

# 2023 Borchardt Conference Technical Program

## Tuesday, May 23, 2023

- 7:45 **Registration**
- 8:15 **Welcome & Introduction Day 1**
- 8:30 **Borchardt Lecture**  
Wastewater effluents impact PFAS concentrations at drinking water treatment plants: Sucralose and predicted de facto wastewater reuse levels correlate with PFAS levels in surface waters  
**Paul Westerhoff**, Regents' Professor and Fulton Chair of Environmental Engineering, School of Sustainable Engineering and The Built Environment, Arizona State University, Tempe, AZ
- 9:30 PFAS removal at the City of Ann Arbor: Treatment and operating decisions informed by pilot-scale and full-scale studies - **Ariana Wade**, **Becky Lahr**, D. Knappe, S. Page; Fishbeck and City of Ann Arbor
- 9:50 Comparison of adsorbent media for the removal of PFAS compounds from water and wastewater treatment systems - **Marat Goldenberg**; Vadose Remediation, LLC / CETCO
- 10:10 **30-min Break with Refreshments**
- 10:40 Hydropowered and sequential wavelength UV disinfection - **Daniel Ma**, D. McDonald, and N. Hull; Ohio State University
- 11:00 Understanding the effects of low-frequency ultrasound, in combination with antimicrobials, on biofilm cell viability - **Yanina Nahum**, A. Cerrone, R. Nerenberg; University of Notre Dame
- 11:20 Heat inactivation of aqueous viable norovirus and MS2 bacteriophage - **Marlee Shaffer**, K. Huynk, V. Costantini, K. Bibby, and J. Vinje; Univ. of Notre Dame
- 11:40 **Borchardt Award Presentation**, James Borchardt, Vice President, Water, Stantec, Pasadena, CA
- 11:50 **Lunch and Poster Session 1**
- 1:20 Design and operational considerations in response to *Legionella* occurrence in Las Vegas Valley groundwater - **Ariel J. Atkinson**, Christina Morrison, Wilbur Frehner, Daniel Gerrity, Eric C. Wert; Southern Nevada Water Authority
- 1:40 Incorporating pathogen persistence into surface water and water reuse decision-making by adding knowledge to the indicator-pathogen paradigm - **Kara Dean** and J. Mitchell; Michigan State University
- 2:00 Assessing the impact of drinking water treatment on distribution system nitrifier populations: Collaborations between the City of Ann Arbor drinking water treatment plant and the Univ. of Michigan  
**Sarah Potgieter**, **Rebecca Lahr**, S. Vosloo, K. Dowdell, M. Vedrin, S. Page, Q. Bautista-de los Santos, J. Keown, T. Quneibi, N. Alfahham, S. Lee, S. Sandoval, Y. Guo, A. Pinto, B. Steglitz, L. Raskin; U. of Michigan and City of Ann Arbor
- 2:20 Modeling water age in a full-scale high-efficiency home - **Ryan Julien** and J. Mitchell; Michigan State University
- 2:40 **Poster Session 1 Continued with Refreshments**
- 3:45 Lessons from chemical spill and wildfire disasters: Science and policy needs for water system response and recovery - **Andrew Whelton**; Purdue University
- 4:15 **Borchardt-Glysson Water Treatment Innovation Prize Lecture**  
PFAS, 1,4-dioxane, and other unregulated contaminants in the Cape Fear river watershed of North Carolina: Community impacts and interventions to reduce human exposure  
**Detlef Knappe**, S. James Ellen Distinguished Professor, Dept. of Civil, Construction, and Environmental Engineering, North Carolina State University

# 2023 Borchardt Conference Technical Program

## Wednesday, May 24, 2023

- 7:45 **Registration**
- 8:15 **Welcome & Introduction Day 2**
- 8:30 **Glysson Lecture**  
A pragmatic approach to the digitalization of water resource recovery facilities: Perspectives from Clean Water Services  
**Adrienne Menniti**, Principal Process Engineer Research & Innovation, Clean Water Services, Tigard, OR
- 9:30 **Barriers to the adoption of smart and connected water systems: Lessons learned in making smart sewers a reality**  
**Jacquelyn Schmidt**, A. Roy, B. Kerkez, University of Michigan
- 9:50 **Modeling phosphorus recovery within MagPrex: Lessons from a statistical and machine learning-based analysis**  
**Joseph Lybik**, N. G. Love, R. Maltos, B. Wisdom, K. Newhart; University of Michigan, Metro Water Recovery, United States Military Academy
- 10:10 **30-min Break with Refreshments**
- 10:40 **Decarbonizing the wastewater treatment industry: Opportunities for waste CO<sub>2</sub> valorization and resource recovery via integrated electrochemical-biological technologies** - **Joshua D. Jack**; University of Michigan
- 11:00 **Integrated biochemical and electrochemical technologies (IBET) for high-rate recovery of high-purity biomethane from organic waste** - **Kuang Zhu, Thomas Lippert**, T. Fairley-Wax, P. Puente, R. Karki, R. Starostka, J. Dunn, G. Wells, Y. Lin, M. Urgun Demirtas, S. Skerlos, L. Raskin; Univ. of Michigan, Argonne National Laboratory, Northwestern Univ.
- 11:20 **Enhancing anaerobic digestion with the microbial hydrolysis process** - **David Parry**, M. Fairley-Wax, C. Klibert, T. Williams; Jacobs Engineering
- 11:40 **Valorization of high strength wastewater streams** - **Meltem Urgun-Demirtas**, H. Wu, R. Dalke, and T. Scheve; Argonne National Laboratory
- 12:00 **Lunch and Poster Session 2**
- 1:30 **Michigan's Wastewater Surveillance Program for SARS CoV-2 public health use and beyond**  
**Nishita D'Souza**, A. Porter, J.B. Rose, E. Dreelin, S.E. Peters, P.J. Nowlin, S. Carbonell, K. Cissell, Y. Wang, M.T. Flood, A.T. Rachmadi, C. Xi, P. Song, S. Briggs and the Michigan Network for Environmental Health and Technology (MiNET) consortium; Michigan State University
- 1:50 **Virus genome degradation in untreated wastewater** - **Katherine R. Harrison**, D. Snead, A. Kilts, M. L. Ammerman, K. R. Wigginton; Univ. of Michigan
- 2:10 **Community-scale wastewater surveillance of *Candida auris* during an ongoing outbreak in Southern Nevada**  
**Katherine Crank**, C. Barber, K. Papp, G. Innes, B. Schmitz, D. Gerrity, A. Rossi, J. Chavez; Southern Nevada Water Authority
- 2:30 **Poster Session 2 Continued with Refreshments**
- 3:30 **Intensive microalgal cultivation for nutrient removal and recovery from municipal wastewater: Characterization of the EcoRecover Process** - **Hannah R. Molitor**, G.-Y. Kim, Y. Li, N. M. Avila, M. Alam, M. Hodaei, B. Gincley, E. Hartnett, A. Fisher, P. Kelly, K. McGraw, I. M. Bradley, A. J. Pinto, J. S. Guest; U. of Illinois at Urbana-Champaign
- 3:50 **Success at pilot-scale leads to the full-scale application of PdNA in MBBR and IFAS and the inadvertent development of mainstream PNA along the way** - **Megan Bachmann**, S. Klaus, J. Macmanus, M. Parsons, H. de Clippeleir, C. Bott; Virginia Tech & HRSD
- 4:10 **Decision-making framework for the sustainability of a large water resource recovery facility retrofitting improvement** - **Daehyun Ko**, J.W. Norton, X. Fonoll Almansa, G. T. Daigger; U. of Michigan & GLWA
- 4:30 **Innovative floating media filtration for advanced primary treatment - carbon diversion and footprint reduction**  
**S.Joh Kang**, D. Rhu, C. Lee, J. Liberzon, M. Magruder, K. Jankowski, C. Waul, G. Daigger; Water & Energy Advisors, LLC
- 4:50 **Closing Remarks and Poster Awards**