

# Kentucky Water Resources Research Institute

## WHO WE ARE

The Kentucky Water Resources Research Institute is part of a nationwide association of 54 federally authorized water resource institutes and centers located at land grant universities throughout the United States and its territories. The Institute operates under the authority of the Water Resources Research Act of 1984 in cooperation with the U.S. Geological Survey, U.S. Department of Interior. Located in Lexington on the campus of the University of Kentucky, the Institute has over 40 years of involvement in water resources issues and has established itself as an important link between water-related personnel at academic institutions; local, state, and federal government agencies; and the private sector.

## WHAT WE DO

The Institute program has 3 objectives:

1. To plan, facilitate or conduct research to help address local, state, and national water resources issues,
2. To promote education and training of new and existing water scientists and engineers through their participation in water resources research and outreach activities, and
3. To support technology transfer and the dissemination of research results through outreach to those who manage or use the nation's resources.



Water Pioneers Measuring pH

## RESEARCH

KWRRI supports research through administering the Water Resources Research Act, Section 104b base grant. This U.S. Geological Survey program is used to fund research efforts at any of Kentucky's universities. Investigators initiating a new research effort related to water are especially targeted. The current focus of the program is to provide small (\$5000) student research enhancement grants to support research in a wide range of disciplines. The Institute also manages a variety of research projects and provides technical support through contracts with local, state, federal, and non-government organizations.

## EDUCATION/TRAINING

Support for student research assistants is currently the primary focus of projects funded through the 104b program. KWRRI also administers a scholarship program for the Kentucky Department for Environmental Protection to assist them in recruiting undergraduate and graduate students in critical discipline areas who promise to work for the agency following graduation. In addition, the Institute is coordinating the Water Pioneers – a group of high school sophomores from the Robinson Scholars Program who represent counties with historically low rates of college attendance.

## OUTREACH

An annual water resources symposium is hosted by the Institute to encourage sharing of information related to research, management, and educational efforts going on in the Commonwealth. In addition, Institute personnel serve as technical experts on a wide variety of State panels and advisory committees. KWRRI also publishes an e-newsletter and maintains a Web site to provide easy access to publications and other information about our activities.



## CONTACT INFORMATION

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# Kentucky Water Resources Research Institute

## 2007-2008 Student Research Enhancement Projects (USGS 104b Annual Institute Program)

1. Effectiveness of improved skid trail ephemeral channel crossings  
Jeffrey Stringer: Department of Forestry, University of Kentucky  
Student: Christopher Reeves (Masters Student)
2. Determination of nutrient sources in a eutrophic lake impacted by human activity, Wilgreen Lake, Madison County, Kentucky: A first step toward development of remediation strategies  
Walter S. Borowski: Department of Earth Sciences, Eastern Kentucky University  
Student: Theresa Aguiar (Masters Student)
3. Diatom colonization patterns in freshwater springs in relation to underlying geology at Land Between the Lakes National Recreation Area  
Susan P. Hendricks: Department of Biological Sciences, Murray State University  
Student: Courtney C. Snapp (Masters Student)
4. Chemical evolution of groundwater in the Wilcox Aquifer of the Mississippi Embayment  
Alan E. Fryar: Department of Earth and Environmental Sciences, University of Kentucky  
Student: Estifanos Haile (PhD Student)
5. The link between metal tolerance and antibiotic resistance in fecal coliforms in the Ohio River Basin  
Rebecca L. Evans: Department of Biological Sciences, Northern Kentucky University  
Student: Alicia Sullivan (Undergraduate)
6. A 3D computational fluid dynamic code for simulation of pump stations with vertical plunging jet with air entrainment and bubble transport  
Scott A. Yost: Department of Civil Engineering, University of Kentucky  
Student: Tien Mun Yee (PhD Student)
7. Impacts of disturbance on streamflow and sediment yield in the Licking River Basin  
Christine E. McMichael: Assistant Professor of Geography, Institute for Regional Analysis and Public Policy, Morehead State University  
Student: Grant York (Undergraduate)
8. Development and application of a new sediment fingerprinting methodology for the Commonwealth of Kentucky  
James. F. Fox: Department of Civil Engineering, University of Kentucky  
Student: Charles M. Davis (Masters Student)