

## Workshop: Advancing UV Germicidal Efficacy Measurement: Metrology, Standards, Data and Protocols

March 18 - 20, 2025  
American Geophysical Union Conference Center  
2000 Florida Ave. NW  
Washington, D.C. 20009

(agenda content subject to change)

Day One – Tuesday, March 18, 2025	
8:30– 9:00	<b>Welcome &amp; Opening Remarks</b> <ul style="list-style-type: none"><li>• Meeting Overview &amp; Orientation – Dianne Poster, Senior Advisor, and Joy Dunkers, Physical Scientist, Material Measurement Laboratory, National Institute of Standards and Technology</li><li>• Remarks - Dan Hanfling, Director, Private Sector Strategic Partnerships, Office of Pandemic Preparedness and Response, The White House</li><li>• Remarks - Stephanie Hooker, Associate Director, Material Measurement Laboratory, National Institute of Standards and Technology</li><li>• Remarks - Ted Mao, President, International Ultraviolet Association</li></ul>
9:00 - 9:30	<b>Keynote</b> - Lewis Radonovich, Deputy Director, Respiratory Health Division, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention
9:30 - 10:00	<b>Keynote</b> - William P. Bahnfleth, Professor of Architectural Engineering, The Pennsylvania State University
10:00 - 10:15	<b>Refreshment Break</b>
10:15 - 11:00	<b>Industry Leaders Roundtable - Common Goals &amp; Different Approaches</b> Moderator: William Bahnfleth, Professor of Architectural Engineering, The Pennsylvania State University  Panelists: <ul style="list-style-type: none"><li>• Giulia Santi, CEO, Light Progress Group</li><li>• Holger Claus, Vice President, Technology,USHIO America, Inc.</li><li>• Ashish Mathur, VP Innovation and Technology, UVDI</li><li>• Rick Rasansky, CEO, XCMR, Inc.</li><li>• James Montavon, Research Analyst, Blueprint Biosecurity</li><li>• P.K. Swain, Chief Operating Officer, EIT2.0 (invited)</li></ul>

Day One – Tuesday, March 18, 2025	
11:00 - 12:00	<p><b>Plenary Session - Inactivation Behavior: What's Happening and What's Needed</b></p> <p>Session Chair: Phyllis Posy, President, President of PosyGlobal</p> <p>This session is composed of the following invited presentations and a moderated discussion led by the session chair.</p> <ul style="list-style-type: none"> <li>• UV Sensitivity of Microorganisms - James Bolton, Founder, Bolton Photosciences (in absentia), with additional speaker in person (to be announced)</li> <li>• ASHRAE Research project 1854-TRP-C, Database of Ultraviolet Inactivation Rate Constant (K-Values) for Microorganisms Critical to System Design - Richard Vincent, Administrative Manager, Icahn School of Medicine at Mount Sinai</li> <li>• UV Air Disinfection Kinetics Measurement: Influential Factors, Challenges, and Standardization - Hao Luo, Postdoctoral Fellow, USP Technologies</li> <li>• Development of inactivation rate constants for microorganisms in water - a synopsis of research and test methods - Phyllis Posy</li> </ul>
12:00 - 1:00	<b>Lunch Break (on-site)</b>
1:00-1:45	<p><b>Moderated Panel: Microbiology Measurements and Global Challenges</b></p> <p>Chairs: James Bolton (in absentia), Matthew Hardwick</p> <p>This panel will feature experts discussing how to best measure UV sensitivity of microorganisms with an emphasis on testing and commercial engagement, with a balance between water, air, and surface topics.</p> <ul style="list-style-type: none"> <li>• Shawn Verhoeven, GAP EnviroMicrobial Services Ltd</li> <li>• Bill Anderson, University of Waterloo</li> <li>• Tatiana Koutchma, Agriculture &amp; Agri-Food Canada</li> <li>• Curtis Donskey, U.S. Veterans Administration</li> <li>• Dave Purkiss, NSF International (invited)</li> <li>• Katherine Ratliff, EPA</li> </ul>
1:45 – 2:00	<p><b>Plenary Talk: UV Metrology</b></p> <p>Cameron Miller, Deputy Division Chief, Sensor Science Division, Physical Measurement Laboratory, NIST</p>
2:00 – 2:15	<p><b>All Hands – Orientation for Breakout Sessions - Scoping &amp; Deliverables</b></p> <p>Chairs and Discussion Leaders:</p> <ul style="list-style-type: none"> <li>• Troy Cowan, Chair, IUVA Healthcare Working Group</li> <li>• Ted Mao, President, IUVA</li> </ul>

Day One – Tuesday, March 18, 2025			
2:00 - 3:00 pm	<b>Breakout Session 1</b> Air Inactivation Chairs: <ul style="list-style-type: none"> <li>James Montavon, Research Analyst, Blueprint Biosecurity</li> <li>Katherine Ratliff, U.S. Environmental Protection Agency</li> <li>Stephen Martin, U.S. Centers for Disease Control and Prevention</li> <li>Dustin Poppendieck, NIST</li> </ul>	<b>Breakout Session 2</b> Surface Inactivation Chairs: <ul style="list-style-type: none"> <li>Joy Dunkers, Physical Scientist, NIST</li> <li>Richard Martinello, Yale School of Medicine</li> <li>Alberto Garcia, U.S. Centers for Disease Control and Prevention</li> <li>Tatiana Koutchma, Agriculture &amp; Agri-Food Canada</li> </ul>	<b>Breakout Session 3</b> Data and Terminology Chairs: <ul style="list-style-type: none"> <li>Rick Rasansky, CEO, XCMR Inc.</li> <li>Holger Claus, Vice President, Technology, USHIO America, Inc.</li> <li>Stephanie Gora, York University</li> <li>Curtis Donskey, U.S. Veterans Administration</li> </ul>
3:00 - 3:15	<b>BREAK (at the discretion of breakout session chairs)</b>		
3:15 - 4:45 pm	<b>Breakout Session 1</b> reconvene	<b>Breakout Session 2</b> reconvene	<b>Breakout Session 3</b> reconvene
4:45 - 5:00	<b>All hands Session - Get ready for Day 2</b>  Session Chairs and Discussion Leaders: Dianne Poster, Senior Advisor, NIST and Troy Cowan, Chair, IUVA Healthcare Working Group  All attendees reconvene for an all-hands recap orientation of the breakout sessions and the plans for Day 2. This will not be a time for the Breakout Sessions chairs to report on their group's Day 1 work, that will occur on the morning of Day 2.		
5:00	<b>Wrap-up and Adjourn</b>  Self-assemble information for networking at the registration desk.		

\*\*\*End of Day 1\*\*\*

Day Two – Wednesday, March 19, 2025			
8:30 - 8:45 am	<b>Opening Session</b>  Welcome Remarks & Orientation for the Day – Dianne Poster, Senior Advisor, and Joy Dunkers, Physical Scientist, NIST		
8:45 - 9:45 am	<b>Moderated Panel - Healthcare Needs &amp; Pandemic Response Planning</b>  <b>Speakers:</b> <ul style="list-style-type: none"> <li>• Dan Hanfling, Director, Private Sector Strategic Partnerships, Office of Pandemic Preparedness and Response, The White House (invited)</li> <li>• Curtis Donskey, Infectious Diseases Physician, Hospital Epidemiologist, Louis Stokes Cleveland Veterans Administration Medical Center</li> <li>• Shawn Ryan, Director, Homeland Security Research Program, U.S. Environmental Protection Agency (invited)</li> <li>• Richard Martinello, Professor of Medicine (Infectious Diseases) and Pediatrics, Yale School of Medicine</li> <li>• Kathleen McPhaul, Associate Research Professor, Global, Environmental, and Occupational Health, School of Public Health, University of Maryland</li> <li>• Arjun Srinivasan, Deputy Director for Program Improvement, Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention</li> <li>• Gigi Gronvall, Professor, Department of Environmental Health and Engineering, Senior Scholar, Johns Hopkins Center for Health Security (invited)</li> </ul> <b>Moderator:</b> Lewis Radonovich, Deputy Director, Respiratory Health Division, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention		
9:45 - 10:35 am	<b>Plenary Session - Recap of Breakout Session from Day 1</b> Plenary Session Chairs: Ashish Mathur, VP Innovation and Technology, UVDI and Cameron Miller, Deputy Division Chief, NIST  Plenary session chairs will direct and manage the floor for this session. A designated breakout session chair from the air, surface, and data breakout sessions will present summaries of their Day 1 work. There will be time for moderated discussions between the audience and the breakout session chairs, as managed by the plenary session chairs.  Order of presentation (10 min presentation, 5 minutes discussion for each): <ol style="list-style-type: none"> <li>1) Air Inactivation – Designated Speaker</li> <li>2) Surface Inactivation – Designated Speaker</li> <li>3) Data and Terminology – Designated Speaker</li> <li>4) Wrap-up - Plenary Session Chairs</li> </ol>		
10:35 am – 10:45	<b>Short Refreshment Break and Move to Breakout Sessions</b>		
10:45 - 12:00 pm	<b>Breakout Session 1 reconvene</b>	<b>Breakout Session 2 reconvene</b>	<b>Breakout Session 3 reconvene</b>
12:00 – 1:00 pm	<b>Lunch Break (on-site)</b>		

Day Two – Wednesday, March 19, 2025			
1:00 - 1:45 PM	<b>Moderated Panel: Technology Issues</b> Senior government and industry leaders share their views on how much the landscape of GUV inactivation behavior has evolved over the past 20 years with an emphasis on technology for air, surface, and clinical applications. How far have things progressed? What challenges remain?  <b>Speakers:</b> <ul style="list-style-type: none"> <li>• Katja Auer, Chief of Staff, XCMR, Inc.</li> <li>• Ashish Mathur, VP Innovation and Technology, UVDI</li> <li>• Richard Martinello, Professor of Medicine (Infectious Diseases) and Pediatrics, Yale School of Medicine</li> <li>• Katherine Ratliff, Physical Scientist, Office of Research and Development, U.S. Environmental Protection Agency</li> <li>• Cameron Miller, Deputy Division Chief, NIST</li> <li>• Paula Olsiewski, Contributing Scholar, Johns Hopkins Center for Health Security</li> </ul> <b>Moderator:</b> Peter Gordon, Business Development Consultant, EIT2.0 (invited)		
1:45 - 3:00 pm	<b>Breakout Session 1 reconvene</b>	<b>Breakout Session 2 reconvene</b>	<b>Breakout Session 3 reconvene</b>
3:00 - 3:15 pm	<b>Refreshment Break</b>		
3:15 - 4:00 pm	<b>Plenary Session - Breakout Updates w/ Moderated Discussion</b> Session Chairs: Dianne Poster, Senior Advisor and Joy Dunkers, Physical Scientist, NIST and Troy Cowan, Chair, IUVA Healthcare Working Group  Breakout session chairs will present updates on their group's work, followed by moderated discussion with the audience led by the plenary session chairs.		
4:00 - 5:00 pm	<b>All Hands Breakout Session- Microbiology Testing Roadmap to Round Robins</b> <b>Chairs:</b> James Bolton, Founder, Bolton Photosciences, (in absentia), Troy Cowan, Chair, IUVA Healthcare Working Group, Matthew Hardwick <b>Facilitators:</b> Dianne Poster, Senior Advisor, and Joy Dunkers, Physical Scientist, NIST  Moderated panel on “Microbiology Measurements and Global Challenges” to reflect with the chairs and audience on how microbiology testing and protocols have been discussed during the event, with an emphasis on challenges and development needs for air and surfaces inactivation data and looking ahead. Panelists: <ul style="list-style-type: none"> <li>• Shawn Verhoeven, GAP EnviroMicrobial Services Ltd</li> <li>• Bill Anderson, University of Waterloo</li> <li>• Tatiana Koutchma, Agriculture &amp; Agri-Food Canada</li> <li>• Curtis Donskey, U.S. Veterans Administration</li> <li>• Dave Purkiss, NSF International (invited)</li> <li>• Katherine Ratliff, EPA</li> <li>• Mark Hernandez, CU Boulder</li> </ul>		
5:00	<b>Wrap-up and Adjourn</b>  Self-assemble information for networking at the registration desk.		

\*\*\*End of Day 2\*\*\*

Day Three –Thursday, March 20, 2024			
8:45 - 9:00 am	<b>Opening Session</b> Session Chairs: Dianne Poster, Senior Advisor and Joy Dunkers, Physical Scientist, NIST and Troy Cowan, Chair, IUVA Healthcare Working Group		
9:00 - 10:30 am	<b>Breakout Session 1</b> <b>reconvene for conclusions &amp; wrap up time</b>	<b>Breakout Session 2</b> <b>reconvene for conclusions &amp; wrap up time</b>	<b>Breakout Session 3</b> <b>reconvene for conclusions &amp; wrap up time</b>
10:30 – 10:45 am	<b>Refreshment Break</b>		
10:45 – 11:30 am	<b>All Hands Session for Wrap-up: Discussion on Conclusions, Recommendations &amp; Next Steps from the Breakout Session Leads</b> Session Chairs: Troy Cowan, IUVA Healthcare Working Group and Cameron Miller, Deputy Division Chief, NIST  Breakout session chairs will present the summaries of their group’s session work, followed by moderated discussion with the audience led by the all-hands session chairs.		
11:30 am - 12:00 pm	<b>All Hands Closing Session - Looking Ahead and Taking Time to Formulate:</b> <ul style="list-style-type: none"> <li>• Taking the next steps</li> <li>• A restatement of the long-term objectives and paths for producing credible inactivation data</li> <li>• Build a follow-up action team with designated leads</li> </ul> Session Chairs: <ul style="list-style-type: none"> <li>• Ted Mao, President, IUVA – Discussion Leader</li> <li>• James Montavon, Research Analyst, Blueprint Biosecurity – Discussion Leader</li> <li>• Lewis Radonovich, Deputy Director, Respiratory Health Division, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention</li> <li>• Shawn Ryan, Director, Homeland Security Research Program, U.S. Environmental Protection Agency (invited)</li> <li>• Curtis Donskey, Infectious Diseases Physician, Hospital Epidemiologist, Louis Stokes Cleveland Veterans Administration Medical Center</li> <li>• Kathleen McPhaul, Associate Research Professor, Global, Environmental, and Occupational Health, School of Public Health, University of Maryland</li> <li>• Darrin Leonhardt, Chief Innovation Officer and Head of Engineering, EIT2.0 (invited)</li> <li>• Dan Hanfling, Director, Private Sector Strategic Partnerships, Office of Pandemic Preparedness and Response, The White House (invited)</li> </ul> Session chairs will convene on the stage, and have a dialogue with the audience, led by the discussion leaders, to meet the formulation needs.		
12:00 pm	<b>Wrap-Up &amp; Adjourn:</b> Dianne Poster, Senior Advisor, and Joy Dunkers, Physical Scientist, NIST and Troy Cowan, Chair, IUVA Healthcare Working Group		

\*\*\*End of Workshop\*\*\*