Research Experiences for Undergraduates

REU
Synopsis of REU Program

• Supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation

• REU projects involve students in meaningful ways in ongoing research programs or in research projects specifically designed for the REU program

• Undergraduate student participants must be U.S. citizens, U.S. nationals or permanent residents of the United States. To participate, students apply directly to REU Sites
Synopsis of REU Program

- Two mechanisms for support of student research:

  (1) *REU Sites* are based on independent proposals to initiate and conduct projects that engage a number of students in research. Sites may be based in a single discipline or offer interdisciplinary research opportunities.

  (2) *REU Supplements* may be included as a component of proposals for new or renewal NSF grants or cooperative agreements or may be requested for ongoing NSF-funded research projects.
Features of an REU Site

• Projects are generally funded for 3 years
• Serve 8 to 10 students. Can be carried out during the summer months, during the academic year, or both
• Grant funding averages $70,000 - $120,000 per year
• Bulk of funds go to student stipends and travel costs
• Significant number of participants from outside Kean
  • at least half from academic institutions where STEM research opportunities are limited
• Students are paid stipends for their participation in an REU
Proposals for REU Sites

- Due fourth Wednesday in August
- Can be submitted to any NSF directorate
- One PI and only one co-PI
- Focus on mentoring of students
- Description of well defined common focus that enables a cohort experience for students
- NSF encourages projects with an international dimension
REU Proposal Components

• Different from regular NSF proposals
• Overview
• Nature of Student Activities – approach to training and examples of research projects
• The Research Environment – prior experience of PI, co-PI and mentors
• Student Recruitment and Selection
• Project Evaluation and Reporting
Review and Selection Process

Reviewers will focus on:

• Appropriateness and value of the educational experience for students
• Quality of the research environment, including facilities
• Preparedness of the research mentors
• Professional development opportunities for students
• Appropriateness of recruitment and selection of students
• Quality of plans for student preparation
• Budget – appropriateness and cost-effectiveness
• Effectiveness of plans for project management and evaluation of outcomes
Kean’s REU Site: Ecosystem Studies in the Maquenque National Wildlife Refuge of Costa Rica ’Daniela Shebitz, PI

- Serves 8 students in a trans-disciplinary team with 8 mentors

- Students will:
  - develop an understanding of the connections between land use, biodiversity and ecosystem function
  - present their work at a regional ESA conference
  - submit manuscripts to journals
  - experience a value-added cultural experience working with the local community in a nearby village
Kean’s REU Site: Ecosystem Studies in the Maquenque National Wildlife Refuge of Costa Rica - Daniela Shebitz, PI

- Enhancement activities include research methods, data analysis, communicating science, publishing work in journals, the ethics in scientific investigations

- Inspiring students to enter graduate programs in ecology or environmental science
Examples of REU Sites

• Education and Human Resources
  • University of Kentucky – STEM Education
    • Students work on one of 4 research projects:
      • motivation and career trajectories of STEM educators
      • racial and gender equity and participation in K-12 math and physics
      • elementary teacher attitudes and beliefs regarding mathematics
      • technology and engineering design concepts for integrated STEM instruction
    • Academic year REU supporting 8 students per year
      • All students come from local or regional institutions
      • Students participate in biweekly meetings on campus as a cohort and with their research mentors.
      • Site uses online collaboration tools to facilitate interactions throughout the experience.
    • Started August 2012, ends August 2015
Examples of REU Sites

- Social, Behavioral, and Economic Sciences
  - CUNY Baruch – Psychology
    - Each student plans and executes an independent project, and in addition works with a faculty mentor and their research team on existing research projects.
    - Can join one of four existing research teams
      - Social, Developmental, Clinical or Industrial/Organizational Psychology and Measurement
    - Each student works 10 hours each week in one of 10 psychology labs at Baruch.
    - Students will present their research at the Baruch REU conference and complete a year-long graduate school preparation course taught at Baruch College.
    - Site supports 12 students from historically disadvantaged groups.
REU Site Support

- Need website describing your project to help recruit students
  - Can find access to website and abstracts through the link above
  - REU sites get linked to NSF webpage. Helps to recruit participants
- ORSP helps funded Kean REU sites develop website as well as a print flyer, poster, and an e-mailer that can be used to recruit students.
The Kean University REU Experience - Costa Rica and New Jersey

The Research Experiences For Undergraduates (REU) program at Kean University provides international experience and training for 8 students per year for 10 weeks (6 weeks in Costa Rica and 4 weeks in New Jersey) during the summer of 2014-2015.

Students will receive $6,000 for the 10 weeks and have all travel and living expenses paid in Costa Rica and New Jersey, as well as their travel costs to the Mid-Atlantic ESA conference for presentation of their data the following year.

This REU project will have students conduct research as part of an international team of scientists from Kean University, the Centro Científico Tropical and Instituto Biológico Nacional to study the undamaged, damaged, or deforested habitats in Maquenque National Wildlife Refuge (MNWR), a new conservation area, in the Northern Zone of Costa Rica.

Students will assess patterns and indicators of change in vegetation, invertebrate, primate, soil microbial community structures, biogeochemical, and/or ecological characteristics, can be observed by habitat, management strategy, and/or atmospheric condition.

Students will develop an understanding of the connections between land use, biodiversity and ecosystem function, present their work at a regional ESA conference and submit manuscripts to journals.

Students will also have a value-added cultural experience working for several days with the local community in the village of Boca Tota.

Application Deadline
Deadline for applications is February 15, 2014. Students will be informed of our decision by March 1, 2014.

Minimum Requirements
Students should have a minimum of 3.2 GPA out of 4.0 although we will consider students who show by other measures that they are exceptional and who have GPAs over 3.0. Class standing and grades in specific subjects that are close to the field of research will also be considered, as are recommendations.

Application Process
Students will be chosen based on a holistic perspective that includes transcripts, GPA, an essay on why they want to work in the program, their goals as future scientists, how they see themselves as future scientists, and any letters of recommendation to benefit from this program, what other research opportunities may exist at their home institution, and two letters of recommendation.

For more information and to apply CLICK HERE
The Kean University REU Experience
Costa Rica and New Jersey

10 WEEKS - 5 WEEKS IN COSTA RICA - 5 WEEKS IN NEW JERSEY
JUNE 9—AUGUST 15, 2014
8 STUDENTS
$5,000 STIPEND—ALL TRAVEL & LIVING EXPENSES PAID

Students will conduct research as part of an international team of scientists from Kean University, the Centro Científico Tropical and Instituto Biológica Nacional to study the undamaged, damaged, or at-risk habitats in Maquenque National Wildlife Refuge (MNWR), a new conservation area, in the Northern Zone of Costa Rica.

Students will assess if patterns/indicators of change in vegetation, invertebrate, primate, soil microbial community structures, biogeochemical, and/or ecological characteristics can be observed by habitat, management strategy, and/or atmospheric condition. Students will develop an understanding of the connections between land use, biodiversity and ecosystem function; present their work at a regional ESA conference and submit manuscripts to journals.

Students will also have a value-added cultural experience working for several days with the local community in the village of Boca Tapada.

For more information and to apply
http://esci.kean.edu/REU.html

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