

## Media Relations

October 23, 2012

### UNH Researcher Awarded NSF Grant for Interdisciplinary Soil Fertility Work in Uganda



Caption: Lisa Tiemann, a post-doctoral researcher at the University of New Hampshire, has been awarded a prestigious National Science Foundation fellowship to conduct interdisciplinary research on soil fertility and sustainable agricultural practices in Uganda. Credit: Courtesy of Lisa Tiemann.

DURHAM, N.H. -- Lisa Tiemann, a post-doctoral researcher at the University of New Hampshire, has been awarded a prestigious three-year, \$520,299 fellowship through the National Science Foundation's Science, Engineering and Education for Sustainability (NSF SEES) program. The grant will fund interdisciplinary research on sustainable agricultural practices in Uganda; UNH faculty members Stuart Grandy, assistant professor of soil biogeochemistry, and Joel Hartter, assistant professor of geography, will serve as her advisors and collaborate closely with Tiemann on the project.

With the grant, Tiemann, a researcher in Grandy's lab in the department of natural resources and the environment, will explore the socioeconomic and environmental factors that influence soil fertility and agricultural sustainability in Uganda.

With the eighth highest population growth rate and the second youngest population in the world, Uganda faces a "perfect storm" of high population density, land shortage, and chronic poverty, taxing the nation's small farms to support its population.

"In the less developed countries of sub-Saharan Africa like Uganda, farmers have increased crop output by practices which result in only short-term increases in crop yields that are not sustainable," Tiemann says. Improving smallholder farmers' understanding of links between soil fertility and traditional farming practice is critical to long-term sustainability of their livelihoods, the researchers say.

Tiemann will conduct her research in one of the most biodiverse regions in the world, which includes Kibale National Park. Local concerns about food security are putting pressure on park resources and wildlife, including the threatened chimpanzee. Tiemann's work will look at how agricultural productivity can be enhanced to sustain local people and offset threats to park services and wildlife.

Her research will use an interdisciplinary approach, integrating elements of ecology and human geography to link patterns of land-use intensity with soil fertility and the socioeconomic barriers to sustainable farming practices by different ethnic groups. "I expect this interdisciplinary approach will

help guide the development of agricultural practices that improve soil and environmental quality and enhance yields,” Tiemann says.

The research is linked to Hartter’s ongoing research in the region around national parks and will create new ties between North American and Ugandan scientists, promoting future collaborative interdisciplinary research and enhancing the research capacity of Makerere University (Uganda) faculty and students. “Exchanging ideas and scientific expertise with our Ugandan colleagues is vital to the success of this work,” Grandy says. “Together, we will be able to advance our fundamental understanding of soil fertility and apply this new information to improve food security in Uganda.”

“This is a wonderful opportunity to lend new scientific expertise to more completely understand the national park landscape and where new advances in knowledge about soil fertility and agricultural practices can make a direct impact on long-term sustainability,” Hartter adds.

In addition, Tiemann will work with the Kasiisi Project, a Cambridge, Mass.-based nonprofit organization that specializes in educational outreach around Kibale National Park. Through this collaboration, she will reach out to thousands of Ugandan school children to share information about increasing local soil fertility using sustainable agricultural practices.

The University of New Hampshire, founded in 1866, is a world-class public research university with the feel of a New England liberal arts college. A land, sea, and space-grant university, UNH is the state's flagship public institution, enrolling 12,200 undergraduate and 2,300 graduate students.

**Photograph available to download:** <http://www.unh.edu/news/releases/2012/oct/tiemann.jpg>

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Credit: Courtesy of Lisa Tiemann.

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