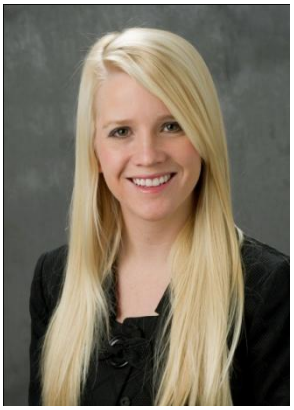

Rebecca received her B.S. in Biological Engineering from the University of Arkansas in 2009 with minors in Geology and Mathematics. Rebecca will continue working on this research project for her Ph.D. project at Purdue. She is currently the President of the Purdue Graduate Student Government and a member of the Women in Engineering Graduate Mentoring Program Leadership Team. Rebecca is the 2011 recipient of the ASABE Robert E. Stewart Engineering Humanities award that she will receive at the annual meeting in August.

Agricultural & Biological ENGINEERING

Thesis Defense

Speaker: **Rebecca Logsdon**

Title: **Development of a Quantification Method for Ecosystem Services**

Major Professor(s): **Dr. Indrajeet Chaubey**

Date: **Wednesday, July 20, 2011**

Time: **10:30AM**

Location: **ABE 301**

Abstract:

Ecosystem services are benefits that people receive from their environment. The ecosystem service concept takes a holistic approach to viewing how humans interact and depend on their environment. Although the concept has been gaining in popularity, it has yet to play a major role in any water management policy. We propose that one reason for this lack of adoption is that the current method for quantifying ecosystem services are inadequate and have many limitations. The purpose of this project was to create quantitative methods for evaluating watershed scale ecosystem services. Output from the Soil and Water Assessment Tool (SWAT) were used to develop quantitative methods to evaluate six ecosystem services: Fresh Water Provision, Food Provision, Fuel Provision, Genetic Resource Provision, Erosion Regulation and Flood Regulation. These six ecosystem services were evaluated in Wildcat Creek Watershed in Central Indiana. Results show that over the study period (1995-2009), all ecosystem services except Food and Fuel Provisioning have been diminished.

Application:

This research has the potential to help land owners make improved land management decisions. By considering the effect of decisions on ecosystem services, we can begin to eliminate the negative feedback loops that are created when we use and consume our natural resources.