

Enrichment programs for highschool students, bachelor and master students

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Education & Students & Research as seen from MIT-Physics

- **Research University model: many benefits over traditional models**
- **Research labs on campus, open to ALL students**
- **Research experience is a vital part of education**
- **Toy research morphs into real research**
- **Education and research are integrated (via students)**

Education & Students & Research:

UROP program

- **From a faculty perspective, UROP students are one of the best things about MIT. Undergraduates who spend time in your lab, working on research. Full of creativity and energy. Can be the spark that lights a fire. And they don't cost much**
- **From an undergraduate student perspective, UROP-ing is one of the best things to do at MIT. Real research experience. Jump in and then learn to swim. Sense of accomplishment. And you get paid, too**
- **Guiding UROP students toward careers in innovation and research, in industry or at universities**
- **Network w/ universities that have UROP e.g. Imperial UK & ETH Zurich; summer exchange of UROP students**
- **Exchange master students (much like UROP)**

MIT Summer programs

MIT does not offer a traditional open-enrollment summer school program where any high school student can come to campus to take courses and live in the dorms. However, several partner organizations run small, specialized programs on campus. If you'd rather study the human genome or build a robot than memorize this year's summer TV reruns, then you might try one of these:

Research Science Institute (RSI) brings together about 70 high school students each summer for six stimulating weeks at MIT. This rigorous academic program stresses advanced theory and research in mathematics, the sciences and engineering. Participants attend college-level classes taught by distinguished faculty members and complete hands-on research, which they often then use to enter science competitions. Open to high school juniors, the program is free of charge for those selected.

Women's Technology Program (WTP) is a four-week summer academic and residential experience where 60 female high school students explore engineering through hands-on classes (taught by female MIT graduate students), labs, and team-based projects in the summer after their junior year. Students attend WTP in either Electrical Engineering and Computer Science (EECS) or Mechanical Engineering (ME).

MIT Launch - a 4-week entrepreneurship program for high school students, teaching the entrepreneurial skills and mindset through starting real companies. Students go through rigorous coursework, collaborate with peers and mentors, and use the multitude of tools surrounding them at MIT to realize what it takes to be successful in the real world – resourcefulness, adaptability, and innovation. Many need-based scholarships are available.

While the **Summer Science Program (SSP)** is not on campus, MIT-co-sponsored science research program. With locations in New Mexico and Colorado, and many MIT students among the program's alumni/ae, students learn mathematics, physics, astronomy, and programming over the program's 6 weeks. The curriculum is organized around a central research project: to determine the orbit of a near-earth asteroid (minor planet) from direct astronomical observations.

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Note:

- * all programs are (highly) competitive but buy your lottery ticket
- * Some are officially 'for high school students' but also accept international undergrads
- * Some require \$\$ but selection is on merit, never money-based
- * Some are free to all selected students and some even pay you

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Education & Students & Research:

International summer schools

- **Boulder Summer School (master, PhD level)**
- **MPI Dresden (PhD&master)**
- **Les Houches (PhD&master)**
- **Weizmann Summer program (undergrads)**
- **Windsor Summer School (master&PhD)**
- **Also: ICTP Trieste, Dynastia (?)**
- **deadlines, \$\$**

Other selective Summer programs

Most summer programs admit all or most students who can pay the (high) tuition. However, a number of competitive-admission summer programs select only the best students on the basis of merit and are often free or comparatively affordable. MIT offers four of our own (above); here are a few more:

Science & Research Programs

BU Research Internship Program

Clark Scholar Program

Garcia Summer Scholars

High School Summer Science Research Program (HSSSRP)

High School Honors Science/Mathematics/Engineering Program (HSHSP)

International Summer School for Young Physicists (ISSYP)

Secondary Student Training Program (SSTP)

Stanford Institutes of Medicine Summer Research Program (SIMR)

Student Science Training Program (SSTP)

QuestBridge College Prep Scholarship

Math Summer programs

AwesomeMath

Canada/USA Mathcamp

Hampshire College Summer Studies in Mathematics (HCSSiM)

Honors Summer Math Camp (HSMC)

MathILy

Program in Mathematics for Young Scientists (PROMYS)

The Ross Program

Stanford University Mathematics Camp (SUMaC)

Prove It! Math Academy