

Scripps Postdoc Named as National Geographic Emerging Explorer

Award will further Jennifer Burney's work at the nexus of climate change and poverty alleviation

May 24, 2011

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Jennifer Burney, a postdoctoral researcher helping understand how changes in cooking habits could have complementary effects on climate change and public health, was named an Emerging Explorer by the National Geographic Society.

The award provides financial support to the research efforts of scientists who are in their early careers. Burney is a University of California President's Postdoctoral Fellow at Scripps Institution of Oceanography, UC San Diego and is an affiliate of Stanford University's Program on Food Security and the Environment. At Scripps, she is part of a team headed by Professor of Climate and Atmospheric Science Veerabhadran Ramanathan studying the effects of replacing homemade cookstoves in rural India with cleaner-burning alternatives in an effort called Project Surya.

"I love the puzzle of figuring out how to measure something be it with data or instrumentation and Surya by its nature is just a giant web of measurement problems. It's a really great synergy," said Burney, who received her doctorate in physics from Stanford University in 2007.

Among Burney's objectives is to study the links between energy poverty and food and nutrition security and the environmental impacts of food production and consumption. In the case of Project Surya, this will mean helping Ramanathan assess what happens when emissions of soot and other black carbon are substantially reduced in a given area. Ramanathan expects that the experiment will show immediate reduction in the contribution of greenhouse agents from that area. On a large scale, the reduction of such pollution created by use of wood and dung as cooking fuel could have a major mitigative impact on climate change. It could also improve the respiratory health of local residents, who frequently must inhale the smoke from their stoves as they cook in poorly ventilated kitchens.

The Project Surya team is hoping to launch a phase later this year in which cookers are replaced with cleaner stoves in a 10-square-kilometer (four-square-mile) area in India. They will then measure emissions of black carbon via satellite and at ground level with help from local residents.

Burney will separately study the agricultural effects associated with temperature and precipitation changes that could be triggered by the cookstove switch.

"I am really delighted, but not surprised, that Jen got this well deserved honor," said Ramanathan. "She brings lots of talent and experience to the Surya research. She is an asset."

Burney said that the award will also support another project she is conducting in West Africa in which she is assessing the feasibility of using solar power to improve irrigation capabilities there.

The Emerging Explorers each receive a \$10,000 award to assist with research and to aid further exploration. Burney and the other new Emerging Explorers are introduced in the June 2011 issue of National Geographic magazine, and comprehensive profiles can be found at <http://www.nationalgeographic.com/emerging>.

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