



Cibin, born in Kerala state (known as “Gods own Country”) of India, did his Bachelor of Technology (B.Tech) degree in Agricultural Engineering from Kerala Agricultural University, India in 2006. He graduated with a Master of Technology (M.Tech) in Hydraulics and Water Resources Engineering from Indian Institute of Technology Madras (IITM), India in 2008. He then worked as Engineering Consultant in L&T Ramboll Consulting Engineering Limited, Hyderabad, India for one year. He joined Ph.D. program at Purdue University in August 2009. Cibin plans to continue as a Post-Doc in the ABE department at Purdue.



Dissertation Defense

Speaker: Cibin Raj

Title: Optimal Land Use Planning on Selection and Placement of Energy Crops for Sustainable Biofuel Production

Major

Professor: Dr. Indrajeet Chaubey

Date: January 22, 2013

Time: 3:00 pm

Place: ABE 301

Abstract:

Perennial grasses such as *Miscanthus* and switchgrass and crop residues have been identified as a potential long term biofuel feedstock sources for the USA. However, environmental impacts of bioenergy crops production need to be carefully evaluated such that effective sustainable production practices can be developed. The overarching goal of the study was to estimate potential impacts of bioenergy crop production on watershed scale hydrology and water quality and to develop a multi-objective optimization framework for optimal selection and placement of energy crops at watershed scale for sustainable bioenergy production. Distributed hydrological model SWAT (Soil and Water Assessment Tool) was used to simulate energy crops growth and its impact on hydrology and water quality. A multi-level spatial optimization framework (MLSOPT) was developed for watershed scale optimal section and placement of energy crops.