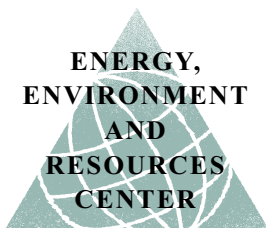


HIGHLIGHTS and INITIATIVES



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David Brill, Director

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**Center for Geography and
Environmental Education**
Rosalyn McKeown, Director

**Oak Ridge Technology Research
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Southeast Water Policy Initiative
David Feldman, Director

Water Resources Research Center
Tim Gangaware,
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EERC conducts unbiased, analytical,
and multidisciplinary research
designed to promote real-world
solutions to problems in the fields
of energy, environment, tech-nology,
and economic development.

SYMPOSIUM. EERC along with UT's Howard Baker Center for Public Policy and the Joint Institute for Energy and Environment (JIEE) will sponsor *Cleaning America's Air: Progress and Challenges* on March 9 in the Tennessee Auditorium on the Knoxville campus. The symposium will explore the creation and evolution of the Clean Air Act (CCA) as well as other air-quality issues and will feature, among other noted speakers, Senator Howard Baker, one of the creators of the CCA, and William D. Ruckelshaus, a former EPA administrator who implemented the Act. Former Vice President Albert Gore, Jr., has also indicated his plans to participate. The symposium is part of UT's Environmental Semester, which begins this month and runs through the spring <<http://environmentalsemester.utk.edu/>>. For information on the symposium, contact JIEE at <jjee@utk.edu> or call 865-974-3939.

NEW PROJECTS. Senior Research Scientist Wolf Naegeli, systems architect for the Southern Appalachian Information Node (SAIN)—an organization that provides data on the region's biological resources—will lead the development of interactive Web tools for the Special Habitats of Tennessee program. A grant from the National Geographic Society Education Foundation (NGSEF) will fund the program, whose goal is to engage K-12 students in activities that promote appreciation, enhancement, and conservation of special habitats in their communities. Project participants include SAIN, the Tennessee Geographic Alliance, the Carson-Newman College biology department, the Tennessee Environmental Education Association, Project WET of Tennessee, Discover Life in America, and the Center for Environmental Education at Middle Tennessee State University.

Tim Gangaware, assistant director of EERC's Water Resources Research Center (WRRC), and **Ruth Anne Hanahan**, WRRC senior research associate, are coordinating a project among the Knoxville/Knox County Water Quality Forum partners to build an "outdoor classroom" for Halls High School students and teachers. The classroom, which comprises three acres adjacent to the school, was donated by the Knox County Stormwater Management Division to the Knox County School System this past year. The outdoor space will serve students in earth sciences, creative writing, art, and other subject areas. The outdoor classroom project is an outgrowth of the Water Quality Forum's Adopt-A-Watershed (AAW) program. Currently, **Gangaware**, **Hanahan**, and six AmeriCorps members are working with 14 middle and high schools on the AAW program, which involved 1,400 area students during the fall semester.

SPECIAL RECOGNITION. In October, **Jonathan Overly**, executive director of the East Tennessee Clean Fuels Coalition (ETCFC), received official designation for ETCFC as a participant in the Department of Energy's (DOE) Clean Cities Program. The Clean Cities Program seeks to advance the nation's economic, environmental, and energy security by supporting local and regional efforts to reduce petroleum consumption. DOE Clean Cities Designating Official David Waldrop presented **Overly**, who also serves as EERC Senior Research Associate, with a plaque at an outdoor ceremony at Great Smoky Mountains National Park headquarters. The ceremony included signing of a Memorandum of Understanding (MoU) by ETCFC's nearly 30 stakeholders, including EERC, University of Tennessee, Tennessee Department of Transportation, Oak Ridge National Laboratory, and the cities of Gatlinburg, Knoxville, and Sevierville. The MoU reflects the stakeholders' commitment to introducing and expanding the use of alternative fuels.

BILINGUAL in RESEARCH and EDUCATION



Each *Highlights and Initiatives* back page presents a closer look at one of our current projects or activities. This edition focuses on the work of Rosalyn McKeown, director of UT's Center for Geography and Environmental Education.

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BILINGUAL *in RESEARCH and EDUCATION*

An EERC researcher returns to high school for a time and rejoins UT with renewed passion for education and an awareness of how students learn.

By Kris Christen

“Since people tend to learn through different channels—such as visual, auditory, or tactual-kinesthetic—McKeown gave her students a learning modality inventory, which poses a series of questions surrounding one’s learning preferences.”

RESEARCH ACADEMICS, particularly those who work in education, are often criticized for being too cozily ensconced in ivory towers to be aware of what’s really going on in the public school system. Nobody can level that criticism at Rosalyn McKeown, director of UT’s Center for Geography and Environmental Education, a division of UT’s Energy, Environment and Resources Center (EERC).

McKeown recently took a two-year hiatus from EERC to teach geography, earth science, and Spanish in the public high schools. The experience brought her face to face with the social issues—be they drugs, alcohol, physical and emotional abuse, divorce, or poverty—that impinge on schools today.

“Because adolescents are living in that world, they come to school with those issues sitting on their shoulders,” McKeown says. Helping her students come to terms with such issues taught her a lot about teaching, curriculum, and the social context of schools. “I tell my colleagues now that I’m bilingual,” McKeown says. “I speak both high school and university.”

Now, back from the classroom, she’s looking to turn those experiences into research projects to develop better teaching methods. And what she has to offer is of significant benefit to UT, says Jack Barkenbus, EERC’s executive director.

“She brings the perspective of an educator who understands the teaching requirements, guidelines, and frameworks that many of us scientists overlook,” Barkenbus says.

McKeown is particularly interested in investigating the different ways in which students learn. The findings could have curricular and policy implications.

Since people tend to learn through different channels—such as visual, auditory, or tactual-kinesthetic—McKeown gave her students a learning modality inventory, which poses a series of questions surrounding one’s

learning preferences. For example, questions might ask, do you start a project before reading the directions? When you take a test, can you see the textbook page in your head? If you hear something, will you remember it?

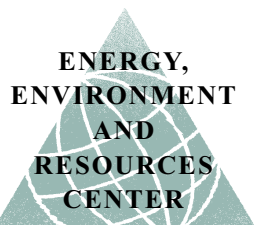
“The way you see these learning styles play out in the classroom is just amazing,” she says, adding that she’s hoping to repeat this experience on a more widespread basis to determine if what she has learned can be generalized to a larger population.

Through McKeown’s ongoing efforts in education for sustainable development (ESD), she has helped put UT on the map internationally. Her work in this area, which has been part of a larger, worldwide ESD effort headed by UNESCO (UN Educational, Scientific, and Cultural Organization), culminated a couple of years back in a Web-based Education for Sustainable Development Toolkit, which was funded by UT’s Waste Management Research and Education Institute.

The Toolkit is essentially an easy-to-use manual to help communities and school systems get started in developing a locally relevant and culturally appropriate educational strategy for sustainable development.

The Toolkit Web site (www.esdtoolkit.org) has been accessed by education ministries, policymakers, higher Education administrators, and non-profit organizations, among others. And UT has received requests to translate the Toolkit into 11 different languages.

Now that the UN has declared 2005 to 2014 as the Decade of ESD, McKeown is continuing her focus in this area. As the Secretariat for the UNITWIN/UNESCO Chair on Reorienting Teacher Education to Address Sustainability and the UN University Chair on ESD, McKeown has helped create a network of some 40 teacher education institutions around the world. (UNITWIN is the abbreviation for universities twinning with UNESCO.)



For more information:

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