Full Day Workshop
Sunday, July 28
8:30 am - 5:00 pm
Workshop A: Making Sense of Extractive Nutrient Recovery
As we continue to feed the growing population, phosphorus is being mined faster than the geologic cycle can replace it. Our industry has a general awareness of the benefits of nutrient recovery, but wider implementation is lacking. This workshop will help to define a clear path towards wider implementation of nutrient recovery and disseminate knowledge that is being generated by the ongoing WERF project.

Chair - Ron Latimer, Hazen and Sawyer
Vice - Sam Jeyanayagam, CH2M HILL

Session 4: Achieving Low Effluent Nutrient Levels - Monday, July 29
Operation of Advanced Instrumentation to Support Enhanced Nutrient Removal: Sensor Selection, Validation, Maintenance, and Calibration
Phil Yi, Wendell Khunjar, Katya Bilyk, Ron Latimer, Paul Pitt, Hazen and Sawyer;
Charles Bott, Hampton Roads Sanitation District;
Maureen O’Shaughnessy, Prince William County Service Authority
Factors for Successfully Reducing Effluent Total Nitrogen Below 2.5 mg/L Using Conventional Nutrient Removal Strategies
Joe Rohrbacher, Katya Bilyk, Rosalyn Matthews, Ron Latimer, Paul Pitt, Hazen and Sawyer

Session 7: Phosphorus Recovery I - Tuesday, July 30
A Novel Process for Increased Prill Production and Enhanced Simultaneous N/P Removal through Intentional Struvite Precipitation
Robert E. Fergen, Miami Dade Water and Sewer Department;
Matthew Fergen, Hazen and Sawyer;
Joshua P. Boltz, CH2M HILL, Inc.

Session 8: Sidestream Deammonification Applications - Tuesday, July 30
Use of Free Ammonia and Dissolved Oxygen for Process Control of a Sidestream Deammonification Sequential Batch Reactor
Sunil Mehta, Christopher Desmottes, Degremont North American Research and Development Center;
W.O. Khunjar, Hazen and Sawyer;
A. Kaidate, Infilco Degremont

Session 9: Planning for Sustainable Nutrient Removal - Tuesday, July 30
Closing The Loop - Strategies for Nutrient And Resource Management in Cities of the Future
Sam Jeyanayagam, CH2M HILL;
Wendell Khunjar, Ron Latimer, Hazen and Sawyer

Session 10: BNR Processes - Tuesday, July 30
BNR/ENR Model Calibration Experience Indicates Deviations in Key Modeling Parameters and Lessons Learned
Ron Latimer, Paul Pitt, Joe Rohrbacher, Katya Bilyk, Hazen and Sawyer

Session 11: Phosphorus Recovery II - Tuesday, July 30
Assessing Extractive Nutrient Recovery as a Viable Nutrient Control Alternative
Wendell Khunjar, Ron Latimer, Hazen and Sawyer;
Chirag Mehta, Damien Batstone, The University of Queensland;
Sam Jeyanayagam, CH2M HILL

Session 13: Carbon Augmentation - Tuesday, July 30
Co-fermentation of Primary Sludge and Grease Trap Waste for VFA Production: A Pilot-scale Investigation
Jeff D. Nicholson, Hampton Roads Sanitation District;
Ron Latimer, Hunter Long, Hazen and Sawyer;
Holly Anne Hillard, William Balzer, Charles Bott, Hampton Roads Sanitation District;
Steven Chiesa, Santa Clara University
Kinetics of Glycerol Acclimated Biomass: Implications on Plant Operations and Performance
Robert Sharp, Manhattan College;
Paul Pitt, Sarah Dailey, Hazen and Sawyer;
Keith Beckmann, Allen Deur, New York City Department of Environmental Protection;
Andrew Brace, Manhattan College;
Demonstration of Glycerol Fed Separate Centrate Treatment Process: Optimization, Performance and Impacts on Main Plant Operations
Robert Sharp, Manhattan College;
Paul Pitt, Sarah Dailey, Hazen and Sawyer;
Melissa Motyl, CH2M Hill;
Keith Beckmann, Allen Deur, New York City Department of Environmental Protection
Exploring Enhanced BPR and Increased Yield with Glycerin at Five Full-Scale BNR Facilities
Katya Bilyk, Joe Rohrbacher, Ron Latimer, Paul Pitt, Theresa Bruton, Hazen and Sawyer;
Charles Bott, Bill Balzer, Hampton Roads Sanitation District
The Impact of Cold Weather and Temperatures on The Design of Supplemental Carbon Facilities Using Glycerol as a Carbon Source for Biological Nitrogen Removal
Amy Gao, Mark L. Supplee, CH2M Hill;
Robert Frost, Hazen and Sawyer;
Sue Liu, NYC DEP