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Georgia Southern University scientist helps with development of conservation map

APRIL 23, 2008

Georgia Southern University scientist Michelle Zjhra is part of an international team of researchers that has developed a remarkable new road map for finding and protecting the best remaining holdouts for thousands of rare species that live only in Madagascar.

Led by conservation biologists at the University of California at Berkeley, the research team developed a conservation plan that includes lemurs and species of ants, butterflies, frogs, geckos and plants.

An island nation in the Indian Ocean, Madagascar is considered one of the most significant biodiversity hot spots in the world. More than 2,300 species that are found only in Madagascar were included in the research team's analysis, which was published in the April 11 issue of Science.

A diverse group of 22 researchers from museums, zoos, herbaria, universities, non-governmental organizations and industry contributed to the study. They were assisted by an additional 62 non-authored collaborators who were part of much larger research teams that collected the data used in the study.

Zjhra is an associate professor in the Department of Biology at Georgia Southern. Her research interest focuses on patterns and processes of plant diversity and spans molecular genetics, floral development, floral odor chemistry, plant-animal interactions, and pollination syndrome evolution.

Zjhra's work has taken her from the old growth swamps and rivers of Georgia and South Carolina, to the tropical rain forests of Madagascar, to the mountainous rain forests of Vietnam.

For the Madagascar research team, centralizing and analyzing the sheer quantity of the data to develop a map of conservation priorities provided an unprecedented challenge. First, a massive team of researchers collected highly detailed data to learn the exact locations of thousands of animal and plant species across Madagascar.

Using software specially designed for this project in collaboration with a computer science researcher at AT&T, the researchers then estimated the range for each species.

Finally, separate optimization software, customized for this project by researchers at Finland's Helsinki University, was used to identify which regions are most vital for saving the greatest number of species.

Species that have experienced a proportionally larger loss of habitat due to deforestation were given top priority in the resulting conservation plan because they are at the greatest risk of extinction.

According to some estimates, about half of the world's plant species and three-quarters of vertebrate species are concentrated in biodiversity hot spots that make up only 2.3 percent of the Earth's land surface.

A developing country off the southeast coast of Africa, Madagascar is one of the most treasured regions of biodiversity on the planet. An estimated 80 percent of the animals on the island do not occur naturally anywhere else on Earth.

All species of lemur and half of the world's chameleons are endemic to Madagascar. They are joined by whole families of plants, insects, birds, mammals, reptiles and frogs that are found only on the island.

In 2003, Madagascar's government announced an ambitious goal of tripling its existing protected area network from about 5 million acres to 15 million acres, or about 10 percent of the country's total land surface.

The conservation mapping project was supported by the MacArthur Foundation with a joint grant to UC-Berkeley and the Wildlife Conservation Society. Based in New York, the Wildlife Conservation Society has a staff in Madagascar that is working with government officials to incorporate the results of the study into the country's conservation policy.

The research team included scientists from the American Museum of Natural History in New York, the California Academy of Sciences, the Center for Applied Conservation International in Virginia, the Center for Conservation and Research at the Henry Doorly Zoo in Nebraska, the International Rice Research Institute in the Philippines, the Missouri Botanical Garden, the Museum of Zoology at the University of Michigan, the Natural History Museum in England, the REBIOMA Wildlife Conservation Society in Madagascar, the Royal Botanical Gardens in England, the State University of New York, the University of York in England, and the Zoological Institute of the University of Braunschweig in Germany.

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IRS partners with Georgia Southern University for Adrian Project

APRIL 23, 2008

Students in former FBI agent Don Berecz's white-collar crime class at Georgia Southern University recently had a real hands-on opportunity to learn how a criminal investigation operates when they took part in the Adrian Project, an IRS education program that reaches out to colleges and universities across the nation. From combing accounting records, to searching through trash, to handing down a grand jury indictment, this class learned by experience just what it takes to catch a crook.

'We are an ideal location for the IRS to conduct this program," said Berecz, director of Georgia Southern University's Center for Forensic Studies in Accounting and Business. 'Georgia Southern University is one of only a few colleges and universities nationwide offering a series of courses leading to a certificate, diploma, minor, or a major degree in forensic accounting. The IRS was pleased with the quality of our students and how informed they already are about tracking financial crimes."

'We got to use everything we've learned so far," said Brianna Bishop, a senior accounting major from Savannah. 'From the first briefing through the grand jury, it was exciting to be able to do the work ourselves."

The Adrian Project's five-hour exercise began with a briefing on the project and introductions for the four experienced IRS Special Agents who came from Savannah to role-play and coach the undergraduates as the investigations took place. Students were divided into four squads of 'honorary" special agents, each with a student team leader and an agent who coached them in the fine points of investigation: dealing with a confidential informant; gathering evidence from many sources, including the suspect's trash; working with other law enforcement agencies; and surveillance. They looked the part, too, as they donned IRS raid jackets, used handcuffs, and uncovered cocaine and weapons the special non-functioning, red-handled simulation weapons used by the IRS for training.

Led by their IRS coaches, the groups went through four crime scenarios. One squad searched through trash and found a flyer for an anti-tax rally, another investigated a casino that kept two sets of books. Another squad looked at a fraudulent tax preparer, and the fourth squad arrested a drug dealer, who then 'rolled over" on his supplier, who turned out to be grossly under-reporting his income.

At this point, Berecz and his class took the Adrian Project one step beyond the standard IRS program. Two days after their investigations, class members responded to their grand jury summons and met at the Bulloch County Courthouse, where they were duly sworn in and charged as a grand jury by the Honorable John Robert Turner of the Ogeechee Judicial Circuit. The evidence found by the fourth squad was turned over to the grand jury, which handed down an indictment.

Joshua Blanchard, a junior accounting major from Brunswick, applauded the IRS agents for allowing the students to ask and answer their own questions. 'The agents that came to participate were great," said Blanchard, who served as a squad leader for the group that investigated the fraudulent tax preparer.

'We enjoy conducting the Adrian Project because it gives us a chance to work interactively with students," said Supervisory Special Agent Lisa Holtz. 'They learn about a forensic career opportunity that they wouldn't otherwise. At Georgia Southern the project operated very well, and some of the students expressed an interest in learning more about working in the IRS Criminal Investigation Division."

“The Adrian Project brings white-collar crime right to the students and makes it real,” said Berecz. “They conduct the actual activities of law enforcement agents. The hands-on experience is almost always eye-opening for the students who take part, and in many cases, the Adrian Project helps them make important life-altering decisions about how they will continue their education.”