College of Engineering
Summer Research Experience for Undergraduates Program

Request for an Engineering Student for Summer 2013 Research

Faculty Name _____ Blair Perot__________________________________________________

Phone ____ 5-3925_____________________________________________________________

Department ___ MIE__________________ Email: ____ perot@ecs.umass.edu____________

Brief description of Summer Research Project (please explain the interdisciplinary nature of this project).

This project involves using supercomputer simulations to compute the fluid flow around a wind turbine blade. The goal is to find the torque and performance characteristics and compare with experimental data from a DOE/NASA experiment. This project is related to the alternative energy topic of the REU. It will introduce the student to topics in computational science, turbulence physics, and mechanical engineering.

Brief description of what the student will be doing:

The student will learn how to use the College of Engineering supercomputer, and will be running cases with slightly different conditions. They will be plotting and analyzing the output of these simulations and making a movie of the transient flow.

Is this a CASA-related project? Yes ___ No _X__

Preferred background of student (major(s), class, GPA, pre-requisites, etc.):

MIE, Junior, 3.3 or greater GPA, class in fluid dynamics

Did you mentor a student last summer in the College REU Program?  
Yes_____ No  _X__

If yes, please describe the outcomes for that student (i.e. Honor's thesis, conference presentations, manuscripts, papers, etc. Describe accomplishments to date as well as plans for the spring semester if the work has continued):