

Office of Engineering Outreach Programs

The [Office of Engineering Outreach Programs](#) (OEOP) in the School of Engineering runs academic enrichment programs that reach over 500 middle and high school students locally and nationally. These programs are offered free of charge and focus on exposing students to engaging and challenging curricula in engineering and science. OEOP's goal is to provide traditionally underserved students with multiple entry points to academic and professional careers in the science, technology, engineering, and mathematics (STEM) disciplines.

OEOP's core programs—Minority Introduction to Engineering and Science (MITES); Engineering Experience at MIT (E2@MIT); MIT Online Science, Technology, and Engineering Community (MOSTEC); Saturday Engineering Enrichment and Discovery (SEED) Academy; STEM; MIT Science of Baseball Program (MSBP); and Confronting Obstacles and Realizing Excellence (CORE)—also support MIT's mission to sponsor K–12 programs that foster unique learning experiences for students and help build a pipeline of diverse and highly qualified scientists and engineers.

Raising over 80–90% of its funding, OEOP makes significant efforts to maintain its financial resources and support. In close cooperation with the dean of engineering and MIT development officers, OEOP secures funding for its programs from a broad range of corporations, foundations, MIT alumni, OEOP alumni, and other individuals.

Highlights

The following are some of the most notable achievements and highlights for OEOP from the 2012–2013 academic year:

- The second year of the online national outreach program MOSTEC had 115 participants, almost twice as many as in the previous year.
- Fifty-five percent of students who applied to MIT from the 2012 Minority Introduction to Engineering and Science program were accepted.
- All students who graduated from the 2012 Saturday Engineering Enrichment and Discovery Academy were accepted to college.
- In fall 2012, the fifth SEED Academy student was admitted to MIT.
- Eighteen high school students successfully completed the 2012 CORE program.
- In 2012, over 110 middle school students participated in the STEM program and the MIT Science of Baseball Program.
- Eleven STEM and MSBP alumni participated in the second year of the ninth grade cohort program, which helps students make a successful transition to high school.

High School Programs

Minority Introduction to Engineering and Science Program

Minority Introduction to Engineering and Science participants take courses in calculus, physics, and life sciences (chemistry, biology, or biochemistry); a writing-intensive humanities course; and a project-based course (genomics at the Broad Institute, digital design, engineering design, electronics, or architecture). In 2013, MITES selected 80 high school seniors from a pool of over 2,000 applicants to participate in its rigorous six-week summer session. The selected students come from 26 states, the District of Columbia, and Puerto Rico. Of the 80 students who attended MITES in 2012, 66 applied to MIT and 36 (55%) were accepted. MITES students who attend MIT are also consistently strong academic performers within their cohorts, graduating at a rate 12 percentage points higher than that of other minority students at the Institute.

Engineering Experience at MIT Program

In order to serve more students from the growing MITES applicant pool, in 2012 OEOP provided 76 promising high school seniors with a one-week, residential summer enrichment program called Engineering Experience at MIT (E2@MIT). Students from the MITES applicant pool with high academic potential and a strong interest in science and engineering were selected to participate in the program the summer before their senior year in high school. During E2@MIT students completed a short project course in an engineering field while attending admissions and financial aid sessions, touring laboratories, participating in social events, and meeting MIT faculty, students, and alumni. Of the 76 students who attended MITES in 2012, 59 applied to MIT and 23 (39%) were accepted.

MIT Online Science, Technology, and Engineering Collaboration

In 2012, OEOP also provided a group of 115 promising high school seniors (almost twice as many students as the previous year) with an enriching online experience—the MIT Online Science, Technology, and Engineering Collaboration—that extended from fall into spring as they submitted their college applications. Students were exposed to MIT's faculty and staff via this online community and were provided with admissions and financial aid tips as well as being able to participate in discussions about science and engineering research. As a part of MOSTEC, students also shared their own research and were offered mentorship opportunities.

Saturday Engineering Enrichment and Discovery Academy

The Saturday Engineering Enrichment and Discovery Academy, an academic enrichment and technical career exploration program for Boston, Cambridge, and Lawrence public high school students, recently completed its tenth year. The seven-semester program is designed to strengthen participants' fundamental mathematics, science, and communication skills using an original, hands-on curriculum. In 2013, all members of SEED Academy's graduating class of 18 students were accepted to a number of prestigious universities, including MIT, Harvard University, Boston College, Worcester Institute of Technology, Georgetown University, Northeastern University, and the University of Massachusetts at Lowell and Dartmouth.

Confronting Obstacles and Realizing Excellence Program

The Confronting Obstacles and Realizing Excellence program is a two-week summer program focused on increasing the quantitative reasoning skills of Boston-area middle and high school students. The premise for CORE is that all students can excel in mathematics and scientific reasoning if they are provided with a fundamental core of mathematical knowledge. CORE consists of an intensive mathematics course that covers basic computation, conversion and transformation, estimation and approximation, ratios and proportions, unit analysis, and variable manipulation and equalities. In 2012, 18 middle and high school students successfully completed the CORE program.

Middle School Programs

Science Technology Engineering and Math Program

The Science Technology Engineering and Math program is a nonresidential, year-round academic enrichment and mentoring program for local public school students in grades six through nine. STEM consists of three components: a five-week summer academic phase on the MIT campus to prepare students for “gateway” high school mathematics and science courses, an academic year mentoring program that pairs each STEM participant with an MIT student, and workshops to empower STEM parents to advocate for and equip their children for academic success. In 2012, 87 students from Boston, Cambridge, and Lawrence public schools completed the summer academic phase. All of these students were invited to participate in the OEOP middle school mentoring program, along with students who participated in MSBP. The mentoring program supported 64 students from STEM and MSBP during AY2013.

MIT Science of Baseball Program

After five summers, the MIT Science of Baseball Program has provided more than 100 eighth-grade boys from Boston and Cambridge public schools with an innovative four-week summer enrichment program. The program is geared toward underserved youth who may not be achieving high marks in math and science, but are interested in baseball and thus demonstrate potential to benefit from a program combining math and science lessons with baseball skills. MSBP integrates an experiential curriculum with academic topics. Throughout the program, students work on their baseball skills as they develop an understanding of the mathematics, science, and culture behind the sport and synthesize all these elements into the strategy of the game through the study of statistics and probability. Last year, the 28 boys who completed the 2012 session of the program were also invited to participate in the OEOP middle school mentoring program during the academic year.

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