More Info on Call for Abstracts

Nutrient Removal and Recovery Symposium 2019:
21st Century Vision

July 23 – 25, 2019
Minneapolis, Minnesota, USA

ABSTRACT SUBMITTAL DEADLINE: December 10, 2018

This symposium is organized by the Water Environment Federation, in cooperation with the Central States Water Environment Association and The Water Research Foundation.

Looking for more information on what's included within each topic? Below are some sub-points to help you tailor your abstract. Please note that this list is not exhaustive but will help point you in the right direction as you submit your abstract.

1. **Advancements in Next Generation Nutrient Removal Processes**
   - Partial nitritation/anammox, nitritation/denitritation
   - Advances in mechanistic understanding, process control, technology application, and optimization of next generation nitrogen removal processes
   - Emerging biofilm applications for nutrient removal and recovery (aerobic granular sludge, MBBR, IFAS, MABR, others).
   - Fermentation applications for biological phosphorus removal
   - Design and operations considerations for denitrifying PAOs
   - Sidestream EBPR (S2EBPR) / RAS fermentation
2. **Optimization of Conventional Nutrient Removal Processes**
   - Conventional nutrient removal processes including nitrification/heterotrophic denitrification, EBPR using anaerobic zones only, and chemical phosphorus removal
   - Process or control modifications to optimize performance or reduce operations and maintenance cost of conventional nutrient removal processes, such as ammonia-based DO control
   - Strategies to reduce energy and chemical usage or other O&M costs
   - Strategies to reduce greenhouse gas emissions or improve sustainability
   - Implementation of energy efficient wastewater treatment flow sheets involving nutrient removal
   - Removal of phosphorus down to low levels using biological phosphorus removal and/or physical/chemical treatment
3. **Strategies for Meeting Ultra-Low Nutrient Effluent Quality Standards**
   - Advances in understanding the practical limits of technology, boundary conditions, application of effluent polishing processes including membranes and other tertiary treatment technologies
   - Conventional technology used to consistently meet TN limits below 3 mg/L and/or TP limits below 0.1 mg/L.
4. **Integrating Nutrient Removal with Reuse Opportunities**
   - Role of nutrient removal in supporting broad water reuse portfolios and fit for purpose waters
   - Direct and indirect potable reuse considerations
   - Fate of emerging contaminants in nutrient removal processes
5. **Operations: Practical Considerations and Training for Nutrient Removal Plants**
   - Approaches to train and maintain an educated operations workforce
   - Practical considerations of process reliability and maintenance
   - SCADA-control strategies
   - Real-time control analyzers and sensors
   - Cold temperature operation
   - Non-municipal waste (e.g. industrial, agriculture, aquaculture)

6. **Phosphorus Management Processes**
    - Novel biological and chemical phosphorus recovery processes (such as struvite, calcium phosphate, etc.)
    - Synergies between operation for biological, chemical phosphorus removal, anaerobic digestion and dewatering
    - Precipitation management
7. **Sidestream Processes for Nutrient Removal and/or Recovery**
    - Partial nitritation/anammox, nitritation/denitritation
    - Advances in mechanistic understanding, process control, technology application, and optimization of treatment processes
    - Phosphorus recovery
    - Nitrogen recovery
8. **Carbon Redirection for Nutrient Removal**
    - Carbon redirection for nutrient removal (e.g. high-rate activated sludge, chemically enhanced primary treatment, mainstream anaerobic treatment)
    - Use of alternative carbon sources, importation of carbon, and internal generation of carbon for nutrient removal processes
9. **High Strength Wastewater Treatment**
    - Nutrient management for Industrial and Agricultural Wastewater Sources
    - Nutrient Management in Source-Separated and Combined Systems
    - High COB / BOD Treatment Systems
    - Pre-Treatment Technologies
    - Nutrient impacts from Septage treatment and Food Waste Co-digestion
10. **Using Recovered Nutrients: Closing the Loop**
    - Nutrient management of biosolids: biosolids land application considerations, and integration of nutrient recovery with other biosolids disposal methods. Pre-treatment of biosolids
    - Agricultural reuse
    - Using inorganic fertilizers recovered from wastewater
    - Nutritional effects of single cell protein produced from recovered nutrients
    - Fit-for-Purpose Reuse Applications
11. **Watershed-Level Nutrient Management**
    - Development and implementation of watershed management plans
    - Integrated planning
    - Wetlands
    - Nutrient trading and offsets
    - Stormwater management and treatment
    - Addressing agricultural sources
    - New considerations in permitting (nutrients trading and offset, ammonia criteria, etc.)
12. **Planning and Decision Making: Environmental and Economic Sustainability**
    - Economic analyses and benchmarking
    - Financing and linkages to end users
    - Scale of operations: Small communities (<5 MGD); centralized and/or decentralized; end-of-pipe and/or source separated collection and treatment
    - Market analysis for recovered nutrients
    - Quantifying environmental impacts (i.e., calculation of GHG emissions and net carbon footprints, life cycle assessments (LCA)
    - Nutrient material flow analyses (MFA), identification of hot spots for nutrient recovery
    - Sustainable decision-making strategies
    - Integrated and total water management
13. **Small Community Challenges**
    - Planning and design of nutrient removal systems at small WWTPs (< 5 mgd)
    - Operating small wastewater treatment facilities for nutrient removal
    - Achieving nutrient removal with limited staffing and resources
    - Retrofitting strategies to achieve low effluent nutrient limits
    - Nutrients as an exploitable commodity

Abstracts should be a maximum equivalent of three pages including tables and graphics (encouraged), which are uploaded separately. To submit an abstract, please visit www.wef.org/Nutrients.

Abstracts must be received no later than 11:59 PM EST on December 10, 2018.