Harvard's Summer Internships for Undergraduates

Summer Honors Undergraduate Research Program (SHURP) at Harvard Medical School
SHURP is a ten-week summer research program primarily for college students belonging to groups that are underrepresented in the sciences. In addition to laboratory-based research with Harvard Medical School faculty, the program includes research and career development seminars and a peer mentoring program. Stipend, housing, and travel are provided. Administered by the Division of Medical Sciences (PhD programs office) at Harvard Medical School every year since 1991, SHURP is offered for currently enrolled undergraduates who are considering careers in biological or biomedical research sciences, who have already had at least one summer (or equivalent term-time) of experience in a research laboratory, and who have taken at least one upper-level biology course that includes molecular biology. U.S. citizenship or permanent residency is required. For more information, including a FAQ page, see [http://www.hms.harvard.edu/dms/diversity/shurp/](http://www.hms.harvard.edu/dms/diversity/shurp/)

Summer Research Opportunities at Harvard (SROH)
Summer Research Opportunities at Harvard (SROH) is offered for currently enrolled undergraduates who are considering Ph.D. careers in the humanities, social sciences, and life/physical sciences and who have already had at least one upper-level course in their field of study. U.S. citizenship or permanent residency is required. Students must have at least one semester of undergraduate study remaining and not have received a bachelor's degree at the time of entry into the summer program.

Within SROH, students in the life/physical sciences will be placed with faculty in the Department of Molecular and Cellular Biology who are part of the Molecules, Cells and Organisms (MCO) Training Program and use a wide variety of techniques and experimental approaches to address important questions at the cutting edge of biology today. Students in the social sciences and humanities will work with faculty across a range of departments that will be related to their research interests.

In addition to research, there are a variety of supplemental activities including faculty lectures, weekly group meeting discussions of student research projects, career/professional development discussions and joint field trips with other Harvard summer programs. In addition, students are brought to the Leadership Alliance National Symposium at the end of July. Students in SROH will live in Harvard housing and a stipend along with housing and travel costs will be provided.

The 10 week program is a partnership with Harvard University's Senior Vice Provost Office for Faculty Development & Diversity (F&D), Office of the Executive Vice President, the Graduate School of Arts and Sciences, and the Department of Molecular and Cellular Biology. [https://gseas.harvard.edu/diversity/outreach-programs/summer-research-opportunities-harvard](https://gseas.harvard.edu/diversity/outreach-programs/summer-research-opportunities-harvard)
Email: SROH@fas.harvard.edu

Summer Program in Biological Sciences in Public Health
The Summer Program in Biological Sciences in Public Health at the Harvard School of Public Health is a 8-week laboratory-based biological research program for undergraduates belonging to underrepresented groups during the summer following their sophomore or junior years. The program goal is to expose college science students (who will be juniors or seniors in the fall) to the rewards of laboratory research directed towards solving important public health problems such as infections (malaria, TB, parasites), cancer, lung diseases, multifactorial, multigenic and common diseases of aging, diabetes, obesity. Scientific approaches include regulation of cell growth and gene regulation, cellular metabolism, DNA modification, cellular signaling, and structure-function analyses. The overall mission of the program is to recruit qualified students for graduate-level training leading to research careers in the biological sciences. [http://www.hsph.harvard.edu/academics/biological-sciences/undergraduate-summer-internship-program](http://www.hsph.harvard.edu/academics/biological-sciences/undergraduate-summer-internship-program)
Summer Program in Epidemiology
The Summer Program in Epidemiology at the Harvard T.H. Chan School of Public Health is an intensive four-week introduction to Epidemiology, Biostatistics, and research methods in relevant areas of interest, such as Cancer Prevention, Infectious Disease, Epidemiologic Methods, etc. The program recruits undergraduates (and recent graduates not admitted to a graduate program) belonging to underrepresented groups for graduate level training. Aside from the introductory courses in Epidemiology and Biostatistics, students will participate in evening faculty lectures, a faculty or post-doctoral fellow led research project, and networking opportunities with current graduate students and faculty. The program covers travel, lodging, a stipend for living expenses, and frequent meals.
https://www.hsph.harvard.edu/epidemiology/diversity/summer-program-in-epidemiology/

Multidisciplinary International Research Training (MIRT) Program
MIRT is a national program designed to encourage students to pursue careers in biomedical and behavioral research providing support for undergraduate and graduate students to do health-related population-based research and training in developing countries including in Zimbabwe, Ethiopia, Vietnam, Thailand, Republic of Georgia, Peru, Mexico, Ecuador, Chile, and Australia. Trainees get knowledge of scientific literature associated with projects, biomedical research ethics, and cultural aspects with a focus on how these aspects affect public health issues as well as scientific and medical issues. Research opportunities are designed collaboratively with faculty in these institutions to address health and health disparities pertinent to their country.
https://www.hsph.harvard.edu/epidemiology/diversity/hsph-mirt-program/

Summer Program in Biostatistics & Computational Biology at the Harvard School of Public Health
The Summer Program is an intensive 6-week introduction to biostatistics, epidemiology, and public health research. Based at the Harvard School of Public Health, this program is designed to introduce qualified undergraduates and post-baccalaureates to the use of quantitative methods for biological, environmental and medical research purposes, and to demonstrate the application of quantitative methods to the study of human health.
http://www.hsph.harvard.edu/biostatistics/summer-program/

Fostering Advancement & Careers through Enrichment Training in Science (FACETS) Program
FACETS is a 6-week summer program based at the Harvard School of Public Health designed to provide participants with exposure to the range and applicability of public health. Participants will receive introductory lectures and coursework in epidemiology and biostatistics from faculty within the Harvard Chan School. Participants will receive a summer salary, housing, and travel funding.
https://www.hsph.harvard.edu/diversity/facets/

FAS Center for Systems Biology Undergraduate Research Internships
The FAS Center for Systems Biology at Harvard University invites interested undergraduates to apply for summer research internships. Internships will last for ten weeks (or longer by mutual agreement), and each intern will have the opportunity to learn a range of current techniques in the fields of systems biology, genomics, or bioinformatics in a small, interactive research group environment. Interns will also attend weekly group meetings and faculty lectures. The Center’s researchers come from diverse backgrounds and fields of science, from biology (including genetics, cell biology and evolution) to applied mathematics and computation. The internship includes field trips to other local institutes, such as Harvard Medical School and the Broad Institute.
http://sysbio.harvard.edu/summer-internship.html

Harvard Stem Cell Institute (HSCI) Internship Program (HIP)
HIP provides an opportunity for Harvard and non-Harvard undergraduates to gain direct experience in stem cell research while working in a Harvard Stem Cell Institute (HSCI) laboratory under the supervision of an experienced researcher. Interns participate in a mandatory stem cell seminar series and a career pathways presentation, and present their summer research findings in the HIP Symposium in August. Candidates must express a strong interest in stem cell biology; previous lab experience is desirable, but not required. Approximately 35 students are selected by competitive review for this 10-week internship.
http://www.hsci.harvard.edu/research/hsci-internship-program-hip
Biological Chemistry and Molecular Pharmacology Summer Scholars Program
The Biological Chemistry and Molecular Pharmacology (BCMP) Summer Scholars Program is a 10-week program designed to provide hands-on laboratory research experience to motivated undergraduates with a strong interest in pursuing graduate studies. In addition to having the opportunity to interact with faculty, post-doctoral fellows, graduate students, and other summer interns, selected students will attend weekly seminars and work on strengthening their presentation, writing, and communication skills. A stipend is provided to the students as part of the program, but students are responsible for travel, housing, and meal accommodations.
http://www.scholars.hms.harvard.edu/info

Research Experience for Undergraduates (REU) at the School of Engineering and Applied Sciences
The School of Engineering and Applied Sciences (SEAS) Research Experience for Undergraduates (REU) program is a mechanism for integrating a broad spectrum of undergraduates into bioengineering, materials research, nanoscience, and engineering. REU provides its interns with a coordinated educational and dynamic research community to inspire and encourage them to continue on to graduate school. Summer research opportunities are arranged in conjunction with the Materials Research Science and Engineering Center (MRSEC), the Nanoscale Science and Engineering Center (NSEC), as well as other Harvard-based engineering and science entities. Professional development workshops, faculty seminars on research and ethics, and community activities are integrated into the program. Students receive a summer stipend and housing.
http://www.svias.harvard.edu/k-12-community-programs/reu

The Banneker Institute and Aztlán Institute Summer Program
The Banneker Institute and Aztlán Institute summer programs are full-time, ten-week research and study experiences. We prepare undergraduate students of color for top graduate programs in astronomy. The programs run simultaneously, focusing on research, professional training, and social justice education. We offer housing, a competitive stipend, and reimbursement for travel. Our programs target undergraduate juniors from backgrounds historically marginalized from academia and the astronomical sciences in particular. While we accept students from all backgrounds, our application review process considers historical injustices and the tendency for traditional application review practices to reproduce racial disparities in academia.
http://bannekerinstitute.fsp.harvard.edu

Harvard Forest Summer Research Program in Ecology
The Harvard Forest Summer Research Program in Ecology is a 11-week research program that allows students to participate in on-going research at the Harvard Forest in Petersham, MA. Projects focus on the effects of natural and human disturbances on forest ecosystems, including global warming, hurricanes, forest harvesting, and invasive organisms. Researchers come from many disciplines, and specific studies center on population and community ecology, paleoecology, land-use history, phenology, biogeochemistry, soil science, ecophysiology, and atmosphere-biosphere exchanges. Students work with mentors from Harvard and collaborating institutions. Responsibilities may include field sampling, laboratory studies, data analysis and scientific writing. In addition, students attend seminars given by nationally known scientists and workshops on career and graduate school preparation. At the end of the summer, students present their research results by writing an abstract and presenting their findings at a student research symposium. The program provides room, board and a competitive stipend.
http://harvardforest.fas.harvard.edu/education/reu

Exceptional Research Opportunities Program (EXROP)
The exceptional research opportunities program (EXROP) enables exceptional undergraduate students from disadvantaged backgrounds or underrepresented groups in the sciences to have an opportunity to conduct research in the laboratory of an HHMI investigator/scientist over a 10-week period during the summer. Travel, housing, and a stipend are provided by HHMI. Students must be nominated by an HHMI investigator, a faculty member at an active Science Education Alliance school, or a director of an HHMI-funded undergraduate program at a college or university.
http://www.hhmi.org/developing-scientists/exceptional-research-opportunities-program-exrop
Harvard-Amgen Scholars Program
Harvard-Amgen Scholars will conduct novel biotechnology-focused research with Harvard scientists over the course of a 10-week summer internship. While participating in the program, Amgen Scholars will live on Harvard’s Cambridge campus among the residents of the Harvard Summer Undergraduate Research Village community. Interns will have the opportunity to interact closely with faculty through scholarly and preprofessional development activities including a Distinguished Faculty Lecture Series and Biotechnology Journal Club. They will also gain critical exposure to tools for effective science communication, proposal writing, and graduate school preparation, and will have opportunities to explore the Boston area through a variety of social activities and outings. Currently enrolled undergraduates interested in pursuing a bioscience Ph.D or the M.D./Ph.D are eligible to apply, especially those from underrepresented and diverse backgrounds. U.S. citizenship or permanent residency is required.
http://fgrl.harvard.edu/amgen-scholars

Summer Undergraduate Program in Immunology at Harvard Medical School
The Immunology Graduate Program at Harvard Medical School offers a 10 week Summer Undergraduate Program in Immunology. This internship program provides participants with a combination of weekly lectures and laboratory work with faculty from the Immunology Graduate Program, and includes extensive interactions with graduate students and postdoctoral fellows. The intent of this initiative is to provide undergraduate students with an exposure to current topics in immunology. Participants from colleges in which the topic is not taught or presented in depth are especially welcome, and individuals from under-represented minority groups are especially encouraged to apply. Preference will be given to students who are in their sophomore or junior year.
https://www.hms.harvard.edu/dms/immunology/prospective_students/summer_program.html

Department of Biomedical Informatics and Health Sciences and Technology Summer Institute in Biomedical Informatics and Optics
The Health Sciences and Technology Summer Institute in Biomedical Informatics and Optics is a nine-week program, sponsored by the National Institutes of Health and the National Science Foundation, that engages students with didactic classroom lectures by well-known leaders in biomedical informatics, while providing a mentored laboratory research experience. This program is ideal for undergraduate students with a strong quantitative background whose goal is to contribute to translational advances to biomedicine by pursuing a PhD, MD/PhD, or a research-oriented MD. U.S. citizenship or permanent residence status is required. A stipend, on-campus MIT housing, and a travel allowance are provided to students as part of the program. The internship program is conducted by the Harvard-MIT Division of Health Sciences and Technology in partnership with Massachusetts General Hospital, and the Department of Bioinformatics at the Harvard Medical School.
http://hst.mit.edu/academics/summer-institute/biomedical-informatics

Summer Clinical and Translational Research Program (SCTRP) at Harvard Medical School
The Summer Clinical and Translational Research Program (SCTRP) is a ten-week mentored, summer research program designed to enrich the pipeline of college students' understanding of and interest in pursuing clinical and/or translational research, as well as to increase underrepresented minority and disadvantaged college student exposure to clinical/translational research. In addition to mentored clinical/translational research experience, SCTRP students will participate in weekly seminars with Harvard faculty and graduate students focusing on topics such as research methodology, health disparities, ethics, career paths, and the graduate school and medical school application process. Participants will also have the opportunity to participate in offerings of other Harvard Medical School programs such as career development seminars and networking dinners. Program participants are provided with housing, a salary, and financial assistance of up to $400 toward travel expenses. Eligible participants are undergraduate sophomores, juniors and seniors, particularly those attending Minority Biomedical Research Support (MBRS) and Minority Access to Research Careers (MARC) NIH-funded institutions, historically black colleges and universities, Hispanic-serving institutions, and/or Tribal Colleges with baccalaureate degree programs, and/or alumni of the Harvard Medical School Minority Faculty Development Program and/or the Biomedical Science Careers Program. US Citizens or U.S. Noncitizen Nationals or Permanent Residents of U.S. are eligible to apply.
https://mfdp.med.harvard.edu/dcp-programs/college/summer-clinical-and-translational-research-program
Summer Research Trainee Program (SRTP) at Massachusetts General Hospital (MGH)
The Summer Research Trainee Program (SRTP), which was founded in 1992, attracts college students who have completed at least three years and/or first and second year medical students from around the nation. The goal of this program is to inspire and develop students who are underrepresented in medicine (URM)* to consider academic medicine and research careers by immersing them in cutting-edge research opportunities. Fifteen students, selected from a nationwide competition, join SRTP each summer. Students are assigned to specific Massachusetts General Hospital (MGH) laboratories or clinical sites where they undertake original research projects under the mentorship of an MGH investigator. Investigation opportunities exist over a broad range of disciplines, including clinical, basic science, health policy and health services research. Assignments are carefully considered and are made with the student's career interest in mind. In addition to the research experience, students will gain knowledge through weekly didactic seminars, both at the MGH and at Harvard Medical School, and have opportunities for clinical shadowing.

The Four Directions Summer Research Program
The Four Directions Summer Research Program (FDSRP) is offered to Native American undergraduate students who are interested in becoming familiar with the medical and research community at Harvard Medical School and Brigham and Women's Hospital, and who are seriously committed to helping improve the health of their Native American communities. Established in 1994, this program has hosted over 170 participants. Interns engage in a wide range of research activities, work closely with advisors, clinical shadowing and participate in career seminars about MD and PhD admissions and programs.
http://fdsrp.partners.org/

Summer Training in Academic Research and Scholarship (STARS) Program at Brigham and Women's Hospital (BWH)
The STARS Program provides underrepresented minority (URM) undergraduate and first year medical students with an opportunity to engage in basic, clinical and translational research projects during an 8 week summer program at Brigham and Women's Hospital (BWH) and Harvard Medical School (HMS)--with the goal of encouraging scholars to pursue advanced medical and graduate-level science training. The focus of internship activity is participation in a research project under the supervision of a medical school faculty mentor. Additional activities include "Research 101" education and training sessions, social networking opportunities, weekly roundtables with BWH Faculty and the Office for Multicultural Faculty Careers, and community health center/clinic shadowing.
http://cfdd.b Brighamandwomens.org/events-and-programs/pipeline-programs/bwh-stars-program/

Newborn Medicine Summer Student Research Program
The newborn medicine summer student research program is sponsored by the Harvard Program in Neonatology for students interested in clinical aspects and research in Newborn Medicine. During the 8-12 week program, students are guided by faculty and fellow mentors from the program with the goal of providing undergraduate and medical school students with intensive clinical and laboratory research. As part of the program, the students will have the opportunity to observe newborn care in the hospital nurseries, clinics, and neonatal intensive care units. Partial funding is available for students participating in the program.

Harvard Summer Research Program in Kidney Medicine
The Harvard Summer Research Program in Kidney Medicine (HSRPK) is an 8-week research-based experience that provides undergraduate students interested in science or medicine an introduction of nephrology and an overview of basic and clinical science. At the end of the program, students will have the opportunity to present their research at a national student symposium. The program is based at Harvard medical school and provides housing and a stipend to participants. Students must be U.S. citizens or permanent residents to participate in the program. Although research experience is preferred, it is not required.
http://hsrp bwh.harvard.edu
Continuing Umbrella of Research Experiences (CURE) at Dana-Farber/Harvard Cancer Center (DF/HCC)
The Dana-Farber/Harvard Cancer Center (DF/HCC) Continuing Umbrella of Research Experiences (CURE) engages high school and undergraduate students from underrepresented minority populations in mentored cancer research internships in basic, clinical, nursing, and population sciences and cancer disparities. Alongside their hands-on research experiences, DF/HCC CURE participants attend scientific seminars and networking events, develop skills and experience in navigating research and medical literature and understanding and presenting research, obtain career and professional development counseling, and learn about issues and ethics in research. Each year several students are selected for CURE internships, which are delivered via 8- or 10-week full-time summer program or a two-year part-time experience. By participating in a program at DF/HCC — an NCI comprehensive cancer center with more than 1,000 researchers across seven Harvard institutions — CURE participants learn from experts who are devoted to preventing, treating, and curing cancer. The goal of DF/HCC CURE is to engage the scientific curiosity and promote the potential biomedical and/or cancer research careers of promising young high school and undergraduate students.
http://www.dfhcc.harvard.edu/research/cancer-disparities/students/curo-program/

Center for Astrophysics (CFA) Solar Research Experience for Undergraduates (REU) Program
Scientists from the Solar and Stellar X-Ray Group (SSXG) and the Solar, Stellar, and Planetary Group (SSP) at the Harvard-Smithsonian Center for Astrophysics (CFA) host undergraduate students from around the US. For 10 weeks these students will participate in cutting edge astronomical research about the Sun and the heliosphere and learn the skills necessary for a successful scientific career. Projects range from data analysis to computer modeling to instrument building. Special seminars will be held to increase students' public speaking and computer programming skills. Students will learn from experience about scientific research and how to apply their academic work to real-world problems. Of course, some time will be devoted to exploring Cambridge, MA and the surrounding area.
https://www.cfa.harvard.edu/opportunities/solar_reu/

BWH Summer Undergraduate Research Internship Program
The Brigham Research Institute's Summer Undergraduate Research Internship Program provides an excellent opportunity for undergraduates across the United States to gain a focused, challenging and hands-on research experience in a basic science or clinical laboratory setting of their choice. Interns can choose from a wide variety of host labs doing exciting work in areas related to cardiovascular, immunology, musculoskeletal, neuro and sex differences research. During the 10-week internship program, students can take advantage of several educational/career advancement offerings on the Brigham and Harvard campuses as well as participate in a central curriculum associated with the program. Students will present their research findings in a mini-research symposium at the end of their training period.
http://www.bwhresearch.org/ internships/
"This program gave me an opportunity to really get involved with people with PhD's, with doctors and researchers, and I really got a chance to get to know them and what they did. They were able to sit down with me and give me advice."
- Matthew J., University of Pittsburgh

"The instructors invest so much of their time into your work and into helping you to really grow from your studies. And on top of the valuable guidance you're given, you have the chance to design your very own research project."
- Hannah C., UC Davis Bodega Marine Laboratory

"The entire SPUR program was great and I truly wish more undergraduates could have the experience that I had this summer. So thank you, for allowing and helping me to grow and learn, but more importantly for making this summer one that I will definitely remember."
- 2011 Participant, University of Oregon

"This program not only gave me research experience, but I learned a lot about myself, about science, and about other people, as well. Overall, this program gave me essential insight into graduate schools, and I now have the confidence and the knowledge to make informed designs about a career in science."
- 2012 Participant, Iowa State University
Research Experiences for Undergraduates

What is an REU?
An REU is a summer program for undergraduates interested in conducting independent research in the sciences, such as biology, chemistry, physics, astronomy, geosciences, mathematics, engineering, and others.
- Locations all over the USA in addition to many international sites
- Work and live with other undergraduates from around the country
- Engage in professional development sessions and social activities
- Typically 10 weeks long
- Travel, meals, and housing are provided in most programs
- Build close relationship with faculty mentors

How to apply!
Search for REU Sites all over the country or abroad at the following link:
http://www.nsf.gov/crssprgm/reu
- Apply directly to the REU program of your choice.
- Each site will have their own application process and deadline.
- Each program may have specific requirements.
- Most deadlines are beginning of February, so apply early!
- Applications typically include a personal statement, transcript, and recommendation.

Who is eligible?
Students must be US citizens or permanent residents of the United States or its possessions and be an enrolled undergraduate student at a two- or four-year college.

How will it benefit me?
- Experience research on exciting biological projects
- Establish positive relationships and networks
- Earn a generous stipend
- Build professional skills
- Explore a new city and potentially experience a new culture
- Develop lab techniques and learn the scientific process

Conduct Independent research with leading scientists all over the country and abroad!

Sponsored by the National Science Foundation
Learn more at: http://www.nsf.gov/crssprgm/reu/

Created by: Ashley Gilmore
Internships

DOE's Science Undergraduate Laboratory Internship (SULI) Program
Community College Internship Program
Research Participant Program (RPP)
Undergraduate and Graduate Internships
Office of Science Graduate Student Research (SCGSR) Program

NREL is a national laboratory of the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, operated by the Alliance for Sustainable Energy, LLC.
NREL Internships

DOE's Science Undergraduate Laboratory Internship (SULI) Program

The SULI program is the U.S. Department of Energy’s Office of Science’s premier undergraduate education and research program. The program is designed to provide undergraduate students with educational training and research experiences to strengthen their knowledge and skills and deepen their commitment to pursue careers in science and technology.

Contact: nrel.education@nrel.gov

Community College Internship Program

NREL participates in the national Community College Internship program (CCI). The CCI internship is designed to provide educational training and research experience in renewable energy and energy efficiency technologies. CCI offers community college students technician experience while opening doors in education at 4-year colleges and universities.

Contact: nrel.education@nrel.gov

Research Participant Program (RPP) Undergraduate and Graduate Internships

Graduate and undergraduate students have the opportunity to participate in the Laboratory’s research and development programs, initiate new areas of research, and establish a base for ongoing collaborations. RPP internships are full time over the summer and during breaks, and part time throughout the school year. Students must be enrolled as a full-time student or within 12 months of graduation to be eligible.

Contact: university@nrel.gov

Office of Science Graduate Student Research (SCGSR) Program

The SCGSR program provides supplemental awards to outstanding U.S. graduate students to pursue part of their graduate thesis research at a Department of Energy (DOE) laboratory in areas that address scientific challenges central to the Office of Science mission. The research opportunity provides students access to the expertise, resources, and capabilities available at DOE laboratories.

Contact: nrel.education@nrel.gov

National Renewable Energy Laboratory
15013 Denver West Parkway, Golden, CO 80401
303-275-3000 • www.nrel.gov

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All Photography by Dennis Schroeder, NREL. Front: NREL 23043. This side, from top: NREL 21377, 39396, 41060.
Join the team!

Research Experiences for Undergraduates in the Mathematical Sciences

National Science Foundation
Apply for summer research opportunities and push forward the boundaries of the mathematical sciences!

There are approximately 50 programs led by faculty mentors at colleges and universities across the United States in many areas of mathematics and statistics that allow undergraduate students to actively participate in research. In addition to exposure to exciting material and mentoring by faculty, participants will participate in professional development activities and receive:

- room & board
- travel support
- stipends

Please check out http://bit.ly/dms_reu for an up-to-date list of opportunities. Students from groups historically under-represented in the mathematical sciences are encouraged to apply.
NSF Research Experience for Undergraduates (NSF-REU)
Frequently Asked Questions

What is REU?
REU is an NSF-funded program where diverse colleges and universities host visiting students (usually 8-10 students) to conduct research during the summer. This program was created to provide meaningful research opportunities to students who wouldn’t otherwise have them.

Where is REU?
There are over 600 REU sites, spanning 16 different general research areas, across the United States and a few that are in foreign countries.

How long is the program?
Usually 10 weeks, but can be adjusted in some cases to accommodate the semester/quarter system, e.g. if your home school is on semesters and the REU site is on quarters, or vice versa.

Do the REU summer researchers get paid?
Yes! If you are accepted to a program, you will receive travel reimbursement and a stipend for the summer. In most cases, housing will be provided in dormitories or comparable facilities on or near campus.

What areas of research are available?

More information can be found on the NSF website:
http://www.nsf.gov/crssprgm/reu/reu_search.jsp

Do I need experience in the area of research?
You do not need previous research experience, but it is best if you have already taken classes in the area of research you are interested in, e.g. a chemistry or biochemistry major will be best matched in a chemistry program or one that is closely related, perhaps materials or some of the programs in biological sciences.

What type of research will I be doing once I am accepted to a site?
The Directors of the REU program will pair up the incoming students with participating faculty members, doing their best to match research interests. When you join a research group for the summer, you will work in the area of research that the group specializes in. Most students will work on a project that is ongoing in the group in order to have the most valuable research experience in 8-10 weeks.

What type of guidance and mentoring will I receive?
You will work very closely with a faculty member and often a graduate student, postdoctoral researcher or other group member. You will be given the necessary scientific and safety training to conduct advanced level research.

Will I get to publish my research?
In many cases, REU students are co-authors on publications resulting from the experiments they conduct over the summer. Sometimes the project is not ready for publication until after the student has left the program.
Is it all research, 24/7?

No, summer research is considered “full time”, but work hours vary from group to group. You will also have time to explore the area the university is located in, and there are often planned group seminars, tours, and other outings.

Will this experience help me get into graduate school?

Yes! Your summer research advisor will often provide you with a supportive letter of recommendation and admissions committees recognize the NSF REU as a distinction that will mark you as a good candidate. In addition, many REU programs will include workshops on how to maximize the competitiveness of your graduate school application.

Will I be able to present the work I complete over the summer?

Yes! There is often a forum, such as a poster session, at the end of the summer for students to showcase their work. In addition, you might have the opportunity to present your work at a scientific meeting.

What kind of professional development can I expect?

Programs vary widely. Some will offer a formal series of workshops or seminars. Beyond that, the chance to work closely with graduate students and get to know and advisor is an important first step in your career as a scientist in any field. You will also receive valuable training in your area of research with regard to instruments and techniques specific to the field.

How do I apply?

Each site has its own application system, so you have to go to the sites that interest you and fill out an application for each one. The due dates are all slightly different (often in February or March), as are the timelines for application review. You can expect to hear back in March or April. There is no application fee, but you should look carefully at the various programs and apply to the ones that are the best match for your interests. You will probably have to provide transcripts, a personal statement, and one or more letters of recommendation.

What should I do if I am admitted to one program, but have not heard back from another one in which I am also interested?

Be honest with your contacts at both programs. It’s OK to contact the second one and ask when you can expect to hear back. And it’s OK to contact the admitted program to ask if you can have more time to make an acceptance decision, but understand that they may not be able to grant that request. In some cases, you might have to withdraw your application from one program if you accept a position. Most importantly, once you accept one position, you are obligated to attend. It reflects badly on you and creates difficulties for the REU site if you accept a position and then later back out.
The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue SW, Washington, DC, 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Research, Education and Economics

The Research, Education and Economics (REE) mission area has leadership responsibility for advancing scientific knowledge related to agriculture through research, extension, and education. REE is dedicated to the creation of a safe, sustainable, competitive U.S. food and fiber system, as well as strong communities, families, and youth through integrated research, analysis, and education.

March 2013

Agricultural Research Service (ARS)
Economic Research Service (ERS)
National Agricultural Statistics Service (NASS)
National Institute of Food and Agriculture (NIFA)
USDA Pathways Programs

The USDA Pathways Programs offers clear paths to paid Federal internships for students from high school through post-graduate school as well as recent graduates, and provides meaningful training and career development opportunities for individuals who are at the beginning of their Federal service. Pathways provides streamlined programs for students and recent graduates to get started in the Federal workforce and for Federal agencies to recruit, hire, develop and retain these individuals.

Executive Order 13562 establishes a Pathways framework with three clear program paths:

- Internship Program
- Recent Graduates Program
- Presidential Management Fellows Program

The regulations were published on May 11, 2012, and became effective on July 10, 2012.

All job opportunity announcements are posted on www.usajobs.gov/studentsandgrads/

Internship Program

This program is for current students enrolled in a wide variety of educational institutions from high school to graduate level, with paid opportunities to work in agencies and explore Federal careers while still in school.

Eligibility: Individuals currently enrolled in high school, college, professional, technical, vocational and trade school; advanced degree programs; or other qualifying educational institution pursuing a qualifying degree or certificate.

Program Administration: May be hired on a temporary basis for up to one year for an initial period or for an indefinite period, to complete educational requirements. May work part-time or full-time. Must sign a participant agreement that sets forth expectations. There is no grade level restriction.

Program Completion: May be converted to a permanent position within 120 days of successful completion of the program. To be eligible for conversion, Interns must complete at least 640 hours of work experience, complete their degree or certificate requirements, meet the qualifications for the position to which the Intern will be converted, meet the requirements specified in the participant agreement, and perform their job successfully.

For more information, please contact us at:
USDA, REE, AFM
Human Resources Division
5601 Sunnyside Avenue
Beltsville, Maryland 20705-5105
(301) 448-7811
(301) 830-0363
recruitment@ars.usda.gov
The Woods Hole Partnership Education Program

Designed for college juniors and seniors who want to spend a summer gaining practical experience in marine and environmental science.

www.woodsholediversity.org

A Summer Science Intern Program
Promoting Diversity in Woods Hole, Massachusetts
Who We Are

The Partnership for Education Program (PEP) is a project of the Woods Hole Marine Science Program, a multi-institutional effort to promote diversity in the Woods Hole science community. Participating institutions are: NOAAs National Marine Fisheries Service, Woods Hole Oceanographic Institution, Marine Biological Laboratory, and Woods Hole Research Center. Our primary academic partner is the University of Maryland Eastern Shore.

The Program

Each summer, PEP brings students to Woods Hole, Massachusetts for a four-week research internship. PEP participants also engage in seminars, workshops, and lectures at the University of Maryland Eastern Shore, or, with approval through their home institutions, Housing is provided, and stipend, room and board, and travel allowances.

Who Is Eligible

PEP is designed for college students entering their junior or senior year who have coursework in the biological, chemical, physical, or marine sciences. Applicants are encouraged to apply, including women, American Indian, Hispanic, Native American, Alaska Native, and Asian Pacific Island students.

How To Apply

Visit www.woodholediversity.org/PEP for application materials and instructions. Application materials are posted in January.

Contact Us

For more information, contact PEP Manager George Lies. NOAA Fisheries (George.Likes@noaa.gov) or 508-495-2007.
The Public Policy and Leadership Conference (PPLC) seeks to provide students from underrepresented, underserved, low socioeconomic status areas access and opportunity to graduate programs focused on Public Policy and International Affairs. This concentration stems from a core belief that our communities are best served by the public managers, policymakers, and community leaders whom represent the diverse backgrounds and perspectives of their constituencies.

Students admitted to the conference will be granted access to a weekend full of information pertaining to graduate programs in public policy, career opportunities, and fellowships. Harvard professors, staff, and students will conduct various workshops on policy issues, career planning, resume building, and leadership. Finally, participants will learn about graduate school application strategies and Graduate School funding opportunities such as, public service-related fellowships.

**APPLICATIONS DUE: NOVEMBER 8, 2017**

Programs ELIGIBILITY is limited to college freshmen and sophomores who are either US Citizens, Permanent Residents, or DACA recipients, attending a US Institution. Applicants must have a 3.0 GPA or above and demonstrate an interest in Public Service.
# WHERE INTELLIGENCE GOES TO WORK

## COOPERATIVE EDUCATION

<table>
<thead>
<tr>
<th>OVERVIEW</th>
<th>Sharpen skills and explore career options before graduating - through a series of alternating assignments each semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO IS ELIGIBLE?</td>
<td>Undergraduate Sophomores (or) Second Semester Freshmen</td>
</tr>
<tr>
<td>FIELDS OF STUDY?</td>
<td>Computer Science, Cybersecurity, Electrical/Computer Engineering &amp; Chinese</td>
</tr>
<tr>
<td>WHEN TO APPLY?</td>
<td>February 1st – March 31st, September 1st – October 31st</td>
</tr>
<tr>
<td>TOUR DETAILS?</td>
<td>Alternate academic semesters and rotating NSA office assignments; 52 weeks of work required before graduation; starting semester flexible</td>
</tr>
</tbody>
</table>

## SUMMER INTERNSHIPS

<table>
<thead>
<tr>
<th>OVERVIEW</th>
<th>Join students from across the country and end your knowledge to national security in one of the NSA’s &gt;20 summer programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO IS ELIGIBLE?</td>
<td>Undergraduate/Graduate/Ph.D. Students must have one semester remaining after summer tour</td>
</tr>
<tr>
<td>FIELDS OF STUDY?</td>
<td>Computer Science, Electrical Engineering, Cybersecurity, Math, Physics, Business, Intelligence/Language Analysis, and more!</td>
</tr>
<tr>
<td>WHEN TO APPLY?</td>
<td>All applications open the fall preceding the summer of interest; check online for specific dates</td>
</tr>
<tr>
<td>TOUR DETAILS?</td>
<td>Discover NSA through a temporary 12 week summer assignment; work directly alongside full-time employees and put your skills to the test</td>
</tr>
</tbody>
</table>

## DEVELOPMENT PROGRAMS

<table>
<thead>
<tr>
<th>OVERVIEW</th>
<th>Learn from technical professionals and confirm interests through full-time office rotations before going permanent</th>
</tr>
</thead>
<tbody>
<tr>
<td>WHO IS ELIGIBLE?</td>
<td>Undergraduate/Graduate/Ph.D. Students within one year of graduating</td>
</tr>
<tr>
<td>FIELDS OF STUDY?</td>
<td>Computer Science, Electrical Engineering, Cybersecurity, Math, Physics, Business, Intelligence/Language Analysis, and more!</td>
</tr>
<tr>
<td>WHEN TO APPLY?</td>
<td>Rolling application windows; check online for the most current program openings</td>
</tr>
<tr>
<td>TOUR DETAILS?</td>
<td>Explore NSA through several 6-9 month full-time rotations before selecting a permanent position; internal training and advanced studies incorporated</td>
</tr>
</tbody>
</table>

## APPLY ONLINE AND LEARN MORE AT

[www.intelligencenationalsecurity.gov/NSA](http://www.intelligencenationalsecurity.gov/NSA)

US CITIZENSHIP REQUIRED FOR ALL POSITIONS.

PLEASE REFER TO [www.intelligencenationalsecurity.gov/NSA](http://www.intelligencenationalsecurity.gov/NSA) FOR THE MOST ACCURATE INFORMATION REGARDING APPLICATION DEADLINES.
Committee on Diversity
IDEAS Program
An NSF-Funded initiative for training, mentoring and public outreach.

Get Funded to Come to the AAPA Meeting in Austin!
(April 10-15, 2017)

IDEAS WORKSHOP – Application OPEN! A day-long science and mentoring workshop for undergraduate and graduate students the Wednesday of the AAPA annual meetings (April 11). 15 IDEAS Student Scholars (both undergraduate and graduate) and 15 IDEAS Faculty. Includes scientific presentations by faculty scholars, thematically and topically focused mentoring groups, and introduction to tools, resources, and practices to help meet the challenges and opportunities faced by students from groups traditionally underrepresented in biological anthropology and first generation college students.

Apply at http://physanth.org/forms/ideas-workshop-application-2018/

DEADLINE - is November 15. Graduate and undergraduate students in programs in biological anthropology or related disciplines are eligible. IDEAS Students Scholars receive free AAPA membership and meeting registration, travel, meals and lodging for the AAPA meeting.

Questions? Please contact: Susan Antón susan.anton@nyu.edu
Follow us on Facebook https://www.facebook.com/groups/220199494657781/
NIDDK/OMHRC
MINORITY RESEARCH TRAINING
Opportunities and Career Development

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) is one of 27 Institutes and Centers (IC) that constitute the National Institutes of Health (NIH). Each IC offers opportunities for training scientists and students, both at the NIH campus in Bethesda, Maryland, and through financial support to individuals at universities and medical schools throughout the United States.

Minority Research Career Pathway—Extramural

Undergraduate
High School—Supplement to Promote Diversity
College—Supplement to Promote Diversity

Graduate/Medical School
T32 predoc slot (Ph.D. students only)
F31 (students from underrepresented groups)
T35 slot (medical students only)
Supplement to Promote Diversity

Postgraduate
T32 postdoc slot F32
Supplement to Promote Diversity

Transition/Instructor Faculty Careers:
K01, K08, K23, K25 (NIDDK Diversity), R21 Supplement to Promote Diversity

Tenured Faculty
K24, F33, R01, P01, Others Supplement to Promote Diversity

Visit the NIDDK training webpage: http://www.niddk.nih.gov/research-funding/training-career-development/Pages/default.aspx

NIDDK Diversity Summer Research Training Program (DSRTP)

COMPLETE INSTRUCTIONS AVAILABLE AT:
https://dsrtp.niddk.nih.gov/

PURPOSE:
The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) through the Office of Minority Health Research Coordination invite students to submit their application for the Summer Research Training Program.

The overall goal of this program is to build and sustain a biomedical, behavioral, clinical and social science research pipeline focused on NIDDK mission areas. The NIDDK Diversity Summer Program is particularly interested in increasing students from backgrounds underrepresented in biomedical research, including individuals from disadvantaged backgrounds and individuals from underrepresented racial and ethnic groups.

At the end of the summer, students participate in the NIH Summer Research Program Poster Day. This provides an opportunity for students to present their work before the NIH scientific community. Students are also expected to participate in meetings and seminars in their individual laboratories. In addition, with permission from their preceptors, students may also attend formal lectures and symposia, which are listed in the weekly "NIH Calendar of Events." The NIH Calendar of Events is only available for students working at the NIH campus in Bethesda, Maryland.

www.niddk.nih.gov
NIDDK Diversity Summer Research Training Program (DSRTP)

PROGRAM HIGHLIGHTS
- Independent research in a NIH laboratory;
- Weekly research and career development seminars;
- Summer seminar series where senior NIH investigators discuss developments in biomedical research.
- Poster presentation
- Will be required to attend courses in Ethics in Research and Lab Safety.
- Students will be paired with post baccalaureates or postdoctoral fellows for informal guidance.
- Bi-weekly informal meetings with OMHRC staff.

ELIGIBILITY
- Undergraduate students who have completed at least 1 year at an accredited institution
- U.S. Citizen or permanent resident status
- Minimum of 3.0 GPA
- The student must be from a racial or ethnic group underrepresented in the bio-medical or behavioral sciences
- Health Insurance coverage

PROVISIONS
- Student Participation Allowance ($2,600)
- Housing (Housing consists of double-occupancy rooms)
- Travel expenses to Bethesda, Maryland or Phoenix, Arizona (up to $700)

LOCATION AND DURATION
- 10 weeks, starting in June through mid-August.
- Bethesda, Maryland or Phoenix, Arizona

APPLICATION PROCEDURE
- Complete the on-line application at https://dsrtp.niddk.nih.gov/
- Include a copy of your curriculum vitae.
- Submit two letters of recommendation from faculty members/advisors who can address your intellectual and personal suitability for the Program.
- Personal Statement - Describe your research interest, career goals, and reasons for applying to this program in 2,000 characters (includes spacing, punctuations, etc.) or less; double-space.
- Official Transcript - The official college transcript should be mailed directly from your school to Ms. Martinez.
- Application selection - Priority will be given to students who reside outside of the Maryland/Washington DC/ Virginia areas. Local students are encouraged to apply for the NIH Summer Internship Program (SIP) at https://www.training.nih.gov/programs/sip

APPLICATION AVAILABLE ONLINE: NOVEMBER 15 — FEBRUARY 15

For further information, please email Ms. Winnie Martinez at Winnie.Martinez@NIH.gov
Applying to a Job

If you are interested in a position with the USGS there are some things you can do in advance to prepare before you apply for a position.

1. Get familiar with USAJobs:
   www.usajobs.gov
2. Create an account on USAJobs website: my.usajobs.gov/Account
3. Use the USAJobs tool to create a profile and resume.
4. Upload all relevant documents to your USAJobs account, i.e. transcripts, veterans’ preference documentation.
5. Signup for e-mail notifications for job postings by locations and careers you are interested in using the “save search” function in your USAJobs profile.

Pathways Team Members

Alicia Gomez
Lead HR Specialist
Denver, CO
Phone: 303-236-9588
Email: agomez@usgs.gov

Kristen Davis
Human Resources Specialist
Reston, VA
Phone: 703-648-7453
Email: kdavis@usgs.gov

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Email: sholder@usgs.gov

Dina Cookus
Human Resources Specialist
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Phone: 703-648-7416
Email: scookus@usgs.gov

Mary Dunlap
Human Resources Assistant
Denver, CO
Phone: 303-236-9563
Email: mdunlap@usgs.gov

Rachel Newboid
Human Resources Assistant
Denver, CO
Phone: 303-236-9194
Email: rnewboid@usgs.gov

US Geological Survey
12201 Sunrise Valley Dr.
Reston, VA 20192
E-mail: Pathways@usgs.gov
Website: usgs.gov

Helpful Links:

How to apply through USAJobs:
www.youtube.com/watch?v=8GhB-cwTgCU

What is the Pathways Program:
www.youtube.com/watch?v=GbhUISeNUL

Students & Recent Graduates Job Search: www.usajobs.gov/Help/working-in-government/unique-hiring-paths/students/　

Explore Student and Career Opportunities for the USGS:
education.usgs.gov/careers.html
Why Employees Love Working for the USGS!

The U.S. Geological Survey has career opportunities that make a difference in both the lives of others and in the environment by employing the best and the brightest people. We bring a range of earth and life science disciplines and by integrating our diverse scientific expertise, we understand complex natural science phenomena and provide scientific products that lead to solutions.

Everyday the 10,000 scientists, technicians, and support staff work for in more than 400 locations across the United States.

The USGS serves the United States by providing reliable scientific information to describe and understand the Earth, minimizes loss of life and property from natural disasters; manages water, biological, energy, and mineral resources; and enhances and protects our quality of life.

As the Nation’s largest water, earth, and biological science and civilian mapping agency, USGS collects, monitors, analyzes, and provides science about natural resource conditions, issues, and problems. Our diverse expertise enables us to carry out large-scale, multidisciplinary investigations and provide impartial scientific information to resource managers, planners, and other customers.

Benefits of the Pathways Program

- Paid opportunities to work while completing your education
- Year-round employment opportunities for graduates and undergraduates
- Over 400 centers nationwide, including Puerto Rico and The Virgin Islands
- Career development with training and mentorship
- Flexible work schedules to accommodate school schedules
- Internship may be converted to a term or permanent career
- Part-time and Full-time work schedules
- Opportunities for career advancement
- Individual Development Plans
- Federal benefits, such as, Life Insurance, Health Insurance, Dental and Vision Insurance
- Retirement Benefits
- Holiday, Sick, and Annual Leave
- Employee Assistance Program
- Credit for Military Service
- Teleworking
- Credit Union

Careers at the USGS

Geographer
- Computer Assistant
Program Analyst
- Biologist
Microbiologist
- Computer Scientist
Ecologist
- Fish Biologist
Wildlife Biologist
- Engineering Tech
Civil Engineer
- Geophysicist
Mechanical Engineer
- Physical Scientist
Computer Engineer
- Hydrologist
Chemist
- IT Specialist
Cartographer
- Geologist
Hydrologic Technician
- Biological Science Technician

Over 400 USGS Locations

Learn about the ones in your area.
usgs.gov/connect/locations?location_types=5046
Public Policy Leadership Conference

HARVARD Kennedy School

JOHN F. KENNEDY SCHOOL OF GOVERNMENT
Inspiring Future Leaders in Public Policy

The annual Public Policy Leadership Conference (PPLC) at Harvard Kennedy School (HKS) inspires undergraduate students from historically underrepresented and underserved communities to pursue careers in public service. Every February, PPLC participants become part of the vibrant HKS community. They build connections with HKS faculty members, staff, students, and their peers, cultivate professional development skills, and learn about graduate school admissions and fellowships.

Applying to the PPLC is competitive. To be considered, you must:
- Be a first- or second-year undergraduate student enrolled at a two- or four-year U.S. institution
- Be a U.S. citizen, permanent resident, or Deferred Action for Childhood Arrivals (DACA) recipient
- Have a 3.0 grade point average or above
- Demonstrate an abiding commitment to public service through activism, student leadership positions, or civic participation at school or in your community or as a volunteer

Travel, meals, and accommodations are covered by the HKS Office for Student Diversity and Inclusion.

Join us. Apply. Online applications are due in November.

www.hks.harvard.edu/pplc
Clean Energy Bridge to Research Summer Program

Clean Energy Bridge to Research (CEBR) is a summer research program sponsored by the Clean Energy Institute (CEI) at the University of Washington (UW). It supports a select group of undergraduates and community college teachers to participate in authentic research in solar, energy storage, and grid technologies under the mentorship of UW's world-class faculty and graduate students.

Full Research Session / June 18–August 17, 2018
For: Students who have completed their second year of college
A nine-week immersive research project in a single lab leading to an abstract and poster. This session provides a stipend of $4,000, on-campus housing, $500 for food, and a $500 travel allowance.

Exploratory Session / June 18–July 18, 2018
For: Rising sophomores at community colleges
A four-week early research experience where students will receive training, then complete a mini research project under the tutelage of a graduate student and create an educational product related to their work. Exploratory fellows may apply for the Full Research Session the following year. This session provides a stipend of $2,000.

Research Experience For Teachers / June 18–July 18, 2018
For: Community college teachers
A four-week session is designed for teachers working with students who have the goal of integrating clean energy research into their curriculum. This session provides a stipend of $4,000.

The CEBR program is open to U.S. citizens or permanent residents.

PROGRAM GOALS
- Encourage students to pursue STEM careers.
- Provide exposure to research at a hands-on level.
- Improve student knowledge about the nature of research including ambiguity, evolving understanding, and open endedness.
- Develop student skills in: formulating research questions, designing experiments, analyzing data, communicating results, and planning future steps.
- Impart relevant, state of the art content in photovoltaics, energy storage, and smart grids in the domains of physics, chemistry, materials science, and electrical engineering.

IMPORTANT DATES
- Application deadline: February 16, 2018 (apply online at www.cci.washington.edu/cebr)
- Program start: June 18, 2018
Clean Energy Bridge to Research Summer Program

The Clean Energy Institute invites undergraduate students and community college teachers to apply for a research experience at the University of Washington in Seattle.

Program overview

Participating students will have the opportunity to explore research that has the potential to revolutionize the field of clean energy. CEBr is a multidisciplinary program offering research experiences in a variety of scientific disciplines including chemistry, physics, materials science and engineering, and electrical engineering.

Participants may select research projects across a broad range of topics and research areas. Students can choose to work on the theory that drives the development of new molecules for trapping solar energy, new electrode materials and chemistry for batteries, or models for grid management of renewable energy. Other labs work on integrating these new materials into devices at both the nano- and macro-scale.

Students and community college teachers will also participate in CEBr seminars, social activities, and field trips that provide the networking and learning opportunities. They may join other enrichment and outreach activities sponsored by the Clean Energy Institute designed to contextualize the student and the CEBr experience within the field of clean energy and more broadly within those of science and engineering. These activities include technical content and career seminars, as well as workshops designed to teach students how to effectively present scientific research. Some students may be eligible to receive academic credit and be provided with the opportunity to attend professional conferences to share their work and learn from others.

By the end of the summer, students will be familiar with lab research and the technical, social, and cultural skills necessary to succeed in industry and academia. Students research activities may include literature search, experimental design, bench work and lab notebook management, mathematical modeling, instrumental characterization, computer/software control and analysis, lab safety, as well as communication, organizational and interpersonal skills.

Expectations of CEBr participants

Full Research Session: Students are expected to work in their designated laboratory 40 hours per week for 9 weeks and complete an academically appropriate research project designed in conjunction with their advisor. By the end of the nine-week session, students are expected to complete an abstract or summary of their work, a poster, and a presentation. Other assignments may be required.

Exploratory Session: Students will conduct a focused research task in a lab 40 hours per week for 4 weeks and produce an educational product that helps translate the research to a non-technical audience. Students will have the opportunity to visit several labs and research settings as they establish relationships and build awareness. Students who excel in the exploratory session may be invited to continue their research during their sophomore year the following summer.

Research Experience For Teachers Session: Community college teachers will participate in the exploratory experience with the goal of creating curricula that they can use to prepare students for clean energy content and research.
MENTORING SUMMER RESEARCH INTERNSHIP PROGRAM (MSRIP)

THE PROGRAM

The Mentoring Summer Research Internship Program (MSRIP) offers undergraduate students with outstanding academic potential the opportunity to work closely with faculty and graduate students on a research project. The objective of this program is to help prepare, motivate, encourage and support those students who aspire to obtain a PhD and pursue a career in teaching and research. UCR provides internships in many disciplines such as humanities, biological and agricultural sciences, physical sciences and engineering and education. Disciplines may vary based on faculty availability.

ELIGIBILITY

- U.S. citizen or permanent resident
- Juniors, seniors: Master’s students enrolling at UCR fall 2018
- Interest in pursuing a graduate degree (i.e., masters, doctoral)
- First generation college, socioeconomic or other hardship which may have impeded your advancement in college
- Minimum 3.0 GPA
- Enrolled full-time student at four-year university or college

PROGRAM DATES AND INFORMATION

The program will begin June 25 and end August 17, 2018. Program participants will receive a $3,000 stipend (minimum), GRE preparation classes and weekly seminars on the graduate application process. Social activities will also be provided.

APPLICATION PROCEDURES

1) Complete and sign summer program application
2) Submit unofficial college transcript(s)
3) Ask faculty to provide two letters of recommendation
4) Submit a Financial Aid award letter from your institution

The deadline for submission of all application materials is Monday, February 19, 2018

For further information please contact:

Maria Franco-Gallardo
Academic Preparation and Outreach
Graduate Division - 045
Riverside, CA 92521-0208
Phone: (951) 827-3680
Email: gdivma@ucr.edu
Materials for Society

Materials science is the enabling technology behind everything from modern electronics to fashion, safe and recyclable packaging, faster and fuel-efficient vehicles, novel energy generation and storage, aerospace propulsion systems, affordable housing, medical engineering, sensors, nanotechnology, and micromachines. One of the most exciting directions in science and policy-making is sustainability, with its emphasis on energy conservation, storage, and renewable production.

The objective of this Research Experience for Undergraduates (REU) program at Boise State University is to provide an intensive research-team experience with state-of-the-art facilities while exploring activities within the theme "materials for society." Mentors from various disciplines work with students to develop skills needed to excel in academic and industrial research environments, where interdisciplinary teams are standard. Students ultimately present their results at the annual summer research conference.

Cost for Students to Participate
There is no cost to REU Program participants! Students selected to participate in the REU receive a weekly stipend to cover meals and other expenses. Housing is provided on the Boise State campus.

Program Dates
End of May through July.
Apply online at coen.boisestate.edu/mse-reu by February 15.

- Interdisciplinary Research
- Team Building and Collaboration
- Professional Development
- Exploration

coen.boisestate.edu/mse-reu
REU in Materials for Society

Research Projects

The program strives to provide participants with genuine research experiences. Projects generally fall into one or more of four broad categories:

- Energy Generation
- Energy Storage
- Energy Conservation
- Societal challenges associated with materials processing/modeling/characterization

Past Research Projects

Projects vary from year to year. Examples of research projects from past years include the following:

- Hybrid Perovskites for Photovoltaics
- Materials-by-Design for Thermoelectric Applications
- Nanostructured High Efficiency Thermoelectric Materials and Devices
- Thermal Energy Storage System Design and Measurement for Residential Buildings
- Understanding Nanostructure Electrode/Electrolyte Interfaces in Sodium Ion batteries
- Molecular Simulations for Engineering Sustainable Energy
- Carbon Nanomaterials for Nanoelectronics
- Magneto-Mechanics of Magnetic Shape Memory Alloys
- Fabrication, Characterization, and Testing of Surrogate Nuclear Fuel Assemblies
- Expanding Empirical Models of Perovskites to Include Small Cations
- Extending Empirical Models of Perovskites to Include Chemical Ordering

coen.boisestate.edu/mse-reu
Summer Internships at Michigan State University – Apply Today

Summer Research Opportunities Program (SROP)

MSU SROP is an excellent venue for highly motivated students to receive research training and exposure to graduate studies. We are accepting applications from students interested in the Sciences, Mathematics, and Engineering fields as well as the Social Behavioral Sciences (Sociology, Psychology, Criminal Justice, Linguistics, Economics, Anthropology, etc.). The SROP program lasts for 10 weeks and travel, housing, and stipends are provided. We encourage applications from under-represented groups.

Applications are available November 1.  Web: https://grad.msu.edu/srop  Email: msusrop@msu.edu

Physics REU:
During this 10-week program, which is funded by the National Science Foundation (NSF), National Superconducting Cyclotron Laboratory (NSCL) and Michigan State University (MSU), 15 undergraduate students will gain research experience in physics by carrying out specific projects under direct supervision of Physics & Astronomy faculty or National Superconducting Cyclotron staff. Experimental and theoretical projects are available in Accelerator Physics, Acoustics, Astronomy, Astrophysics, Atomic physics, Computational physics, Condensed Matter Physics, High Energy Physics, Low Temperature Physics, Materials science and Nuclear Physics.  Web: http://www.pa.msu.edu/REU

Chemistry REU:
This REU funded by the National Science Foundation, Cross-Disciplinary Research in Sustainable Chemistry and Chemical Processes, will provide the opportunity for undergraduate research and education in the chemical sciences and engineering. Research projects in green synthesis and materials, inorganic coatings, membranes for water purification and contaminant removal, renewable energy-related materials, and advanced imaging and spectroscopy will be available to the student interns. This program lasts for 10 weeks.

Web: www.chemistry.msu.edu (REU link)

Kellogg Biological Station:
Twelve interns will be offered the following opportunities:

- Join a dynamic group of students and faculty for an authentic field research experience.
- Learn the process of research: reading the literature, formulating questions and hypotheses, designing a study, collecting and analyzing the data, and presenting the results as a paper, poster, and/or talk.
- Build references for your application to graduate school or other programs.

We invite applications from highly motivated individuals, and encourage applications from underrepresented groups in the sciences. You must be a U.S. citizen with undergraduate status to participate in the REU program.

Web: http://www.kbs.msu.edu/education/undergraduate-program/research-experiences-for-undergraduates-reu/
Email: KBSsummer@kbs.msu.edu

Physician-Scientist Program:
The MSU College of Osteopathic Medicine offers “SUPER”, a Summer Undergraduate Physician-scientist-training Education & Research program, to undergraduate students who are planning to pursue a career as a physician scientist. Students interested in combined DO-PhD training for a career as a biomedical researcher are offered an opportunity to conduct research, be exposed to clinical care and the excitement of an academic medical environment.

Web: http://com.msu.edu/DO-PhD-Program/SUPER.htm

BRUSH Program: The Biomedical Research for University Students in Health Sciences at MSU is funded through the National Heart Lung and Blood Institute of the National Institutes of Health. The goal is to provide research opportunities for individuals who are from diverse backgrounds underrepresented in biomedical research. Students participating in this 12-week program will work on a research project under the mentorship of leading biomedical researchers in the fields of heart and lung diseases at Michigan State University. The research experience will be supplemented with seminars, workshops, and networking and presentation opportunities.

Web: http://cyv.msu.edu/research/student-research/undergraduate-student-summer-research-program

Plant Genomics:
MSU is a leader in the Plant Sciences with over 100 faculty engaged in research spanning the discipline. Plant Genomics @ MSU recruits rising sophomores, juniors and seniors with a declared major in biology, biotechnology, biochemistry, chemistry or computer sciences. Participants will engage in a faculty mentored, 10-week research experience that utilizes either wet-lab or computational approaches to address fundamental questions in plant biology using various model and crop species or photosynthetic micro-organisms.

Web: www.plantgenomics.msu.edu

AEA Summer Training Program:
The AEA Summer Training Program (AEASP) and Scholarship Program have increased diversity by preparing undergraduates for doctoral programs in economics and related disciplines. AEASP offers talented undergraduates seriously considering post-graduate studies in economics, the opportunity to develop and solidify their math and other technical skills to enable them to be successful.

Web: http://aecon.msu.edu/aeasps/aeawselcome.php

Engineering REU (EnSURE):
The intent of this program is to encourage students to consider pursuing graduate degrees and to provide them an early opportunity to become involved in research. Work with faculty mentors in one of six Engineering departments:
- Biosystems & Agricultural Engineering
- Chemical Engineering & Materials Science
- Civil & Environmental Engineering
- Computer Science & Engineering
- Electrical & Computer Engineering
- Mechanical Engineering

Applicants do not have to be US citizens.

Web: http://www.egr.msu.edu/undergraduate/ressources/summer-research  Email: colbyka@egr.msu.edu


Outstanding undergraduate students from other institutions with an interest in pursuing their Ph.D. can apply to SROP upon entering or completing their junior year. Students have the opportunity to conduct full-time summer research under the mentorship of the country’s leading engineering faculty members. The program culminates in a research symposium, oral or poster session.

**IMPORTANT DATES**

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<th>Application Deadline</th>
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<th>Program Dates</th>
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<td>January 15, 2018</td>
<td>March-April 2018</td>
<td>May 30-July 27, 2018</td>
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*SROP participants are expected to participate full-time during the 8 week program. Participants may not enroll for classes, concurrent summer programs, or hold other employment during the period of the program. SROP is held on the U-M Ann Arbor campus.

**BENEFITS**

- $4,000 stipend
- Roundtrip airfare or mileage
- Room and board in University housing facilities
- GRE preparation course at no additional cost
- Weekly seminars to help prepare for graduate school
- Networking and professional development opportunities
- Access to campus facilities such as libraries, computer labs, etc. (gym fees are extra)

"Over the years, my nine SROP students have enriched the summer research environment in my group and contributed intellectually, and in terms of group cohesion."

Niel H. Walter, Professor
Chemistry, Biochemistry and Biological Chemistry

**ELIGIBILITY**

Applicants must:

- Be a U.S. citizen, permanent resident, or non-U.S. citizen with DACA
- Be able to demonstrate that they are from a background that will contribute to the diversity of the community of scholars in SROP. Students from racial or ethnic minority groups, low-income family backgrounds, first-generation U.S. citizens, and first generation college students are especially encouraged to apply.
- Have a minimum overall 3.0 GPA (on a 4.0 scale). Students who have attained a GPA of 3.5 or above are strongly recommended.
- Be entering their junior or senior year in college (at a school other than the University of Michigan) and not scheduled to graduate before December 2017.
- Have an interest in pursuing a doctoral degree in one of the Rackham graduate programs. Please note that this does not include programs leading to professional degrees, e.g., Medical School (MD), Law School (JD), Business School (MBA).
- Have a genuine interest in academic research and/or teaching as a career.

**HOW TO APPLY**

For more information and to apply, visit our website at rackham.umich.edu/srop

Have questions? Contact us at srop.rackham@umich.edu
Team

On December 18, 2010, just after 6 pm New Zealand time, seven austral summers of construction came to an end as the last sensor was lowered 2.5 kilometers deep into the ice. IceCube was complete nearly 25 years after the pioneering idea of detecting neutrinos in ice was first proposed.

A dedicated team of physicists, engineers, technicians, and IT professionals from around the world turned this idea into a successful experiment. They built IceCube on time, on budget, and exceeding performance expectations. The IceCube Neutrino Observatory is operated by the Wisconsin IceCube Particle Physics Laboratory at UW–Madison. An international collaboration of 300 scientists is responsible for the scientific research, providing exciting new information about our universe.

South Pole

Located atop the three-kilometer thick Antarctic ice sheet, the Amundsen-Scott South Pole Station is dedicated to research. The National Science Foundation–managed station includes astronomers, biomedical researchers, meteorologists, physicists, glaciologists, and support staff.

The IceCube Lab is located 800 meters away from the station across an ice runway. In this remote location, all supplies, fuel, and food have to be flown in on cargo planes when weather conditions permit. Outside temperatures have been recorded between −82.8 °C and −12.3 °C (−117 °F and 9.9 °F). Around 40 brave souls winterover at the station to take care of the facilities and the scientific experiments during the dark, winter months at the Pole.
A New View of the Universe

The images with the Earth's atmosphere, which have revealed fascinating structures in the universe, are examples of the enigmatic nature of the cosmos. By exploring these phenomena, scientists aim to uncover the secrets that have puzzled us for centuries.

This image shows a very high energy neutrino detected in Italy on December 4, 2012. The neutrino was detected at the Gran Sasso National Laboratory in Italy, providing a new window for exploring the universe and its mysterious environments.

Astrophysical sources in our universe are expanding our understanding of cosmic phenomena. The detection of high-energy neutrinos from extragalactic sources suggests that the universe is a vast reservoir of energy, waiting to be explored and understood.