

Summer Research Opportunities

Vanderbilt

Vanderbilt School of Engineering Summer Research program

Each student in the program works for 10 weeks under the supervision of a School of Engineering faculty member. Students work side-by-side with faculty, graduate students and other undergraduates on a currently active research project while gaining first-hand experience in laboratory research.

DEADLINE- Application will be available in February and due in March

Vanderbilt Undergraduate Summer Research Program (VUSRP)

VUSRP is a summer research opportunity available to enrolled Vanderbilt undergraduate students designed to enhance joint student-faculty research efforts.

PROGRAM DATES- June 4, 2018 through August 10, 2018

DEADLINE- All materials must be submitted by noon on February 16, 2018

The SyBBURE Searle Undergraduate Research Program

This program aims to provide undergraduate students with mentored experiences in advanced scientific investigation with some of the University's leading research and teaching faculty.

National Science Foundation Research Experience for Undergraduate (REU) Sites

Many summer opportunities are available at NSF REU sites in many scientific disciplines at numerous institutions and organizations through the United States. Above is the link to the NSF REU website, and below are a few of the available REU opportunities.

Computation Sensing and Medical Robotics

The Johns Hopkins University

Students will contribute to specific research projects pursued by faculty and researchers at the Laboratory for Computation Sensing and Robotics (LCSR). Each student will be a part of a collegial research team, including a faculty project supervisor and a graduate student mentor, and will work on a challenging research project. Some students may contribute to research on medical image registration and fusion or image enhancement and segmentation. Other students will help to develop new robotic devices to help support surgeons in the operating room.

PROGRAM DATES- May 27, 2017 through August 4, 2018

DEADLINE- All application materials need to be received by February 18, 2018

Engineering Biological Machines

MIT, Georgia Tech, or University of Illinois-Urbana Champaign

The National Science Foundation (NSF) Center on Emergent Behaviors of Integrated Cellular Systems (EBICS) announces its "Engineering Biological Machines" Research Experience for Undergraduates (REU) program for summer 2018. The program will include 10 weeks of hands-on research at MIT, UIUC, or GT, attendance of EBiCS Annual Retreat in Georgia to

learn about cancer, and networking with REUs across GT, UIUC and MIT, as well as students and faculty across all 11 EBICS institutions.

PROGRAM DATES-

GT: May 20, 2018 through August 2, 2018

UIUC: May 27, 2018 through August 2, 2018

MIT: June 10, 2018 through August 17, 2018

DEADLINE- All application components must be submitted by February 16, 2018

[Imaging and Mechanics-based Projects on Accidental Cases of Trauma \(IMPACT\)](#)

Wake Forest University

The Biomedical Engineering Department at Wake Forest University will offer several summer research opportunities in 2017 focusing on Imaging and Mechanics-based Projects on Accidental Cases of Trauma (IMPACT). Students selected for this REU program will receive a stipend, meals, and on-campus housing.

PROGRAM DATES- May 27, 2018 through August 4, 2018

DEADLINE- Applications will be accepted on a rolling basis until positions are filled. To guarantee your application will be considered, apply by February 9, 2018

[Vanderbilt Institute for Nanoscale Science and Engineering \(VINSE\)](#)

Vanderbilt University

Participation in the program provides students with a true interdisciplinary research experience in an environment where physicists, chemists, biologists, and all engineers collaboratively solve problems and create new scientific understanding. Each student works directly with VINSE faculty members and their research groups and has access to the VINSE laboratories, which are shared facilities available to all authorized users.

PROGRAM DATES- May 27, 2018 through August 3, 2018

DEADLINE- All application materials are due by February 15, 2018

[Engineering and Computing in Rehabilitation and Assistive Technologies](#)

Cleveland State University

Students will be immersed in a community of undergraduate researchers, graduate students, engineering mentors, healthcare professions, and people with disabilities. Students will collaborate with others to work on research projects to restore movement to people with paralyzed arms, develop new prosthetic legs, help improve balance in older adults, and explore the mechanics of injured joints.

PROGRAM DATES- June 4, 2018 through August 10, 2018

DEADLINE- All application materials are due by March 1, 2018

[Biomaterials Research Initiative Dedicated to Gateway Experiences \(BRIDGE\)](#)

Harvard University

Spend your summer at Harvard University performing cutting-edge research in world-class laboratories. Students are part of a large, diverse research community through organized and informal interactions with students, mentors, and faculty. This program focuses on areas such as biomaterials, materials, science, nanotechnology, robotics, computer science, and energy and the environment. Students will participate in hands-on research, faculty-led seminars, technical writing & presentation skill workshops, networking and social activities, and more.

PROGRAM DATES- June 4, 2018 through August 11, 2018

DEADLINE- All application materials are due by February 1, 2018

Cardiovascular Research: Engineering a Translational Experience (CREATE)

Pennsylvania State University

Students will have an opportunity to join a number of cutting-edge research teams that focus on furthering the understanding of cardiovascular diseases and developing medical interventions to treat related conditions. Research projects will emphasize the development of implantable devices, artificial gene therapy and drug delivery systems. Students participating in the program will engage in a wide range of biomedical engineering research and participate in weekly group activities.

PROGRAM DATES- May 29, 2018 through August 3, 2018

DEADLINE- All application materials are due by January 5, 2018

Undergraduate Research Opportunities in Biomedical Devices

University of Nebraska-Lincoln

This program is designed to provide independent research experience for undergraduate students, broaden participant knowledge of opportunities in academic, industry and national laboratories, and introduce participants to interdisciplinary research in biomedical devices. Research areas are mainly focused to (1) devices for diagnostics and sensing and (2) devices for therapeutics and intervention. Students are involved in many aspects of research, including design, analysis, simulation, and implementation of biomedical devices.

PROGRAM DATES- June 3, 2018 through August 8, 2018

DEADLINE- Priority Deadline: February 1, 2018; Application Closes March 1, 2018

Engineering Tools for Disease Diagnosis and Treatment

Washington State University

This new summer research experience for undergraduates (REU) site will train undergraduate scholars to develop or utilize engineering tools to diagnose and/or treat diseases. The program will include hands-on research, an industrial trip, a trip to the Pacific Northwest National Laboratory (PNNL), a professional training series, a professional seminar, and community building activities.

PROGRAM DATES- May 29, 2018 through August 3, 2018

DEADLINE- All application materials are due by February 16, 2018

REU Site for Meeting the Grand Challenges in Engineering

Duke University

Through this REU program, students will have the opportunity to work on a research project related to solving one of the Grand Challenges of Engineering for the 21st century. These challenges include vital objects such as: reverse-engineer the brain, make solar energy cost-competitive with coal, engineer better medicines, provide access to clean water, among others. During a period of nine weeks, students will work full-time in a research project, participate in weekly seminars and workshops, and attend regular group meetings in their research labs. The program concludes with the students presenting their research findings during the REU Summer Symposium.

PROGRAM DATES- May 28, 2018 through July 27, 2018

DEADLINE- All application materials are due by February 19, 2018

Texas BME Community of Undergraduate Research Scholars (CUREs) for Cancer

The University of Texas at Austin

BME CUREs Cancer Scholars address nationally identified key challenges in cancer research using an engineering approach. Each scholar will have both a faculty mentor and a graduate-student mentor. In addition to laboratory experience, students will participate in seminars and community engagement.

PROGRAM DATES- June 1, 2018 through August 10, 2018

DEADLINE- All application materials are due by February 1, 2018

Biomedical Engineering in Simulations, Imaging, and Modeling (BME-SIM)

East Carolina University

The goal of the BME-SIM REU is to provide a quality research experience to undergraduate students in order to increase awareness of and application to graduate school. Students will be exposed to cutting edge research utilizing advanced computational models with applications in biomedical engineering.

PROGRAM DATES- May 27, 2018 through August 4, 2018

DEADLINE- All application materials are due by February 5, 2018

Biological Materials and Processes (BioMaP)

Iowa State University

This program creates novel research experiences for undergrad students from around the country in the areas of biological materials and processes. Students are active members of interdisciplinary groups and interact with faculty, post-doctoral researchers, graduate students, and industry. Students also participate in cohort experiences such as short courses, joint seminars/meetings, workshops, tours of research facilities and field trips.

PROGRAM DATES- TBA

DEADLINE- TBA

Wellman-HST Summer Institute for Biomedical Optics

Massachusetts General Hospital

The HST Summer Institute is part of Harvard's and MIT's efforts to help facilitate the involvement of talented students in engineering and science research. Admitted students pursue full-time laboratory research for ten weeks, working in one of the laboratories at the Wellman Center and MIT. In addition to research, students attend lectures and research seminars. At the end of the summer, students present their work to the Biomedical Optics mentors at a conference.

PROGRAM DATES- June 2018 to August 2018

DEADLINE- All application materials are due by January 13, 2018

Bioengineering and Biomanufacturing

Rensselaer Polytechnic Institute

The program provides students the opportunity to work side by side with RPI faculty and graduate students to investigate a broad range of important and interesting problems at the forefront of Biomedical Engineering and Chemical Engineering. During the summer research experience, participants make short progress presentations to their peers during program meetings, attend presentation skills workshops, make a formal poster presentation of their

research experience at the end of the program, and submit a written final report describing the results of their research.

PROGRAM DATES- TBA

DEADLINE- All application materials are due by March 2, 2018

Cellular Bioengineering – From Biomaterials to Stem Cells

Rutgers University

With an intellectual focus in Cellular Bioengineering, this program provides research opportunities that articulate with a range of cutting-edge, multidisciplinary areas, including stem cell engineering, systems and computational biology, cell-active biomaterials, and micro/nanoscale biosystems. The research experience is complemented by weekly exercises aimed at professional development. Currently the program has a strong emphasis on innovation and entrepreneurship, and shepherds the students through the process of creating a business plan centered around the research projects.

PROGRAM DATES- May 29, 2018 to August 3, 2018

DEADLINE- All application materials are due by March 15, 2018

Analysis & Design of Complex Biological Systems using Data Science

Tufts University

Students will learn and develop data science approaches to analyze and design complex biological systems. The research projects deal with the collection, analysis, and modeling of biological datasets to understand or design a system of interest, ranging from microbial communities to bioreactors. The research activities are supported through workshops providing a hands-on introduction to modern data analysis, modeling, and visualization tools.

PROGRAM DATES- May 30, 2018 to August 8, 2018

DEADLINE- N/A; Applications available at the end of December 2017

Engineering and Nanoscience of Materials and Device Applications in Biotechnology and Medicine

University of Central Florida

Students will gain hands-on research training in topics such as adoptive cancer immunotherapy and targeted nanoparticle cancer therapy, engineering of MEMS devices and body-on-a-chip systems for proteomic research, develop nanofibers for tissue engineering, engineer smart wound healing patches, and nanomanufacturing of tunable plasmonic sensors. Research will involve both experimental and theory based learning.

PROGRAM DATES- May 21, 2018 to July 27, 2018

DEADLINE- All application materials are due by March 9, 2018

Entrepreneurial REU

University of Connecticut

The aim of this E-REU is to provide students with a truly integrated research and entrepreneurship training experience, giving them both depth in fundamental engineering research, as well as breadth in entrepreneurial skills. As part of this REU, you will take part in cutting edge research on commercializable ideas with UConn faculty, as well as participate in an entrepreneurship program developed by co-PI and UConn's Entrepreneur-in-Residence, Dr. Hadi Bozorgmanesh.

PROGRAM DATES- June 4, 2018 through August 10, 2018
DEADLINE- All application materials must be received by March 1, 2018

Dare to BE FIRST (Biomechanical Engineering Foundations in Impactful Research, Sciences & Technology)

University of Delaware

Students will spend 10 weeks in a biomechanics research lab and benefit from state-of-the-art facilities, mentorship, and workshops to conduct an independent research project. Highlighted research areas include cellular and molecular mechanisms, tissue biomechanics, human movement and rehabilitation, and joint/systems biomechanics.

PROGRAM DATES- June 4, 2018 through August 9, 2018
DEADLINE- All application materials must be received by February 15, 2018

Nanotechnology and Biomedicine

University of Georgia

The REU program will provide a interdisciplinary research experience at the interface of nanotechnology and biomedicine to undergraduate students from other institutions, leveraging the diverse interdisciplinary expertise, resources, and training opportunities in this area at UGA. In addition to a hands-on research experience, students will participate in an ethics-in-science workshop; weekly lunch presentations on the opportunities in interdisciplinary research, & what to expect in graduate school; a career workshop; research seminars; tours to UGA research facilities; participation in a regional summer symposium in nanotechnology and biomedicine; and science, technology, engineering, and mathematics (STEM) education.

PROGRAM DATES- May 21, 2018 through July 28, 2018
DEADLINE- Application form due by February 11, 2018; Reference Letters due by February 18, 2018

A Multidisciplinary Research Experience in Engineering Bioactive Interfaces & Devices

University of Kentucky

A multidisciplinary program focusing on cell/protein interactions with materials and incorporation of these systems into devices. Students will research in the area of Engineered Bioactive Interfaces and Devices. Engineered Bioactive Interfaces and Devices focuses on the novel design of architectures that interact with biological systems and promote a desired response. These advanced architectures have numerous applications ranging from tissue engineering to sensing systems, to drug delivery.

PROGRAM DATES- May 29, 2018 through August 3, 2018
DEADLINE- All application materials must be received by February 9, 2018

Summer Undergraduate Fellowship in Sensor Technologies (SUNFEST)

University of Pennsylvania

The purpose of this program is to expose the students to real, in-depth research in the area of sensor technology and to motivate them to go on to graduate school. In addition to immersive laboratory experience, students will work under the mentorship of a faculty member and a graduate student, participate in workshops, and learn about ethics in engineering and science.

PROGRAM DATES- May 29, 2018 through August 4, 2018
DEADLINE- All application materials are due by February 23, 2018

Advancing Human Health, From Nano to Network

University of Rochester

This program provides an interdisciplinary framework for faculty and students to utilize hypothesis-driven research to advance human health. Students will conduct 300 hours of research under the guidance of one or more of the University of Rochester's premier faculty members, attend several seminars and workshops that discuss in-depth research techniques, complex problems and finding unique solutions, as well as career opportunities and preparation.

PROGRAM DATES- May 29, 2018 through July 30, 2018

DEADLINE- All application materials are due by February 15, 2018

Other Opportunities

Biomedical Engineering Summer Internship Program (BESIP)

The NIBIB sponsored Biomedical Engineering Summer Internship (BESIP) is for undergraduate biomedical engineering students who have completed their junior year of college. The internship will allow rising senior bioengineering students to participate in cutting-edge biomedical research projects under the mentorship of world-class scientists in NIH laboratories in Bethesda, MD.

PROGRAM DATES- June 4, 2018 through August 10, 2018

DEADLINE- Online application is due February 9, 2018 and reference letters are due February 14, 2018

Oak Ridge Associated Universities (ORAU) Summer Research Programs

ORAU oversees several summer undergraduate research programs at Oak Ridge National Laboratory and other national laboratories.