

The 2009 U.S. Environmental Protection Agency Workshop on Innovative Approaches for Detecting Microorganisms and Cyanotoxins in Water

EPA Region 3 Offices
1650 Arch Street
Philadelphia, PA

May 20-21, 2009

DRAFT AGENDA

Workshop Objectives

- Provide a forum to discuss proposed solutions to the methodological challenges in the search for better methods of detection and assessment of waterborne microbial contaminants.
- Facilitate collaboration and cooperation among scientists and policy-makers from research entities, EPA, states, local agencies, and stakeholders.
- Assist EPA in identifying what research or technologies are needed to better inform decisions and/or policies associated with the assessment of microorganisms in water.
- Give STAR grantees of the past two solicitations regarding “Development and Evaluation of Innovative Approaches for the Quantitative Assessment of Pathogens and Cyanobacteria and Their Toxins in Drinking Water” the opportunity to present their latest findings. Summaries of the grantees’ projects can be found at: http://www.epa.gov/ncer/rfa/2005/2005_pathogens_drinking_water.html and http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/recipients.display/rfa_id/456/records_per_page/ALL

Wednesday, May 20, 2009

Moderator: Barbara Klieforth, EPA, Office of Research and Development, National Center for Environmental Research

- 1:00 – 1:15 p.m. **Welcome and EPA’s National Program for Drinking Water Research**
Audrey Levine, U.S. Environmental Protection Agency (EPA), Office of Research and Development, Drinking Water National Program Director
- 1:15 – 1:35 p.m. **UCMR and Other Regulatory Updates**
Pamela S. Barr, EPA, Office of Groundwater and Drinking Water, Standards and Risk Management Division
- 1:35 – 1:55 p.m. **Overview Presentation From EPA Region 3**
Victoria P. Binetti, EPA, Region 3
- 1:55 – 2:15 p.m. **Crypto and Molecular Methods Work Being Done With EPA Regions 2 and 3**
Eric Villegas, EPA, National Exposure Research Laboratory, Microbiological and Chemical Exposure Assessment Research Division
- 2:15 – 2:35 p.m. **Development of a Universal Microbial Collector (UMC) for Enteric Pathogens in Water and Its Application for the Detection of Contaminant Candidate List Organisms in Water**
Kelly R. Bright, University of Arizona and Cedar Systems
- 2:35 – 2:55 p.m. **BREAK**
- 2:55 – 3:15 p.m. **Development and Evaluation of an Innovative System for the Concentration and Quantitative Detection of CCL Pathogens in Drinking Water**
Saul Tzipori, Tufts University
- 3:15 – 3:35 p.m. **On-Chip PCR, Nanoparticles, and Virulence/Marker Genes for Simultaneous Detection of 20 Waterborne Pathogens**
Syed Hashsham, Michigan State University
- 3:35 – 3:55 p.m. **Rapid and Quantitative Detection of Helicobacter pylori and Escherichia coli O157 in Well Water Using a Nano-Wired Biosensor and QPCR**
Evangelyn C. Alocilja, Michigan State University

- 3:55 – 4:15 p.m. **Assessment of Microbial Pathogens in Drinking Water Using Molecular Methods Coupled With Solid-Phase Cytometry**
Barry Pyle, Montana State University
- 4:15 – 4:35 p.m. **Detecting Pathogens in Water by Ultrafiltration and Microarray Analysis**
Anthea K. Lee, Metro Water District of Southern California
- 4:35 – 4:55 p.m. **Robust Piezoelectric-Excited Millimeter-Sized Cantilever Sensors for Detecting Pathogens in Drinking Water at 1 Cell/Liter**
Raj Mutharasan, Drexel University

Thursday, May 21, 2009

- 8:30 – 8:45 a.m. **Overview of EPA's Office of Research and Development and the Science To Achieve Results (STAR) Program**
Barbara Klieforth, EPA, Office of Research and Development, National Center for Environmental Research
- 8:45 – 9:05 a.m. **National Risk Management Research Laboratory (NRMRL) Microbial Research**
Jorge Santo Domingo, EPA, NRMRL, Water Supply and Water Resources Division, Microbial Contaminants Control Branch
- 9:05 – 9:25 a.m. **Rapid Concentration, Detection, and Quantification of Pathogens in Drinking Water**
Zhiqiang Hu, University of Missouri
- 9:25 – 9:45 a.m. **Simultaneous Concentration and Real-Time Detection of Multiple Classes of Microbial Pathogens From Drinking Water**
Mark D. Sobsey, University of North Carolina at Chapel Hill
- 9:45 – 10:05 a.m. **Quantitative Assessment of Pathogens in Drinking Water**
Kellogg Schwab, Johns Hopkins University
- 10:05 – 12:00 p.m. **Break and Discussion**
- 12:00 – 1:00 p.m. **Lunch**
- 1:00 – 1:20 p.m. **New Electropositive Filter for Concentrating Enterovirus and Norovirus From Large Volumes of Water**
Mohammad Karim, Oak Ridge Institute for Science and Education Research Fellow, EPA
- 1:20 – 1:40 p.m. **Development of High-Throughput and Real-Time Methods for the Detection of Infective Enteric Viruses**
Jason Cantera, University of California at Riverside
- 1:40 – 2:00 p.m. **Automated Methods for the Quantification and Infectivity of Human Noroviruses in Water**
Timothy Straub, Batelle Pacific Northwest Division
- 2:00 – 2:20 p.m. **Characterization of Naturally Occurring Amoeba-Resistant Bacteria From Water Samples**
Sharon Berk, Mid-Tennessee State University
- 2:20 – 2:35 p.m. **Break**
- 2:35 – 2:55 p.m. **Analysis of Various Toxins Produced by Cyanobacteria Using Ultraperformance Liquid Chromatography-Tandem Mass Spectrometry (UPLC/MS/MS)**
Judy Westrick, Lake Superior State University
- 2:55 – 3:15 p.m. **Development and Application of a Fiber Optic Array System for Detection and Enumeration of Potentially Toxic Cyanobacteria**
Donald Anderson, Woods Hole Oceanographic Institute
- 3:15 – 4:00 p.m. **Development of Sensitive Immunoassay Formats for Algal Toxin Detection**
Fernando Rubio, Abraxis LLC
- 4:00 p.m. **Adjournment**