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Baker Institute Energy Forum sends volunteers to work on sustainable development in Lesotho

By Franz Brotzen

713-348-6775

franz.brotzen@rice.edu

A group of Rice students and scholars is in the southern African nation of Lesotho this summer developing cost-effective integrated approaches to sustainable development and energy.

The project aims to assess the needs of the communities around the capital, Maseru, to identify local resources, match the needs to climate-change adaptation impacts and recommend integrated ways to meet community needs in the most cost-effective manner. The trip is sponsored by the Energy Forum of the James A. Baker III Institute for Public Policy.

Lesotho was judged to be an ideal site for the project because of its political stability and relatively high standards of education. In addition, Rice's Beyond Traditional Borders initiative established a successful undergraduate internship program in Lesotho last summer. That initiative resulted in good working relationships with the Lesotho Ministry of Education, several local primary and secondary schools as well as with nongovernmental organizations working in the country.



Rice students and faculty are traveling to Lesotho to assess strategies to promote sustainable development in the country.
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The faculty members overseeing the project in Lesotho are Rebecca Richards-Kortum, the Stanley C. Moore Professor of Bioengineering and professor of electrical and computer engineering; Pedro Alvarez, the George R. Brown Professor of Civil and Environmental Engineering; Amy Myers Jaffe, the Wallace S. Wilson Fellow in Energy Studies at the Baker Institute; Eugenia Georges, associate professor of anthropology; Maria Oden, lecturer on bioengineering; and Deb Niemeier, professor of civil and environmental engineering at the University of California at Davis.

Seven Rice students are on the trip: undergraduates Mark Hoffman, Matt Wesley, Scott Steger, Joanna Cummings, June Liu and Amanda Hu and graduate student Guyton Durnin. Several of them are blogging about their experience in an online journal, <http://owlsbeyondborders.rice.edu/>.

"We are traveling to Lesotho with a multidisciplinary team of students and faculty to carry out a community assessment designed to support sustainable development," Richards-Kortum said. "Our team brings faculty expertise in energy policy (Baker Institute), environmental engineering, bioengineering and anthropology."

The Baker Institute Energy Forum and the Rice 360° initiative cosponsored an independent study course called "Integrated Approaches to Sustainable Development" this past spring that dealt with development issues like energy, water, health and education -- and policies to address those issues. The course (BIOE/CEVE 402) prepared students to conduct energy and water assessment for a community in the developing world and to create cost-effective solutions.

The seven students who will be traveling to Lesotho were selected from the pilot course. "We hope to come back with a better understanding of the community needs and plans to partner with the community to invest in future development efforts," Richards-Kortum said.



Lesotho, a poor, landlocked country, was judged to be an ideal site for Rice's sustainable energy and development project.
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The project is designed to focus on improved energy sources and energy efficiency, air and water quality and adaptation strategies for climate change that can be implemented at the community level in other developing countries. It is part of the broader Rice 360°: Technology Solutions for World Health, the university initiative that hopes to create, test and disseminate new technologies and educational programs that help achieve the United Nation's health-related Millennium Development Goals. These include reducing the spread of HIV and AIDS, slashing the mortality rate of children under 5 by two-thirds and reducing the number of women who die from complications of pregnancy and childbirth.

More than 1.6 billion people worldwide do not have access to electricity and more than 3 billion depend on solid fuels like biomass and coal for heating and cooking. The use of solid fuels often results in indoor smoke, which has a devastating effect on health. The Rice students who visited Lesotho last year said it was difficult to breathe inside some of the dwellings because of the smoke. The Lesotho Sustainability Assessment project is looking at new technologies -- like ventilated stoves -- that would alleviate the problem. The project will also investigate the need for and logistics of future projects to improve water access and quality in addition to establishing access to electricity via biogeneration or mini-electrical grids.

"In so many regions of Africa, people have no access to modern fuels, to the detriment of health and quality of life," Jaffe said. "Our goal is to engage our Rice students in the process of building community energy and water solutions in locations where Rice's expertise and dedication can create replicable, scaleable programs."