

Real World Examples Developmental Meeting Outcome

Plenary Sessions

Leads- Tanya Spano, Marya Levelev, Vikram Pattarkine

- Design Limitations and Issues
 - JB Neethling (HDR)
 - Denny Parker (Brown and Caldwell)
 - Ultra low Phosphorus
 - April Gu
 - Chris DeBarbadillo
- New Technologies
 - Glen Daigger, CH2M HILL
 - James Barnard, B&V
 - Denny Parker, B&C
- Cost Benefit Analysis (ROI)
 - Considering Overlooked Gains
- Energy Reductions Concurrent w Nutrient Reductions
 - Net Environmental Impact
- Resource Recovery
 - Kartik Chandran, Columbia University
- Use of Modeling for Nutrient Process Design, Operation, Development and R&D
 - Lina Belia
 - Bruce Johnson
 - Maureen O'Shaughnessy

Getting to Know the Known Technologies: Exploring Established Practices

Leads-Allan Brokenbrough, Sudhir Murthy, Amit Pramanik, (Chris DeBarbadillo)

Optimization

- Retrofit and Construction During Operations of an Existing WWTP
- Optimizing Nitrogen Removal Efficiency (Operations)
 - Sam Amad, WSSC
 - Mike McGrath, Fairfax County
 - Maureen O'Shaughnessy, O'Shaughnessy Water
- Using External Carbon (Operations)
 - Methanol- Nick Passarelli/ Salil Kharkar, DC Water
 - Glycerol- HRSD- Charles Bott
 - Acetic Acid- Maureen O'Shaughnessy
 - Waste Substrates- Little Patuxent
- Instrument and Control System (Automation)
 - Salil Kharkar, DC Water
 - Bill Balzer, HRSD
 - Bob Dabowski, Hach
 - Katya Bilyk, Hazen and Sawyer
 - Bob Hill, EMA
- Fermenters for External Carbon
 - Fairfax Co. VA
 - Michael McGrath (Operations Director)
 - Norman Cole (Pollution Control)
 - Kalispell, MT
 - Joni Emrick (Water Resource Manager)
 - Paul Pitt or Ron Latimer, Hazen and Sawyer
- Improving BNR and Nitrification Reliability
 - Process Optimization
 - Controlling factors that Cause Upsets, Reduce Performance
 - Cliff Randall, Blacksburg, VA
- Turbo Blowers
 - De Pere Plant in Green Bay WI (magnetic bearing design)
 - Michael Kersten (Operations Manager)
 - Big Gulch Wastewater Treatment Facility
 - Thomas Bridges (Wastewater Treatment Plant Manager)
- Energy, Chemical and Carbon/ Green House Gas Efficiency
 - Energy- HRSD Nansemond Plant NH₄-based DO control study
 - Leiv Rieger, EnviroSim
 - Carbon and S-based electron donors for denitrification
 - Charles Bott (HRSD)
 - Sudhir Murthy (DCWater)
 - Green House Gases
 - John Willis (Brown and Caldwell)
- Staffing Needs- Operators and Instrumentation Techs
 - Bob Hill (EMA)

- Optimization of Small STPs
 - Crewe STP
 - Operation Assistant DEQ
 - Ken Fanfoni, Augusta County SA

Smaller Facilities

- Design, Build and Operate a WWTP
 - What are the Key Elements?
 - What are the Costs/Time Needed for Various Size Facilities?
- Small (<.5 mgd) WWTP Cost Effectiveness
 - Capital cost
 - Operational cost

Measure

- EnergyStar Portfolio Manager- Establish Baseline
- Technical Training
 - Operations after upgrades
 - Updates
- Energy Conservation
 - Small to Medium Sized Facilities
 - MCET Speaker
 - SAIC/NYSERDA, Wisconsin Focus of Energy
 - Pete Cavagnaro, Johnson Controls
- Online Instrumentation, Sensors, etc Needed for Optimizing BNR at WWTPs
- Plant Optimization using Computer Model- MCET
- EPA Energy Management Guide

Established Resource Recovery

- Nitrogen and Phosphorus Recovery through Struvite
 - OSTARA
 - Matt Kuzman (VP, Wastewater Solutions)
 - Ahren Britton
 - Eric Fessler, Procorp, Milwaukee, WI
 - Durham, OR
 - York, PA
- Nutrient Recovery
 - Ammonia Recovery Process (ARP)
 - Morton Orentlicher (ThermoEnergy Corp./CASTion Corp.)
 - Nitrogen Recovery Considerations in the Mid-Atlantic
 - Bryce Figdore, AECOM
 - Testing of NY City Plant
- Technology- Role of Anaerobic Digestion in Nutrient Removal
 - Bernhard Wett (ARA Consult)
 - Beverley Stinson AECOM
 - Sudhir Murthy DC Water
- Side Stream Treatment

- Beverley Stinson AECOM
- Green Energy Role for WWTP
- Practical and Realistic Reuse for N and P Reduction

Cold/Wet Weather

- Cold Weather Treatment
- Waste Heat Reuse

Advancing the World We Live In: Exploring Cutting Edge Technologies

Leads- Amit Pramanik, Phil Zahreddine, (Beverly Stinson)

Developing Optimization

- Integrated Air Flow Control
 - Operations Stabilization
 - Aeration Efficiency
 - Energy Savings
 - Brent Herring (Bucklin Point WWTP, Providence, RI)
 - Energy – HRSD Nansmond Plant NH₄-Based DO Control Study
 - Leiv Rieger, EnviroSim
 - Bernhard Wett
 - Randy Chann, Environmental Dynamics Inc, Columbia, MO
- Innovative Aerators and Mixers
 - Dual Impeller Aerator (EIMCO)
 - Hyperbolic Mixer (Invent Umweltond Germany)
 - Mike Furst (Invent)
- Pulsed Large Bubble Mixing
 - Enviromix
 - Stuart Humphries (Director of Sales)
 - Testing at Gwinnett Co., GA (F. Wayne Hill Plant)
 - Dr. Cliff Randall
 - Energy Savings
 - Fouling Reduction
 - O₂ Transfer Efficiency improvement

Emerging Processes- Removal and Recovery

- BioMag Technology
 - Increase capacity
 - Enhances performance <3 mgd
 - Jose Jimenez, Brown and Caldwell
- Reuse
- Constructed Wetlands Floating
 - Bruce Kania, Floating Islands International, Shepherd, MT
 - Blue Wing Group
- Algae Application- Hopewell, ATS
 - Margie Mulholland, ODU – basis R&D
 - AlgaeWheel, Indianapolis, IN
 - NASA OMEGA project
 - Jonathan Trent, NASA
- Load Reduction, Source Separation, Resource Recovery
 - Tove Larsen, EAWAG (CH)- Urine Separation
 - HRSD Urine Separation Project (in construction at this time)
- Emerging Nitrogen Removal Processes
 - Sidestream Anammox/Deammonification Based Processes
 - Beverley Stinson, AECOM

- Mainstream Deammonification
 - Dave Kinnear (HDR)
 - Charles Bott
 - Sudhir Murthy
 - Maureen O'Shaughnessy, Bernhard Wett
- DEMON Process
 - Chandler Johnson
 - Bernhard Wett (A)
- Deammonification
- Urine Separation
- N and P Recovery- general overview
- Carbon Recovery
 - Kartik Chandran (Columbia University)
- Resource Recovery and Nutrient Removal
 - New flow sheets of the future
 - Paul Sutton

Management and Regulatory Constraints: Action in a Limiting World

Leads- Tanya Spano, Marya Levelev, Vikram Pattarkine

Management and Regulation

- SRF Criteria must design for Peak Q
 - Disincentive for funding
- State Funding
- Growing under a cap
- Cost Effective Decentralized systems technology
 - Rick Blackwell, Blackwell Engineering Inc, Harrisonburg, VA
- Zero Discharge Technologies- new facilities
- Expansion Options
- Markets/Legislation/Adaptive Management
 - Peter Vanrolleghem (Laval)
- Nitrogen Recovery
- Urine Separation
- Credit Trading
- Trading
 - Kurt Stephenson, VT

Adaptive Management

- Centralization/Decentralization Regional Collaboration to optimize N Removal
- State/Federal Funded Projects that support holistic environmental objectives
- Permit Structure that includes Point and Non Point Sources
 - Speakers-Cy Jones- WRI, Dave Clark, HDR
- Incentivized Regulations, innovation
 - Peter Vanrollenghem (Universite Laval)
- Integrated Watershed Management
 - Peter Vanrollenghem (Universite Laval)
- How to Remain a Good Neighbor while running or building a WWTP (building Community/Stakeholder Relationships)
- Finding the Sustainability Balance- Green House Gas and BNR
 - Mike Falk/Dave Reardon/JP Neethling-HDR
 - WERF Project
 - Andrew Shaw B&V
 - Jeremy Guest, Univ. Michigan
- How to identify, engage and brief key decision makers
- Regulatory Flexibility
 - Dave Clark – HDR and WERF Nutrient Challenge