Researcher will push emerging field of biodiversity informatics in Africa

July 13 2012

The term “biodiversity informatics” may not set the average person’s heart aflutter. Yet, this emerging field is revolutionizing conservation efforts, public health and agriculture in parts of the world. Now, a researcher at the University of Kansas is ready to bring comprehensive training in biodiversity informatics to students and scientists across Africa.

“Biodiversity informatics is about how to develop, integrate and use information about life on Earth,” said Town Peterson, University Distinguished Professor of Ecology and Evolutionary Biology and curator in the Biodiversity Institute. “We have a lot of raw data about biodiversity, which is to say we know places where particular species have been seen. But turning those raw data into usable information is a much bigger challenge.”

In Africa, as in much of the world, there is scant availability of training in this important discipline. This is about to change. With funding from the JRS Biodiversity Foundation, Peterson will lead multiple training sessions in four African nations: Ghana, South Africa, Kenya and Egypt.

“The people doing the training will come from around the world, and the trainees will be a range of people, from people in decision-making situations, such as a ministry of natural resources, to professors, graduate students and undergrads,” said Peterson. “We’re going to focus on people with the promise to take this training and put it to good use.”

What's more, Peterson and his team will make videos of the training sessions, along with other learning materials, available on the Internet for anyone to access. He calls it a free online "biodiversity informatics university."

"You have a field that's relatively new," said the KU researcher. "Being able to analyze biodiversity patterns worldwide is not something that's been feasible in terms of data availability for very long. This field emerged just in the last 10 to 20 years. It requires a fair amount of technology and access to the Internet. So not just Africa, but people all over the world, including in the U.S., are looking for means of obtaining quality training in terms of how you learn these techniques. The in-person training will be in Africa, but the training materials will then be made available worldwide."

The training could significantly enhance efforts in Africa and elsewhere in several important fields.

"Say a country has the will to protect its natural resources in biodiversity, but may not have good information about where protection should be focused," said Peterson. "If you want to have maximum effect, you need to know where each species is. Think of the national parks in the U.S.: here you have the Rockies, the Appalachians, the Great Plains and California. But if you were starting from zero and setting up a national park system, where would you protect first? Take that question to any number of countries in Africa, and there are data out there, but they are raw. So you need to organize the data and have a framework for analyzing and interpreting the results."

Peterson also said that public health officials could use biodiversity informatics to track transmission of infectious diseases such as malaria and dengue, while agricultural experts could know better what insects and weeds could pose a threat to crops.

This work is funded by a three-year grant from the JRS Biodiversity Foundation.