

Florida Environmental Health Association (FEHA) – Annual Meeting

October 13-15, 2021

Harmful Algal Blooms Session

Friday, October 15th from 1:30-3:30pm

Moderated by: FDOH Aquatic Toxins Program

Agenda

- 1:30 Introduction
Bureau of Environmental Health, Public Health Toxicology, FDOH
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- 1:35 Understanding HABs and the Department of Health Role:
Notification, Response, Resources, and Research – *Monica Samit, MPH*
Bureau of Environmental Health, Public Health Toxicology, FDOH

Veterinary Resources – *Danielle Stanek, DVM*
Bureau of Epidemiology, State Public Health Veterinarian, FDOH

Foodborne Illness Surveillance and Outbreak Investigation – *Kimberly Stockdale, MSPH*
Bureau of Epidemiology, Food & Waterborne Disease Program, FDOH
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- 2:00 Development of a Red Tide Communication Plan for Florida – *Lisa Krimsky, PhD*
Florida Sea Grant, University of Florida
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- 2:15 Exploring the Relationship between Cyanobacterial Toxins and Human Diseases in Florida –
Yi Guo, PhD
Health Outcomes & Biomedical Informatics, University of Florida College of Medicine
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- 2:30 Aerosolization of Cyanotoxins: A Controlled Laboratory Approach – *Barry Rosen, PhD*
Department of Ecology & Environmental Studies, Florida Gulf Coast University
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- 2:45 Long-term Effects of Exposure to Harmful Algal Blooms (LEE-HABs) Study – *Shirley Gordon, PhD, RN*
Christine E. Lynn College of Nursing, Florida Atlantic University
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- 3:00 Diversity and Innovation in Screening and Prevention of Exposure over the Long-term (DISPEL) to HABs – *Alberto Caban-Martinez, DO, PhD, MPH*
Department of Public Health Sciences, University of Miami Miller School of Medicine
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- 3:15 Q&A
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- 3:30 End

Project Summaries

Development of a Red Tide Communications Plan for Florida

Lisa Krinsky, Ph.D. Florida Sea Grant, University of Florida

The goal of this project was to advance red tide communications by aligning practitioner needs with end-user wants. Using innovative educational approaches and messaging, the project developed a better social science understanding of preferred red tide information, formats, and delivery modes, and created a comprehensive communication plan for residents, visitors, and businesses to better promote the use of science-based information in decision-making during red tide events.

Exploring the Relationship between Cyanobacterial Toxins and Human Diseases in Florida

Yi Guo, Ph.D. University of Florida

The goal of this study was to begin the process of defining the linkage between toxic cyanobacteria blooms and threats to human health in Florida. Electronic health record data and HAB blooms were spatially analyzed to identify possible hotspots of human diseases potentially associated with cyanobacterial toxins.

Aerosolization of Cyanotoxins: A Controlled Laboratory Approach

Barry Rosen, Ph.D. Florida Gulf Coast University

In this project, cultures and natural samples of cyanobacteria placed in a sealed chamber were subjected to various wind speeds, and the amount of aerosolized microcystin, anatoxin, cylindrospermopsin and saxitoxin collected in an air impactor that simulates the respiratory system. Additional refinements to the methods are underway to count and size the aerosols and determine 1) amount of cyanotoxin that might be produced from a bloom, and 2) if the types of cyanotoxins aerosolize at different rates.

Long-term Effects of Exposure to Harmful Algal Blooms (LEE-HABs) Study

Shirley Gordon, Ph.D., RN Florida Atlantic University

Despite multiple occurrences of red tide and blue green algae in Florida waters during recent years, our understanding of the health effects of exposure to these blooms remains limited. Using a collaborative, multisite approach, the aims of the LEE-HABs Study, funded by FDOH, are to (1) measure concentrations of HAB toxins in the environment and in multiple human tissues to better understand the effects of exposures to HABs on human health, and (2) establish a HAB Biorepository at Florida Atlantic University.

Diversity and Innovation in Screening and Prevention of Exposure over the Long-term (DISPEL) to HABs

Kimberly Pependorf, Ph.D., and Alberto Caban-Martinez Ph.D., D.O., MPH University of Miami

The aims of the DISPEL study have been to 1) collect and review human biomonitoring data and environmental water sample data among diverse Florida communities to improve the understanding of

the health risks for people with variable exposure to toxins associated with blue-green cyanobacterial HABs in Florida, and 2) test the efficiency of a variety of home air filter and commercially available face masks for removing HAB toxins from the air.