Research Experience for Undergraduates

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Eligibility Requirements:
Citizen or Permanent Resident of the United States (Wyss and Rowland Institutes excepted)
Currently enrolled undergraduate not graduating before December 2019

June 10 – Aug. 17, 2019
When you apply, your application will be available to research mentors for all funding sources listed below:

**NSF National Nanotechnology Coordinated Infrastructure (NNCI) at the Center for Nanoscale Systems at Harvard**
cns.fas.harvard.edu
Participate in research in photonics and optical computing, biomimetics, diamond-based nanoscale sensors and computing elements, and more at our world-class nanofabrication, characterization and imaging facility.

**The Wyss Institute for Biologically Inspired Engineering**
wyss.harvard.edu
Discover the engineering principles that nature uses to build living things, and harness these insights to create biologically inspired materials and devices to revolutionize healthcare and create a more sustainable world. Project include adaptive material technologies, bioinspired soft robotics, 3D organ engineering, bioinspired therapeutics and diagnostics, living cellular devices, immuno-materials, molecular robotics, and synthetic biology.

**NSF Quantum Cascade Lasers as High-Speed Wireless Communication Devices**

This project aims at a radical reinvention of the quantum cascade laser: instead of using the emitted infrared radiation from the laser, light can be trapped inside the laser cavity to generate elusive microwave and terahertz frequencies - such waves may be used to transmit communication signals from the laser.

**Institute for Applied & Computational Science**
iais.seas.harvard.edu
Participants will tackle team projects involving the application of computational and mathematical tools such as machine learning, data analysis, and numerical simulation to solve real-world problems in fields including geoscience, medicine, materials science, and the social sciences.

**NSF REU Site in Biomaterials & Bioengineering (BRIDGE)**
reusite.seas.harvard.edu
Conduct research in biomaterials, including drug delivery, tissue engineering, microfluidics, and cells as materials.

**NSF Materials Research Science and Engineering Center (MRSEC)**
mrsec.harvard.edu
Study the mechanics of films and interfaces, design and test materials for soft robotics, and engineer materials and techniques for biological studies at cellular scales.

**NSF Privacy Tools**
privacytools.seas.harvard.edu
Join a multidisciplinary effort to help enable the collection, analysis and sharing of personal data for research in social science and other fields while providing privacy for individual subjects.

**NSF-Simons Center for Mathematical and Statistical Analysis of Biology**
quantbio.harvard.edu/mathbio
This Center focuses on understanding how molecular networks in individual cells contribute to developmental decisions; discovering how proteins and cells self-organize to produce intra-cellular structures, tissues, and organs; and understanding how biological systems adapt within and beyond the lifespan of individual organisms. Projects aim to advance knowledge of complex biological systems using mathematical and computational tools, developing new mathematics and statistics for the study of biology.

**The Rowland Institute at Harvard**
rowland.harvard.edu
Study experimental science over a broad range of disciplines. Research in physics, chemistry, and biology has an emphasis on interdisciplinary work and development of new experimental tools.

**Additional Opportunities**

Additional projects in a variety of areas may become available as funding is received. Please inquire at reu@seas.harvard.edu if you have specific interests within the Harvard Paulson School of Engineering and Applied Sciences that are not listed on this flyer.

MRSEC, BRIDGE, NNCI, and Privacy Tools are supported through the auspices of the National Science Foundation. The Center for Mathematical and Statistical Analysis of Biology is jointly funded by NSF and the Simons Foundation. Information on other NSF undergraduate research opportunities is at www.nsf.gov/home/crssprgm/reu/index.jsp. Additional summer research programs at Harvard can be found at www.gsas.harvard.edu/diversity/outreach-programs.