Research and Internship Experiences for Biomedical Engineering Students
Details and Deadlines 2011

Research and Internship Experiences

The American Physiological Society - Undergraduate Summer Research Fellowship
The program will fund up to 24 fellowships during the summer. These fellowships are to support full-time undergraduate students to work in the laboratory of an established investigator. The intent of this program is to encourage students to pursue a career as a basic research scientist.
http://www.the-aps.org/education/ugsrf/
Deadline: February 1, 2011

Battelle Memorial Institute
Battelle serves industry and government in developing new technologies and products. They insert technology into systems and processes for manufacturers; pharmaceutical and agrochemical industries; trade associations; and government agencies supporting energy, the environment, health, national security, and transportation.
Deadline: Depends on internship of choice

Case Western Reserve University
The Department of Biomedical Engineering at Case Western Reserve University is pleased to announce the 2008 summer program in Biomedical Engineering research for undergraduates, funded by the National Science Foundation. Project areas in biomaterials, tissue engineering, drug delivery, imaging, and neural engineering
http://bme.case.edu/reu/
Deadline: February 1, 2011

Cleveland Clinic Foundation
Undergraduate Engineering in Medical Research, sponsored by the National Science Foundation and the Cleveland Clinic Foundation. Research opportunities include five to six month on-site cooperative engineering positions in an international research group in order to develop research skills, leadership and collaboration skills, and technical knowledge.
http://www.lerner.ccf.org/bme/education/reu/
Deadline: Applications will be continuously reviewed and offers will be extended four times per year

Engineering World Health Organization
The Summer Institute is an opportunity for engineering students to gain hands on repair and design experience while simultaneously helping disadvantaged hospitals and patients in a developing nation. Open to students of engineering, physics and chemistry, the Summer Institute begins with a one-month stay in Costa Rica or Tanzania in which students live with a host family. Mornings are spent learning Spanish or Swahili, while in the afternoons students receive three hours of technical
training in the operation and repair of medical equipment. Day trips to the country's breathtaking natural features punctuate the experience and give volunteers a time to bond. After the one-month training, each student travels to his or her target hospital. Students work repairing and installing badly needed equipment. Whether they’re working on an infusion pump that helps treat a tiny infant, or an ECG that will aid in diagnosing someone’s grandfather, each student-engineer makes a difference in patients’ lives.

http://ewh.org/index.php/programs/institutes
Deadline: Visit website for more information.

Harbor Branch Oceanographic Institute
The areas of study include: aquaculture, biomedical marine research, marine biology, marine mammal research, marine natural product chemistry, marine microbiology, ocean engineering, and oceanography.
http://www.fau.edu/hboi/education/internships/index.php
Deadline: March 1, 2011

Harvard University
We are pleased to announce summer research opportunities for K-12 teachers and undergraduates through our NSF REU/RET Site Materials for Bioengineering Research Internships Dedicated to Gateway Experiences (BRIDGE). Our program provides undergraduates with hands-on experiences in research at the interface of biology and materials science and engineering, along with a program that includes faculty seminars, professional development workshops, and community activities. We are seeking undergraduates from chemistry, physics, biology, applied math, and engineering. Students without prior research experience, including freshman and sophomore students, are especially encouraged to apply.
http://www.eduprograms.seas.harvard.edu/reu.htm
Deadline: February 28, 2011

Illinois Institute of Technology
The Research Experience for Undergraduates (REU) program at the Illinois Institute for Technology is a 10 week program for undergraduate students from around the country who have completed at least their 2nd year in a science or engineering field. The program is sponsored by the Biomedical Engineering Program at IIT and The Engineering Center for Diabetes Research and Education (ECDRE). Each student chooses a project relating to diabetes and will be guided by an engineering mentor at IIT. The objectives of the program are to train undergraduates in basic research through challenging diabetes-related engineering projects performed with research mentors from ITT, expose them to the broader health implications of their research with lectures from clinical experts and tours of clinical facilities and integrate ethics discussion and training into all aspects of the student experience.
http://www.iitdiabetes.org/reu
Deadline: February 15, 2011

Iowa State University
The Department of Chemical and Biological Engineering at Iowa State University hosts a summer research experience for undergraduate students. The program will create novel research experiences for undergraduate students in the areas of biological materials and processes (BioMaP). The students will be active members of interdisciplinary groups and will interact with faculty, postdocs,
graduate students, and industry. The students will participate in cohort experiences such as short courses, joint seminars/meetings, workshops, tours of research facilities, and field trips. A unique component of the program is a partnership with the Department of Chemical Engineering at the Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), Mexico. As part of this international component, some students will participate in research projects at ITESM.

http://www.eng.iastate.edu/biomapreu/program.asp
Deadline: March 15, 2011

Johns Hopkins University
The Institute for NanoBioTechnology at Johns Hopkins University offers undergraduate students from colleges and universities around the country a chance to participate in research projects in the exciting and rapidly growing area of nanobiotechnology, a place where biology, medicine, and nanotech meet.

http://inbt.jhu.edu/reu-nanobio.php
Deadline: February 12, 2011

Keck Graduate Institute
The REU program for undergraduate research in biotechnology and bioengineering at Keck Graduate Institute provides undergraduate students the opportunity for cutting-edge, interdisciplinary research in the areas of bioengineering, computational biology, and applied molecular and cellular biology, as well as exposure to related ethics and business topics.

http://www.kgi.edu/x1748.xml
Deadline: March 1, 2011

Lehigh University
Undergraduate physics and engineering majors currently in their sophomore or junior year are invited to apply to the Lehigh University Summer Undergraduate Research Participation Program in Physics. This year the Department of Physics at Lehigh University has again been selected by the National Science Foundation as a "Research Experiences for Undergraduates" (REU) site. In addition, a number of Sherman Fairchild Scholarships for research in solid state studies and electrical engineering are also available. The Lehigh REU program is intended for students who plan to pursue graduate study in physics or related fields. Participants will receive $475 per week for a 10 week program in one of a variety of current research areas at Lehigh. The work will be supervised by Lehigh faculty and will begin around June 1, 2010. Free housing is also available to participants.

http://www.lehigh.edu/~inreu/reu/index.html
Deadline: March 7, 2011

The Lerner Research Institute
The Cleveland Clinic's REU Program is located in the Department of Biomedical Engineering, a component of the Lerner Research Institute, which is one of the major divisions of the Cleveland Clinic. The Cleveland Clinic provides a somewhat different experience than that offered through the usual National Science Foundation REU Site, in that it is organized as a nominally six months long co-operative engineering position. Development of the student's research leadership skills along with technical training are highly emphasized.

http://www.lerner.ccf.org/bme/education/reu/nsf/
Deadline: Applications will be continuously reviewed and offers will be extended four times per year
Marquette University
The Department of Biomedical Engineering at Marquette University, with the support of a grant from the National Science Foundation, is pleased to announce its Summer Research Program for 2007. The department seeks undergraduates in biomedical engineering to participate in innovative and interdisciplinary biomedical research aimed to improve the quality of life of individuals with neurological dysfunction or disease. The focus of the 9-week summer project is imaging, modeling and rehabilitation of neurosystems, drawing on faculty strengths at Marquette University and The Medical College of Wisconsin.
http://www.marquette.edu/engineering/biomedical/reu.shtml
Deadline: Unspecified

Massachusetts Institute of Technology
The Department of Biological Engineering (BE) at the Massachusetts Institute of Technology (MIT) is presently seeking outstanding current junior-year undergraduates to participate in the Research Experience for Undergraduates Program during the summer term of 2009. The REU Program, sponsored by the National Science Foundation, provides non-MIT students with the opportunity to participate in the research happening in the Department of Biological Engineering.
http://web.mit.edu/be/education/reu.htm
Deadline: February 15, 2011

Mayo Graduate School Summer Undergraduate Research Fellowship (SURF) Program.
Conduct your own small research project or work on part of an ongoing research investigation for 10 weeks, develop your technical skills and participate in a special weekly seminar series that introduces you to rapidly progressing research areas.
http://www.mayo.edu/mgs/surf.html
Deadline: February 1, 2011

Mote Marine Laboratory (MML)
Research internship programs include biomedical, Invertebrate Zoology and Benthic Ecology, Aquaculture, and Marine Mammal Research. The four different centers include the Center for Shark Research, Marine Mammal and Sea Turtle Research, Coastal and Tropical Ecology, and Fisheries Enhancement.
http://www.mote.org/~jimg/reu.htm
Deadline: February 15, 2011

National Institute of Health Biomedical Engineering Summer Internship Program (BESIP).
This ten week summer program allows undergraduate biomedical engineering students to participate, under the mentorship of scientists on various biomedical research projects in NIH laboratories in Bethesda, Maryland.
http://www.nibib.nih.gov/Training/UndergradGrad/besip/home
Deadline: February 11, 2011

Neuroscience Institute Summer Research Program.
Selected applicants will come to the Morehouse School of Medicine for ten weeks, where they will join a single laboratory, attend lectures on the neurobiology of degenerative disorders, undertake a
well-defined research project with Institute faculty, and make scientific presentations at the end of
the program.
http://www.nsbri.org/EDUCATION-and-TRAINING/Student-Graduate-and-Fellowship-
Opportunities/Summer-Internship-Program/
Deadline: January 31, 2011

Neural Engineering
Summer interns work on Neural Engineering projects at the Biomedical and Mechanical
Engineering Departments at Northwestern University and the Sensory Motor Performance Program
at the Rehabilitation Institute of Chicago for a period of 10 weeks. Junior or senior undergraduate,
and junior graduate students are eligible to apply for the internships. $4000 Stipend for 10 weeks
http://www.mccormick.northwestern.edu/undergraduates/current_students/research_opportunities/s
ummer_research_programs.html
Deadline: Depends on internship of choice

Northeastern University
The Bernard M. Gordon Center for Subsurface Sensing and Imaging Systems (Gordon-
CenSSIS), provides the opportunity for science or engineering undergraduate students to
work at CenSSIS laboratories on research projects related to the emerging technology of
subsurface sensing and imaging systems. These REU students have the opportunity to work
at CenSSIS testbed facilities in the areas of hyperspectral underwater imaging, medical
ultrasound and optical imaging, 3D biological imaging, and imaging of underground objects
or environmental conditions by ground-penetrating radar or electromagnetic induction.
http://www.censsis.neu.edu/Education/REU/index.html
Deadline: February 27, 2011

Northwestern University
Active hands-on research infuses the traditional undergraduate curriculum with excitement.
These experiences provide a glimpse into the life of a scientific researcher and opportunities
to meet and work with world-renowned scientists. The center offers the Research Experience
for Undergraduates (REU) program, under the leadership of Professor Mark Hersam, each
summer. The REU program is held for a 9-week period over the summer. Participants engage in
fulltime research on a nanotechnology-related topic. Regular group meetings give students
opportunities to share their progress along the way, and gain a broad overview of a wide
array of scientific projects. Additional activities include special lectures, field trips, a public
speaking seminar, technical writing workshops, summer picnic, and tours of facilities and
laboratories.
http://www.mccormick.northwestern.edu/undergraduates/current_students/research_opportunities/s
ummer_research_programs.html
Deadline: February 15

Rehabilitation Institute Research Corporation
The Summer Internship in Neural Engineering (SINE) provides undergraduate students with an
intense experience in cutting edge research in neural engineering. The goal of the program is to
identify, train, and nurture the development of future investigators who plan on using engineering
applications to study neurologic disorders. We believe that early exposure to interdisciplinary research will provide tomorrow’s scientists with the skills they need to help end the devastation of neurologic injury.

http://www.mccormick.northwestern.edu/undergraduates/current_students/research_opportunities/summer_research_programs.html
Deadline: February 27, 2011

University of California, Riverside
BRITE scientific and engineering research is based on recent advances in recognizing and exploiting genomic, proteomic, and metabolic patterns in cells. Research emphasis will be conducted with the framework of an emerging field known as BioCellular Engineering. BioCellular Engineering proposes to understand, identify and utilize patterns of cellular organization as expressed in such structures as mitochondria, ribosomes, peroxisomes, and the Golgi apparatus to provide coded instructions or blueprints of biological controls for new generations of bio-machines and bioprocesses. Other related bioengineering problems will also be addressed. BRITE disciplines and departments within this field include Bioengineering, Chemical Engineering, Electrical Engineering, and Chemistry.

http://www.engr.ucr.edu/brite
Deadline: Not yet updated for 2011

University of California, San Diego
The Department of Bioengineering at the University of California, San Diego is pleased to announce a National Science Foundation Research Experience for Undergraduates (NSF-REU) program in Regenerative Medicine, Multi-Scale Bioengineering, and Systems Biology. This exciting summer program provides undergraduate students access to state-of-the-art facilities, the opportunity to work with accomplished and experienced faculty mentors, and to participate in highly collaborative, cutting-edge research projects. In addition to the training students receive in individual research laboratories, extensive professional development opportunities will be provided through weekly workshops, an undergraduate research conference, panel discussions, and GRE preparation courses.

http://nsfreu.be.ucsd.edu
Deadline: March 5, 2011

University of Illinois – Chicago
The Departments of Bioengineering, Chemical Engineering, Electrical Engineering, and Mechanical Engineering at the University of Illinois at Chicago are pleased to announce their Summer Research Fellowship Program for 2009. Eleven fellowships are sponsored by the National Science Foundation (NSF) Research Experiences for Undergraduates (REU) and the Department of Defense (DoD) ASSURE (Awards to Stimulate and Support Undergraduate Research Experiences) programs. Summer fellows will have the opportunity to conduct research in Novel Advanced Materials and Processing with applications in biomedical, electrical and chemical engineering in an academic setting. This program welcomes students in Science and Engineering.

http://www.uic.edu/labs/AMReL/NSF-REU.htm
Deadline: February 28, 2011

University of Maryland Molecular and Cellular Bioengineering Research Experiences
for Undergraduates
The Molecular & Cellular Bioengineering REU program focuses on the investigation of fundamental bioengineering questions using techniques that elucidate the roles of elemental participants. The University of Maryland, and specifically the new Fischell Department of Bioengineering, is engaged in a number of bioengineering research activities that bring together the University's traditional strength in engineering with recent advances in biological sciences as well as collaborations with surrounding national laboratories, including the NIH, NIST, and FDA. As a result, major research initiatives are underway in topics including biomechanical systems, biomechanics, biomolecular engineering, cardiovascular mechanics, cellular and metabolic engineering, drug delivery, biomedical imaging, nanobiotechnology, neuroengineering, systems biology, and tissue engineering.
http://www.bioe.umd.edu/reu
Deadline: March 10, 2011

University of Massachusetts, College of Engineering
Summer Research Experience for Undergraduates (REU)
Each summer the College of Engineering sponsors a Research Experience for Undergraduates (REU) program. This is a great way to find out if graduate study is right for you and an opportunity to learn more about the broad range of interdisciplinary research being conducted in the College.
http://www-new ecs.umass.edu/reu
Deadline: February 15, 2011

University of Massachusetts, The Institute for Cellular Engineering (ICE)
The Institute for Cellular Engineering (ICE) hosts a Research Experience for Undergraduates for U.S. citizens or permanent residents interested in pursuing graduate studies in bioengineering or biological sciences. Cellular engineering is a new frontier of applied biology. Understanding cellular function and manipulating cells/tissues to perform in a particular manner is the basis for many ventures in the biomedical, biotechnology and pharmaceutical industries, including drug production from cell culture, generation of artificial organs for replacement of diseased tissues, and design of bioremediation processes for waste water clean-up. Our faculty and research are at the forefront of cellular engineering innovation, performing cutting-edge work in biosensor development, cell and drug delivery, metabolic engineering and protein engineering.
http://www.umass.edu/ice/reu/index.html
Deadline: February 15, 2011

University of Washington
In summer 2010 (June 14 - August 20), UWEB will sponsor a 10-week research program for undergraduates on the university's Seattle campus. Participants will be involved in ongoing research projects with investigators, and will have the opportunity to take part in workshop training sessions in ethics, communication skills, and scientific presentation skills designed to provide the undergraduate scientist with a solid foundation for graduate study. UWEB has a strong commitment to undergraduate education and has a particularly strong commitment to increasing diversity in the field of engineering. The UWEB REU, a National Science Foundation funded program, will take advantage of the uniquely interdisciplinary research environment at the biology and engineering interface to provide high quality summer research experiences for
undergraduates from around the country. We strongly encourage women, under-represented minorities, and students with disabilities to submit applications.

http://www.uweb.engr.washington.edu/education/reu

Deadline: On hiatus in 2011

Virginia Polytechnic Institute and State University – Macromolecules and Interfaces Institute

Thanks to the Research Experience for Undergraduates (REU) grants (funding pending) - with focuses on the Design and Delivery of Polymer-Drug Complexes - the twenty-first consecutive summer of research opportunities is being made available for undergraduates who wish an exciting laboratory experience.

http://www.mii.vt.edu/SURP/index.html

Deadline: February, 1, 2011

Wayne State University

The SSIM sponsored REU - Research Experiences for Undergraduates - program integrates ongoing research efforts in our Smart Sensors and Integrated Microsystem (SSIM) Program into a cooperative traineeship program for undergraduate students. This program builds upon existing sensor-related projects to develop a concerted thrust in the area of sensor integration with VLSI circuitry, a growing research strength at Wayne State University. Active programs in wide-bandgap semiconductor materials, graded pyroelectrics, photonic systems, thin-film magnetic devices, organic film devices, and integrated (intelligent) technology will form the core research here at SSIM.

http://www.ssim.eng.wayne.edu

Deadline: Visit website for more information.

Whitaker International Fellows and Scholars Program

The Whitaker International Program is a grant that sends emerging leaders in biomedical engineering (or bioengineering) overseas to increase international collaboration in the field. The Whitaker Program was funded by The Whitaker Foundation (now closed), and is administered by the Institute of International Education. Funding for awards will exist until around 2020.

Whitaker International Program grants are awarded based on an activity/project proposal that is relevant to biomedical engineering. We can offer about 30-45 grants annually, but only the highest quality applicants are awarded. In the last three competition cycles, 15, 12, and 20 grants have been awarded. This year, we are looking for at least 100 qualified applications this year, so all high quality students are encouraged to apply.

Recent awards have included research in heart blood flow, improved prosthetic leg design, and development of affordable oral cancer screening tools. Projects occur worldwide, including farflung countries like the United Kingdom, Denmark, India, and South Africa.

http://www.whitaker.org/home

Deadline: January 24, 2011

Worcester Polytechnic Institute

Faculty members from Biomedical Engineering, Chemical Engineering, and Chemistry & Biochemistry have created a diverse array of projects for students to choose from. Each student conducts research in the laboratory with the faculty mentor on a project specifically designed for his or her abilities and also participates in professional development activities.

A novel component of this REU is that each undergraduate will receive training in mentoring,
and will become a mentor to a middle-school student.
http://www.wpi.edu/Academics/Depts/BME/Research/reu.html
Deadline: February 28, 2011

**Biology, Biotechnology, and Pre-Medical Engineering Internships**
Homepages and web-links to over 590 paid co-op/internship and summer undergraduate research postings listed alphabetically by organization name and listed by state.
http://people.rit.edu/gtfsbi/Symp/summer.htm

**Complete List of Research Experiences for Undergraduates**
http://www.nsf.gov/crssprgm/reu/reu_search.cfm

**Industrial Internship Experiences**

**Abbott Labs**
Research focuses include Analytical chemistry; Analytical services; Biochemistry; Chemical process development; Clinical-related areas; Immunology; Microbiology; Molecular biology; Pathology; Pharmacology; Pharmacy; Physiology; Polymer chemistry; Product development; Research data management; Statistical analysis; Synthetic organic chemistry; Toxicology; and Virology.
http://www.abbott.com/global/url/content/en_US/50.60.10:10/general_content/General_Content_00166.htm
Deadline: **Electronic resumes are accepted between September 1 and March 1.**

**Baxter**
Three-month summer internship program in a highly professional, fast-paced environment, opportunities in engineering and biochemistry.
http://www.baxter.com/about_baxter/careers/college_relations/summer.html
Deadline: **Depends on the position**

**Bayer**
Bayer offers paid internships in almost 20 professional areas, including engineering and research and development.
Deadline: **Depends on position of choice**

**Biogen**
Interns must be available to start in June and continue for 10-12 weeks through August. This program includes lab positions but you must have completed either basic or advanced science courses and have developed experience in laboratory practices.
Deadline: **See website for details**

**Boston Scientific**
Boston Scientific Corporation is the world’s largest medical device company dedicated to lessinvasive therapies. Summer internship and year round Co-op opportunities are available.
http://www.bostonscientific.com/Careers.bsci/./navRelId/1000.1007/seo.serve
Deadline: **No specific deadline, but internships typically start in May.**
Columbia Industries Internships
A variety of engineering internships are available for 10 to 16 weeks in the spring and summer with Energy Northwest, Flour Federal Services, Flour Hanford Inc., or Protection Technology Hanford. The internship carries a weekly stipend paid bi-weekly.
http://www.ciintern.com
Deadline: Internship opportunities are available year-round, depending upon the business. When completing your application, please specify which term(s) you are applying for.

G.E. Medical Systems
Assignments range from Engineering Design, either Software, Hardware, or Systems to Six Sigma and Quality to Manufacturing, Operations, and Inventory management, to Sourcing and Supplier Management to Service Engineering and Operations
http://www.ge.com/careers/students/internships.html
Deadline: No specific deadline given.

Genetech
The Genentech Internship Program is an intensive 10-12 week program during the summer. Interns have the opportunity to assist in the development, manufacturing and marketing of recombinant DNA products. Some projects include developing assays in support of pharmokinetic studies using real-time immuno-PCR, assisting in the design of therapeutic molecules for the treatment of diabetes, and developing nutrient feeding strategies to optimize cell growth and productivity.
Deadline: Depends on position of choice

Genzyme
Interns can work in any life science field and typically begin their internships in May or June and continue throughout August.
Deadline: Summer positions posted from February to April

Johnson and Johnson
The Co-op and Internship program places qualified students in full- and part-time internship positions within Johnson & Johnson companies, three times a year, during the spring, summer and fall semesters.
http://careers.jnj.com/Internship-co-op-programs
Deadline: No specific deadline given

Medrad
Medrad has internships, co-ops, and full-time opportunities for undergraduate and graduate students. Their products are focused on medical imaging.
Deadline: Check with company

Medtronic
The Summer Associates program is an eleven week program
http://www.medtronic.com/employment/summer_assoc.html
Deadline: No specific deadline given.
Some St Jude Medical locations offer high-caliber students the opportunity to apply their knowledge in practical business settings through internship and co-op programs. These programs combine academic study and practical experience—a learning and training partnership between the student, St. Jude Medical, colleges and universities. The internship and co-op programs give you the opportunity to work in a corporate environment where you are treated as a professional with responsibilities and accountability.


Deadline: **No specific deadline**