

USF: Water Issues on Tap



Nancy Stoner, the EPA's acting assistant administrator for water, visited three labs during her visit to USF Wednesday. Photo: Aimee Blodgett | USF

TAMPA, Fla. (March 27, 2013) - The Environmental Protection Agency's chief water administrator unveiled Wednesday a new "blueprint" for innovation to address the nation's issues in water cleanliness and safety as she toured a trio of University of South Florida laboratories where new technology is addressing age-old issues.

The EPA's blueprint calls for greater national support for emerging technologies in water treatment, testing and reuse, as well as an easing of barriers to greater collaboration and innovation among academic, industry and government researchers.

Nancy Stoner, the U.S. Environmental Protection Agency's acting assistant administrator for water, and officials from the Water Environment Federation made the announcement in a visit to USF's Patel College of Global Sustainability and three university laboratories where technologies are being developed to detect waterborne pathogens, convert wastewater into renewable resources and grow algae for bio-fuel production.

"What we are trying to do is encourage the development of technology that solves real-world problems, that's what is being done here," Stoner said immediately after learning about new technology developed by USF Professor Daniel Lim and his research team that can more easily detect pathogens such as E. coli in water at contaminated beaches or in fruit and vegetable processing.

The inexpensive, portable testing equipment developed by the lab is patent-pending.

"There are all kinds of exciting things being done in laboratories; it's time to scale them up," Stoner added.

Stoner was hosted by Patel College Dean Kala Vairavamoorthy and joined by Jeff Lape, deputy director of EPA's Office of Science and Technology; Jeff Eger, executive director of the Water Environment Federation; and Matt Ries, chief technical officer for the Water Environment



Daniel Yeh's lab was one of three labs Stoner visited Wednesday.

Federation and senior research fellow at USF's Patel College of Global Sustainability and a doctoral student in civil engineering at USF.

The new EPA blueprint put the focus on technological innovation in drinking water system, wastewater treatment and management, water reuse and reducing the amount of water used in domestic energy production. Sustainable water issues are a major research focus for USF throughout the university, but particularly in the newly-created Patel College.

"In the future we won't be building water treatment and wastewater treatment plants, we will be building water machines, machines that produce water, energy, nutrients, etc," Vairavamorthy told Stoner.

"There is a need for a comprehensive management of urban water systems by adopting more intelligent treatment technologies, including water recycling, and IT for monitoring and control of urban water systems. The convergence of these technologies offers great opportunities to the water sector."

The delegation's visit took them to the laboratory of Daniel Yeh, an associate professor of Civil and Environmental Engineering, who has developed new technology that converts wastewater into clean water, nutrients and energy. Yeh's project, partially funded by a 2011 grant from the Gates Foundation, has drawn worldwide interest because of its potential to turn wastewater into a renewable resource.

In Lim's Advanced Biosensors Laboratory, the delegation was able to see his invention – the Portable Multi-Use Automated Concentration System – is able to quickly and easily detect waterborne diseases. The machine is able to concentrate low levels of microbial pathogens in large volumes of water, making it useful for detecting contamination at beaches, in rivers and even in fruit and vegetable processing plants.

"Those of us who live in the Tampa Bay area know how often the beaches are closed for two or three days to test for pathogens in the water," he said. "We can do that in two or three hours."

The device has been tested extensively in various scenarios, but isn't on the market because it is still considered research equipment and not having met regulatory standards and asked Stoner for the EPA's assistance in easing the path from new innovation to usable technology.

The group also traveled to Lakeland to visit a biofuels laboratory created by George Philippidis, a USF associate professor in the Department of Chemical and Biomedical Engineering. As director of the Renewable Fuels Laboratory, Philippidis has engineered technologies to grow fuel-producing algae while reducing water and energy consumption.

To read the EPA Blueprint for Integrating Technology Innovation into the National Water Program click [here](#).