

## Oceans and Human Health

Date: July 10, 2013

Time: 12:00-1:00 p.m. ET

Please register at: [http://bit.ly/PEPH\\_Oceans](http://bit.ly/PEPH_Oceans)

(registration required)

**Description:** Oceans can affect our health in many ways. Eating contaminated seafood, swimming in polluted water, and exposure to harmful algal blooms all can cause health problems. Scientists also are discovering that ocean life is a rich source of natural products and potential medicines. In this webinar, we will learn about cutting-edge marine research being conducted by two NIEHS-funded scientists.

**Introduction** – Frederick Tyson, Ph.D., National Institute of Environmental Health Sciences



Dr. Tyson oversees the Oceans and Human Health program in the NIEHS's Division of Extramural Research and Training. He will provide a brief overview of the program, explaining why it is important to NIEHS and the PEPH community.

### Harmful Algal Blooms: Concerns and Directions

John Stegeman, Ph.D., Woods Hole Oceanographic Institution



The Woods Hole Center for Oceans and Human Health addresses issues at the intersection of oceanographic, biological, and environmental health sciences, blending biological, hydrographic, and modeling studies of key habitats and processes. This includes researching the dynamics of harmful algal blooms (HABs), biological phenomena with the potential for significant human health consequences worldwide. Factors affecting the distribution, survival, proliferation, and toxicity of HAB species are still poorly known. Moreover, it is becoming clear that multiple HAB

species can co-occur, raising issues of combined exposures compounding the threats to human health. The research focuses on two key species, *Alexandrium fundyense*, which produces saxitoxins responsible for paralytic shellfish poisoning, and *Pseudo-nitzschia spp.*, which produce domoic acid that is responsible for amnesic shellfish poisoning syndrome. The application of new remote sensor technologies is yielding new understandings of HAB processes, and companion studies are addressing the consequences of sub-acute exposure, especially during development, which may have pervasive and pernicious effects in exposed populations. Studies on the mechanisms of toxin action are accompanied by—and compared with—those of important anthropogenic toxicants common in the marine environment.

### Exploring Natural Marine Contaminants of Emerging Concern

Bradley Moore, Ph.D., University of California – San Diego



The Scripps Center for Oceans and Human Health at the Scripps Institution of Oceanography (UC San Diego) is dedicated to advancing the biology and chemistry of natural marine contaminants of emerging concern. With an increasing awareness of the bioaccumulation of naturally produced halogenated organic compounds (HOCs) in the marine environment, such as polybrominated diphenyl ethers (PBDEs) and polybrominated bipyrroles, comes a public responsibility to understand the chemical diversity, sources, distributions, and toxicity of these compounds. California's PBDE

body burden is the highest in the U.S., which is the highest in the world. Thus, the Southern California Bight—a region impacting over 17 million residents from Ensenada, Mexico to Point Conception, California—is an ideal area to address fundamental questions concerning the biogenic origin and toxicology of naturally produced polybrominated HOCs. These compounds have been linked to endocrine and thyroid disruption, neurodevelopmental deficits, immunotoxicity, reproductive toxicity, and cancer and thus represent an emerging environmental and public health concern for this major metropolitan region. The Scripps Center is structured into three highly collaborative and integrated projects to discover 1) the main marine sources and sinks of natural polybrominated organic compounds; 2) the molecular basis of polybrominated organic compound biosynthesis in the marine environment; and 3) the distribution, provenance, and human health implications of marine polybrominated organic compounds.



**REGISTER NOW**

[http://bit.ly/PEPH\\_Oceans](http://bit.ly/PEPH_Oceans)

### PEPH Webinar Series

The Partnerships for Environmental Public Health (PEPH) program established the PEPH Webinar Series to promote interactions among PEPH grantees and to increase awareness of common issues and approaches. The webinars facilitate consideration of emerging issues. While the primary audience is grantees within the PEPH network, anyone interested in environmental public health is welcome to register.

If you have any questions about this webinar or future webinars, please contact Liam O'Fallon ([ofallon@niehs.nih.gov](mailto:ofallon@niehs.nih.gov), 919-541-7733).

Individuals with disabilities who need accommodation to participate in this event should contact Liam O'Fallon ([ofallon@niehs.nih.gov](mailto:ofallon@niehs.nih.gov), 919-541-7733). TTY users should contact the Federal TTY Relay Service at 800-877-8339. Requests should be made at least 5 business days in advance of the event.

### Upcoming Webinar Topics:

- Addressing Historical Inequities: Environmental Justice for Native Americans (August 21)

