SuperUROP
Advanced Undergraduate Research Opportunities Program

What is SuperUROP?
Launched in 2012, SuperUROP is an expanded version of MIT’s flagship Undergraduate Research Opportunities Program (UROP). The academic year-long research program, administered by the MIT Department of Electrical Engineering and Computer Science (EECS), enables juniors and seniors to tackle tough problems and strive for significant findings.

What does SuperUROP offer students?
SuperUROP gives students the time, training, resources, and guidance necessary for deep scientific and engineering inquiry. They also learn to present their work professionally in poster sessions; many have published their research results. In addition, they receive access to graduate-level facilities, such as nanofabrication labs.

How does SuperUROP work?
Students are paired with faculty members or MIT researchers, enroll in a two-semester course (6.UAR) on undergraduate research, and spend 10 hours a week (or more) in the lab. Often, these yearlong projects evolve into graduate theses, startup plans, or industry jobs. Guest speakers from a variety of companies provide insight on topics ranging from technical communications to intellectual property to ethics in engineering. Students typically receive named scholarships generously funded by industry, foundation, and alumni gifts, as well as course credit.

What is SuperUROP’s desired outcome?
The program serves as a launch pad to academia, research, industry, and startups by teaching students to:

- Select research projects and conduct background research.
- Explore current research topics in their degree fields.
- Learn industry-strength design methodologies.
- Write high-quality research papers and experience the review process.
- Give effective research presentations to various stakeholders.

SuperUROP in Action
The most recent class of 128 SuperUROP scholars came from throughout the MIT School of Engineering.

Sample SuperUROP Projects
Arjun Gupta, a junior in EECS and an AeroAstro/Lincoln Lab scholar, worked on deep learning for scene understanding and prediction for autonomous vehicles.

Helen Ho, an EECS senior and a Fairbairn scholar, worked on a project that involves training image-recognition algorithms for self-driving cars.

Haripriya Mehta’s SuperUROP project “Paper Dreams” focused on using machine learning to generate fresh ideas for storyboard artists.

Faraaz Nadeem, an EECS senior and a CS+HASS scholar, worked with music technology professor Eran Egozy on automatic computer transcription of musical performances involving multiple instruments.

Patrick Tornes, a MechE senior and a School of Engineering/Quest scholar, worked on a project exploring the intersection of machine learning and adaptive control with aerial vehicle flight testing.

Taylor V’Dovec, a MechE senior and MechE/Lincoln Lab scholar, investigated how novel techniques and technologies can improve aerial and aquatic transportation.
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What is MIT’s pitch to potential supporters?
Industry and foundational sponsors become part of the MIT undergraduate research experience, offering expertise and mentorship. Our goal is to have industry leaders from sectors that align with our students’ varied interests. Such exposure can lead to potential recruitment opportunities and helps sponsors keep up with the latest research.

What do sponsors receive in return?
Sponsors have the opportunity to:

- Provide mentorship to individual students and teams, and attend presentations.
- Participate in forums on problems or areas of interest, and offer education about corporate products and resources.
- Gain access to a book containing all SuperUROP Scholars’ resumes.
- Recognition via named scholarships.

What are the levels of sponsorship and involvement?

- **Industrial sponsors**: Support for five students ($50,000) provides access to research events, student presentations, and the resume book.

- **Individual sponsors**: Support for one student ($10,000) provides access to research events.

Who are the current corporate, individual, and foundation sponsors?

**Corporate**
- Advanced Micro Devices (AMD)
- Analog Devices, Inc.
- Aptiv
- Boeing
- MIT Lincoln Laboratory
- Nutanix
- Takeda
- Texas Instruments

**Individual / Foundation**
- Erika N. ’04 and Colin M. Angle ’89, SM ’91
- Robert M. Fano ’41, ScD ’47
- Jeremy Gerstle ’99, MEng ’01
- Jeff S. Himawan ’88
- Keel Foundation
- Prashant Lal ’99
- Sheila E. and Emanuel E. Landsman ’58, SM ’59, ScD ’66
- The Mason Fund
- Dinarthe R. Morais ’86 and Paul Rosenbaum, Jr. ’86
- R. Frank Quick ’69, SM ’70
- Anonymous

**Supporters**
- The Hewlett Foundation
- Tang Family Catalyst Fund
- MIT IBM-Watson AI Lab
- MIT QuestBridge
### Activity Timeline and Application Process

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<tr>
<th>Date</th>
<th>Activity</th>
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<tbody>
<tr>
<td><strong>January-May</strong></td>
<td>SuperUROP scholar sponsors confirmed</td>
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<tr>
<td>March 1</td>
<td>Companies and faculty submit project ideas</td>
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<tr>
<td>April 30</td>
<td>Students submit application materials</td>
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<tr>
<td>June 15</td>
<td>Applications reviewed; students notified</td>
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<tr>
<td>July 15</td>
<td>Students accept enrollment</td>
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<tr>
<td>August 15</td>
<td>Scholar assignments made</td>
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#### Fall/Winter

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<th>Activity</th>
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<tr>
<td>Early September</td>
<td>First semester starts</td>
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<tr>
<td>Mid-September</td>
<td>Student resumes distributed to sponsors</td>
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<tr>
<td>Early December</td>
<td>Fall SuperUROP Showcase poster session</td>
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#### Spring

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<th>Date</th>
<th>Activity</th>
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<tr>
<td>Early February</td>
<td>Second semester starts</td>
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<tr>
<td>Late April</td>
<td>SuperUROP Showcase poster session and awards</td>
</tr>
<tr>
<td>Mid-May</td>
<td>SuperUROP Certificate Ceremony and reception</td>
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superurop.mit.edu
Throughout my SuperUROP experience and during my time at [MIT spinoff company] FormLabs, I had to learn everything on the job. And that's what I realized engineering is. It's being able to learn what you need to, to get the job done.

— Neerja Aggarwal ’16, MEng ’18; now Electrical Engineer, LiveNova

SuperUROP allowed me to immerse myself in research. The support from the EECS Department and the program’s organization were huge in making my experience the best it could be. I’m so excited to take the skills and experience I gained through the SuperUROP program with me into graduate school.

— Ava Soleimany ’16, now a PhD Candidate, Harvard & MIT

I felt like I was taken under the wing of one of the preeminent minds in [artificial intelligence] and given the opportunity to learn how he thinks about AI, academia, and life in a broader sense.

— Josh Haimson ’16, now Senior Product Manager, Flatiron Health

SuperUROP was an awesome experience. I really loved the program. I wish I could do it twice.

— Maya Nasr ’18, now a PhD Candidate, MIT AeroAstro

I saw that my lab work and that of others could actually lead to improved medical imaging and better care. I learned how things actually get accomplished through research.

— Tally Portnoi ’17, MEng ’18, now Software Engineer, Color Genomics

Additional Information
SuperUROP Website home: superurop.mit.edu
SuperUROP articles: superurop.mit.edu/news/
SuperUROP videos and brochures: superurop.mit.edu/previous-years/

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