

# **Researchers develop water purification system for hurricane relief using nanoparticles**

October 20 2005

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The National Science Foundation has asked two University of Central Florida researchers to quickly develop a unique water purification system to aid victims of Hurricane Katrina and other disasters.

The professors were awarded a \$10,000 startup grant from NSF this month as part of a rapid response program designed to support research that can directly benefit those affected by Katrina. The researchers will submit their research results to NSF in six months. The agency is also encouraging the scientists to connect the Federal Emergency Management Agency and other agencies directly tied to disaster relief for immediate application of any useable technology.

Professors Sudipta Seal from the Department of Mechanical, Materials and Aerospace Engineering and James Taylor from Civil and Environmental Engineering combined their expertise in developing coated nanoparticles and water purification systems, respectively, to propose a portable method for producing safe drinking water from any source.

The key to the process is a naturally created nanoparticle that can kill bacteria that foul membranes used as filters to produce drinking water. In catastrophic situations such as Hurricane Katrina or the recent earthquake in Pakistan, the membranes become so fouled by bacteria that they become unusable for water treatment.

"By introducing nanoparticles into a mobile integrated membrane system, we can create potable water from a variety of sources," said Seal, who also works with the Advanced Materials Processing and Analysis Center.

Taylor, who has conducted water treatment research since 1975, said drinking water could be consistently produced even from wastewater if the fouling bacteria could be killed. Taylor is responsible for more than \$10 million in project funding at UCF, including a major desalination effort for Tampa Bay Water and the American Water Works Association Research Foundation.

UCF was able to respond immediately to the need for a water purification system because of the quality research those scholars were already conducting, said M.J. Soileau, vice president for research. Seal and Taylor are part of a team that UCF is assembling to address alternative water sources for Florida, as water issues for the Central Florida region and the state are approaching crisis proportions.

With the seed funding, the researchers hope to develop an adaptable method for producing quality water in any kind of emergency.

Source: University of Central Florida

Citation: Researchers develop water purification system for hurricane relief using nanoparticles (2005, October 20) retrieved 26 April 2024 from <https://phys.org/news/2005-10-purification-hurricane-relief-nanoparticles.html>

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