



Massachusetts Institute of Technology

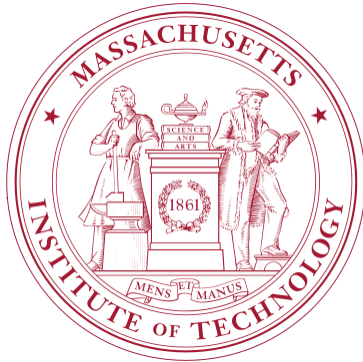
The **Massachusetts Institute of Technology** (**MIT**) is a private research university in Cambridge, Massachusetts, United States. Established in 1861, MIT has played a significant role in the development of many areas of modern technology and science.

In response to the increasing industrialization of the United States, William Barton Rogers organized a school in Boston to create "useful knowledge." Initially funded by a federal land grant, the institute adopted a polytechnic model that stressed laboratory instruction in applied science and engineering. MIT moved from Boston to Cambridge in 1916 and grew rapidly through collaboration with private industry, military branches, and new federal basic research agencies, the formation of which was influenced by MIT faculty like Vannevar Bush. In the late twentieth century, MIT became a leading center for research in computer science, digital technology, artificial intelligence and big science initiatives like the Human Genome Project. Engineering remains its largest school, though MIT has also built programs in basic science, social sciences, business management, and humanities.

The institute has an urban campus that extends more than a mile (1.6 km) along the Charles River. The campus is known for academic buildings interconnected by corridors and many significant modernist buildings. MIT's off-campus operations include the MIT Lincoln Laboratory and the Haystack Observatory, as well as affiliated laboratories such as the Broad and Whitehead Institutes. Campus life is often noted for demanding workloads, a hands-on approach to research and coursework, and elaborate practical jokes known as "hacks".

As of October 2024, 105 Nobel laureates,^[10] 26 Turing Award winners, and 8 Fields Medalists have been affiliated with MIT as alumni, faculty members, or researchers.^[11] In addition, 58 National Medal of

Massachusetts Institute of Technology



Motto	<i>Mens et Manus</i> (Latin)
Motto in English	"Mind and Hand" ^[1]
Type	<u>Private land-grant research university</u>
Established	April 10, 1861
Founder	<u>William Barton Rogers</u>
Accreditation	<u>NECHE</u>
Academic affiliations	<u>AAU</u> · <u>AITU</u> · <u>COFHE</u> · <u>NAICU</u> ^[2] · <u>UARC</u> · <u>URA</u> · <u>Sea grant</u> · <u>Space grant</u>
Endowment	\$24.6 billion (2024) ^[3]
President	<u>Sally Kornbluth</u>
Provost	<u>Cynthia Barnhart</u>
Academic staff	1,090 ^[4]
Students	11,886 (2024–25) ^[5]
Undergraduates	4,535 (2024–25) ^[5]
Postgraduates	7,351 (2024–25) ^[5]
Location	<u>Cambridge, Massachusetts, United States</u> 42°21′35″N 71°5′31″W﻿ / ﻿
Campus	<u>Midsize city</u> ^[7] , 166 acres (67.2 ha) ^[6]
Newspaper	<i><u>The Tech</u></i>

Science recipients, 29 National Medals of Technology and Innovation recipients, 50 MacArthur Fellows,^[12] 83 Marshall Scholars,^[13] 41 astronauts,^[14] 16 Chief Scientists of the US Air Force, and 8 foreign heads of state have been affiliated with MIT. The institute also has a strong entrepreneurial culture and MIT alumni have founded or co-founded many notable companies.^{[15][16]}

History

Foundation and vision

[...] a school of industrial science aiding the advancement, development and practical application of science in connection with arts, agriculture, manufactures, and commerce [...] ^[17]

—Massachusetts General Court, *Acts of 1861, Chapter 183*

In 1859, a proposal was submitted to the Massachusetts General Court to use newly filled lands in Back Bay, Boston for a "Conservatory of Art and Science", but the proposal failed.^{[18][19]} A charter for the incorporation of the Massachusetts Institute of Technology, proposed by William Barton Rogers, was signed by John Albion Andrew, the governor of Massachusetts, on April 10, 1861.^[20]

Rogers, a geologist who had recently arrived in Boston from the University of Virginia,^[21] wanted to establish an institution to address rapid scientific and technological advances.^{[22][23]} He did not wish to found a professional school, but a combination with elements of both professional and liberal education,^[24] proposing that:

The true and only practicable object of a polytechnic school is, as I conceive, the teaching, not of the minute details and manipulations of the arts, which can be done only in the workshop, but the inculcation of those scientific principles which form the basis and explanation of them, and along with this, a full and methodical review of all their leading processes and operations in connection with physical laws.^[25]

The Rogers Plan reflected the German research university model, emphasizing an independent faculty engaged in research, as well as instruction oriented around seminars and laboratories.^{[26][27]}

Colors	Cardinal red and steel gray ^[8] <div><div></div><div></div></div>
Nickname	Engineers
Sporting affiliations	NCAA Division III – NEWMAC · NEISA · CWPA · UVC · EARC · EAWRC
Mascot	Tim the Beaver ^[9]
Website	web.mit.edu (https://web.mit.edu/)



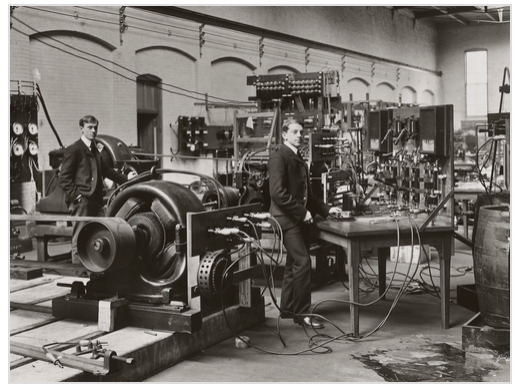
Early developments

Two days after MIT was chartered, the first battle of the Civil War broke out. After a long delay through the war years, MIT's first classes were held in the Mercantile Building in Boston in 1865.^[28] The new institute was founded as part of the Morrill Land-Grant Colleges Act to fund institutions "to promote the liberal and practical education of the industrial classes" and was a land-grant school.^{[29][30]} In 1863 under the same act, the Commonwealth of Massachusetts founded the Massachusetts Agricultural College, which developed as the University of Massachusetts Amherst. In 1866, the proceeds from land sales went toward new buildings in the Back Bay.^[31]



Original Rogers Building in Back Bay, Boston, c. 1901

MIT was informally called "Boston Tech".^[31] The institute adopted the European polytechnic university model and emphasized laboratory instruction from an early date.^[26] Despite chronic financial problems, the institute saw growth in the last two decades of the 19th century under President Francis Amasa Walker.^[32] Programs in electrical, chemical, marine, and sanitary engineering were introduced,^{[33][34]} new buildings were built, and the size of the student body increased to more than one thousand.^[32]



Tech electrical engineering students with dynamos

The curriculum drifted to a vocational emphasis, with less focus on theoretical science.^[35] The fledgling school still suffered from chronic financial shortages which diverted the attention of the MIT leadership. During these "Boston Tech" years, MIT faculty and alumni rebuffed Harvard University president (and former MIT faculty) Charles W. Eliot's repeated attempts to merge MIT with Harvard College's Lawrence Scientific School.^[36] There would be at least six attempts to absorb MIT into Harvard.^[37] In its cramped Back Bay location, MIT could not afford to expand its overcrowded facilities, driving a desperate search for a new campus and funding. Eventually, the MIT Corporation approved a formal agreement to merge with Harvard and move to Allston, over the vehement objections of MIT faculty, students, and alumni.^[37] The merger plan collapsed in 1905 when the Massachusetts Supreme Judicial Court ruled that MIT could not sell its Back Bay land.^[38]

In 1912, MIT acquired its current campus by purchasing a one-mile (1.6 km) tract of filled lands along the Cambridge side of the Charles River.^{[39][40]} The neoclassical "New Technology" campus was designed by William W. Bosworth^[41] and had been funded largely by anonymous donations from a mysterious "Mr. Smith", starting in 1912. In January 1920, the donor was revealed to be the industrialist George Eastman, an inventor of film production methods and founder of Eastman Kodak. Between 1912 and 1920, Eastman donated \$20 million (\$304.2 million in 2024 dollars) in cash and Kodak stock to MIT.^[42] In 1916, with the first academic buildings complete, the MIT administration and the MIT charter crossed the Charles River on the ceremonial barge *Bucentaur* built for the occasion.^{[43][44]}

Needing funds to match Eastman's gift and cover retreating state support, President Richard MacLaurin launched an industry funding model known as the "Technology Plan" in 1920.^{[45][46][47]} As MIT grew under the Tech Plan, it built new postgraduate programs that stressed laboratory work on industry problems, including a new program in electrical engineering.^[45] Gerard Swope, MIT's chairman and head of General Electric, believed talented engineers needed scientific research training.^[45] In 1930, he recruited Karl Taylor Compton to helm MIT's transformation as a "technological" research university and to build more autonomy from private industry.^{[45][47]}



The new Cambridge campus, completed in 1916.

Curricular reforms

... a special type of educational institution which can be defined as a university polarized around science, engineering, and the arts. We might call it a university limited in its objectives but unlimited in the breadth and the thoroughness with which it pursues these objectives.^[48]

—MIT president James Rhyne Killian, Inaugural Address (1949)

In the 1930s, President Karl Taylor Compton and Vice-President (effectively Provost) Vannevar Bush emphasized the importance of pure sciences like physics and chemistry and reduced the vocational practice required in shops and drafting studios.^[49] The Compton reforms "renewed confidence in the ability of the Institute to develop leadership in science as well as in engineering".^[50] Unlike Ivy League schools, MIT catered more to middle-class families, and depended more on tuition than on endowments or grants for its funding.^[46]

Still, as late as 1949, the Lewis Committee lamented in its report on the state of education at MIT that "the Institute is widely conceived as basically a vocational school", a "partly unjustified" perception the committee sought to change. The report comprehensively reviewed the undergraduate curriculum, recommended offering a broader education, and warned against letting engineering and government-sponsored research detract from the sciences and humanities.^{[51][52]} The School of Humanities, Arts, and Social Sciences and the MIT Sloan School of Management were formed in 1950 to compete with the powerful Schools of Science and Engineering. Previously marginalized faculties in the areas of economics, management, political science, and linguistics emerged into cohesive and assertive departments by attracting respected professors and launching competitive graduate programs.^{[53][54]} Humanities and social science programs continued to develop under the successive terms of the more humanistically oriented presidents Howard W. Johnson and Jerome Wiesner between 1966 and 1980.^[55]

Defense research

MIT's involvement in military research projects surged during World War II. In 1941, Vannevar Bush was appointed head of the federal Office of Scientific Research and Development and directed funding to only a select group of universities, including MIT.^[56] Engineers and scientists from across the country gathered at MIT's Radiation Laboratory, established in 1940 to assist the British military in developing microwave radar. The work done there significantly affected both the war and subsequent research in the area.^[57] Other defense projects included gyroscope-based and other complex control systems for gunsight, bombsight, and inertial navigation under Charles Stark Draper's Instrumentation Laboratory;^{[58][59]} the development of a digital computer for flight simulations under Project Whirlwind;^[60] and high-speed and high-altitude photography under Harold Edgerton.^{[61][62]} By the end of the war, MIT became the nation's largest wartime R&D contractor (attracting some criticism of Bush),^[56] employing nearly 4000 in the Radiation Laboratory alone^[57] and receiving in excess of \$100 million (\$1.2 billion in 2015 dollars) before 1946.^[50] Work on defense projects continued even after then. Post-war government-sponsored research at MIT included SAGE and guidance systems for ballistic missiles and Project Apollo.^[63]



ROTC students celebrate Veterans Day at MIT in 2019.

These activities affected MIT profoundly. A 1949 report noted the lack of "any great slackening in the pace of life at the Institute" to match the return to peacetime, remembering the "academic tranquility of the prewar years", though acknowledging the significant contributions of military research to the increased emphasis on graduate education and rapid growth of personnel and facilities.^[64] The faculty doubled and the graduate student body quintupled during the presidential terms of Karl Taylor Compton (1930–1948), James Rhyne Killian (1948–1957), and chancellor Julius Adams Stratton (1952–1957), whose institution-building strategies shaped the expanding university. By the 1950s, MIT no longer simply benefited the industries with which it had worked for three decades, and it had developed closer working relationships with new patrons, philanthropic foundations and the federal government.^[65]

In late 1960s and early 1970s, student and faculty activists protested against the Vietnam War and MIT's defense research.^{[66][67]} In this period MIT's various departments were researching helicopters, smart bombs and counterinsurgency techniques for the war in Vietnam as well as guidance systems for nuclear missiles.^[68] The Union of Concerned Scientists was founded on March 4, 1969 during a meeting of faculty members and students seeking to shift the emphasis on military research toward environmental and social problems.^[69] MIT ultimately divested itself from the Instrumentation Laboratory and moved all classified research off-campus to the MIT Lincoln Laboratory facility in 1973 in response to the protests.^{[70][71]} The student body, faculty, and administration remained comparatively unpolarized during what was a tumultuous time for many other universities.^[66] Johnson was seen to be highly successful in leading his institution to "greater strength and unity" after these times of turmoil.^[72] However six MIT students were sentenced to prison terms at this time and some former student leaders, such as Michael Albert and George Katsiaficas, are still indignant about MIT's role in military research and its suppression of these protests.^[73] (Richard Leacock's film, *November Actions*, records some of these tumultuous events.^[74])