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## ***THE RIVER BASIN RESEARCH INITIATIVE: AN INTERDISCIPLINARY UNDERGRADUATE RESEARCH PROGRAM***

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The River Basin Research Initiative at Furman University is a research program for undergraduates that focuses on the impact of urbanization and other land transformation on the biogeochemistry and biodiversity of river environments. The research focuses on the Lower Broad River Basin, which is part of the Santee River Hydrologic Unit currently being studied by the U.S.G.S. National Water-Quality Assessment Program. The River Basin Research Initiative began in 1997 as a small study of a 3 square kilometer mountain watershed and has grown to a study area of over 7000 square kilometers. The initiative involves thirteen faculty members from Earth and Environmental Sciences, Biology, Chemistry, Economics, Sociology, and Political Science. The focus on rivers was chosen because of the socio-economic importance of the topic, the variety of scientific problems available for study, the ability to blend field and laboratory work, and the relative ease and speed of data acquisition by students.

In the last three years, seventy-nine students have been involved in this research. Thirty-two of these students were from other universities, including five students from Puerto Rico and one student from Germany. The River Basin Research Initiative has generated nearly \$700,000 in external grants from NSF, EPA, the Rockefeller Brothers fund, and the Associated Colleges of the South Environmental Initiative. Our major goal is to teach the students about the process of doing science, including sampling design, field methods, analytical techniques, and data reduction and interpretation. We strive to mentor each participant from a dependent assistant to independent scientific colleague.

Over 250 localities have been sampled for the analysis of chemical composition, bacterial populations, and fish and aquatic insect biodiversity. Focal topics in the field of geochemistry include the impact of sewage treatment effluent on stream biogeochemistry, the biogeochemical cycle of silicon, the effect of ponds as nutrient sinks, the influence of rock type on the chemical composition of streams, and trace metal transport processes in watersheds. The results have so far generated over forty-five abstracts presented at regional, national, and international meetings, six journal articles and a workshop.

[GSA Annual Meeting, November 5-8, 2001](#)  
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