THE SHODOR EDUCATION FOUNDATION, INC.

National Science Foundation (NSF)
Research Experience for Undergraduates (REU) Fellowship
in
Computational Atmospheric Sciences

The Shodor Education Foundation, Inc. (http://www.shodor.org), a non-profit science and mathematics education foundation located in Durham, NC, is now **accepting applications** for a National Science Foundation "Research Experience for Undergraduates" fellowship in the area of **computational atmospheric sciences**. This fellowship will provide funding during the 2001 calendar year for one outstanding undergraduate student majoring in atmospheric sciences, meteorology, earth sciences, or environmental sciences. The position provides funding for part-time research work during the academic year, and full-time research employment during the summer. Research work is conducted both on-site at the Foundation offices in downtown Durham and electronically via the Internet.

This fellowship will work primarily to support the ongoing development and support of six online courses now being created for the Air Pollution Training Institute (APTI). The APTI serves thousands of students annually across the nation, providing training and professional development opportunities through videoconferences, training workshops, seminars, and online course offerings. APTI is supported primarily by the Industrial Extension Service of North Carolina State University for the US Environmental Protection Agency (EPA).

Shodor is currently developing six online courses, designed to introduce students to the technologies, techniques, and tools of atmospheric science and air quality modeling. The six courses are: Basic Sciences for Air Quality Modeling; Basic Atmospheric Sciences; Air Quality Meteorology; Tropospheric Chemistry; Computational Science; and Atmospheric Science Models. These courses are being designed to serve as self-instructional programs for persons interested in developing their ability to use and interpret air science models for research and decision-making. The courses make use of text, graphics, and a wide variety of interactive models, animations, and Web-based calculators.

The REU fellow will work with the development team to: 1) continue development of one or more of the online courses; 2) create additional interactive technologies, such as animations, simulations, calculators, and others as appropriate; 3) assist in other tasks that arise during the academic year; 4) as appropriate, mentor younger interns during

after-school and summer programs. The specific tasks assigned to the REU fellow will be based on the particular academic background and skill set that the student brings. A sample task might be the development of a Web-based tropospheric chemistry teaching model, using existing computer models that need to be "ported", or moved, to a Web-accessible format. In addition to moving "old" codes to "new" codes, the REU Fellow would develop curricular materials, case studies, and other support materials for this particular model. A good example of this type of effort is on the Web at: http://www.shodor.org/ekma. Significant professional development opportunities are a key part of this fellowship, and the student will be expected to participate in other areas of the research as new skills are gained.

The ideal student for this position will be majoring in one or more of the key disciplines: atmospheric sciences, meteorology, earth sciences, or environmental sciences. In addition, the ideal student will have a significant comfort level with computers and computing, including development of Web pages (HTML), computer programming experience (FORTRAN, C/C++, Java, perl, etc.), and other software tools (such as graphics). Applicants who are not strong in these areas are encouraged to apply, as many of these skills can be taught on-site as part of the fellowship. The ideal candidate should have outstanding communications skills, including technical writing, since a significant part of this fellowship is in developing curricular materials in the various areas. The ideal candidate should also be able to work effectively in a team environment while also being able to work independently on deadline.

Applications for this competitive fellowship are now being accepted. Applicants should submit, via email (text or attachment), the following items:

- Cover letter (email preferred)
- Current resume (email preferred)
- Two letters (emails) of support, at least one from a professor of atmospheric sciences, meteorology, earth science, or environmental science
- Anticipated availability during the academic year (it is anticipated that the student will work 5-10 hours/week during the academic year, 40 hours/week for 8-10 weeks during the summer)
- A 250-word description of experiences, career goals, and any other information that might provide "insight" into your abilities to succeed in this fellowship

All materials should be emailed to Robert R. Gotwals, Jr ("Bob2") at gotwals@shodor.org. Questions regarding this fellowship should also be addressed to this email.