Initiative
Joint Program on the Science and Policy of Global Change
Knight Science Journalism Program
Koch Institute for Integrative Cancer Research
Laboratory for Financial Engineering
Laboratory for Information and Decision Systems
Laboratory for Manufacturing and Productivity
Laboratory for Nuclear Science
Legatum Center for Development and Entrepreneurship
Leventhal Center for Advanced Urbanism
Lincoln Laboratory
Martin Trust Center for MIT Entrepreneurship
Materials Research Laboratory
McGovern Institute for Brain Research
Microsystems Technology Laboratories
MIT Center for Art, Science, and Technology
MIT Energy Initiative
MIT Environmental Solutions Initiative
MIT-IBM Watson AI Lab
MIT Innovation Initiative
MIT Kavli Institute for Astrophysics and Space Research
MIT Media Lab
MIT.nano
MIT Portugal Program
MIT Program in Art, Culture, and Technology
MIT Quest for Intelligence
MIT Sea Grant College Program
MIT–Woods Hole Oceanographic Institution Joint Program in Oceanography/Applied Ocean Science and Engineering
Nuclear Reactor Laboratory
Operations Research Center
Picower Institute for Learning and Memory

Plasma Science and Fusion Center
Research Laboratory of Electronics
Simons Center for the Social Brain
Singapore–MIT Alliance for Research and Technology
Sociotechnical Systems Research Center
Women's and Gender Studies Program

Collaborating Institutions

MIT's research extends out through collaborations with leading institutes and consortia around the world.

Advanced Functional Fabrics of America
Broad Institute
Charles Stark Draper Laboratory
Howard Hughes Medical Institute
Massachusetts Green High Performance Computing Center
Ragon Institute of MGH, MIT and Harvard
Whitehead Institute for Biomedical Research

Lincoln Laboratory

MIT's Lincoln Laboratory, in Lexington, Massachusetts, is a federally funded research and development center (FFRDC) that develops advanced technology to address national security needs. Its core competencies are in sensors, information extraction (signal processing and embedded computing), communications, and decision support—all supported by a broad research base in advanced electronics. Other areas of innovative research and development are cybersecurity, autonomous systems, bioengineering, and homeland protection. A strong emphasis is on field-testing prototype systems. As a Department of Defense FFRDC, the laboratory transitions

technologies to both the military services and industry. Approximately 3,546 MIT employees and 510 subcontracted personnel worked at Lincoln Laboratory in fiscal year 2019.

Lincoln Laboratory Program Funding, by Mission Area, Fiscal Year 2019*

MIssion area	Expenditures (in millions)**	%
Communications Systems	$203.2	18%
Space Systems and Technology	$188.4	17%
Air, Missile, and Maritime Defense Technology	$181.8	16%
Advanced Technology	$137.6	12%
Tactical Systems	$115.4	11%
Homeland Protection	$78.5	7%
Cybersecurity and Information Sciences	$70.9	7%
Intelligence, Surveillance, and Reconnaissance Systems and Technology	$65.1	6%
Advanced Research Portfolio	$42.6	4%
Air Traffic Control	$26.2	2%
Total	**$1,109**	**100%**

*Lincoln Laboratory's fiscal year runs from October 1 to September 30.

**Figures are rounded.

MIT and Industry

Since its founding, MIT has encouraged researchers to work collaboratively across departments, fields, and institutional boundaries to solve problems. This has led to thousands of fruitful partnerships with industry and other leading research institutions.

More than 800 companies work with faculty and students both in Institute-wide programs such as the Industrial Liaison Program (part of MIT Corporate Relations and the main conduit between corporations and MIT), the Computer Science and Artificial Intelligence Laboratory, the Media Lab, and many other collaborations.

Research sponsored directly by industry totaled $180 million in fiscal year 2019, or 23% of total MIT research expenditures. According to the National Science Foundation, MIT consistently ranks first in industry-financed research and development expenditures among universities and colleges without a medical school.

The Technology Licensing Office (TLO) moves innovations and discoveries from the lab to the marketplace for the benefit of the public and to amplify MIT's global impact. The TLO cultivates an inclusive environment of scientific and entrepreneurial excellence, and bridges connections from MIT's research community to industry and startups by strategically evaluating, protecting, and licensing technology. In fiscal year 2019, the TLO received 789 invention disclosures (including 81 from Lincoln Laboratory), filed 439 new US patents, had 383 US patents issued, executed 143 licenses and options, had 25 companies formed

using MIT intellectual property, and received $34.8 million in total licensing revenue.

MIT's strong corporate connection also is reflected in its extensive business-oriented curricula, such as the Leaders for Global Operations program, System Design and Management program, Sloan Fellows Program in Innovation and Global Leadership, Supply Chain Management program, and other degree programs that offer an industry internship component.

MIT Sloan Executive Education offers programs that combine innovation and entrepreneurship with strategic thinking and global leadership for mid- to senior-level executives. Led by senior faculty, programs provide participants with the tools and frameworks they need to create and lead successful organizations.

MIT Professional Education provides engineering, science, and technology professionals a gateway to renowned MIT expertise, research, and knowledge through advanced education programs designed for working professionals.

Entrepreneurship and Innovation

MIT's preeminence in innovation is rooted in its founding. As one of the first land-grant colleges, the Institute was designed to deliver a practical education rather than to focus on the classical education that was provided by many private universities of that era. This emphasis on practice is infused into the entrepreneurship curriculum and programming, which emphasizes learning by doing. Over the course of the 2018–2019 academic year, more than 85 entrepreneurship courses

were offered, as well as not-for-credit boot camps during the Independent Activities Period and the MIT delta v accelerator program in the summer.

There are more than 200 resources dedicated to fostering entrepreneurship and innovation at MIT. These are just a few:

- The **MIT Innovation Initiative** combines opportunities for hands-on innovation and entrepreneurship education, building a dynamic innovation infrastructure across the campus.
- The **MIT Sandbox Innovation Fund Program** provides selected teams of MIT student innovators up to $25,000 in seed funding, tailored educational opportunities, advising and mentoring, and access to materials and makerspace resources.
- The **Bernard M. Gordon–MIT Engineering Leadership Program** promotes leadership and communications skills among undergraduate engineers.
- The **Deshpande Center for Technological Innovation** funds innovative faculty research and supports faculty in technology commercialization.
- **designX** is an entrepreneurial accelerator for endeavors from the School of Architecture and Planning that aims to transform cities and the built environment.
- The **Legatum Center for Development and Entrepreneurship** supports MIT students creating ventures focused on solving challenges in developing economies.
- The **Lemelson-MIT Program** promotes invention at MIT, in particular among students, through the Lemelson-MIT National Collegiate Student Prize Competition.

- The **Martin Trust Center for MIT Entrepreneurship** supports students with an entrepreneurship curriculum, programming, coaching and mentoring from entrepreneurs in residence, and connections to the MIT and broader entrepreneurial communities.
- **MIT D-Lab** works with people around the world to develop and advance collaborative approaches and practical solutions to global poverty challenges through interdisciplinary courses, research in collaboration with global partners, technology development, and community initiatives.
- **MIT IDEAS Global Challenge** is an annual, campus-wide social innovation competition run by the Priscilla King Gray Public Service Center. The program enables students to work closely with community partners to tackle quality-of-life issues for people around the world.
- The **MIT Startup Exchange** is a web community for the MIT innovation ecosystem composed of MIT Industrial Liaison Program members, MIT-connected startups, and employees and alumni with active startup engagements.
- The **Technology Licensing Office** assists MIT inventors in protecting their technology and in licensing that technology to startups and existing companies.
- The **Venture Mentoring Service** matches student, faculty, staff, and alumni entrepreneurs with talented mentors.

MIT also has a wealth of student clubs and initiatives involved in entrepreneurship or innovation, among them the MIT $100K Entrepreneurship Competition, the MIT Clean Energy Prize, and conferences such as Hacking Arts and Hacking Medicine.

MIT's educational efforts in entrepreneurship and innovation have an impressive impact at local, regional, and global levels. A 2015 study reported that 30,000 companies founded by MIT alumni were active as of 2014, employing 4.6 million people and producing annual revenues of $1.9 trillion, equivalent to the world's 10th largest economy. MIT alumni form hundreds of new companies each year, and approximately 40% of MIT founders are serial entrepreneurs, starting multiple companies. Twenty-three percent of MIT alumni's new firms are founded outside the United States.

Alumni

MIT Students after Graduation

In 2018–2019, there were over 700 unique company engagements via career fairs, on-campus recruiting, information sessions, and formal partnerships with individual companies for recruiting. MIT graduates found jobs using multiple resources, such as career fairs (53%), various networking avenues, including MIT faculty and administrators, Career Advising and Professional Development contacts, and professional conferences (47%), and through on-campus recruiting and MIT-sponsored job listings (38%). These figures include resources used in internships that converted to full-time jobs.

Undergraduates after Graduation

- Thirty-nine percent of 2019 bachelor's degree graduates had internships that led to a full-time job offer.
- Eighty-five percent of all graduating seniors completed internships while at MIT.

- Fifty-five percent of undergraduates took jobs after graduation; 36% went on to graduate school. The top graduate school destinations were MIT, Stanford, Harvard, University of California at Berkeley, Carnegie Mellon University, and the University of Cambridge.

Graduate Students after Graduation

- Eighty-two percent of graduating 2019 master's students entered the work sector and 13% went on to further study.
- While 96% of PhD students planned to work after graduation, 1% continued their education. Of those with confirmed employment, 52% had postdoctoral positions.

Employment Sectors for 2019 MIT Graduates, by Degree Type

Employment sector	Bachelor's	Master's	PhD
Academic institutions	4%	2%	32%
Energy/Utilities	4%	2%	3%
Finance/Insurance	17%	16%	4%
Government	5%	4%	1%
Health care/ Pharmaceuticals	7%	6%	6%
Information and technology	30%	27%	16%
Professional, scientific, and technical services (including consulting)	15%	20%	34%
Transportation	6%	5%	1%

Top Employers of 2019 MIT Graduates, by Sector

- **Academic institutions:** Harvard University, Jet Propulsion Laboratory, MIT, MIT Lincoln Laboratory, Northwestern University, Princeton University, Stanford University, University of California at Berkeley
- **Energy/Utilities:** ExxonMobil, Schlumberger, Shell Oil
- **Finance/Insurance:** Bank of America, Citadel LLC, Goldman Sachs, Morgan Stanley
- **Government:** US Air Force, US Army, US Navy
- **Health care/Pharmaceuticals:** Amgen, Biogen Idec, daytoday health, Ginkgo Bioworks
- **Information and technology:** Amazon, Apple, Facebook, Google, IBM, Microsoft, Salesforce
- **Professional, scientific, and technical services (including consulting):** Accenture, Bain & Company, Boston Consulting Group, Deloitte Consulting, McKinsey & Company, PriceWaterHouseCoopers
- **Transportation:** Aurora Flight Sciences, Blue Origin, Boeing, Ford Motor Company, General Motors

MIT Alumni Association

The MIT Alumni Association seeks to engage and inspire the MIT global community to make a better world. It serves as a platform to strengthen the ties of MIT's 139,318 living alumni and its students and friends with the Institute and with one another, and offers opportunities for connection through various resources, programs, services, and channels.

In fiscal year 2019, 50% of living alumni engaged with MIT philanthropically, virtually, or face to face. More than 16,680 alumni volunteered in service to the MIT community. The Annual Fund reported $86.5 million in gifts, and more than 44,000 alumni, students, and friends gave to MIT.

Geographic Distribution of Alumni*		
United States and Possessions		106,052
New England	26,658	
Mid-Atlantic	26,619	
West	22,067	
Southwest and South Central	8,852	
Great Lakes	7,670	
Southeast	7,011	
Northwest and Great Plains	6,395	
Alaska and Hawaii	523	
Puerto Rico, the Virgin Islands, and other US territories	257	
Asia		8,149
Europe		6,319
North America (other than US)		1,990
South America		1,632
Pacific Ocean Islands and Australia		570
Africa		526
Central America		77
Total		**125,315**

*Includes only alumni with known addresses. Data as of July 1, 2019.

Building MIT's Resources

The MIT Campaign for a Better World was publicly launched in May 2016 with the ambitious goal of meeting humanity's urgent global challenges through the vision and talent of the people of MIT.

The Campaign is guided by six priority areas that span the full breadth of the Institute:

- **Discovery Science:** Transforming our world through fundamental scientific research
- **Health of the Planet:** Addressing critical environmental and sustainability challenges facing humankind
- **Human Health:** Defining the future of health through advances from bench to bedside across a broad range of disciplines
- **Innovation and Entrepreneurship:** Accelerating the journey from idea to impact
- **Teaching, Learning, and Living:** Reimagining education for the 21st-century learner
- **The MIT Core:** Attracting extraordinary students and faculty and providing them with the resources they need to thrive

Thanks to the generosity of friends, alumni, foundations, and corporations, the Institute closed fiscal year 2019 with an additional $740 million in new gifts and pledges and, with support from more than 100,000 gifts, had raised $5.2 billion toward the Campaign goal.

Financial Data

Fiscal Year 2019 Statistics

Value of Plant and Invested Assets, Fiscal Year 2019

Asset	Value (in millions)
Land, buildings, and equipment, net book value	$3,993.3
Market value of endowed funds	$17,443.8
Market value of total investments	$22,083.2

*Figures are rounded.

Gifts and Pledge Payments to MIT, Fiscal Year 2019

Source	Amount (in millions)
Foundations	$265.6
Individuals	$212.8
Corporations	$128.1
Other	$4.7
Total	**$611.2**

*Figures are rounded.

Gift and Pledge Payment Designations, Fiscal Year 2019

Designation	Amount (in millions)
Research and education programs	$353.9
Unrestricted	$88.9
Undergraduate education and student life	$46.4
Construction and renovations	$42.6
Faculty chairs	$32.7
Scholarships and other undergraduate aid	$25.1
Graduate fellowships	$15.9
Undesignated and miscellaneous	$5.7
Total	**$611.2**

*Figures are rounded.

Operating Expenditures, Fiscal Year 2019

Category	Expenditures (in millions)*	%
Sponsored research	$1,733.4	47%
Instruction and unsponsored research	$1,208.4	32%
General and administrative**	$769.0	21%
Total	**$3,710.8**	**100%**

* Figures are rounded.
** Includes auxiliary enterprises and Alumni Association.

Operating Revenues, Fiscal Year 2019

Category	Revenues (in millions)*	%
Research revenues—Lincoln Laboratory	$1,059.4	27%
Investment return to operations	$875.4	22%
Research revenues—Campus	$728.2	19%
Gifts and bequests for operations	$405.5	10%
Tuition, net of discount	$383.7	10%
Other operations revenues	$296.3	8%
Auxiliary enterprises	$138.1	3%
Research revenues—Singapore-MIT Alliance for Research and Technology	$45.3	1%
Total	**$3,931.9**	**100%**

*Figures are rounded.

Accreditation

MIT is accredited by the New England Commission of Higher Education.

Inquiries regarding MIT's accreditation status may be submitted to MIT at accreditation@mit.edu or directly to the Commission:

New England Commission of Higher Education
3 Burlington Woods Drive, Suite 100
Burlington, MA 01803-4514
telephone 781-425-7785
email info@neche.org

Many degree programs at MIT are accredited by specialized professional accrediting bodies, including ABET, the Association to Advance Collegiate Schools of Business, the American Chemical Society, the National Architectural Accrediting Board, and the Planning Accreditation Board. Academic departments can provide information on the accreditation of the specific degree programs they offer.

About the Cover

When people think of MIT's campus, its iconic architecture or views of the Charles River and Boston skyline often come to mind. However, its thoughtfully planned and carefully curated green spaces are an integral part of the outdoor tapestry, tempering the bustle and noise of the urban environment. Large, grassy courtyards, numerous easy-to-find or tucked-away gardens, and abundant trees provide spots to gather with others or just enjoy your own company.

This year's cover is a tribute to a few of the species of flora found on MIT's campus. We hope these playful representations are a reminder to make time to enjoy your surroundings and care for the environment.

Callery Pear
(*Pyrus calleryana*)

Kousa Dogwood
(*Conus kousa*)

Eastern White Pine
(*Pinus strobus)*

American Sweetgum
(*Liquidambar styraciflua*)

Littleleaf Linden
(*Tilia cordata*)

Japanese Maple
(*Acer palmatum*)

Green Ash
(*Fraxinus pennsylvanica*)

Pin Oak
(*Quercus palustris*)

Japanese Cherry
(*Prunus serrulata*)

Callery Pear
(*Pyrus calleryana*)


Massachusetts Institute of Technology
A few of the most visited locations on campus are highlighted below:
W16 Kresge Auditorium
W20 Student Center
N52 MIT Museum
7 Information Center
10 Lobby 10 and Great Dome
K Killian Court
N Hockfield Court
32 Stata Center
76 Koch Building
E14 Media Lab
E15 List Visual Arts Center
E51 Wong Auditorium, Tang Center
E62 Sloan School
T Kendall T Station
whereis.mit.edu
m.mit.edu
West Campus
East Campus
Briggs Field
Fran O'Brien Field
Henry G. Steinbrenner Stadium
Jack Barry Astro Turf Field
du Pont Tennis Courts
Compton Court
Eastman Court
McDermott Court
Killian Hall
du Pont Court
Lowell Court
Charles River
Walter C. Wood Sailing Pavilion
77 Massachusetts Avenue
Memorial Drive
Vassar Street
Main Street
Albany Street
Amherst Street
Amherst Alley
Landsdowne Street
Sidney Street
Pacific Street
Ames Street
Vassar Street
Carleton Street
Hayward Street
Wadsworth Street
Charles Street
Binney Street
Third Street
Fifth Street
Broadway
Hyatt Regency
Harriott Hotel
Kendall Hotel
Kendall Square
Longfellow Bridge
Commercial Avenue
Edwin H. Land Boulevard
Downtown Boston
To Boston
The Charles Stark Draper Laboratory, Inc.
Technology Square
Whitehead Institute
Broad Institute
Le Meridien Cambridge Hotel
88 Sidney Street
65 Landsdowne Street
35 Landsdowne Street
80 Landsdowne Street (garage)
40 Landsdowne Street
MIT P
MIT Child