

Saturday, September 21

W08 WEF/WRF: Co-Digestion: What Can We Handle? (Room S504d)

8:30 am–5:00 pm As interest increases in co-digestion, questions also arise. The goal of this workshop is to allow attendees to find answers to their facility-specific questions regarding co-digestion.

Sunday, September 22

Special Seminar: Stormwater Infrastructure Lifecycle Costs and Planning Using CLASIC (Room S106b)

1:30 pm–5:00 pm Learn about the capabilities and uses of 'Community-enabled Lifecycle Analysis of Stormwater Infrastructure Costs (CLASIC),' an EPA-funded, cloud-based tool. CLASIC tool outputs include: (1) life cycle costs; (2) assessed value of co-benefits (environmental, social, financial); and (3) performance. The participants will discuss the analysis framework of life cycle cost for both green infrastructure and gray infrastructure and associated decision support tool.

Monday, September 23

2019 LIFT Passport to Innovation (Booth 8145, North Hall [B])

Discover LIFT innovations on the show floor and enter for a chance to win an Amazon gift certificate!

102 LIFT Intelligent Water Systems Challenge: The Finals (Room S403a)

10:30 am–12:00 pm The [Intelligent Water Systems Challenge](#) is back for a second year to encourage participants to use innovation and data to help solve some of the most difficult issues facing water and wastewater utilities. The goal is to demonstrate the value of intelligent water systems to utilities and foster adoption of smart water technologies. The Challenge also allows students, professionals, and technology experts to showcase their talents and innovation with a focus on leveraging data using the tools to help utilities make better decisions.

202 Mainstream Deammonification (Room S505a)

2:00 pm–2:30pm Media Selection for Enrichment of Anammox in Polishing Filters, Rahil Fofana, DC Water ([project 4855](#))

209 Department of Energy (DOE) Solutions for Water Sector Energy Recovery (Room S405a)

2:00 pm–2:30 pm Development of an Integrated Process for the Hydrothermal Conversion of Wastewater Sludge to Recover Energy, Recycle Nutrients, and Destroy Contaminants; Justin Billing, PNNL ([project 4755](#))

3:30 pm–4:00 pm Economic Analysis of Wet Waste-to-Energy Resources in the United States, Anelia Milbrandt, NREL

210 More Applications and Studies in THP Yield New Insights (Room S501d)

2:30 pm–3:00 pm Gelation Factor as Potential Indicator of Overcooking Solids in Thermal Hydrolysis Process, Munshi Md Rasel, George Washington University ([project 4883](#))

217 Making Models Matter: Understanding and Resolving Complex Water Quality Problems (Room S503b)

2:00 pm–2:30 pm Assessing an Empirical Approach to Estimate Nutrient Loads to Impaired Waterbodies Attributable to Water Reuse Irrigation Practices, Joan Oppenheimer, Stantec ([project 4905](#))

4:30 pm–5:00 pm Spatial Trends in Logistic Models and Correlation Coefficients of Pathogen Indicators and Total Suspended Solids in a CSO-Impacted Urban River, Sarath Chandra Jagupilla, Stevens Institute of Technology ([project 5034](#))

220 IPR/DPR: Resistance is Futile! (Room S404d)

4:30 pm–5:00 pm PureWaterSF: Purification and Water Quality Risk Analysis for Decentralized DPR in San Francisco, Andrea Corral, Carollo Engineers ([project 4691](#))

224 From Microbial Community to Full Scale Optimization of BioP (Room N426a)

3:30 pm–4:00 pm Denitrifying PAOs for Low-Carbon and Low-Energy Nutrient Removal in Cold Weather Conditions: The Ejby Mølle Case Study, Nerea Uri Carreño, VCS Denmark ([project 4819/NTRY13R16](#))

4:30 pm–5:00 pm Sludge-Fermentation Based Side-Stream EBPR Enables Sustainable Nutrient Removal with Carbon/Energy Recovery, April Gu, Cornell University ([project 4869](#))

228 Stormwater Alternative Project Delivery (Room S502a)

4:15 pm–4:30 pm Economic Framework and Tool for Quantifying and Monetizing the Triple Bottom Line Benefits and Costs of Green Infrastructure, Janet Clements, Corona Environmental Consulting ([project 4852](#))

231 Evaluating Microbes: Working Out the Bugs in a Reuse System (Room N426c)

4:30 pm–5:00 pm Metagenomic Profiling of the Effect of Ozone/Biologically-Active Carbon Filtration on Antibiotic Resistance Genes and Microbial Communities, Matthew Blair, Virginia Tech ([project 4872](#))

Tuesday, September 24

IP13 LIFT SEE IT (Innovation Pavilion, Booth 7739, North Hall [B])

9:30 am–10:00 am This session features the unique stories from the [2019 LIFT SEE IT](#) awardees, Fidan Karimova, The Water Research Foundation

309 Get Down: Process Control Strategies To Meet Low Effluent TN Limits (Room N426c)

9:30 am–10:00 am A Novel Online Dynamic Control Coupling AvN and PdN-AnAOB to Achieve Stringent Effluent Limits in Mainstream During Wet Weather, Tri Le, DC Water ([project 4855](#))

402 Alternate Nitrogen Removal and Pathways (Room S403a)

2:30 pm–3:00 pm Identifying the Process Niche of Complete Ammonia Oxidizing Bacteria, Irmario Cotto, Northeastern University ([project 4884](#))

407 Knowledge Development Forum: From Research to Practice–Energy Sustainability (Room N426b)

1:50 pm–2:10 pm Future Direction of Energy Research at The Water Research Foundation, Ashwin Dhanasekar, The Water Research Foundation

4:30 pm–4:50 pm Battery Energy Storage for Energy Resilience and Cost-Effective Operations: Lessons Learned from Selected Municipal Case Studies, Carla Cherchi, Stantec ([project 4718](#))

408 Big Data, Machine Learning, and Predictive Control (Room S402b)

2:00 pm–2:30 pm Operations, Asset Management, and Data Analytics Nexus–A Closed Loop Function Approach; Carla Cherchi, Stantec ([project 4668](#))

410 Sidestream Success! N and P Removal Case Studies (Room N426c)

4:00 pm–4:30 pm Cost and Benefit Analysis of Removing Orthophosphate and Improving of Dewaterability of Digested Sludge by Post-Digestion AirPrex® Technology, Zhongtian Li, Centrisys-CNP ([project 4818](#))

423 Modeling of Aerobic Granular Sludge (Room S403b)

4:00 pm–4:30 pm Modeling Aerobic Granular Sludge Performance in Sequencing Batch Reactor, Rasha Faraj, the University of Kansas ([project 4870](#))

Wednesday, September 25

LIFT Utility Working Group Breakfast Meeting (Room N228) (invite only)

7:00 am–9:00 am

508 Fundamentals of Nitrogen and Phosphorus Recovery and Tools for Assessment (Room S402b)

9:45 am–10:00 am Tool for Estimation of Capital and Operating Costs of Nitrogen and Phosphorus Recovery from Wastewater and Agricultural Wastes, Ankit Pathak, Hazen and Sawyer ([project 4898](#))

- 509 What's in Your Wastewater? Wastewater Characterization: Learning to Measure Metals, Microplastics, and Antibiotic Resistant Genes** (Room S404a)
 10:30 am–11:00 am Reliably Quantifying Microplastics within a Wastewater Matrix, Tyler Mayo, University of Kansas (project 4936)
- 527 Disinfection Disentangled** (Room S505a)
 11:30 am–12:00 pm Multiple Utility Evaluation of Peracetic Acid for Municipal Wastewater Disinfection, Joseph Jancangelo, Stantec ([project 4805](#))
- 604 We Don't Need No Stinking Bubbles, Too! Modeling MABR Technologies** (Room S403b)
 2:00 pm–2:30 pm Enhancing Nitrification Fluxes in MABRs: Modeling and Experimental Approaches, Patricia Perez, University of Notre Dame ([project 4875](#))
- 606 Nutrient Removal and Recovery in Practice: Full Scale Case Studies** (Room S505a)
 2:00 pm–2:30 pm High Efficiency Calcium Phosphate Recovery Technology at The Madison Metropolitan Sewerage District: Stability Metrics, Design Optimization, and Performance; Menachem Tabanpour, Centrisys-CNP (project 5004)
- 613 Becoming an Asset (Management) to the Organization: Tools and Applications for Stormwater** (Room S502b)
 1:30 pm–2:00 pm Developing Stormwater Strategic Asset Management Tools and Guidance on a National Scale: A Status Update on WRF's Targeted Collaborative Research Project, Mark Van Auken, Arcadis
 2:00 pm–2:30 pm Planning and Prioritization for Effective Flood Control Channel Management in Urban Los Angeles County, Jonathan Abelson, Stantec (project 4800)

WEF Chats

Food - Energy - Water (FEW) Nexus: What's all the hype about?

Ashwin Dhanasekar, Kristan VandenHeuval, and Stephanie Fevig, The Water Research Foundation

As resources become more limited, water utilities will play more significant roles in the food, energy, and water nexus. How can we efficiently manage one of today's most important synergies? How can we promote cross sector collaboration? Let's tackle this together. All ideas welcome.

Occurrence, Removal, Fate, and Transport of Microplastics in Wastewater and Drinking Water Treatment

Lola Olabode, Ashwin Dhanasekar, and Alice Fulmer, The Water Research Foundation

There is increasing public concern over the amount of plastic pollution in the environment and its effect on human health and ecosystems. The goal of this chat is to engage the audience on what MP research the Foundation should focus its effort on. A polleverywhere fun activity answering three questions will be provided. A microplastics poster presented to IWA-LET 2019 will also be provided to facilitate discussions. Finally, WRF would like to have a good gauge of what current technologies utilities are adopting to address the MP challenge. Is there an opportunity for multiple utility partnerships? Who would be interested?

Integrated Stormwater Management and Flood Resilience: Best Practice and Innovative Approach

Harry Zhang, The Water Research Foundation

The objective of this chat is to demonstrate the integrated stormwater management approach through successful examples such as CLASIC life cycle cost tool, green infrastructure co-benefits framework and BMP database. In addition, built from a recent utility urban flooding workshop, the state-of-the-practice and innovative approach for flood resilience will be discussed with case studies.

Hydrothermal Processing - Transforming Wastewater Sludge into BioFuels

Aaron Fisher and Jeff Moeller, The Water Research Foundation; Jim Oyler, Genifuel; and Paul Kadota, Metro Vancouver

WRF is leading a DOE-funded project to pilot hydrothermal processing of wastewater sludge at the Central Contra Costa Sanitary District in California, which will convert 15 wet tons/day of sludge into diesel fuel and natural gas. Metro Vancouver is currently leading a project to pilot a 10 wet tons/day system serving a population of approximately 30,000. We are interested in hearing thoughts and questions from utilities and interested parties on the implementation of such a technology in the wastewater industry.

Workforce of the Future

Walter Graf, The Water Research Foundation

Chat about the future of the water sector as it relates to the digital utility, technology, and strategies for the sector to meet future staffing needs by identifying skillsets, roles, responsibilities and implications for strategic HR, management diversity leadership, culture, and other issues encountered in the changing workforce landscape. Training and education, addressing the career life cycle of the future workforce will be discussed. We want to focus on leading edge thinking of how the workforce can be attracted and retained from both an employer and employee perspective.

Agricultural Research and Technology Innovation

Fidan Karimova, The Water Research Foundation

Agriculture and water are interlinked and it is vital to incorporate the farmers in the conversation, to help them better manage nutrients. Learn about WRF's research and technology innovation work on this topic.

Risk Communications for Water Sector Leaders

Alice Fulmer and Allison Deines, The Water Research Foundation

As analytical tools improve, the water sector is faced with explaining what it means when man-made compounds are detected in water and biosolids. This talk will introduce the large body of work on risk communications that WRF has developed for water sector leaders. It will highlight best practices in risk communications for the public, decision-makers and staff.