

Dear Patricia Bowie,

Congratulations on a successful submission of your abstract to the 2006 Annual Meeting, Chicago, Illinois. **Your Program Identification Number (PIN) is: 90019620.** Your abstract details are as follows:

Title: *Land cover, channel morphology and hydrologic conditions as controlling factors for nitrate flux into stream system, Mountain Creek Watershed, SC*

Keywords: Urbanization, Nitrate, Greenville - South Carolina, hydrology, stream geomorphology

Type: Poster

Abstract: Increased anthropogenic activities in urban areas increase the influx of nitrogen into the stream system. The Mountain Creek Watershed, located in the Piedmont South Carolina, shows high spatial variability in nitrate concentration. The northern tributary of the watershed is dominantly forested with overall lower nitrate concentrations (0.06-1.38 mg/L). The southern tributary of the watershed is more urbanized with higher nitrate concentrations (0.42-2.47 mg/L). Our objectives were to determine if there is a correlation between land cover and nitrate concentrations, and to determine the causes of nitrate variability. For this purpose, a spatially detailed water sampling along the southern tributary was carried out. Our sampling started from immediately downstream of a pond, where the lowest nitrate concentrations were observed, and continued downstream for 1.3 kilometers along which the nitrate concentrations rapidly increased. Our results indicate that south bank tributaries typically have higher nitrate concentrations than north bank tributaries. Springs and seeps with high nitrate concentration were found along the south bank but absent in the north bank. These results are probably a consequence of the south bank having a steeper slope than the north bank resulting in steeper hydraulic gradient. In addition, aerial photographic analysis shows that tributaries with higher nitrate concentrations are draining more urbanized areas than those with relatively lower nitrate concentrations. The combination of deep stream incision and urban land cover on the south bank lowers the denitrification potential and increases the nitrification potential leading to the observed higher nitrate concentrations.

Authors: Patricia Bowie, Earth and Environmental Sciences, Furman University, Greenville, SC 29613 tricia.bowie@furman.edu*
Christina Polito, Geosciences, San Francisco State University, San Francisco, CA 94132 franciebrady1@yahoo.com
Suresh Muthukrishnan, Earth and Environmental Sciences, Furman University, Greenville, SC 29613 suresh.muthukrishnan@furman.edu
Gregory P. Lewis, Biology, Furman University, Greenville, SC 29613 greg.lewis@furman.edu
C. Brannon Andersen, Earth and Environmental Sciences, Furman University, Greenville, SC 29613 brannon.andersen@furman.edu

Topics: Water Resources, Geomorphology, Land Use

You are responsible for the content of your abstract, title and authors, please review your abstract and make necessary edits. You may return to the submission console to edit your abstract and/or submit as session if you wish.

Reminder: **Your Program Identification Number (PIN) is 90019620.**

A Confirmation Email has been sent to tricia.bowie@furman.edu

I understand that there will be a 4'x8' posterboard for me to use, but that there will be no other audio visual equipment available.