



Homeschool Internship Program for Science and Technology

Homeschooled High School Student Summer Internship Opportunity at MIT -- Spend your summer learning and doing state-of-the-art science in an MIT research lab!

Details: In 2022, we will be hosting between 2 and 4 high school students from the homeschooled community for 8 weeks this summer with flexible dates starting and ending dates. We currently hope the program will be in-person, for local students. Students will be assigned a mentor, participate in meetings to plan their project, make scientific presentations of their work to audiences of scientists and engineers, and present their findings in a symposium in August. Projects may involve searching the scientific literature, working in the research lab, writing or utilizing a computer program or scientific software, solving mathematical equations to help develop a theory, accessing and assembling information from internet databases, communicating with other scientists worldwide, and graphing or processing scientific data. Projects will be tailored to the skills and interests of the candidate. Students will be paid \$15/hour for approximately 15 hours per week. If you are interested in a career in science or engineering, this opportunity is a great way to gain experience and learn what it is all about. You will be directly mentored by an MIT PhD student or postdoc to participate in frontier research in chemical biology, chemistry or engineering, and gain experience in research skills, become acquainted with the scientific literature, and present at scientific meetings. The following laboratories, and possibly others, will be accepting HIP-SAT interns the summer of 2022:

Prof. Matt Shoulders' Group (<http://shoulderslab.mit.edu/>): The Shoulders Lab is broadly interested in understanding protein folding in human cells, with a focus on the development of new methods to treat currently incurable, protein misfolding-related diseases. They also devise new platforms to create medically relevant biotechnologies.

Prof. Michael Strano's Group (<http://srg.mit.edu/>): The Strano Lab is offering projects in the area of plant biology, medicine, and energy applications. Specifically they are offering projects for the design and incorporation of nanoparticles into living plants for new functions such as chemical sensing, infrared communications and light emission. There are also projects on energy harvesting from ambient heat, and sensors to help treat diabetes and cancer treatment.

Requirements: Appropriate candidates for this internship will be homeschooled high school students at least 16 years of age, committed and mature, with a demonstrated interest in chemistry, biology, and/or bioengineering, and scientific preparation at the high school level. Interest and preparation in computer programming or scientific software is also helpful. The internship will involve a time commitment of approximately 15 hours/week over the 8-week period with flexibility depending on project and candidate. To the extent possible, candidates should plan to participate continuously in the internship program from June to August.

How to Apply for the Internship: Your (1) resume, (2) high school transcript, and (3) a two-page description of your background, what motivates you to pursue scientific research, and the types of research that most interest you. The Departments of Chemistry and Chemical Engineering provide a welcoming and supportive environment for exceptional science, teaching, mentorship, and service. We believe that education and research are at their finest when they include and appreciate the experiences of people of all backgrounds. As such, we also ask candidates to (4) summarize in 300 words or less their philosophy of diversity, equity, and inclusion in higher education, including any current activities they are involved in, plans for the future, and how these plans connect with their career goals. **Please send all materials to Betty Lou McClanahan (blm@mit.edu) by April 22, 2022.**

About HIP-SAT: The HIP-SAT program began as an educational activity sponsored by a grant from the National Science Foundation to the MIT Chemistry Department and has operated through the past 6 years, hosting numerous students from the greater Boston area and nationally. MIT is committed to the principle of equal opportunity in education and employment. <https://referencepubs.mit.edu/what-we-do/nondiscrimination-policy>