

Laurent Ahiablame is the youngest of three brothers. He earned his Bachelor of Science degree Summa Cum Laude in BioEnvironmental Engineering from North Carolina Agricultural & Technical State University in December 2006. He joined Dr. Chaubey's research group at Purdue during Spring 2007. After investigating how nutrients naturally cycle through numerous, man-made drainage channels that dominate many areas of the Midwest US, he completed his MS degree in Agricultural and Biological Engineering in May 2009. He continued his graduate training under Dr. Chaubey and Dr. Engel. His research mainly focus on hydrologic and water quality impacts of urban land use/land development activities, with special emphasis on development of methods for quantifying management strategies to support sustainable land development activities. He is a recipient of the 2009 USDA National Needs Fellowship, 2010 NSF Summer Institute Fellowship, 2011 Magoon award for excellence in teaching, 2011 Frederick N. Andrews Environmental travel grant, 2012 Woods travel grant, 2012 CETA teaching award, and 2012 ABE Outstanding PhD Student award. Following the doctoral training, Laurent will pursue a career in research and academia.





## **Dissertation Defense**

Speaker:	Laurent M Ahiablame
Title:	Development of methods for modeling and evaluation of low impact development practices at the watershed scale
Major Professor(s):	Drs. Indrajeet Chaubey & Bernie Engel
Date:	Tuesday, October 30, 2012
Time:	1:00 PM
Location:	ABE 301

## Abstract:

Effective planning and management of water resources at the watershed scale using strategies such as low impact development (LID), requires an understanding of variations in runoff and baseflow processes. The scientific literature, however, provides limited quantitative information describing potential impacts of LID practices at the watershed scale. Further, little information is available for exploring the impacts of LID practice adoption on baseflow processes. Computational methods for baseflow estimation for modeling LID practices at the watershed scale were developed and evaluated with data from Indiana watersheds. The method consists of techniques to develop baseflow equations, determine baseflow threshold area, and estimate baseflow pollutant coefficients for individual land use types. The study also proposed a framework to represent, evaluate, and report the effectiveness of LID practices using the Long-Term Hydrologic Impact Assessment-Low Impact Development (L-THIA-LID) model. Finally, a numerical procedure to quantify uncertainty associated with the L-THIA-LID model output was developed to assess the reliability of the model.

## Application:

The proposed methods were used to enhance the capabilities of an easy-to-use tool for assessing hydrologic impacts of various land use activities, and will support widespread adoption of LID practices.