

Office of Engineering Outreach Programs

The Office of Engineering Outreach Programs (OEOP) in the School of Engineering runs academic enrichment programs for middle and high school students. These programs are all offered free of charge and focus on exposing students to engaging and challenging curricula in engineering and science. Our 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—the Minority Introduction to Engineering and Science (MITES) Program, the Saturday Engineering Enrichment and Discovery (SEED) Academy, the STEM Program, and the MIT Science of Baseball Program (MSBP)—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. In 2008, OEOP added the SEED Confronting Obstacles and Realizing Excellence (CORE) Program to its portfolio.

OEOP makes significant efforts regarding the maintenance of its financial resources and support. In close cooperation with the dean of engineering and MIT resource development officers, OEOP has secured funding for its programs from a broad range of corporations, foundations, agencies, and other groups, as well as its own alumni, MIT alumni, and the parents of former program participants.

The following are some of our most notable achievements and highlights from academic year 2009:

- The MITES Program received a historic number of applications (more than 1,000). The program achieved an acceptance rate of approximately 7%, with 70 participants.
- One-hundred percent of this year's SEED Academy seniors were accepted to college. Also this year, the first SEED Academy alumnus was accepted into MIT.
- The STEM Mentoring Program was expanded to include students from MSBP and renamed the OEOP Middle School Mentoring Program.
- The OEOP pipeline continues to grow stronger, as exemplified by the following:
 - The largest number of MSBP alumni (4) were accepted to the fourth level of the STEM Program.
 - The first SEED CORE Program students (2) were accepted to SEED Academy.
 - Eleven students from the STEM Program were accepted to SEED Academy.
 - Three students from SEED Academy were accepted to the MITES Program.
 - Thirty-nine students from the 2008 MITES program were accepted to MIT.

Minority Introduction to Engineering and Science Program

MITES participants take courses in calculus, physics, and life science (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 2009, the MITES Program selected 70 high school seniors from a pool of more than 1,000 applicants to participate in its rigorous six-week summer session. The selected students come from 25 states and Puerto Rico.

Of the 66 students who attended MITES in 2008, 39 (59%) were accepted to MIT and 36 (92% of the 39) are attending MIT as members of the Class of 2013. MITES students who attend MIT are also consistently strong performers, performing well within their cohorts and graduating at a rate 12 percentage points higher than that of other minority students at the Institute.

Saturday Engineering Enrichment and Discovery Academy

The SEED Academy, an academic enrichment and technical career exploration program for Boston, Cambridge, and Lawrence public high school students, recently completed its seventh year. The seven-semester program is designed to strengthen participants' fundamental mathematics, science, and communication skills using an original, hands-on curriculum. In 2009, the members of SEED Academy graduating class were accepted to number of prestigious universities, including MIT, University of Pennsylvania, Columbia University, Tufts University, Boston College, and Syracuse University.

Science Technology Engineering and Math Program

The STEM 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 math 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 2009, 78 students from Boston and Cambridge public schools completed the summer academic phase. All of these students have been invited to participate in the OEOP Middle School Mentoring Program along with students who participated in the MSBP.

MIT Science of Baseball Program

After three summers, MSBP has provided more than 70 boys with an innovative four-week summer enrichment program. The students in the program are eighth-grade boys from Boston and Cambridge public schools. 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 of these elements into the strategy of the game through the study of statistics and probability. Last year, boys who completed the 2008 session of the program

were also invited to participate in our OEOP Middle School Mentoring Program during the academic year. Eleven of the boys signed up for mentors.

SEED Confronting Obstacles and Realizing Excellence (CORE) Program

SEED CORE Program is a two-week summer program focused on increasing the quantitative reasoning skills of Boston-area high school students. The premise for SEED CORE is that all students can excel in math and scientific reasoning if they are provided with a fundamental core of mathematical knowledge. The CORE Program consists of an intensive quantitative course covering these major topics: basic computation, conversion and transformation, estimation and approximation, ratios and proportions, unit analysis, and variable manipulation and equalities.

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