

# DHS/NIST Workshop: Standards to Support an Enduring Capability in Wastewater Surveillance for Public Health

(SWWS Workshop)

## AGENDA

Updated 6/10/2021

### Day 1: Monday, June 14, 2021 (all times EDT)

<b>10:00 – 10:50 AM</b>	<b>WELCOME &amp; INTRODUCTORY REMARKS</b>
	<p><b>Welcome, Logistics, and Workshop Overview –</b>  Mr. Philip Mattson, DHS Standards Executive and Director, Office of Standards at US Department of Homeland Security  Dr. Nancy Lin, Leader of the Biomaterials Group, Material Measurement Laboratory at the National Institute of Standards and Technology</p>
	<b>Welcome Remarks –</b> U.S. Senator Gary Peters (MI), Chair of the Homeland Security & Governmental Affairs Committee
	<b>Welcome Remarks –</b> Mr. Joseph Hamel, Director, ASPR Program Office for Innovation and Industrial Base Expansion (IBx) for the Department of Health and Human Services (HHS) Office of the Assistant Secretary for Preparedness and Response (ASPR)
	<b>Welcome Remarks –</b> Robert B. Newman, Jr., Office of Strategy and Policy at the Department of Homeland Security, Science and Technology Directorate
	<b>Welcome Remarks –</b> Dr. Eric Lin, Acting Associate Director for Laboratory Programs, NIST
<b>10:50 AM – 12:35 PM</b>	<b>STANDARDS FOR WASTEWATER SURVEILLANCE (SWWS) 101: INTRODUCTION TO WASTEWATER SURVEILLANCE (WWS)</b> <b>Chair:</b> Dr. Michael Focazio, Environmental Health Research Program Coordinator at the U.S. Geological Survey
10:50 – 10:55 AM	<b>Opening Remarks</b> - Dr. Michael Focazio, USGS
10:55 – 11:35 AM	<b>KEYNOTE PRESENTATION –</b> Dr. Amy Kirby, Program Lead for the National Wastewater Surveillance System at CDC
11:30 – 11:55 AM	Dr. Kate Griffiths, Senior Molecular Biologist at the National Measurement Institute of Australia
11:55 AM – 12:15 PM	Judith Wong, Director of the Environmental Health Institute and Microbiology and Molecular Epidemiology Division, National Environment Agency, Singapore and Dr. Shane Snyder, Professor of Civil & Environmental Engineering and Executive Director of the Nanyang Environment & Water Research Institute (NEWRI) at Nanyang Technological University (NTU), Singapore
12:15 – 12:35 PM	Dr. Beverley Stinson, Executive Vice President at AECOM

12:35 – 1:05 PM	BREAK
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1:05 – 2:55 PM	<b>SWWS 201: SAMPLING</b> Chair: Renee Stevens, DHS
1:05 – 1:10 PM	<b>Opening Remarks</b>
1:10 – 1:25 PM	Claudio Ternieden, Senior Director of Government Affairs & Strategic Partnerships at Water Environment Federation
1:25 – 1:40 PM	<b>USGS Experience in Wastewater Sampling: 3 Issues to Guide Wastewater Surveillance for Public Health</b> – Mr. Patrick Phillips, Quality Assurance Specialist at US Geological Survey
1:40 – 1:55 PM	<b>Case Study – Wastewater monitoring for COVID-19</b> in Louisville, Dr. Aruni Bhatnagar, Professor of Medicine at the University of Louisville
1:55 – 2:00 PM	<b>Rapid Fire – Wastewater sampling for WBE surveillance</b> , Mr. Kaushal Trivedi, Business Development Manager at Teledyne ISCO
2:00 – 2:05 PM	<b>Rapid Fire – Building-level Wastewater Monitoring for COVID-19 Using Tampon swabs and RT-LAMP for Rapid SARS-CoV-2 RNA Detection</b> – Dr. Aaron Bivins, Post Doctoral Research Fellow at University of Notre Dame
2:05 – 2:55 PM	<b>Panel Discussion: Need for Standards to Support Wastewater Sampling</b> <b>Moderator:</b> Ms. Sarah Wright, Environmental Laboratories Manager at the Association of Public Health Laboratories <b>Panelists:</b> <ul style="list-style-type: none"> <li>• Mr. John Birkner, Manager of Technical Services, Bergen County Utilities Authority</li> <li>• Dr. Raul A. Gonzalez, Environmental Scientist at Hampton Roads Sanitation District</li> <li>• Dr. Rochelle Holm, Associate Professor, Mzuzu University, Malawi</li> <li>• Mr. Greg Kester, Director of Renewable Resource Programs at the California Association of Sanitation Agencies (CASA)</li> <li>• Mr. Bruce Smith, Environmental Engineer at USEPA</li> <li>• Mr. David Swain, Associate Vice President at AECOM</li> </ul>

2:55 – 3:00 PM	<b>WRAP-UP: Closing Remarks for Day 1</b> , Dr. Nancy Lin, NIST
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## Day 2: Tuesday, June 15, 2021 (all times EDT)

10:00 – 10:05 AM	<b>WELCOME &amp; LOGISTICS</b>
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10:05 AM – 12:05 PM	<b>SWWS 202: TESTING METHODS</b>
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	<b>Chair:</b> Ms. Sally C. Gutierrez, Senior Advisor for Water, United States Environmental Protection Agency
10:05 – 10:10 AM	<b>Opening Remarks</b> – Ms. Sally Gutierrez, USEPA
10:10 – 10:25 AM	<b>Global Update on Wastewater Surveillance for SARS-CoV-2</b> , Dr. Christobel M. Ferguson, Chief Innovation Officer at The Water Research Foundation
10:25 – 10:45 AM	<b>Case Study</b> – Dr. Nichole Brinkman, Microbiologist at EPA's Office of Research and Development (ORD), Center for Environmental Solutions and Emergency Response (CESER) and Rebecca Fugitt, Assistant Chief, Bureau of Environmental Health and Radiation Protection at Ohio Department of Health
10:45 – 10:55 AM	<b>Scalable, sensitive, representative, and comparable approach for high throughput SARS-CoV-2 RNA analysis in settled solids</b> , Dr. Alexandria Boehm, Professor of Civil and Environmental Engineering at Stanford University
10:55 – 11:00 AM	<b>Rapid Fire – Reducing Erosion: Using a rapid deployable testing solution to reduce time between sampling and action</b> , Dr. Jordan J. Schmidt, Director, Product Applications at LuminUltra Technologies
11:00 – 11:05 AM	<b>Rapid Fire – The Importance of Validation for Wastewater Surveillance</b> , Dr. Brian Swalla, Staff Scientist, IDEXX Laboratories, Inc.
11:05 – 11:10 AM	<b>Rapid Fire</b> – Carolyn Reifsnnyder, Director, Global Product Marketing, Digital Biology Group at Bio-Rad Laboratories
11:10 – 11:15 AM	<b>Rapid Fire</b> – Dr. Michael Bussmann, Associate Director Global Product Management - dPCR bei QIAGEN
11:15 – 11:20 AM	<b>Rapid Fire – SARS-CoV-2 Variant Profiling in Wastewater by Sequencing</b> , Dr. Ellen M. Beasley, CSO at Pangolin Health
11:20 – 11:25 AM	<b>Rapid Fire</b> – Mr. Matt Scullion, Vice President of Sales and Marketing at BioFire Defense
11:25 – 11:30 AM	<b>Rapid Fire – Viral Concentration with Nanotrap Magnetic Virus Particles</b> , Dr. Roberto J. Barbero, Chief Business Officer at Ceres Nanosciences
11:30 – 12:05 PM	<b>Panel Discussion: Need for Standards to Support Testing Methods</b> <b>Moderator:</b> Jay Garland, Associate Director at the Center for Environmental Solutions and Emergency Response at the Environmental Protection Agency <b>Panelists:</b> <ul style="list-style-type: none"> <li>• Dr. Kartik Chandran, Professor of Environmental Engineering, Columbia University</li> <li>• Mr. Kahlil Lawless, Microbiology Segment Manager - Americas at Illumina</li> <li>• Dr. Mia Mattioli, Environmental Engineer at the Centers for Disease Control and Prevention</li> <li>• Dr. Gertjan Medema, Principal Microbiologist at KWR</li> <li>• Dr. Martin Shafer, Senior Scientist, University of Wisconsin-Madison, State Laboratory of Hygiene</li> </ul>
12:05 – 12:30 PM	<b>BREAK</b>
12:30 – 2:15 PM	<b>SWWS 203: DATA REPORTING AND ANALYTICS</b> <b>Chair:</b> Mr. Paul Storella, Senior Vice President at AECOM

12:30 – 12:35 PM	<b>Opening Remarks</b> – Mr. Paul Storella, AECOM
12:35 – 12:50 PM	<b>Available Data Tools: National Wastewater Surveillance System</b> , Dr. Wiley Jennings, Health Scientist at the Centers for Disease Control and Prevention
12:50 – 1:10 PM	<b>Case Study – SARS-CoV-2 Wastewater Surveillance and Public Health Applications in Houston, TX</b> , Dr. Lauren Stadler, Assistant Professor, Environmental Engineering at Rice University and Dr. Loren Hopkins, City of Houston Chief Environmental Science Officer, Chief of the Bureau of Community and Children’s Environmental Health at the Houston Health Department, and a Professor in the Practice in the Department of Statistics at Rice University
1:10 – 1:25 PM	<b>Translating Wastewater Data for Policymaking</b> , Ms. Aparna Keshaviah, Senior Statistician at Mathematica
1:25 – 1:35 PM	Dr. Mariana Matus, CEO and Co-founder at Biobot Analytics
1:35 – 1:40 PM	<b>Rapid Fire</b> – Ms. Ana Grace Alvarado, Graduate Student, Department of Environmental Engineering, University of California Merced
1:40 – 2:15 PM	<b>Panel Discussion: Need for Standards to Support Data Reporting and Analytics</b> <b>Moderator:</b> <b>Panelists:</b> <ul style="list-style-type: none"> <li>• Dr. Ellie Graeden, CEO at Talus Analytics</li> <li>• Mr. Robert Greenberg, CEO, G&amp;H International Services, Inc.</li> <li>• Mrs. Stacie Reckling, GIS Analyst, North Carolina Department of Health and Human Services, Division of Public Health</li> <li>• Dr. Rachel R. Spurbeck, Senior Genomics Research Scientist at Battelle Memorial Institute</li> </ul>

<b>2:15 – 2:55 PM</b>	<b>SWWS 204: ROLE OF STANDARDS IN SUPPORTING THE USE OF WWS DATA</b> , Chair: Dr. Ted Smith, Associate Professor, University of Louisville School of Medicine
2:15 – 2:25 PM	<b>Communicating Sewage Surveillance Data for a Public Health Response</b> , Dr. Sandra McLellan, Professor at the University of Wisconsin School of Freshwater Sciences
2:25 – 2:55 PM	<b>Panel Discussion: Standards to Support Implementation of WWS Data for Public Health</b> <b>Moderator:</b> Dr. Ted Smith, University of Louisville School of Medicine <b>Panelists:</b> <ul style="list-style-type: none"> <li>• Major Michael Dietrich, PhD, Bioenvironmental Engineering Flight Commander, USAF</li> <li>• Ms. Rosa Inchausti, Deputy City Manager, City of Tempe</li> <li>• Dr. Nathan LaCross, Wastewater Surveillance Program Manager at Utah Department of Health</li> <li>• Dr. Sandra McLellan, Professor at the University of Wisconsin School of Freshwater Sciences</li> </ul>

<b>2:55 – 3:00 PM</b>	<b>WRAP-UP: Closing Remarks for Day 2, NIST</b>
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<b>3:00 – 4:00 PM</b>	<b>VIRTUAL POSTER SESSION</b>
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**Day 3: Friday, June 18, 2021 (all times EDT)**

<b>10:00 – 10:10 AM</b>	<b>WELCOME &amp; LOGISTICS</b>
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<b>10:10 AM – 12:10 PM</b>	<b>SWWS 301: BUILDING AN ENDURING CAPABILITY</b> , Chair: Mr. Philip Mattson, DHS Standards Executive and Director, Office of Standards at US Department of Homeland Security
10:10 – 10:15 AM	<b>Opening Remarks</b> – Mr. Philip Mattson, DHS
10:15 – 10:35 AM	<b>Example: National Wildlife Health Center</b> – Dr. Jonathan Sleeman, Center Director for the National Wildlife Health Center at the U.S. Geological Survey
10:35 – 10:45 AM	<b>Tools-Documentary Standards: Documentary Standards for Biological Response</b> , Dr. Jayne B. Morrow, Assistant Vice President for Research and Economic Development at Montana State University
10:45 – 10:55 AM	<b>Tools-Reference Materials: Development and Performance of NIST SRM 2917 for Molecular Recreational Water Quality Testing</b> , Dr. Orin C. Shanks, Senior Scientist at the U.S. Environmental Protection Agency
10:55 – 11:05 AM	<b>Tools-Accreditation: Draft Accreditation Checklist for Wastewater COVID PCR Testing</b> – Ms. Patsy Root, Regulatory Affairs Manager, IDEXX Water
11:05 – 11:10 AM	<b>Enduring Capability: NWSS Perspective</b> – Dr. Amy Kirby, Program Lead for the National Wastewater Surveillance System at CDC
11:10 – 11:15 AM	<b>Enduring Capability: Biosurveillance Perspective</b> – DHS
11:15 – 11:20 AM	<b>Enduring Capability: One Health Perspective</b> – Dr. Tonya Nichols, Associate Director for Strategic Operations at the USEPA
11:20 – 11:25 AM	<b>Enduring Capability: Public Health Decision Maker Perspective: Building an Enduring Capability in Wastewater Surveillance</b> – Mr. Jeff Wenzel, Chief of the Bureau of Environmental Epidemiology at the Missouri Department of Health and Senior Services
11:25 – 11:30 AM	<b>Enduring Capability: A Local Health Department Perspective</b> – Dr. George A. Conway, Director at Deschutes County Health Services Department
11:30 – 11:35 AM	<b>Enduring Capability: State Perspective – Wastewater surveillance for COVID in Massachusetts</b> , Dr. Larry Madoff, Medical Director at the Bureau of Infectious Disease and Laboratory Sciences, Massachusetts Department of Public Health
11:35 AM – 12:10 PM	<b>Panel Discussion: Enduring Capability and Role of Standards</b> <b>Moderator:</b> Mr. Philip Mattson, DHS <b>Panelists:</b> <ul style="list-style-type: none"> <li>• Dr. George A. Conway, Director at Deschutes County Health Services Department</li> <li>• Dr. Amy Kirby, Program Lead for the National Wastewater Surveillance System at CDC</li> </ul>

	<ul style="list-style-type: none"> <li>• Dr. Larry Madoff, Medical Director at the Bureau of Infectious Disease and Laboratory Sciences, Massachusetts Department of Public Health</li> <li>• Dr. Tonya Nichols, Associate Director for Strategic Operations at the USEPA</li> <li>• Mr. Jeff Wenzel, Chief of the Bureau of Environmental Epidemiology at the Missouri Department of Health and Senior Services</li> </ul>
12:10 – 12:15 PM	<b>Instructions for Breakout Sessions</b> – Dr. Katrice A. Lippa, Leader, Organic Chemical Metrology Group, Material Measurement Laboratory at NIST

<b>12:15 – 12:30 PM</b>	<b>BREAK</b>
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<b>12:30 – 1:30 PM</b>	<b>CONCURRENT BREAKOUT SESSIONS</b>
	<b>SWWS 302: Methods and Data Comparability Breakout</b> <b>Session Co-Leads:</b> <ul style="list-style-type: none"> <li>• Dr. Scott Jackson, Leader of the Microbial Metrology Group, Material Measurement Laboratory at NIST</li> <li>• Dr. Mia Mattioli, Environmental Engineer at the Centers for Disease Control and Prevention</li> <li>• Ms. Sarah Wright, Environmental Laboratories Manager at the Association of Public Health Laboratories</li> </ul> <b>Session Scribe:</b> <ul style="list-style-type: none"> <li>• Dr. Paulina Piotrowski, Material Measurement Laboratory at NIST</li> </ul>
	<b>SWWS 303: Reference Materials Breakout</b> <b>Session Co-Leads:</b> <ul style="list-style-type: none"> <li>• Dr. Katrice Lippa, Leader of the Organic Chemical Metrology Group, Material Measurement Laboratory at NIST</li> <li>• Dr. Orin C. Shanks, Senior Scientist at the U.S. Environmental Protection Agency</li> <li>• Ms. Briana Benton, Technical Manager for Microbiology Systems at ATCC</li> </ul> <b>Session Scribe:</b> <ul style="list-style-type: none"> <li>• Dr. Stephanie Servetas, Material Measurement Laboratory at NIST</li> </ul>
	<b>SWWS 304: Documentary Standards – Guidance Documents Breakout</b> <b>Session Co-Leads:</b> <ul style="list-style-type: none"> <li>• Dr. Nancy Lin, Leader of the Biomaterials Group, Material Measurement Laboratory at NIST</li> <li>• Ms. Patsy Root, Regulatory Affairs Manager, IDEXX Water</li> </ul> <b>Session Scribe:</b> <ul style="list-style-type: none"> <li>• Dr. Sandra Da Silva, Research Chemist, Material Measurement Laboratory, NIST</li> </ul>

<b>1:30 – 2:00 PM</b>	<b>BREAK</b>
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<b>2:00 – 2:45 PM</b>	<b>SWWS 401: SUMMARY OF BREAKOUT SESSIONS</b> <b>Chair:</b> Yonas Kifle-Nebiyeyoul, US Department of Homeland Security
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2:00 – 2:15 PM	<b>Report Back from SWWS 302: Methods and Data Comparability</b> – Breakout Session Co-Leads and Scribe
2:15 – 2:30 PM	<b>Report Back from SWWS 303: Reference Materials</b> – Breakout Session Co-Leads and Scribe
2:30 – 2:45 PM	<b>Report Back from SWWS 304: Documentary Standards – Guidance Documents</b> – Breakout Session Co-Leads and Scribe
<b>2:45 – 3:00 PM</b>	<b>WRAP-UP: Final Remarks &amp; Next Steps</b>