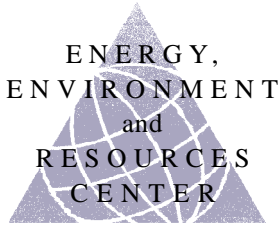


H I G H L I G H T S and I N I T I A T I V E S



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The EERC conducts unbiased,
analytical, and multidisciplinary
research designed to promote
real-world solutions to problems
in the fields of energy, environ-
ment, technology, and economic
development.

COLLABORATION The University of Tennessee has awarded a President's Initiative to Improve Teaching, Research, and Service grant to Senior Research Scientist **David Feldman** for establishing the **Southeast Water Policy Initiative**. **Feldman** and faculty associates will analyze regional water demands and develop a virtual library that will demonstrate methods of avoiding and resolving water disputes. The initiative, which will take a long-term, collaborative approach to solving water problems, is directed by **Feldman** and staffed by UT Professor **Carol Harden (geography)** and Associate Professors **Robert Freeland (biosystems engineering)**, **Robert Jones (Environment and Society Program in Sociology)**, and **Forbes Walker (biosystems engineering and agricultural extension service)**. EERC graduate research assistants **Emily Heinrich (biosystems engineering)** and **Aaron Routhe (sociology)** are also working on the project.

PRESENTATIONS In September, **David Feldman** served as panel chair for a session titled "Environmental Justice and Public Policy" at the *American Political Science Association Annual Meeting* in San Francisco. In addition, he addressed a panel titled "A Drop in the Bucket: Facts and Mythology of Interbasin Transfers" for the *Georgia Water Resources Leadership Summit and Fourth Annual Southeast Watershed Forum* in Atlanta in August. **Feldman** also presented "Southeast Water Policy Issues in Context" in June at *The Tennessee River: Beauty, Bounty, and Balance* conference in Knoxville sponsored by the Tennessee Valley Authority and the Association of Tennessee Valley Governments.

APPOINTMENT The Tennessee Exotic Pest Plant Council recently elected Senior Research Scientist **Jack Ranney** to its board of directors. The council hosts such meetings as the upcoming *Southeast Exotic Pest Plant Council Conference* in Nashville (April 2002), develops brochures and information on pest plants, and produces and updates a list of exotic pest plants. In addition, **Ranney** has published "Green Groundskeeping" in *Greenseal's Guide on Green Buildings* for the state of Pennsylvania.

GRANT The Knoxville Police Department recently awarded a \$30,000 grant to EERC's Systems Development Institute. SDI will develop and build a browser-based database that will help the Knoxville Truancy Center manage and track juvenile offenders. **Anurag Agarwal**, SDI's assistant director, will serve as principle investigator (PI) on the project. **Agarwal** serves as PI on another project that will uncover limitations in an existing records-management system and perform browser-based system upgrades, if needed, for Tennessee's Ninth Judicial District. The Knox County Child Advocacy Center, ChildHelp USA, has also asked SDI to build a browser-based system to help manage its data needs. Senior Research Scientist **Warren Wilson** will assist **Agarwal** on this project, which will be implemented in Child Advocacy Centers statewide.

Dogging Wasted Energy



Each *Highlights and Initiatives* page presents an in-depth look at one of EERC's projects or activities. This edition features *Dogging Wasted Energy*, which explores the role of energy audits in improving energy efficiency in state buildings.

continued on back *

Dogging Wasted Energy

When these UT researchers tour state buildings, they see green—in the form of energy savings, environmental improvement, and bolstered bottom lines. •BY LISA BYERLEY GARY

These energy assessments evaluate *what is* and calculate *what could be* by comparing a system's current efficiency to its maximum practical efficiency.

ONE GOOD THING about conducting an energy audit, say researchers from the University of Tennessee's (UT) Energy, Environment and Resources Center (EERC), is that results can be as good for the environment as they are for the bottom line.

EERC researchers **Jonathan Overly** and **Greg Harrell** currently are conducting energy assessments for several Tennessee state agencies and industries. These energy assessments evaluate *what is* and calculate *what could be* by comparing a system's current efficiency to its maximum practical efficiency.

As energy auditors, the researchers examine each facility's major energy-consuming systems and conduct cost analyses that help determine how the facility can reduce its overall energy consumption and how long it might take to recoup the state's or company's investment in these improvements.

Overly is evaluating prison manufacturing sites across the state through funding provided by the State Building Energy Management Program. Most of the work so far has taken place in state prisons for a group called TRICOR—Tennessee Rehabilitative Initiative in Corrections. TRICOR manages prison manufacturing facilities where inmates work at regular jobs ranging from dairy production to metal working to textile manufacturing.

Overly finds most savings in lighting, heating, and cooling systems. One site he evaluated had the potential to save \$108,000 a year with a \$10,000 investment and payback estimates

ranging from zero to six months, far less than the usual three- to five-year payback time.

Harrell is an expert in assessing boilers, steam systems, steam turbines, combined heat and power systems, combustion turbines, refrigeration systems and compressed air systems, and he arrives at a manufacturing site with a variety of tools that help him assess the performance of energy systems. In fact, Harrell has developed special software that can analyze the complex interactions among these systems. Because modifying one system component may affect the performance of the entire system, a system-wide analysis is necessary. A combination of direct measurement and system analysis software allows a complete investigation.

Both Harrell and Overly hope their team will become a resource for manufacturers across Tennessee, as well as for public schools, universities, and other state buildings. "We want to be a major source of technical support for physical plants in Tennessee's universities," says Harrell. "We want to be the premier independent information base for industries in Tennessee. And we want companies in any part of the state to look to us as a credible source of information."

Energy-use analysis fits perfectly with UT's three-fold mission of research, teaching, and public service, and EERC is the logical resource to provide technical assistance to state and industrial clients who want to increase energy efficiency, reduce waste, and boost productivity. •

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