TRAVELING HAB LAB: EMPOWERING CITIZEN SCIENTISTS TO PROTECT WATER RESOURCES

SESSION: ENGAGING COMMUNITIES & STAKEHOLDERS

ABSTRACT: New Jersey has seen significant increases in cyanobacterial harmful algal blooms (HAB) that produce cyanotoxins, which can be dangerous for humans, pets, livestock, and wildlife. As New Jersey encompasses roughly 1,900 lentic waterbodies, eight major river systems, two major estuaries and nearly 130 miles of coastline; government agencies are unable to effectively monitor all waterbodies across New Jersey. Hence, Montclair State University developed the Traveling HAB Lab to educate the general public to identify HABs and take actions to reduce water pollution and future blooms. The Traveling HAB Lab includes three components: a citizen science program, an education program, and a teacher training program. Community members in the citizen science program were equipped with necessary supplies and materials and trained to follow established standard operating procedures to perform HAB monitoring. These citizen scientists were also tasked to spread the message about HABs and their impacts with their fellow community members. For the teacher training program, education modules about water quality, harmful algal blooms, and water conservation were developed; all materials were designed to align with the New Jersey Student Learning Standards for Science. The education program provides students and community members with educational materials and discovery-based activities focusing on water quality and HAB. Educational programming both in classrooms and at outreach events gives students and community members an understanding of water quality issues in their immediate environments, help foster environmental stewardship and inspire them to take action in reducing water pollution and to control future blooms.

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SPEAKER BIO: Dr. Meiyin Wu, Director of New Jersey Center for Water Science and Technology and Professor of Biology at Montclair State University, is an aquatic ecosystem ecologist whose research focuses on water quality, aquatic ecology, harmful algal blooms, drinking and recreational water safety, seafood consumption safety, pollution transport and control, microbial source tracking, and ecosystem restoration. In addition to teaching and conducting research, Dr. Wu directs a water analysis laboratory (NJDEP Laboratory Certification # 07105), organizes a citizen science program for HAB monitoring, and coordinates an environmental education and outreach program. The author of more than 50 articles, books and educational DVDs, she also holds three U.S. patents on innovative technologies for water treatment.

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