

University of South Florida International Development Engineering Program Receives Water Charities Grant to Reduce Lead (Pb) Levels in Drinking Water in Madagascar

Congratulations to University of South Florida (USF) Civil & Environmental Engineering professors James Mihelcic, Maya Trotz, and Jeff Cunningham who are recipients of a \$24,500 grant to improve health in Madagascar. The goal of their project is to improve health and community well-being by reducing Lead (Pb) concentrations below World Health Organization guidelines in water supplied by locally-manufactured hand pumps in Madagascar.

Ninety-two percent of Madagascar's 22.9 million people live on less than US \$2 a day and over half lack access to safe water. USF researchers and graduate students affiliated with the International Development Engineering Program had previously identified unsafe lead concentrations in water provided by locally manufactured hand pumps. They also identified a simple solution, replacing lead weights found in two check valves of the hand pump with weights manufactured with locally repurposed iron. The grant funds will be used to replace lead-containing components of wells, train pump manufacturers to use non-lead components, and educate homeowners. USF will partner with Ranontsika, a local Malagasy nongovernmental organization that aims to improve public health in Madagascar by promoting access to high quality drinking water through a social business service franchise model. The director of Ranontsika is a former graduate student of Professor Mihelcic's.

The U.S. Safe Drinking Water Act requires the Environmental Protection Agency regulate lead in drinking water. This is because lead is a toxic metal that can be harmful to human health even at low exposure levels. Pregnant woman and young children, infants, and fetuses are particularly vulnerable to lead exposure. In the U.S. the health impacts of lead in drinking water have gained extensive national exposure after the situations of lead poisoning associated with drinking water was identified in Flint (Michigan) and Washington D.C.

In the past five years Water Charities Fundraising has awarded grants to charitable organizations working to provide clean water, improved sanitation, and reliable infrastructure in communities around the world. They host Jammin'4Water (www.jammin4water.org) every year, a live musical performance that occurs at the Water Environment Federation's Technical Exhibition and Conference which is the largest annual water quality event in the world.



Associate Professor Maya Trotz, USF International Development Engineering Alumni Josh Donegan, and Professor James Mihelcic receive grant award from Water Charities Fundraising at Jammin for Water event held in Chicago.



Young Malagasy girl obtaining water from locally manufactured hand pump (photo courtesy of Michael MacCarthy).



Former USF graduate student Brad Akers sampling for lead in water from household pumps in Madagascar (Photo courtesy of Brad Akers)

The USF International Development Engineering program (<http://cee.eng.usf.edu/peacecorps/>) envisions a world where all have access to sanitation and potable water, where all children are able to learn in well-built classrooms, where there is sustainable transportation, where families no longer suffer from disease, starvation and poverty, where renewable energy has replaced fossil fuels, and engineers are leaders of the sustainability revolution.

USF RECLAIM (<http://usf-reclaim.org/>) promotes innovative, culturally-relevant solutions to manage resources at the nutrient, energy, and water nexus by communicating research through social media and cultivating interdisciplinary collaboration and discussions