



Summer Research Experiences

@ NC State University



Summer Research Experiences @ NC State University

Why Should You Apply for an Undergraduate Summer Research Program?

NC State's Summer Research Programs offer hands-on research experiences that

- introduce students to all aspects of research (planning experiments, managing time, writing up results, and presenting work)
- familiarize participants with the ethical issues of research
- enable students to work on projects that can eventually become their senior theses
- support students as they determine if they are truly interested in pursuing a graduate degree that involves research
- assist students in deciding what field of research they would like to pursue
- help students meet individuals attending other universities, making contacts that can last a lifetime
- introduce students to mentors who can make a big difference in their future academic development
- make students more desirable candidates to graduate school search committees
- prepare students to be more competitive for national scholarships and fellowships
- provide students an insider's look at NC State University (to which some students will apply for graduate work).

In addition, SRE participants engage in several joint activities:

- Summer Research Program Welcoming Reception
- Lab Safety Training
- Seminars on How to Make Effective Research Presentations
- Seminar on Navigating the Graduate School Process
- Seminar on Financing Graduate Education
- Seminar on Research Ethics
- Social Events
- Undergraduate Summer Research Symposium

For more information about Undergraduate Research Experiences at NC State,
please visit www.ncsu.edu/undergrad-research, or contact:

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For information on graduate education at NC State, please visit www.ncsu.edu/grad, or contact:

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NC State University is dedicated to equality of opportunity. The University does not condone discrimination against students, employees, or applicants in any form. NC State commits itself to positive action to secure equal opportunity regardless of race, color, creed, national origin, religion, sex, age, or disability. In addition, NC State welcomes all persons without regard to sexual orientation.

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Department of Chemistry NSF-REU Program

About the Program: The Chemistry REU program provides undergraduate students with the opportunity to experience cutting-edge chemical research in the fields of materials, energy, catalysis and life science and to broaden their perspectives on chemical research careers in both academic and industrial settings. During the 10-week program, participants will have an opportunity to perform research on an independent project under the guidance of a faculty advisor and graduate student or postdoctoral researcher. The students will also take on-site visits to leading chemical companies and government laboratories in RTP to gain first-hand information on the job opportunities in chemical industry.

Program Activities: The REU Program takes place from the beginning of June through the beginning of August each year. During this period, the undergraduate student researchers will:

- conduct independent research project in a chemistry research area of their interest
- tour the Department of Chemistry's laser laboratory, X-ray and powder diffraction facility, and NMR facilities
- on-sight visit industrial partners and government laboratories in the RTP area
- present in a University-wide Undergraduate Research Symposium and in the department
- selected opportunities to participate in national ACS meetings
- participate in social events to interact with other undergraduate researchers on campus.

Other Information: Please see the website for updates on application dates and eligibility requirements. We especially welcome applications from women and minorities.

Website: www.ncsu.edu/chemistry/chemreu

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Chemistry Research and Study in Collaboration with Zhejiang University

About the Program: This program involves research in chemistry to study catalysts for industrial applications and fundamental understanding of mechanism in collaboration with groups at Zhejiang University. There are two phases. Phase I is part of the Discover China Study Abroad Program for Physical Chemistry and Research based in Hangzhou, China for 7 weeks from May-July each year. Phase II is year round at NC State University. Both phases can be taken for course credit in research in various programs. The Study Abroad portion can be combined with study of Physical Chemistry for Biochemistry, Pre-Med, Chemistry or Chemical Engineering majors. Also, Chinese language is offered for students who do not require the Physical Chemistry course. The year-round program provides an opportunity to engage in research with the help of a teaching assistant throughout the academic year. Sample projects include:

- Design and expression of modified enzymes that have altered chemical reactivity.
- Study of the oxidation catalysis involved in industrial synthesis of vitamins.
- Computational studies of enzyme active sites or catalytic processes.
- Spectroscopic studies of probe molecules used to understand the electrostatic properties of enzymes.

Program Activities: Research focuses on computation (using freeware), mutagenesis and expression of proteins and measurement of kinetics as basic skills for the biologically inclined student. For chemical engineering or chemistry students the possibilities include studies of reaction conditions, thermodynamics and kinetics of industrially relevant transformations in collaboration with the largest manufacturer of vitamins in the world, which is located in Zhejiang province in China. While Study Abroad and NC State coursework are not supported by external funding and require payment, teaching and research activities are supported by both NC State and Zhejiang University (ZJU). Teaching assistants are provided by both universities for the research experience. The collaborative research involves work with Chinese students and can continue in Raleigh since there is a continual exchange of students between the universities as part of this program.

Other Information: Although research is conducted with a significant component of collaboration with ZJU, travel to China as part of the Study Abroad program is optional. The major focus is on developing a skill set that will provide students with advantages for employment, as well as graduate, medical and professional school applications. Publication of results is a goal that has been achieved by a number of participants.

Website: www.ncsu.edu/chemistry/franzen/public_html/China/china.htm

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Undergraduate Research in Computational Astrophysics

About the Program: Undergraduate Research in Computational Astrophysics (URCA) is an integrated 10-week summer program designed to introduce students to computational physics through original research projects in the field of high-energy astrophysics and through instruction in computing, numerical methods, basic physics and astrophysics. Research applications include supernovae and supernova remnants, interacting binary stars and accreting compact objects, gamma-ray bursts, accretion disks, stellar winds and jets, r-process nucleosynthesis, and neutrino astrophysics. The computational tools taught to and applied by the students will include hydrodynamic and magnetohydrodynamic simulations, nuclear reaction networks, Monte-Carlo methods, spectral synthesis codes, and various data analysis techniques applied to both simulation and observational data.

Program Activities: Participants will spend the summer in an immersive environment that includes not only a faculty-mentored research project, but extensive training in all aspects of independent research through classroom instruction, hands-on training exercises, small group discussions, and campus-wide activities. The program ends with students giving a research talk to fellow physics students and faculty and presenting a poster at a campus-wide Undergraduate Research Symposium.

Other Information: The URCA application process opens January 1, with application review and participant selection beginning March 1 and continuing until the program is filled. Applicants must be U.S. citizens or permanent residents; URCA especially welcomes applications from women and minorities. Students participating in this NSF-funded program will receive a stipend of \$5000 plus expenses for travel to and from Raleigh and on-campus housing during the 10-week program.

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CSUMS: Computation for Undergraduates in Statistics Program (NCSU CUSP)

About the Program: The Department of Statistics at NC State established a Computational Science Training for Undergraduates in the Mathematical Sciences (CSUMS) program to provide a rich applied computational statistics research experience to a diverse population of undergraduate students that will encourage them to continue their academic programs to the graduate level and will help them in making more informed decisions about their academic or nonacademic careers. This CSUMS program, which is funded by the National Science Foundation, targets rising senior and exceptional rising junior mathematics majors who have demonstrated academic excellence. NCSU-CUSP prepares students to be involved in a significant research experience, and to be fluent in the languages of computing, mathematics, and statistics.

Program Activities: The statistics CSUMS program is a ten-week program that runs from the beginning of June through the beginning of August each year. During this period, approximately three teams of two to three students will work collaboratively with program faculty. Topics to be explored include novel models for environmental epidemiological data, drug discovery using high-throughput screening (HTS) data, new computational statistical methods in identifying genes responsible for human diseases, financial risk evaluation using data mining software and pattern recognition methods (CART, SVM, etc.). The program couples extensive coursework in computing for contemporary statistical analysis with a practicum and research lab focusing on an area of application mentioned above.

Website: www.stat.ncsu.edu/programs/cusp

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REU @ Engineering the Grid

About the Program: The NSF REU-Site Engineering the Grid offers research experiences for outstanding rising junior undergraduate students to work on topics related to solar and photovoltaic systems, energy storage, semiconductor power electronics, electrical sub-systems, processing issues related to fabrication of solar arrays and semiconductor power devices, in addition to education. The faculty team is multidisciplinary from different departments in the college of engineering, college of textiles, and physics. Sample projects include:

- Solar Technology
- Power Systems
- Batteries and Fuel Cells
- Photonics
- Communications Systems
- Cyber Security in the Grid

Program Activities: Students participating in the 10-week summer program will receive a stipend of \$4600 with room paid, an allowance for food, and up to \$500 for travel. Each student will work under a close-coupled mentorship of a faculty and a graduate student, and be exposed to multidisciplinary academic settings at NC State in Raleigh. Each participant will have a predetermined research project, chosen during the selection process, and will be responsible for completing it within the allotted time. At the end of the program, the students will present their research findings at a joint general symposium on campus. In addition to the research, the students will also participate in a series of organized seminars, career information, industry visits, and recreational activities.

Other Information: The Engineering the Grid REU site will accept web applications for the summer starting in mid-November and closing on March 1st. Students will be notified by April 1st. Applicants must be US citizens or permanent residents of US territory and possessions. Minimum GPA requirement applies (see web application).

Website: www.ece.ncsu.edu/reu-grid

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REU @ FREEDM Systems Center

About the Program: The NSF Engineering Research Center (ERC) Future Renewable Electric Energy Deliverable and Management (FREEDM) Systems Center offers a 10-week summer research experience for junior- and senior-level undergraduate students exploring new directions in green energy grid infrastructure. Students will spend 10 weeks conducting research projects through areas of electrical and computer engineering, civil engineering, materials science and mechanical engineering, chemical engineering, computer science and other related fields.

Program Activities: REU participants will be paired with a graduate mentor and faculty advisor and join the faculty member's research team to work full-time on a predetermined research project. Students will also participate in an organized program of lectures, laboratory and industrial visits, as well as a variety of recreational activities. At the end of the program, students will present their research results at a joint general symposium on campus.

Students participating in the 10-week summer program will receive a stipend of \$4000 with paid on-campus housing as well as \$500 for travel reimbursement if arriving from outside of a 50-mile radius.

Other Information: Applications will be accepted through March 2, 2012, with notification of selection by April 6, 2012. Applicants must be US citizens or permanent residents of US territory and possessions and enrolled in a bachelor degree program during the REU program.

Website: www.freedm.ncsu.edu/education

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The North Carolina Global Training Initiative (GTI)

About the Program: Through partnerships with departments on campus and local businesses, the GTI facilitates short-term academic course work, academic research, student internships, and education and business training opportunities in North Carolina for overseas nationals and for NC State University students who wish to do research or internships overseas. The GTI offers several options:

- **Certificate in U.S. Culture and Higher Education** (GTE – full time study program) is a semester-based program enabling overseas participants to take courses in their field of study, to improve their English skills, and prepare for further study in a US university (immigration assistance available). Also open to ESL students, spouses, or certain other internationals already in the US.
- **International Student Internship Program** (GTN – student internship) is a 2-12 month program that facilitates overseas undergraduate students coming to North Carolina to do a full-time internship or research with a local company, agency, or NC State faculty.
- **Executive/Faculty Training Programs** are 1-4 week events for executives, managers, government employees, university staff or faculty to benefit from the world class faculty and businesses at NC State and in the Research Triangle Park. The GTI typically partners with faculty, university departments, and area companies to develop custom programs of continuing education and professional development. In particular we specialize in programs about Food and Drug Administration and regulations, Higher Education Administration, and Innovative Management.
- **Summer Academic Programs** for overseas university students to spend one month training and taking non-credit classes at NC State.
- **Summer Language and Culture Programs** include week-long day camps for area children and include language lessons, cultural activities, games, art, music, and cooking in selected languages and cultures.
- Other grant-funded and contract-based funded programs for students, scholars, and professionals.

Program Activities: Some of the activities the GTI also offers are a 3-credit course (Colloquium on U.S. Culture and Education), cross-cultural lectures, workshops, and service learning opportunities.

Other Information: NC State is authorized under federal law to enroll non-immigrant alien students. Applicants who have immigration or visa questions can contact the GTI office.

Website: www.ncsu.edu/gti

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REU in Modeling and Industrial Applied Mathematics

About the Program: The Department of Mathematics at North Carolina State University established a Research Experiences for Undergraduates (REU) program to provide a rich applied mathematics research experience to a diverse population of undergraduate students that will encourage them to continue their academic programs to the graduate level and will help them in making more informed decisions about their academic or nonacademic careers. This REU program, which is funded by the National Science Foundation and the National Security Agency, targets rising senior and exceptional rising junior mathematics majors who have demonstrated academic excellence.

Program Activities: The mathematics REU program is a ten-week program that starts on Tuesday after Memorial Day. During this period, approximately 10 teams of three to four students will work collaboratively with program faculty and industrial partners. Past topics have included an industrially sponsored project by Calabazas Creek Research, Inc. (design of electron devices using computer optimization), biomathematics (from the US EPA as well as blood flow models, cartilage, menstrual cycle, infectious diseases, etc.), material science (smart materials and optimal chutes), financial mathematics, symbolic computation, data mining, and computer vision.

Website: www.math.ncsu.edu/REU

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Research and Enrichment Experience for Underrepresented Undergraduate Students (REU+)

About the Program: The Department of Mathematics at North Carolina State University established a Research and Enrichment Experience for Underrepresented Undergraduate Students (REU+) to provide a summer research experience for undergraduates, whose preparation might normally be insufficient to participate in the regular REU program. This REU+ program, which is funded by the National Science Foundation, targets rising senior and exceptional rising junior mathematics majors who are underrepresented and have demonstrated academic excellence.

Program Activities: The mathematics REU+ program is an eleven-week program that starts one week before Memorial Day. During the first week students will participate in a short intensive training in differential equations, modeling and dynamical systems accompanied by problem sessions as well as some training in MATLAB and probability theory. The second week (and there after) REU+ students will merge into the regular mathematics REU program. Students will work in teams and develop valuable techniques of applied mathematics. Additionally, there will be opportunities to work on oral and written communication of mathematical ideas, learn about graduate school, and attend conferences.

Website: www.math.ncsu.edu/summer/REUplus

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Undergraduate Research Opportunities @ CNR

About the Program: The College of Natural Resources (CNR) sponsors annual research awards for undergraduates on a competitive basis, generally for about \$1000 per undergraduate student selected, whenever budgets allow. These scholarships are awarded to about 6 to 12 students across the College through a review process conducted by the College Research Committee (composed of two faculty members from each CNR department, and the Associate Dean for Research). The review process is based on a brief proposal (according to guidelines distributed each year at the time when a call-for-proposals is offered) prepared by the student (can be collaborative with other students) in consultation with a faculty advisor, and endorsed by the advisor on submission. The CNR Research Committee ranks proposals and announces awards.

The objective of the College of Natural Resources' Undergraduate Research Scholarship Program is to expand the education of undergraduate students through the "high-impact" learning activity of research, by:

- providing a meaningful and complete research experience from the development of a proposal through the presentation of results,
- fostering relationships between undergraduate students and research faculty,
- teaching the importance of research in our daily lives, and
- providing awareness of career opportunities in research.

Program Activities: Students receiving undergraduate research scholarships are expected to complete the proposed research and give a presentation of the results at one of the NC State University Undergraduate Research Symposia or any other professional presentation venue the student and advisor might select.

Other Information: Undergraduate students in all departments of the College of Natural Resources are eligible for the competition. Students are encouraged to seek out one or more CNR faculty members to serve as a mentor and to supervise the research project. Deadlines and details are announced annually, usually during the spring semester, by the CNR Associate Dean for Research.

Website: cnr.ncsu.edu/research/office/undergraduate_research_grants.php

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Nuclear Engineering Undergraduate Research Program

About the Program: Through the REU in Nuclear Engineering, undergraduate students gain insight into nuclear science fundamentals. Projects involve the PULSTAR research reactor, radiation detection facilities and/or plasma engineering devices. A combination of lectures, guest speakers, labs, group projects, and field trips assist students in answering such questions as:

- How can we develop energy sources for deep space missions?
- How can we detect very low concentrations of pollutants in the environment?
- How are nuclear methods revolutionizing medical diagnostics and treatment?
- How can we develop, modify, and enhance materials using plasma techniques?

Program Activities: The initial appointment for this program is two months in the summer. A third month extension is possible, depending on the student's performance and the willingness of the mentor to support.

Most of our outstanding students have participated in this program. And many of our current graduate students state that their bright future started as undergraduates, participating in this undergraduate summer research.

Other Information: The program is open to students majoring in nuclear engineering. Application announcements are made in April. Appointments begin June 1.

Website: www.ne.ncsu.edu

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Office of International Affairs SRE

About the Program: This Summer Research Experience is hosted by Office of International Affairs at NC State. It invites qualified and interested undergraduate students in any discipline to pursue study and research under a faculty mentor at NC State through a five-week long program. This program will:

- introduce students to different aspects of research (planning experiments, managing time, ethnic issues, writing up results, and presenting work)
- introduce students to mentors who can make a big difference in their future academic development
- support students as they determine if they are truly interested in pursuing a graduate degree that involves research
- enable students to work on projects of interest while gaining cross-cultural experiences
- help students meet other individuals at the University and make contacts that can last a lifetime.

Program Activities: Students participating in this program will be required to conduct research on either a small independent project or assist with an ongoing project in the host laboratories. A final symposium will be held to conclude the program. Students will be required to prepare a final research report and present the report in full details.

Besides research work, students will enjoy a variety of weekend excursions. Visits of research institutions at the famous Research Triangle Park (15 miles from NC State), tour of places of interest, watching a live sports game, trip to the North Carolina beach and Washington, DC will be part of activities in the program.

Website: oia.ncsu.edu/summer-research-program

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Plant Pathology Kelman Scholars Program

About the Program: The Kelman Scholars Program provides research internships to undergraduate students interested in the biological sciences. The Kelman Scholars Program offers both a summer research internship and undergraduate research internships during the academic year. The Kelman Undergraduate Research Internships are part-time, open to NC State and local university students during the Fall or Spring academic semesters, and provide each intern with an honorarium per semester. The Kelman Summer Research Internships are open to university students throughout the US and provide full-time, 10-week research experiences coordinated through the NC State Undergraduate Research Program. Kelman Summer Interns are provided a stipend, room and board on campus, a transportation allowance, and participation in a variety of social and professional activities. All Kelman Scholars receive documented experience in the fundamentals of biological research, the opportunity to present results of their research in the NC State Undergraduate Research Symposium, and a foundation for graduate study and careers in biology.

Program Activities: The complex interactions of microbes and hosts make Plant Pathology a stimulating and versatile biological discipline. Research projects for Kelman Scholars range from genomics and biotechnology to applications of the latest technologies to investigate disease ecology and management.

Website: www.cals.ncsu.edu/plantpath/kelmanscholars

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Progress Energy/Environmental Technology Internships

About the Program: The Progress Energy/Environmental Technology (PE/ET) internship program provides environmental technology students opportunities to conduct relevant and meaningful environmental research in areas of water resources, renewable energies, renewable energy assessment, hydrology, ecohydrology, and environmental restoration. PE/ET interns are expected to contribute to any of the following areas:

- Renewable energy assessment for solar, wind, geothermal, and biomass/biofuels
- Water resource availability and protection
- Field site research, project management, and collaboration with community stakeholders for environmental issues

Program Activities: Students participating in this program will receive stipends of roughly \$1500 to \$3000 for summer internships. PE/ET interns may work with NCSU faculty or community stakeholders for each internship opportunity. Interns will be required to present their projects at one of NCSU's undergraduate symposiums or equivalent scientific meeting/conference.

Other Information: NCSU Environmental Technology majors are eligible to apply. Applications are generally due in February of each academic year.

Website: cnr.ncsu.edu/fer/envtech/caseinpt.html

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Summer Ethnographic Field School in Lake Atitlán, Guatemala

About the Program: The NC State University Summer Ethnographic Field School is a seven-week program with the following main goals:

- Learn how to live, study and work, doing research in an international setting – in Maya communities nestled on the shores of the incredibly beautiful Lake Atitlán, Guatemala.
- Improve your knowledge of Spanish.
- Help students interested in ethnographic methods achieve a level of methodological proficiency to enable them to undertake future fieldwork independently and confidently.
- Produce useful information and analysis concerning the impacts of globalization on indigenous communities for the residents of local Maya communities.

Whether you are an undergraduate or graduate student, training as an ethnographer can prove to be beneficial for a variety of majors, such as anthropology, sociology, international affairs, history, education, textiles, natural resource management, business and management, political science, psychology, and public health. All students are encouraged to apply, especially students interested in topics concerning the environment, globalization, social justice, tourism, conservation, language, development, poverty and health.

Program Activities: During orientation and classes, students develop their research project and are placed with indigenous Mayan families in communities around Lake Atitlán. Excursions to other communities in the Western Guatemalan highlands are planned. The program emphasizes: designing a field research project, selecting appropriate research methods, defining and utilizing appropriate sampling procedures, developing daily and weekly research goals, writing and coding field notes and keeping a journal, doing systematic observation techniques, understanding ethical issues implied in field work, doing formal and informal interviewing, working effectively with informants (collaborators) and translators, developing appropriate rapport building devices, doing community and cognitive mapping, understanding rapid appraisal techniques, understanding time allocation study techniques, surviving and overcoming culture shock, using laptop computers for simple research tasks, analyzing ethnographic data, writing research reports and practicing conversational Spanish.

Other Information: The program takes place between mid-May and mid-July each year.

Website: faculty.chass.ncsu.edu/wallace

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Summer Institute for Training in Biostatistics

About the Program: Biostatistics is the exciting field that applies statistics to medical and public health research, and biostatisticians with graduate training are in high demand. The Summer Institute for Training in Biostatistics (SIBS), sponsored by the National Heart, Lung, and Blood Institute and the National Center for Research Resources, is a six-week program to give undergraduate students majoring in the quantitative and biological sciences the opportunity to explore a career in biostatistics and learn about graduate training in the field. Program participants will learn the principles of biostatistics and the unique challenges that arise in studies of human health from recognized experts in the field and will gain hands-on experience working with actual data collected in internationally recognized studies.

Program Activities:

- formal introduction to statistical techniques used in studies of human health
- learning and using popular statistical software packages
- field trips to meet practicing biostatisticians and physicians engaged in medical research at Duke Clinical Research Institute and GlaxoSmithKline
- data collection and analysis
- information sessions on opportunities for graduate study and additional training
- final oral presentations
- social events

Website: www.stat.ncsu.edu/sibs

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Sustainable Agriculture at the Center for Environmental Farming Systems

About the Program: This eight-week internship program (June-July) provides undergraduate students with experience in local and community food systems, sustainable agriculture research, outreach and practices that promote agricultural sustainability. The goal is to provide educational and research experiences through collaboration with research and extension faculty at NCSU and NCA&T, NCDA&CS farm staff in farming systems and resource management and with community adult and youth partners. The internship combines topical subject matter with real-world, hands-on agricultural experience and problem solving on the CEFS farm, in Goldsboro and through various field trips to farms, markets and community sites. Interns will become familiar with farming practices that promote:

- strong local food system networks;
- sustainable production systems using available renewable resource-based technologies;
- agricultural production systems of animal and crops that efficiently use energy and water in the biological systems of North Carolina;
- efficient use of nutrient cycling in production systems;
- diverse complementary production systems and season extension techniques;
- community gardens for food and education in good food choices;
- use of organic crop rotations, crop/animal integration, and natural systems for animal production.

Program Activities: Each intern will have the opportunity to assist with a sustainable agriculture research or educational/outreach project. Each intern will be mentored by NCSU and NCA&T faculty or project and NCDA&CS staff from a variety of fields working in sustainable agriculture at the Center for Environmental Farming Systems for their project experience. Students will also have a unique experience learning about community food systems as they visit and work with a variety of community members in town of Goldsboro. Student interns will be able to receive 6 credits from NCSU for the internship program. Housing is provided free of charge at the Goldsboro site.

Website: www.cefs.ncsu.edu

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Triangle Universities Nuclear Laboratory REU

About the Program: The NSF Research Experience for Undergraduates (REU) program at the Triangle Universities Nuclear Laboratory (TUNL) enables students to become directly involved in low-energy experimental nuclear physics research. TUNL researchers are faculty, staff, and students from the physics departments of NC State University, the University of North Carolina-Chapel Hill, and Duke University.

Program Activities: Students participate in a ten-week summer program combining research work, lectures, and social activities. Each student is assigned to a research group and works with a professor along with staff and graduate students to complete a well-defined project. When possible, the student's project involves the use or development of one of our on-site accelerators or target systems, and often contributes to the group's ongoing experimental program.

TUNL provides a lecture series that is designed for undergraduate students and covers a wide range of topics. Subjects include an introduction to nuclear physics concepts, historical reviews of physics, and the relationship between physics and medicine, art, or society.

Other Information: Social activities allow for comfortable interaction between undergraduate students, graduate students, postdoctoral research staff, and faculty.

Website: www.tunl.duke.edu/students/web.tunl.studies.reu.php

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Undergraduate Research Awards

About the Program: The Undergraduate Research Grants, sponsored by the Division of Undergraduate Academic Programs through the Office of Undergraduate Research, offer competitive awards to NC State University undergraduate students in any discipline for research with a faculty mentor. Awardees are identified in the fall semester for work to be performed during the fall, spring and/or summer terms. A call for proposals for a limited number of summer awards is announced in January.

Designed to encourage undergraduate research in the context of close faculty mentoring, the grants specifically team students and tenured or tenure-track faculty who can demonstrate for students the connections between classroom teaching and learning and hands-on research engagement. Thus, the students work with a faculty mentor to design or continue a research project that offers extensive one-on-one contact with the faculty.

Program Activities: Students are responsible for writing a brief research proposal that describes the research project along with its importance and implications for advancing disciplinary knowledge. They must show a link between their research and their curricular interests, although the research does not have to be in the student's major. The student must identify a tenured or tenure-track faculty mentor who agrees to serve as the official sponsor of the project and agrees to attend, with the student, the mandatory meeting of all award participants. Students and mentors evaluate their experience; students must present their work at a campus, regional or national symposium.

In the proposal, the student should provide clear and specific evidence of understanding the project and how its results will be used, appreciation for the value of research, and connections between the project and his/her ongoing interests. Details can be found at the program website.

Website: www.ncsu.edu/undergrad-research

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