2023 Borchardt Conference Poster Program

Tuesday, May 23, 2023

ASSEMBLY HALL

1	Insights from deploying continuous online sensors in premise plumbing in Detroit, MI - **Alyssa Schubert**, J. Harrison, S. McElmurry, V. Bonds, L. Kent-Buchanan, N. Love; Univ. of Michigan
2	Competition of planktonic and biofilm bacteria in premise plumbing systems, considering intermittent flows: A modeling study - **Emily Clements**, C. Picioreanu, R. Nerenberg; Univ. of Notre Dame
3	Addressing drinking water quality deterioration in building plumbing through automatic flushing: An evaluation of protocols using online Oxidation-Reduction Potential (ORP) and temperature sensors - **Ernesto Martinez**, L. Raskin, K. Wigginton, B. Kerkez; Univ. of Michigan
4	Comparing water quality of chlorinated and non chlorinated premise plumbing systems as a function of water age - **Isaiah Murrell-Thomas**, E. Clements, R. Nerenberg; Univ. of Notre Dame
5	Prevalence of *Legionella* in a public building water plumbing system during COVID-19 lockdown - **Xin Li**, J. Xu, J. Wu, M. H. Weir, and C. Xi; Univ. of Michigan
6	Evaluation of the effects of nanobubbles on *Escherichia coli* biofilms in models of the drinking water distribution system - **Nguyen Nhat Thu Le**, J. Wu, C. Xi; Univ. of Michigan
7	Towards new virus log reduction frameworks for sub-residual ozone treatment - **Delaney Snead**, A. Kilts, A. Sanchez, A. Bandy, D. Gerrity, C. Haas, B. Pecson, A. Olivieri, K. R. Wigginton; Univ. of Michigan
8	Inactivation of *Staphylococcus aureus* and *Acinetobacter baumannii* dual-species biofilm using UV-LED **- Habeeb Rahman**, B. K. Mayer, C. W. Marshall, K. R. Hristova, Marquette Univ.
9	Mechanisms of chloramine-driven viral inactivation - **Natalia Alejo**, A. Atwood, M. Chaplin, A. Szczuka; Univ. of Michigan
10	Assessing the impact of UV disinfection on microbial viability and community structure in a full-scale drinking water system using molecular methods - **Nuha Alfahham**, S. Potgieter, R. Lahr, L. Raskin; Univ. of Michigan
11	A systematic review and linear mixed model of viral inactivation with chlorine - **Mira Chaplin**, K. Leung, J. Henderson, A. Szczuka, K. Wigginton; Univ. of Michigan
12	Rechargeable gels designed to release chlorine for inactivation of pathogens in water - **Ana Estrella-You**, Q. Luo, R.I A. Letteri, I. J. Duti, J. A. Smith; Univ. of Virginia
13	Rational design of catalytic polymeric membranes for treating nitrate in drinking water - **Angela Abarca-Perez**, J. Xu, A. Reisinger, W. Phillip, K. Doudrick; Univ. of Notre Dame
14	Adsorbent membranes for removing per- and polyfluoroalkyl substances (PFASs) - **Jeein Kim**, J. Xu, W. Phillip, K. Doudrick; Univ. of Notre Dame
15	Challenges and opportunities in ultra-high pressure reverse osmosis operation - **Jishan Wu**, E. Hoek, UCLA
16	Emerging advanced oxidation processes: UV-LED/ClO_2 viral inactivation mechanisms - **Arnulfo Pelayo**, Y. “Brad” Chuang, A. Szczuka; Univ. of Michigan
17	Cold-air plasma treatment of contaminants of emerging concern: volatilization or mineralization? - **Jordon Horton**, Y. Xian, R. Pinsky, J. Foster, A. Szczuka; Univ. of Michigan
18	Evaluating the role of hydroxyl radicals in degrading haloacetonitriles by high voltage atmospheric air plasma in water - **Yuhao Xian**, J. Horton, R. Pinsky, J. Foster, A. Szczuka; Univ. of Michigan
19	Development of a screening technique to identify the production of radicals during persulfate/peroxide oxidation activated by ferrous chloride using methylene blue dye - **Shardula Gawankar**, S. J. Masten, Michigan State Univ.

20	Enhanced thermal treatment of PFAS-laden granular activated carbon with additives - **Charbel Abou-Khalil**, L. Chernysheva, K. Doudrick; Univ. of Notre Dame
21	Cometabolic removal of 1,4-dioxane in biologically active carbon filtration at concentrations relevant to drinking water and indirect potable reuse - **Hannah Stohr**, G. Salazar, C. Wilson, C. Bott; Virginia Tech & HRSD
22	Quantification of GAC-adsorbed volatile organofluorines (VOFs) using particle-induced gamma ray emission spectroscopy (PIGE) - **Liliya Chernysheva**, C. Abou Khalil, G. Peaslee, K. Doudrick; Univ. of Notre Dame
23	Changes in groundwater quality in Ingham and Clinton Counties, MI from the 1980s to 2022 - **Susan J. Masten**, G. Rowe; Michigan State Univ.
24	Transport and removal of antibiotic resistance genes from fresh cattle manure in freshwater artificial streams - **Andrei Badilla-Aguilar**, O. Ginn, E. Snyder, J. Tank, D. Bolster, K. Bibby; Univ. of Notre Dame
25	Mitigating Agricultural Runoff in a South Michigan Watershed - **Bethany Oceguera**, O. Ginn, E. Thrift, M. Liddick, U. Mahl, K. Bibby, J. Tank; Univ. of Notre Dame
26	Urban stormwater green infrastructure: Evaluating its public health service role using microbial source tracking and microbiome analyses - **Emma Lancaster**, J. Lee; The Ohio State Univ.
27	Flocculation of cyanobacteria cells using modified clay-biopolymer material for controlling harmful algal blooms - **Katelin A. Weitzel**, D. D. Dionysiou; Univ. of Cincinnati
28	Direct potable reuse QMRA for determining suggested LRV guidelines for Arizona - **Katherine Crank**, E. Seto, D. Gerrity, N. Ashbolt, C. Haas, B. Pecson, T. Slifko, A. Kaufmann, A. Olivieri; Southern Nevada Water Authority
29	Evaluating how shifts In microbial communities affect Chlorophyll-A values gathered using an unmanned aerial system In a small urban lake - **Kendall Byrd**, J. Lee; The Ohio State Univ.
30	Water use efficiency delivers financially-material benefits for corporate performance - **Mingyan Tian,** P. Adriaens; Univ. of Michigan
31	Clinically relevant antibiotic resistance genes harbored in fish gut and urban river water microbial communities: wastewater influents as a major source revealed by One Health and One Water approach - **Molly Mills**, D. Mollenkopf, T. Wittum, S. M. Patricio Sullivan, J. Lee; The Ohio State Univ.
32	Development of marine water concentration method for recovery of viruses - **Simran Singh**, J. Rose; Michigan State Univ.
33	Leaching behavior of AFFF-impacted pavements at military installations - **Menglin Jiang**, L. Chernysheva, E. Que, L. Montabon, Kyle Doudrick; Univ. of Notre Dame

2023 Borchardt Conference Poster Program
Wednesday, May 24, 2023

ASSEMBLY HALL

1	Persistence of viruses in urine - **Abigail Atwood**, L. Li, K. Wigginton, A. Szczuka; Univ. of Michigan
2	Growth and stability of chain elongating isolates on lactate-rich digestate - **Jasmeen Kaur Parmar**, C. Lawson; Univ. of Toronto
3	Phosphorus recovery method analysis and batch test for return activated sludge sample from wastewater treatment plant at the Detroit, MI, GLWA - **Jiawei Liu**, Zihao Cui, Z. Liang, G. Daigger; Univ. of Michigan
4	Informing microplastic extraction and upcycling technologies through hyper-local life cycle assessment - **Madeline E. Clough**, L. Goedert, Jose Alfaro, Anne J. McNeil; Univ. of Michigan
5	No carbon lost: a novel anaerobic fermentation process to achieve carbon efficient chemical production from organic wastes - **Shane Orgnero**, C. Lawson; Univ. of Toronto
6	The potential to circularize urban nutrient flows - **Lucinda Li**, S. MacBride, R. Goodspeed, K. R. Wigginton, N. G. Love; Univ. of Michigan
7	Resource recovery from anaerobic co-digestion of food scraps, fats, oils, grease, and wastewater sludge at small-scale Department of Defense facilities for energy security - **Andrew Pfluger**, C. Robbins, M. Butkus, K. Newhart; U.S. Military Academy, West Point
8	Advancing anaerobic biotechnologies for product recovery from waste streams - Acid whey composition impacts the efficiency of lactate-based chain elongation - **Dianna Kitt**, H. Song, S. Shrestha, L. Raskin, Univ. of Michigan
9	Effective nutrient recovery from digester centrate assisted by in situ production of acid/base in a novel electrochemical membrane system - **Fubin Liu**, H. Moustafa, M. S. El-Din Hassouna, Z. He; Washington Univ.
10	Sustainable Organic Waste Management through Hydrothermal Systems - **Jianan Feng**, Y. Li, T. J. Strathmann, J. S. Guest; Univ. of Illinois
11	Stability prediction using a modified biomethane potential test and modeling for the co-digestion of food waste and sewage sludge - **Pedro Puente**, K. Zhu, R. Appleton, T. Fairley-Wax, T. Rauch-Williams, S. Skerlos, L. Raskin; Univ. of Michigan
12	Elucidating heterogenous struvite nucleation mechanisms with AFM - **Samuel Aguiar**, R.D. Cusick; Univ. of Illinois
13	Phosphorus recovery from whole digestate: Minimum energy and chemical input through electrochemical leaching and precipitation - **Zixuan Wang**, D. Anand, Z. He; Washington Univ. at St. Louis
14	Biochar – A multi-beneficial and cost-effective amendment to clay soil during stormwater runoff - **Mohammad Khalid**, J. Rice-Boayue, M. Munir; Univ. of North Caroline Charlotte
15	Design of a greenhouse ecosystem to treat craft beverage wastewater and comparison to other decentralized treatment systems - **Carley Allison**, S. Safferman; Michigan State Univ.
16	Exploring the role of filamentous fungi in membrane aerated biofilm reactors (MABRs) - **Alejandro Martín-Linares**, Y. Nahum, E. Clements, E. Espinosa-Ortiz, R. Nerenberg; Univ. of Notre Dame
17	Designing a recirculating dynamic membrane bioreactor for full-scale municipal wastewater treatment - **Katherine Giammalvo**, T. Fairley-Wax, L. Raskin, S. Skerlos; Univ. of Michigan
18	Evaluating the effects of backwashing and relaxation on EPS production and fouling in an anaerobic dynamic membrane bioreactor - **Renata Starostka**, H. Song, S. Skerlos, L. Raskin; Univ. of Michigan
19	Further examinations of MABR fingerprint soft sensor in nitrification and robustness in variable organic concentrations and compositions - **Yi Cao**, Z. Cui, G. T. Daigger; Univ. of Michigan

20	Performance and startup process of an electrolytic anaerobic baffled reactor (EABR) - **Maryam Amouamouha**, T. W. Walker; Northwestern Univ.
21	Adaptive sampling for soft sensor model calibration of total solids - **Meagan Tobias**, B. Kerkez; Univ. of Michigan
22	A discussion of acoustic soft sensing to predict total solids in real time on the wastewater treatment plant scale - **Gina Kittleson**, B. Bhattarai, K. Nam Ngo, H. Nguyen, T. Nguyen, H. De Clippeleir, N. Love, B. Kerkez; Univ. of Michigan
23	Novel optical oxygen sensor technology: A comparable study of real-time operation at two wastewater treatment plants over 18 months - **Ruby Ghosh**, M. Freeman, M. Earl, J. Goergen; Opti O2, LLC & Genesee County
24	Integrating bio-electrochemical sensors and machine learning to predict the efficacy of biological nutrient removal processes at WRRFs - **Seyed Aryan Emaminejad**, J. Sparks, R. D. Cusick; Univ. of Illinois
25	Model at the source: Next-generation H/H modeling for sustainable wastewater management - **Hazem Gheith**; Arcadis
26	Generating interpretable rainfall-runoff models automatically from data - **Travis Adrian Dantzer**, B. Kerkez; Univ. of Michigan
27	Dynamic simulations of nitrogen removal and GHG emissions of a hybrid MABR system with plant-wide aeration controls - **Huanqi He**, G. Daigger; Univ. of Michigan
28	GLWA plant-wide modeling - **Hongji Su**, J. Liu, D. Ko, G. T. Daiggerr; Univ. of Michigan
29	Combining Bacterial and Algal Membrane Bioreactors to Achieve Energy-Positive, Carbon-Negative Water Recycling - **Minhao Xiao**, D. Jun, K. Clack, R. Honda, S. Mahendra, E. M.V. Hoek; UCLA
30	How do we evaluate the variability of wastewater metagenomes? - **Ishi Keenum**, S. Jackson, N. Lin; NIST
31	Precision electrochemical management of selenium in the aquatic environment: Needs, challenges, and opportunities - Zilan Yang, **Ao Xie**, S. Zou; Auburn Univ.
32	Electrochemical degradation of aminomethyl phosphonic acid (AMPA) in water matrices - **Jiaxiang Zhao**, Z. Yang, S. Zou; Auburn Univ.
33	Persistence of antibiotic resistance genes varies with particle size and substrate conditions in recirculating streams - **Olivia Ginn**, J. Tank, A. Badilla-Aguilar, E. Snyder, P. Brandão-Dias, E. Thrift, D. Bolster, K. Bibby; Univ. of Notre Dame

CONFERENCE ROOM

34	Assay development and monitoring of SARS-CoV-2 in solids and influent fractions of wastewater settled solids in Southeast Michigan - **Felipe de Paula Nogueira Cruz**, J. Gilbert, M. L. Ammerman, K. Figueroa, R. Learman, S. Iorga, B. Foxman, M. Eisenberg, K. R. Wigginton; Univ. of Michigan
35	Monitoring rotavirus in wastewater - **Khaitlyn Figueroa**, M. Eisenberg, B. Foxman, K. R. Wigginton, M. L. Ammerman; Univ. of Michigan
36	Advanced and simple early warning methods for predicting COVID-19 surges: Lessons learned from 21 months of wastewater and clinical data collection in Detroit, MI - **Liang Zhao**, Y. Zou, I. Xagoraraki; Michigan State Univ.
37	Online dashboard for viral pathogen wastewater data in southeast Michigan - **Rachel Learman**, V. Slack, K. Figueroa, F. de Paula Nogueira Cruz, J. Gilbert, S. Iorga, M. Ammerman, B. Foxman, M. Eisenberg, K. Wigginton; Univ. of Michigan
38	Using a model-based framework to assess the theoretical feasibility of monitoring Zika virus with wastewater-based epidemiology (WBE) - **William Chen**, K. Bibby; Univ. of Notre Dame
39	Methods to test for human virus diversity in wastewater: Towards a practical approach for identifying human viruses

	with metagenomics - **Yabing Li**, B. Miyani, K. L. Childs, S.-H. Shiu, I. Xagoraraki; Michigan State Univ.
40	Environmental surveillance provides informed risk assessment of SARS-CoV-2 on a university campus - J. Wu, X. Zhang, O. Yancey, X. Li, L. M. Smith, J. Gilbert, Y. Wang, P. Song, M. Eisenberg, J. T. Dvonch, A. Franzblau, R.Neitzel, **Chuanwu Xi**; Univ. of Michigan
41	Evaluating water quality parameters to improve wastewater-based epidemiology - **Judith Straathof**, N. Hull; The Ohio State Univ.
42	Optimization of SARS-CoV-2 RNA extraction techniques for enhanced viral RNA yield in wastewater samples - **Nita Khanal**, Md A. Islam Juel, C. Gibas, J. Schlueter, M. Munir; Univ. of North Carolina Charlotte