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 & 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; The 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; University 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 & 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_2 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, **Maddy 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 heath 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; University 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 - H. 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, **Jeremy 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, J. Goergen, G. Daigger; Water & Energy Advisors, Tomorrow Water, MMSD, GCDC & U of Michigan

4:50 **Closing Remarks and Poster Awards**