Faculty Name ______Caitlyn Butler________________________________________
Phone _____5-5396________________________________________________________
Department ___CEE_______________Email: ___cbutler@ecs.umass.edu_______________

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

Bioelectrochemical systems have the potential to produce electricity directly from the remediation of environmental contaminants. This project will explore the bioelectrochemical reduction of oxidized environmental contaminants. Oxidized contaminants such as perchlorate, bromate, arsenate and selenate are becoming an increasing concern in water systems because of their harmful effects on human health. Integrating principles of environmental reactor design, electrochemistry, and microbiology, the reduction of these contaminants will be investigated and the microbial ecology of the biofilm that perform the reduction will be examined.

Brief description of what the student will be doing:

The student will be working closely with graduate students to monitor removal trends for oxidized contaminants and will perform PCR-based techniques to explore the microbial community of the cathode-associated biofilms. The student will also be responsible for the analysis of the data they collect.

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

Preferred background of student (major(s), class, GPA, pre-requisites, etc.):
Chemical, Civil or Environmental Engineering.
It would be beneficial if the student has completed an Introduction to Environmental Engineering and it would be a plus if the student has taken a microbiology class. Neither are required but both would be desirable.

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):

Please return this form to:

Lorraine Robidoux,  
REU Program Coordinator  
129 Marston Hall
By Friday, February 3, 2012