Research Assistantship

Sustainability for Engineers

Listening, Designing, Evaluating

Start Date: December 16, 2014
Application Deadline: November 24, 2014
Notification by: December 6, 2014

Basic Function:

This Research Assistantship exposes the graduate student to an intervention-based study designed to engage undergraduate engineering students more deeply and more effectively in understanding complex issues of sustainability. The study uses mixed methods consisting of surveys and interviews to understand how students view sustainability and what types of instruction in sustainability they are more likely to engage in over others. In supporting this project, the graduate student RA will gain exposure to a wide range of sustainability problems and potential approaches to teaching students to understand, analyze, and formulate solutions to these problems inside the classroom and outside of it.

Current approaches to teaching sustainability in undergraduate engineering programs tend to focus on teaching ABOUT sustainability, where largely traditional techniques are used to transmit concepts, facts, and information between teacher and student. This NSF-funded project seeks to advance such education in engineering (regardless of discipline) toward programs that are FOR sustainability. To accomplish this goal of engineering education FOR sustainability, we are pursuing two sets of curricular interventions in electrical engineering that (a) integrates a full learning cycle of education FOR sustainability into sophomore and well as senior years in electrical engineering; and (b) superpose an ethics of care framework on top of this curriculum to ensure that students both learn how to care about sustainability and learn how to express that care in a way that takes full advantage of their training in engineering. Our pilot curriculum uses sustainability topics and challenges in the life cycle of consumer electronics to test the usefulness of both the full learning cycle involved in training students FOR sustainability and the added value of teaching ethics of care alongside this learning cycle.

General Information:

This RA is supported by a 2-year, NSF-funded project that seeks to identify effective ways to teach sustainability to undergraduate engineers. Surveys and interviews are used to understand how students initially view sustainability and which points of departure are appropriate for different levels of undergraduate students. Interventions will then be developed for inside and outside classroom use to expose students to problems of sustainability so that the complexity and general "wicked" nature of unstructured sustainability problems can be addressed in a meaningful, educational, and engaging way.

Characteristic Duties and Responsibilities:

The RA works an average of 20 hours a week on duties connected to collecting, interpreting, and presenting mixed methods data from our research effort and in supporting the design and development of curricular and extracurricular sustainability teaching segments. Duties include a broad range of activities related to the research questions at hand including data collection (surveys, interviews), analysis of the data, and the support of design, scripting, and management of multimedia for these teaching segments.

General Qualifications:
In general preference will be given to applicants who exhibit the following qualifications, as evidenced in their letter of application, resume, references, and prior work experiences.

Education:
Bachelors Degree in psychology, education, public health, environmental science, environmental engineering or related field.

Work Experience: Research or design experience in one of the above fields.

Other desirable attributes to be assessed during the application/ interview process:
Experience in statistical analysis and/or qualitative interview analysis methods
A fascination with how students learn
Professional demeanor and communication skills
Ability to work closely with others of different backgrounds to develop interdisciplinary curricular and extracurricular educational materials and multimedia

Preferred Qualifications:
Self motivated individual capable of specifying a design, formulating a solution, and developing that solution in an iterative process, including pilot studies & assessment
Comfortable with quantitative/statistical analysis of human subjects data
Comfortable with qualitative analysis of interview data
Interested in engineering or technical education
Committed to a sustainable lifestyle

Salary:
Salary and benefits are competitive. Salary is commensurate with academic standing, qualifications, and experience.

How to Apply:
Please send letter of interest and CV/resume (including at least 2 references) by e-mail to the e-mail address below:

Denise Wilson
Department of Electrical Engineering, Box 352500
Seattle WA 98195-2500 denisew@u.washington.edu

Application inquiries may be made to: Same as above.

Notes:
This job classification is governed by a negotiated labor contract and is subject to union shop provisions. For more information about union shop provisions, visit:
http://www.washington.edu/admin/hr/jobs/apl/union-info.html

The University of Washington is an equal opportunity, affirmative action employer. To request disability accommodation in the application process, contact the Disability Services Office at 206.543.6450 / 206.543.6452 (tty) or dso@u.washington.edu.