

Researchers Receive State Funding to Study Human Impact of Harmful Algal Blooms

Researchers with the University of Miami Miller School of Medicine, in collaboration with UM's Rosenstiel School of Marine and Atmospheric Science, have been awarded state funds that support research efforts to improve the understanding of the potential long-term human-health impacts of harmful blue-green algal blooms (HABs). The Florida Department of Health announced the award on December 9.



From left, Kim Pependorf, Ph.D., with Alberto J. Caban-Martinez, D.O., Ph.D., M.P.H.

“Our water and natural resources are what make Florida such a desirable and unique place to live and visit,” said Florida Governor Ron DeSantis. “When they are threatened, our economy

and way of life are threatened, too. These important grants will help advance the crucial research needed to ensure Floridians and visitors can safely enjoy our beautiful waterways.”

UM joins three additional Florida universities – Florida Atlantic University, the University of Florida and Florida Gulf Coast University – which will share the \$650,000 state appropriated grant.

“It is an honor for us to be selected for this research award that will bring together the environmental sciences, population-level sciences and clinical resources of our marine and medical schools to support the study of harmful algal bloom impacts among Floridians, various occupational workers and visitors,” said Alberto J. Caban-Martinez, D.O., Ph.D., M.P.H., assistant professor of public health sciences in the Miller School’s Division of Environment and Public Health Sciences, and Kim Popendorf, Ph.D., assistant professor of ocean sciences at the Rosenstiel School. Dr. Caban-Martinez and Dr. Popendorf are co-principal investigators for the research project titled “Diversity and Innovation in Screening and Prevention of Exposure over the Long-term (DISPEL) to HABs.”

Potential outcomes of the research will include improved environmental and/or human toxin tests and a better understanding of the health risks for people with variable exposure to the toxins (from the occasional beach visitor to those with long-term occupational exposures).

The overall priorities for the state funded research projects are:

- **Prevention:** Research with a focus on prevention of impacts from exposure to toxins associated with harmful algal blooms.
- **Treatment:** Research with a focus on improved treatment of impacts from exposure to toxins associated with harmful algal blooms.
- **Health Disparities:** Research that contributes to reductions of impacts from exposure to toxins associated with harmful algal blooms resulting from health disparities due to race, ethnicity or income.
- **Screening:** Improve screening accuracy, detection of high-risk subgroups, and/or improved implementation of a HAB-toxin screening program that results in an increase in early detection or prevention of HAB-related illness.

UM's DISPEL project will focus specifically on prevention, health disparities and screening, with unique transdisciplinary work by a team of researchers with expertise in human health, ocean science, atmospheric science and environmental engineering. Additional funding support for DISPEL was provided by UM's U-LINK initiative, which catalyzed the pilot work that led to the state award.

"We are thrilled to have been able to support this pioneering research through U-LINK," said Susan Morgan, UM's Associate Provost for Research. "This is high-impact interdisciplinary research that will lead to significant improvements to the health of many Americans."

"Environmental policy is a priority for our administration. Ensuring our waterways are safe and free of harmful blooms is

critical to safeguarding one of our state's biggest commodities – our natural resources,” said Lieutenant Governor Jeanette Nuñez. “The health of Floridians is paramount, and this investment will be fundamental in researching the health-related impacts of the algae bloom.”

This research will support the Governor’s Executive Order 19-12, which aims to encourage partnerships to address critical water quality issues and their impact on the citizens of and visitors to Florida.

“The presence of harmful algal blooms in Florida’s bodies of water severely impacts our public health and economy,” said State Surgeon General Scott Rivkees, M.D. “This research will support our efforts toward a better understanding of the health risks of exposure to harmful algae blooms and how best to treat the consequences.”

The research team includes Helena Solo-Gabriele, Ph.D., professor of civil, architectural and environmental engineering and associate dean for research at the UM College of Engineering; Larry Brand, Ph.D., professor of marine biology and ecology; Cassandra Gaston, Ph.D., assistant professor of atmospheric sciences at the Rosenstiel School; Natasha Schaefer Solle, R.N., Ph.D., research assistant professor of medicine; Nichole Klatt, Ph.D., associate professor of pediatrics, and Adrienne Arsht Endowed Chair in Pediatric Clinical Research; Grace Zhai, Ph.D., associate professor of molecular and cellular pharmacology and senior associate dean for basic science research at the Miller School.

This promising research, still in its early stages, was

recently featured on a Regional Emmy-nominated episode of the PBS documentary television series Changing Seas (called “Toxic Waters”).