

Opportunities at the University of Delaware

Sponsor: Delaware Water Resources Center; Co-sponsors presently include: College of Agriculture and Natural Resources, College of Marine Studies, College of Engineering, Department of Plant and Soil Sciences, Institute for Public Administration, Water Resources Agency, Delaware Department of Natural Resources and Environmental Control, U.S. Geological Survey, and Delaware Geological Survey.

Position Description:

Delaware Water Resources Center (DWRC) Undergraduate Internships in Water Resources provide a unique opportunity for undergraduate students and faculty to become directly involved in research and education programs that address water resource related issues of critical importance to Delaware and the Mid-Atlantic region.

Eligibility Requirements:

Applicants must have a 3.0 GPA and attend a university in Delaware.

General Program Information:

Program details, application information, project descriptions, participating faculty and program details are available at:

<http://ag.udel.edu/dwrc/jobs.html>

Sponsor: Undergraduate Scholar Research Programs are available with a number of departments on campus. Science and Engineering Scholars may work with faculty from departments within the College of Arts and Science, the College of Agricultural Sciences, the College of Engineering and the College of Marine Studies.

Position Description:

The Scholars are apprenticed full-time for ten weeks during the summer following the sophomore year, and they continue their research part-time during the following academic year (their junior year) without further remuneration from the Science and Engineering Scholars Program. For research assistance accomplished during the junior year, Scholars may earn “technical elective,” “major elective,” or “free elective” credit, or they may work for a salary if their faculty sponsor has funding for them.

Eligibility Requirements:

Applicants must have a 3.2 GPA and have completed their sophomore year in one of the participating majors at the University of Delaware.

General Program Information:

Information on all summer programs through the University of Delaware can be found at: <http://www.udel.edu/UR/scholars.html>.

It is suggested that interested students read the Handbook for Scholars before applying. The handbook for Science and Engineering Scholars can be found at:

<http://www.udel.edu/UR/Handbook.pdf>

Position Title: Undergraduate Summer Research

Sponsor: Center for Environmental Molecular Science – Stony Brook University

Location: Stony Brook, NY

Employment Dates: Summer Internships last about 10 weeks (June through August).

Background Information:

The Center for Environmental Molecular Science (CEMS) at Stony Brook University invites applications from undergraduate students to participate in a summer research program. CEMS involves collaboration between Stony Brook University and Brookhaven National Laboratory, both situated on eastern Long Island in New York. We are close to beaches and only 1-1/2 hours from New York City. CEMS research is focused on understanding the mechanisms that govern the behavior of chemical contaminants in our environment.

The student-advisor relationship in the summer research program is modeled after the relationship between graduate students and their advisors in a research university setting. Thus, students are given individual projects and a good deal of independence and responsibility. At the same time, the advisors are always available for consultation and guidance. Students will also benefit from interaction with full-time graduate research students who are working in the same facilities. In the first weeks of the program, the advisors spend time training the students on technique and laboratory safety. During the following weeks, the students and advisors have almost daily contact in the laboratories.

Position Description:

Working closely with staff and faculty members of the Center for Environmental Molecular Science, students will spend ten weeks at Stony Brook working on projects related to environmental science. The student participants will experience the essential elements of a quality research environment, including data collection, analysis, and presentation of their results to other scientists.

Eligibility Requirements:

- ✧ Undergraduate majoring in any of the physical sciences
- ✧ Completion of at least 60 academic credits
- ✧ U.S. Citizen or permanent resident
- ✧ Interest in a research career in Earth and Environmental Sciences, Physics, Chemistry, or Materials Science

Compensation:

Each participant will receive:

- ✧ \$3,500 stipend
- ✧ Travel allowance up to \$600
- ✧ Housing on the university campus

Activities:

When not working in the laboratories, group housing in the Stony Brook residence halls and extracurricular activities provide for an excellent social experience as well. Stony Brook University is not far from beaches and is 1-1/2 hours from New York City by rail. Extracurricular activities usually include visits to the American Museum of Natural History and other New York attractions. Other recreational activities may include exploration of the upper Carmans River by canoe or kayak, fishing excursions on Long Island Sound, and attending a New York Yankees or Mets game.

Application Information:

To apply send the following materials:

- ✧ Online Application (pdf file available at website listed below)
- ✧ Recent college transcripts
- ✧ Two (2) letters of recommendation (forms included in application online)

To:

Administrative Coordinator
Center for Environmental Molecular Science
Stony Brook University
Stony Brook, N. Y. 11794-2100

Additional Questions can be directed to:

Owen Evans

Tel: (631) 632-8061

Fax: (631) 632-8240

E-mail: cems@stonybrook.edu

General Internship Information:

<http://www.cems.stonybrook.edu/education/summer/index.html>

Position Title: Undergraduate Summer Research

Sponsor: Environmental Molecular Science Institute – University of Notre Dame

Location: South Bend, IN

Employment Dates: Summer Internships last about 8 weeks (June through August).

Background Information:

The Research Experience for Undergraduates (REU) program is sponsored by the Environmental Molecular Science Institute, hosted by the Department of Civil Engineering and Geological Sciences at the University of Notre Dame. The Institute brings together scientists and engineers with expertise in a wide range of environmental sciences, and students are offered a truly interdisciplinary research environment. The scientific mission of the Institute is to provide a molecular-scale understanding of heavy-metal (Cd, Cu, Pb) and actinide (U, Np) interactions with nano- and micro-particles (bacteria, natural organic matter, mineral colloids, etc.) in the environment, and to determine how these particles affect contaminant transport in geologic systems. The Institute integrates traditional macroscopic and microscopic techniques with state-of-the-art molecular-scale approaches such as x-ray absorption spectroscopy, atomic force microscopy, and molecular dynamics modeling. The Institute maintains an extremely well-equipped analytical facility in Fitzpatrick Hall, and together with the Center for Environmental Science and Technology, offers powerful approaches for studying molecular-scale environmental geochemistry.

Position Description:

This REU site provides the participants with the opportunity to pursue research related to understanding the molecular-scale controls on contaminant transport in geologic systems. It will involve eight weeks of lab work at the University of Notre Dame, culminating in a REU forum in which all participants will present results of their studies.

Eligibility Requirements:

- ✧ Undergraduate majoring in any of the physical sciences
- ✧ U.S. Citizen or permanent resident
- ✧ All participants must have health insurance

Compensation:

Each participant will receive:

- ✧ \$4,000 stipend
- ✧ Housing on the university campus

Application Information:

To apply send the following materials:

- ✧ Online Application (pdf and non-pdf files available at website listed below)
- ✧ Recent college transcripts
- ✧ One (1) letter of recommendation (forms included in application online)

To:

Dr. Jeremy B. Fein
Environmental Molecular Science Institute
169 Fitzpatrick Hall of Engineering
University of Notre Dame
Notre Dame, IN 46556
Email: emsi@nd.edu
Phone: (574) 631-8556
FAX (574) 631-8797

The applications may be submitted either in paper copy or electronically (pdf or Microsoft Word).

Additional Information:

Send an email to Jennifer Redding at redding.11@nd.edu for additional information about this REU program.

General Internship Information:

<http://www.nd.edu/~emsi/reu.03.html>

Position Title: Undergraduate Education Program Participant

Sponsor: Savannah River Ecology Laboratory (SREL)

Location: Aiken, SC

Employment Dates: Appointments are generally for 10-12 week periods, although shorter or longer term appointments may be negotiated.

Background Information:

SREL offers outstanding educational and research opportunities in ecology and environmental sciences for undergraduate students. This program provides research experience for college students, primarily juniors and seniors, considering careers in ecological disciplines. Students work closely with SREL faculty advisors on independent research projects. Since 1967, more than 20 students a year have participated in this program.

This is a **summer research program**. Students should visit <http://www.uga.edu/srel/REU/REUFac.htm> to view the research conducted by scientists at the lab.

Position Description:

Undergraduate students are expected to participate as professionals in laboratory activities and to attend seminars and discussion groups. Participation is also expected in special activities such as local and regional field trips and special lecture programs unless these programs conflict directly with the students' research.

A 15-minute seminar to which all SREL faculty, research staff and students are invited is expected at the completion of the appointment, along with a five-page written account of the project.

Eligibility Requirements:

College students majoring in biology, chemistry or environmental sciences are eligible. Priority is given to juniors and seniors with a B average or better. However, allowances are made for freshmen, sophomores and recent graduates. Participants must be US citizens.

Compensation:

Undergraduates are paid a stipend equivalent to \$300/week. One round trip from the home or academic institution is reimbursed up to \$400. Acceptance in the program also includes \$1200 (for non-local students) to be applied to housing and living expenses at the University of South Carolina's Pacer Downs.

Application Information:

To apply send the following materials:

- ✧ Completed Application (pdf file available at website listed below)
- ✧ Recent college transcripts
- ✧ Two (2) letters of recommendation from faculty in your department

To:

Lindy Steadman
Education Program Coordinator
Savannah River Ecology Laboratory
Drawer E
Aiken, SC 29802
Phone: (803) 725-0156
E-mail: Steadman@srel.edu

Application Deadline:

Applications for the summer program are due ***February 15.***

Incomplete applications ***will not*** be considered.

General Internship Information:

http://www.uga.edu/srel/REU/REU_Program.htm

<http://www.uga.edu/srel/undergrad.htm> - pdf of application available at this site.

Position Title: Science Undergraduate Laboratory Internships

Sponsor: Oak Ridge National Laboratory

Location: Oak Ridge, TN

Employment Dates: Summer Internships last for 10 weeks (May through August). Fall (August through December) and Spring (January through May) Internships last for 16 weeks.

Background Information:

ORNL has a long history and interest in providing hands-on research experiences to undergraduates, graduates, postgraduates, and faculty of the nation's colleges and universities. Over the years, these programs have enhanced academic curricula and at the same time have helped the Laboratory realize its vision for excellence in science, mathematics, engineering, and technology. ORNL wants students like you in its facilities.

The Oak Ridge Institute for Science and Education (ORISE), the administrative agent for ORNL's education programs, has more than 50 years experience in operating programs for students. Together, ORNL and ORISE know how to provide you with the best experience.

Position Description:

Join the research community at Oak Ridge National Laboratory for a summer or semester and get paid for having the experience of your life!

- ✧ Experience the thrill of conducting research at the cutting edge.
- ✧ Interact with international experts in fields you have studied.
- ✧ Contribute to the technical capabilities of the U.S.
- ✧ Look for answers to pressing problems of global importance.
- ✧ Publish your research in a technical journal.
- ✧ Enjoy the camaraderie of students with similar interests.

This is a summer research program. When applying you will need to know what type of research you wish to complete and the scientists with whom you wish to work.

Eligibility:

- ✧ Must be currently enrolled as an undergraduate student and completed at least one semester
- ✧ Must be 18 years or older at the start of the program
- ✧ Must be United States Citizen or Permanent Resident Alien
- ✧ Must have a cumulative grade point average of 2.5 or above
- ✧ Can participate in a maximum of two SULI internships
- ✧ Must have coverage under a health insurance plan. It is the responsibility of each participant to secure insurance coverage before arriving at the appointment site.

Position Requirements:

- ✧ Full-time commitment to conduct research under the direction of a scientific mentor
- ✧ Attendance at weekly seminar series
- ✧ Submittal of a research abstract
- ✧ Participation in the poster session
- ✧ Completion of pre- and post-appointment surveys
- ✧ Submittal of an abstract and either a research paper or a Power Point presentation to DOE Headquarters

Compensation:

Each participant will receive:

- ✧ \$400 per week paid bi-weekly.
- ✧ \$75 housing allowance for those whose permanent address is more than 50 miles from Oak Ridge.
- ✧ Prepaid airline tickets or limited travel reimbursement for mileage, provided the participant's permanent address is more than 50 miles from Oak Ridge.

Housing:

Who is assigned to housing. If you are coming from beyond a 50-mile radius and do not have a local permanent address, housing arrangements will be made for you in a local apartment complex (summer only). If you qualify for housing and it is not available at the time of your appointment, you will receive a housing allowance of \$75 per week to arrange your own.

Roommates. Each one-bedroom furnished apartment will house two male or two female participants. Your apartment-mate's name, address, and telephone will be sent to you. We encourage you to contact each other before moving to Oak Ridge.

What comes with your apartment. Apartment units are air conditioned and carpeted. Furnishings include drapes or blinds, furniture (twin beds, etc.) refrigerator, stove, and dishwasher. You should bring all other items you will need such as linens, small appliances, television, cooking utensils, and dishes. Wal-Mart is nearby, so if you forget anything, you can always purchase it when you get here. Phone hook-ups are available but you will need to make your arrangements with the telephone company or bring a cellular phone. Laundry facilities are also available. The complex even has an outdoor swimming pool and clubhouse that you are welcome to use.

Application Information:

You are **strongly** encouraged to apply online through the Department of Energy at: <https://applicationlink.labworks.org/applicationlink/default.htm>

Be sure to indicate on the application that you wish to participate in the Research Program at Oak Ridge National Laboratory.

Before you apply be sure to visit the Environmental Sciences Division at ORNL (<http://www.esd.ornl.gov/>) to see which researchers with whom you may wish to collaborate and work you want to complete.

Application Deadlines:

The deadline for applications for the Summer Program is **February 9**.

The deadline for applications for the Fall Program is **July 1**.

The deadline for applications for the Spring Program is **November 3**.

General Internship Information:

<http://www.scied.science.doe.gov/scied/erulf/about.html> - DOE site

<http://www.ornl.gov/orise/edu/ornl/doeprog/> - ORNL site

Position Title: Science Undergraduate Laboratory Internships

Sponsor: U.S. Department of Energy (DOE)/Argonne National Laboratory

Location: Chicago, IL

Employment Dates: Summer Internships last for 10 weeks (May through August). Fall (August through December) and Spring (January through May) Internships last for 16 weeks.

Background Information:

The U.S. Department of Energy's (DOE) Argonne National Laboratory, a major research center, is pleased to announce opportunities for college and university undergraduate students to participate in the Laboratory's ongoing research programs. In addition to such opportunities, the U.S. Department of Energy is directly sponsoring research participation at other DOE facilities. At Argonne, college/university students may obtain research experience through the Department of Energy's Science Undergraduate Laboratory Internships Program or the Student Research Participation Program.

Position Description:

This is a summer research program. When applying you will need to know what type of research you wish to complete and the scientists with whom you wish to work. When filling out the online application, you may search the research catalog for possible projects by research title (using soil as a keyword, provides many projects), ANL Research Division or Academic Discipline.

Eligibility:

- ✧ Must be currently enrolled as an undergraduate student
- ✧ Must be sophomore, junior or senior
- ✧ Must be United States Citizen or Permanent Resident Alien
- ✧ Must have a cumulative grade point average of 2.5 or above
- ✧ Can participate in a maximum of two SULI internships
- ✧ Must have coverage under a health insurance plan. It is the responsibility of each participant to secure insurance coverage before arriving at the appointment site.

Position Expectations:

- ✧ Complete the full ten or sixteen week program
- ✧ Complete entrance and exit surveys on the EDULINK web-site
- ✧ Behave in a responsible and professional manner
- ✧ Submit a complete copy of a Research Paper or Power Point presentation (depending on the individual laboratory's policy)
- ✧ Submit an abstract of their research in the required format
- ✧ Attend all scheduled events including lectures, tours and group activities.

Participants should expect to spend more than 40 hours per week and more than 8 hours per day in activities and/or research related to their internships.

Compensation:

Each participant will receive:

- ✧ \$400 per week paid bi-weekly.
- ✧ Housing allowance for those whose permanent address is more than 50 miles from Argonne (if housing is not provided).
- ✧ Travel expenses will be reimbursed provided the participant's permanent address is more than 50 miles from Argonne.
 - Travel by a private automobile will be reimbursed at the current government rate up to a maximum of \$350.00 or the cost of the lowest commercial airfare, whichever is lower. Travel by air will be reimbursed at the cost of the lowest commercial airfare.

Housing:

Apartment type lodging facility provided on site.

Application Information:

You **must** apply online through the Department of Energy at:

<https://applicationlink.labworks.org/applicationlink/default.htm>

AND

You **must** apply through Argonne National Laboratory at:

<http://www.dep.anl.gov/highered/summr.htm>

Before you apply you should search the research catalog for possible projects. Visit <http://www.dep.anl.gov/catalog/catalog.htm> to see projects. You may search by research title (using soil as a keyword, provides many projects), ANL Research Division or Academic Discipline.

It is **strongly** encouraged that you apply online.

Application Deadlines:

The deadline for applications for the Summer Program is **February 9**.

The deadline for applications for the Fall Program is **July 1**.

The deadline for applications for the Spring Program is **November 3**.

General Internship Information:

<https://www.scied.science.doe.gov/SciEd/ERULF/about.html> - DOE site

<http://www.dep.anl.gov/highered/summr.htm> - ANL site

Position Title: Science Undergraduate Laboratory Internships

Sponsor: U.S. Department of Energy (DOE)/Brookhaven National Laboratory

Location: Upton, NY

Employment Dates: Summer Internships last for 10 weeks (May through August). Fall (August through December) and Spring (January through May) Internships last for 16 weeks.

Background Information:

The United States Department of Energy (DOE) has established a National program entitled the Science Undergraduate Laboratory Internship (SULI) (formerly known as the Energy Research Undergraduate Laboratory Fellowship Program ERULF). Under it, Brookhaven National Laboratory (BNL) and ten other laboratories will be offering student appointments for the summer semester.

Selected participants will be associated with members of the Brookhaven National Laboratory scientific and professional staff in an educational training program developed to give research experience in areas of chemistry, physics, engineering, biology, nuclear medicine, applied mathematics, high and low energy particle accelerators, and science writing.

Position Description:

You will participate in a cutting-edge scientific research program, directed by a BNL staff member. The nature of your research assignment will be determined after a review of your background and interests by our staff, relative to their current research activities.

As a major user facility, BNL attracts visiting scientists and University faculty from across the US and the world. Like them, you will be treated as a colleague in your research group and a full member of the BNL community - able, as time permits, to attend or take part in scientific seminars, visit major BNL facilities, and interact casually with other undergraduates, graduate students, post-doctoral fellows, and technical staff, as well as your immediate research group. You may also participate in a wide variety of recreational activities available to laboratory employees.

You may very well have the chance to offer presentations of your research results verbally and/or in writing; possibly, your work may appear in a contribution to a scientific journal or BNL report. Goals of SULI at BNL are to offer not only a specific learning experience, but an exposure to the "scientific enterprise," to support future career developments.

Eligibility:

- ✧ Must be currently enrolled as an undergraduate student
- ✧ Must be sophomore, junior or senior
- ✧ Must be United States Citizen or Permanent Resident Alien
- ✧ Must have a cumulative grade point average of 2.5 or above
- ✧ Can participate in a maximum of two SULI internships
- ✧ Must have coverage under a health insurance plan. It is the responsibility of each participant to secure insurance coverage before arriving at the appointment site.

Position Expectations:

- ✧ Complete the full ten or sixteen week program
- ✧ Complete entrance and exit surveys on the EDULINK web-site
- ✧ Behave in a responsible and professional manner
- ✧ Submit a complete copy of a Research Paper or Power Point presentation (depending on the individual laboratory's policy)
- ✧ Submit an abstract of their research in the required format
- ✧ Attend all scheduled events including lectures, tours and group activities.

Compensation:

Each participant will receive:

- ✧ \$400 per week paid bi-weekly.
- ✧ Housing allowance for those whose permanent address is more than 50 miles from Argonne (if housing is not provided).
- ✧ Travel expenses will be reimbursed provided the participant's permanent address is more than 50 miles from Argonne.
 - Travel by a private automobile will be reimbursed at the current government rate up to a maximum of \$350.00 or the cost of the lowest commercial airfare, whichever is lower. Travel by air will be reimbursed at the cost of the lowest commercial airfare.

Housing:

For all non-local students, dormitory-style single-room (air-conditioned) housing will be available on BNL's 5000 acre site.

Application Information:

You **must** apply online through the Department of Energy at:

<https://applicationlink.labworks.org/applicationlink/default.htm>

Be sure that you indicate that you would like to participate in this program at Brookhaven National Laboratory.

Before you apply, you should think about the type of research is important to you. At BNL, they will try to match your interests with the project ideas of the scientists that will act as mentors.

Application Deadlines:

The deadline for applications for the Summer Program is **February 9**.

The deadline for applications for the Fall Program is **July 1**.

The deadline for applications for the Spring Program is **November 3**.

General Internship Information:

<https://www.scied.science.doe.gov/SciEd/ERULF/about.html> - DOE site

<http://www.bnl.gov/scied/programs/suli/index.html> - BNL site

Position Title: Interdisciplinary Ecosystem Research

Sponsor: Plattsburgh State University

Location: Northeastern New York State

Employment Dates: The summer research program lasts about 8 weeks.

Background Information:

The Center for Earth and Environmental Science at Plattsburgh State University of New York (PSU), the W.H. Miner Agricultural Research Institute, and the National Science Foundation will provide an eight-week summer research experience for undergraduates who are interested in ecosystem research. Our objective is to promote the professional development of undergraduate students through their participation in ongoing ecosystem research. The research program will involve interdisciplinary investigations of ecosystem-level processes in pine barrens and mixed hardwood forests in northeastern New York. Participants will work closely with the program's faculty mentors on research projects ranging from bedrock geology to surface and ground water hydrogeology, biogeochemistry (nutrient cycling), and terrestrial plant and invertebrate ecology.

Position Description:

All students will participate in an environmental policy seminar and in weekly project meetings to evaluate progress and examine the interdisciplinary linkages between the individual research components.

Participants will have full access to the research, library and computer facilities at Plattsburgh State University, including the state-of-the-art biogeochemistry laboratories of the newly renovated Lake Champlain Research Institute. The pine barrens field site contains the Ecosystem Studies Field Laboratory, an instrumented portion of the Little Chazy River watershed that is dedicated to undergraduate teaching and research. The Miner Institute (right) research facilities, including a 18-unit, fully networked and internet-accessible computer laboratory and complete soil and water chemistry laboratories, will also be available.

Eligibility Requirements:

Applicants must be matriculated, junior or senior-level undergraduates majoring in a natural science or engineering program at a four-year institution or have completed an AA or AS degree at a two-year college. A full-year sequence in geology (or physics), chemistry, and/or biology and familiarity with spreadsheets or databases is recommended. Applicants should have a B average or better in their major. Persons with special needs should contact the project director before the program begins.

Compensation:

Each participant will receive:

- ◇ \$2,400 stipend per student for the 8-week period.
- ◇ Housing in 2 or 3 person efficiency apartments at the Miner Institute campus. Each apartment is equipped with a private bath, refrigerator, and microwave oven and students will have access to common laundry and barbeque facilities.

Credit Option:

Participants who wish to register for PSU credit will enroll in ENV 409 Ecosystem Research (6-credits) and choose one of the six research projects (below), depending upon their interests and academic backgrounds. The projects and their faculty mentors are listed below. Enrollment is limited to four students for each research course. The program also features a 1-credit environmental policy seminar, which is required for all participants. ***If you are accepted as an REU summer research fellow there are no fees for these courses.***

Research Projects

- ✧ Surface-Water Hydrology (Dr. David Franzi)
- ✧ Ground-Water Hydrology (Dr. Edwin Romanowicz)
- ✧ Forest Biogeochemistry (Dr. Robert Fuller)
- ✧ Invertebrate Ecology (Dr. Timothy Mihuc)
- ✧ Terrestrial Plant Ecology (Dr. Kenneth Adams)
- ✧ Wetlands Ecology (Dr. Melinda Wu)

Seminar (1-credit)

- ✧ Environmental Policy Seminar (Dr. Kate Joyce)

Application Information:

To apply you must:

- ✧ Complete an application for the program The application is available at: <http://faculty.plattsburgh.edu/david.franzi/PSURP/Application%20Ver-1.pdf>
- ✧ An official transcript of courses and grades
- ✧ "Statement of Purpose" that explains why you would like to participate in the PSU/REU Program.
- ✧ Two (2) letters of recommendation from your undergraduate advisor and another professor or scientific/engineering professional who is familiar with your work.

Send to:

Plattsburgh Summer Undergraduate Research Program
David A. Franzi or Tim Mihuc (Project Directors)
Center for Earth and Environmental Science
Plattsburgh State University
101 Broad Street
Plattsburgh, NY 12901

Telephone: 518-564-4033
FAX: 518-564-5267 or 518-564-3152

Email: david.franzi@plattsburgh.edu
timothy.mihuc@plattsburgh.edu

Application Deadlines:

Applications must be received by ***March 15*** for the summer research program.

General Internship Information:

<http://faculty.plattsburgh.edu/david.franzi/PSURP/PSURPindex.htm>

Position Title: Interdisciplinary Watershed Studies

Sponsor: College of William and Mary

Location: Williamsburg, VA

Employment Dates: The summer research program lasts about 10 weeks.

Background Information:

2003 marks the first year of an interdisciplinary summer internship program to study watersheds at the College of William and Mary. Funding is from the National Science Foundation's Research Experience for Undergraduates (REU) program. Each year we will select 10 undergraduates from across the country to participate in student research projects mentored by faculty in environmental geology, biology, sociology and economics. The cohort of students will work with W&M faculty mentors to determine the impacts of changing watershed land use in scientific and socio-economic contexts. Students will complete research projects on the 16-ha Lake Matoaka (the oldest man-made impoundment in Virginia) and in streams and associated uplands of the two watersheds in which the college owns property. Investigations of current hydrogeologic and ecological status in the two watersheds will be completed by determining stream discharge characteristics and responses to stormflows, spatial variation in water quality, lake-wide budgets for water, sediment and nutrients, and population/community structure in aquatic and terrestrial portions of the watersheds. Because the status of the watershed systems is the result of historical changes in land use, sociologic and economic examinations of residents' perception of development, environmental protection and water and property rights will be used to determine the current direction and strength of population and market forcing functions. Access to a richly detailed history of the Colonial Williamsburg region will allow us to develop a timeline of changes in watershed land use as a context for analysis of watershed structure and function.

Position Description:

Over the 10-week summer program, participants will live together on the College of William and Mary campus and work on projects at the new Keck Environmental Field Laboratory. Participants will identify a faculty mentor in the first week of the program. Daily meetings with mentors will help shape and refine specific research projects within environmental disciplines. Weekly, interdisciplinary meetings with faculty will allow the research cohort to present their findings across disciplines, receive feedback from all program participants, and discuss project directions. At the end of the summer program, students will give oral presentations of the results of their work in conference format where all faculty will be invited to attend. Over the subsequent academic year, students will work from their home institution to develop papers with project mentors for scientific publication as appropriate. Selected students will travel to regional conferences to make poster presentations of their research.

Eligibility Requirements:

Freshmen thru first-semester seniors are eligible to apply. Please note that applicants must be enrolled in a degree program leading to a bachelor's degree.

Compensation:

Each participant will receive:

- ✧ \$3,000 stipend per student for the 10-week period.
- ✧ Free housing in campus dormitories will be arranged by program coordinators.
- ✧ Some travel assistance may be available for travel to and from the program.

Application Information:

To apply you must:

- ✧ Complete an application for the REU Watershed Research Program that may be submitted electronically as a Word document. Alternately, you may complete the form, print it, and then submit to the address below. The application is available at: http://www.wm.edu/environment/REU/REU_Application.html
- ✧ Obtain 2 letters of recommendation in sealed, signed envelopes; these letters should be from faculty at your college or university and should address your academic and research capabilities/potential.
- ✧ Obtain one (1) official copy of your transcript (may be an original released to student).

Send to:

REU Watershed Program
Keck Environmental Field Lab, Wake Drive
College of William and Mary
Williamsburg, VA 23185
Fax: (757) 221-5076
espcen@wm.edu

Application Deadlines:

Applications must be received by **March 1** for the summer research program.

General Internship Information:

http://www.wm.edu/environment/REU/Reu_Home.html

Here you can read about the program, as well as the faculty mentors with whom you may work.

Position Title: Undergraduate Summer Research

Sponsor: Colorado State University

Location: Fort Collins, CO

Employment Dates: The summer research program lasts about 8 weeks.

Background Information:

The National Science Foundation and The Water Center at Colorado State University offer a unique opportunity for 15 undergraduate students from four-year colleges and universities to conduct independent research in Water Science and Engineering during 8 weeks each summer under the guidance of faculty in the departments of Civil Engineering, Earth Resources, Soil and Crop Science, Chemical and Bioresource Engineering, Fishery and Wildlife Biology, and Rangeland Ecosystem Science. The goal of the program is to provide a comprehensive research experience which will motivate students toward a research career in water. Students will work in teams including faculty, graduate students, and staff to conduct research and gain hands-on experience in laboratory and field research methods.

Position Description:

REU participants will gain comprehensive research experience through field and laboratory research, literature synthesis, laboratory analyses, modeling, statistical analyses, technical writing, teamwork, and oral communication. Interaction with faculty members and graduate students will facilitate and enhance the research experience.

REU participants must prepare and submit a final research report by the end of the summer program. In addition, REU participants must make a poster presentation on the results of their research at a closing REU symposium. REU students are strongly encouraged to participate in the annual undergraduate student research symposium organized by The Water Center at Colorado State University.

Finally, for exceptional projects, provisions will be made for attendance and presentation of the research at the annual American Geophysical Union Hydrology Days Conference, held annually at Colorado State University.

Field Trips and Seminars:

An important component of the research experience of the REU Program in Water Science at Colorado State University is participation in several field trips and bi-weekly workshops and seminars. Examples of seminars and workshops from the 1997, 1998, 1999, 2001, and 2002 Summer Research Experiences include: a history of water development and water rights issues in the West, and a four-part sequence of workshops on ethics in engineering science and research. Fellows participated in the following field trips in 1997, 1998, and 1999: a geomorphologic survey of the Cache-La Poudre River; a full-day, guided visit to Colorado Big Thompson Project hosted by the Northern Colorado Water Conservancy District; and a guided visit to the Engineering Research Center. A variety of seminars and field trips are being scheduled for the 2003 program; some of the same sites may be visited and additional trips planned to complement the 2003 research objectives.

Eligibility Requirements:

To apply you must be an undergraduate student at a four-year college or university and be either a junior or a senior with at least one semester left prior to graduation. You must also be a citizen or permanent resident of the United States or its possessions. An incomplete list of appropriate disciplines follows:

Agricultural Economics
Agricultural Engineering
Agricultural Sciences
Biochemistry
Biological Science
Chemical Engineering
Chemistry

Civil Engineering
Ecology
Environmental Science
Fishery Biology
Forestry
Geology
Hydrologic Science

Microbiology
Natural Resources Management
Natural Resources Recreation
Range and Forest Management
Range Ecology
Soil and Crop Sciences
Watershed Science

Compensation:

Each participant will receive:

- ✧ \$2,400 stipend per student for the 8-week period.
- ✧ Housing in CSU dormitories will be arranged by program coordinators. Otherwise, a housing allowance of up to \$1,500 will be provided.
- ✧ \$300 travel allowance will be provided for the actual cost of travel from the student's residence to Colorado State University.

Activities:

The city of Fort Collins and the Front Range of Colorado provide an ideal setting for outdoor activities of all types: hiking, kayaking the Cache-La Poudre river, white water rafting, cycling, rock climbing, and camping. There are also numerous concerts, festivals, and other cultural activities throughout the summer. Information on these activities will be provided to the fellows upon arrival at Colorado State University.

Application Information:

- ✧ A completed online application form, including a 1-2 page essay describing your research interests in water. Applications are available at:

<http://waterreu.colostate.edu/newapp.htm>

Only on-line applications will be accepted.

- ✧ Two letters of reference from faculty members who can comment on your potential for academic research. Letters of reference must be sent by each faculty reference via e-mail to Jorge A. Ramirez at: ramirez@enr.colostate.edu
- ✧ Transcripts from all colleges attended showing all courses completed and grades, and a list of courses in which you are currently enrolled. Transcripts must be official and mailed to:

WaterREU
c/o Professor Jorge A. Ramirez
Civil Engineering Department
Colorado State University
Fort Collins, CO 80523-1372

Additional Questions can be directed to:

Dr. Jorge A. Ramirez

E-mail: ramirez@enr.colostate.edu

Phone: (970) 491-7621 - Fax: (970) 491-7727

Dr. Judy Hannah
E-mail: jhannah@cnr.colostate.edu
Phone: (970) 491-1392

Ms. Marilee Rowe
E-mail: mrowe@engr.colostate.edu
Phone: (970) 491-5247 - Fax: (970) 491-7727

Application Deadlines:

Applications must be received by ***March 28*** for the summer research program.

General Internship Information:

<http://waterreu.colostate.edu/>

Position Title: Harvard Forest Summer Research Program

Sponsor: Harvard University

Location: Harvard Forest, Central Massachusetts

Employment Dates: Summer Internships for 12 weeks (May through August).

Background Information:

The Forest is located in central Massachusetts about 70 miles west of Boston. The 3000-acre site lies in the Transition Hardwood-White Pine-Hemlock forest region, and includes a variety of forests and wetlands. Facilities include laboratories for nutrient analysis, physiological and population ecology, isozyme, tree-ring and pollen analysis; greenhouses; herbarium; computer laboratory; library; archives; and the Fisher Museum of Forestry.

Harvard Forest research focuses on the effects of natural and human disturbances on forest ecosystems, including atmospheric pollution, global warming, hurricanes, treefalls, and insect outbreaks. Researchers come from many disciplines, and specific projects center on population and community ecology, paleoecology, land-use history, wildlife biology, biochemistry, soil science, ecophysiology, and atmosphere-biosphere exchanges.

Position Description:

Each student will participate in an on-going research project with a researcher from Harvard University, University of New Hampshire, Marine Biological Laboratory Ecosystem Center or other institutions. Responsibilities may include field sampling, laboratory studies, data analysis and scientific writing. In addition, students attend weekly seminars and workshops given by nationally known scientists on topics regarding ecosystem research, career planning, and graduate school preparation.

In July, participants attend a one-day symposium on careers in ecology at the Institute of Ecosystem Studies in Millbrook, New York. At the end of the summer, students will develop their research results, prepare an abstract, and present their findings at a student research symposium.

Academic credit may be arranged with the student's home institution. Students are encouraged to give a presentation regarding their summer research project upon returning to their home institution.

Eligibility Requirements:

Applicants must be enrolled in a degree program leading to a bachelor's degree.

Compensation:

Each participant will receive:

- ✧ \$3,600 stipend
- ✧ Free housing at Fisher House as well as a full board program for participants who live on site.

Application Information:

To apply send the following materials:

- ✧ Online Application (pdf file available at website listed below)
- ✧ Recent college transcripts
- ✧ Two (2) letters of recommendation from faculty in your department

To:

REU Summer Program
Harvard Forest
P.O. Box 68
324 N. Main Street
Petersham, MA 01366
Email: hfapps@fas.harvard.edu
Fax: (978) 724-3595

Applications may also be sent via email or fax.

To receive the status of your application materials, include a self-addressed, stamped envelope with your application.

Application Deadline:

Applications must be received by **March 3** for the summer research program.

General Internship Information:

<http://harvardforest.fas.harvard.edu/education/reu/reu.html#>

Position Title: Summer Research Program Participant

Sponsor: River Basins Research Initiative, Furman University

Location: Greenville, SC

Employment Dates: Summer Internships for 10 weeks (June through August).

Background Information:

The 1900 km² Enoree River basin incorporates Greenville, Spartanburg, Laurens, and Union Counties, and enters the Broad River near Whitmire, SC. This river basin is home to a diverse array of land uses from intensive industrialization to a national forest. The Enoree River has received the next to worst water quality ranking by the Environmental Protection Agency on the basis of the biological and chemical indices. Our goal is to determine the cause of the poor water quality, and attempt to link land use to water quality. This research is funded by an NSF-REU grant, a South Carolina Department of Health and Environmental Concerns Non-Point Source Pollution Program grant (EPA funds), and Furman University.

Position Description:

Students will be working with topnotch analytical equipment, both in the field and in the lab, so one of the goals is learning proper field and laboratory techniques. Field equipment for water sampling includes Accumet pH meters, YSI conductivity and dissolved oxygen meters, and filtration devices. Samples are stored following EPA standard methods. Field equipment for biological sampling includes seines and electroshocking equipment. In the laboratory, the students will work with a Tekmar-Dohrman Phoenix 8000 organic carbon analyzer, a Varian inductively coupled plasma atomic emission spectrometer (ICP-AES), a Dionex 120 ion chromatograph, a Perkin-Elmer fluorimeter, an O.I. Analytical Flow Solution IV Ion Analysis System, a Turner Designs Field Fluorimeter, an autoclave and chamber for bacterial analyses, a Ro-tap and sieve set, and a Philips x-ray fluorescence spectrometer. In addition, we have GIS capability with a site license for ArcView 3.2.

All students will participate in four evening sessions that discuss different aspects of environmental ethics. Topics include general ethics, scientific ethics, and a comparison between western and eastern views of the environment. Readings from books provided by the program will accompany the sessions. The goal of this part of the program is to expose the students to the idea of environmental issues as a cultural concern.

Eligibility Requirements:

Applicants must be citizens or permanent residents of the United States and its possessions and must be enrolled in a degree program leading to a bachelor's degree in Earth Science, Environmental Science, Biology, or Chemistry. Students who will receive their degree prior to August are not eligible.

Compensation:

Each participant will receive:

- ✧ \$3,500 stipend
- ✧ Apartment style housing on the university campus

Application Information:

To apply send the following materials:

- ✧ Online Application (pdf file available at website listed below)
- ✧ Recent college transcripts
- ✧ Two (2) letters of recommendation from faculty in your department

To:

EES Department
Furman University
Greenville, SC 29613

Additional Questions can be directed to:

Dr. Ken Sargent

E-mail: ken.sargent@furman.edu

General Internship Information:

http://alpha.furman.edu/academics/dept/ees/newhome/research_rbri_summer.html