<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>8:30 - 10:00 AM</td>
<td>Welcome and Opening Plenary Session - The Big Questions from Utilities, Universities, Suppliers, Regulatory, and Consulting</td>
</tr>
<tr>
<td>10:00 - 10:30 AM</td>
<td>Networking Break</td>
</tr>
</tbody>
</table>
| 10:30 AM - 12:00 PM | Biofiltration in Reuse Applications  
Moderator: Jason Carter, Arcadis  
Biological Groundwater Treatment  
Moderator: Brian Noma, Minnesota Department of Health |
| 10:30 AM | Impacts Of Operational Parameters And Water Quality On Biofiltration For Potable Reuse Systems  
Leigh Terry |
| 11:00 AM | Impacts Of Operational Conditions In Ozone-Biofiltration Systems On Disinfection Byproduct Formation And Mitigation  
Daniel Gerity, University of Nevada Las Vegas |
| 11:30 AM | Notes from the Field: Lessons Learned from Extensive testing of Ozone Biofiltration for Potable Reuse Across the US  
Jennifer Nyfennegger, Carollo Engineers |
| 12:00 - 1:30 PM | Networking Lunch (provided)                                                                           |
| 1:30 - 3:00 PM | Biofiltration  
Moderator: Chris Owen, Tampa Bay Water  
Biological Groundwater Treatment  
Moderator: Brian Noma, Minnesota Department of Health |
| 1:30 PM | Biofiltration Knowledge Base And Current State Of The Industry (WRF 4459)  
Jason Carter, Arcadis |
| 2:00 PM | Biological Filtration For Simultaneous Removal Of Multiple Contaminants (WRF 4559)  
Eric Dickenson, Southern Nevada Water Authority |
| 2:30 PM | Sequential Biofiltration – A Novel Approach For Enhanced Biological Removal Of Trace Organic Chemicals From Impaired Water Source  
Jürg Drewes, Technische Universität München, Chair of Urban Water Systems Engineering |
| 3:00 - 3:30 PM | Networking Break                                                                                   |
| 3:30 - 5:00 PM | Converting to Biofiltration  
Moderator: Chris Owen, Tampa Bay Water  
Biological Groundwater Treatment  
Moderator: Brian Noma, Minnesota Department of Health |
| 3:30 PM | Converting Conventional Filters To Biofilters (WRF 4496)  
Oren Schneider, American Water |
| 4:00 PM | A Tale Of Two Conversions: Dallas Water Utilities East Side WTP  
Kimberlie Brashear |
| 4:30 PM | Converting From Conventional Filtration To Biological Filtration At The 160 Mgd Bachman WTP  
Greg Pope, Carollo Engineers |
| 5:00 - 6:30 PM | Poster Session / Networking Reception                                                                |
# 2018 International Symposium on Biological Treatment

**Thursday, January 25, 2018**

<table>
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<th>Time</th>
<th>Session</th>
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<td>8:30 - 10:00 AM</td>
<td><strong>Impact of Temperature and Operational Strategies</strong>&lt;br&gt;Moderator: Eva Nieminski, Utah Department of Environmental Quality</td>
<td>Monitoring and Control of Biofiltration&lt;br&gt;Moderator: David Tracey, Luminultra&lt;br&gt;Peter Huck, University of Waterloo Civ. Eng.</td>
</tr>
<tr>
<td>8:30 AM</td>
<td>Biofiltration at Low Temperatures - Does it Work?</td>
<td>Using ATP to Monitor and Optimize Biofilter Performance&lt;br&gt;Ashlee Donaher, Luminultra Technologies Ltd.</td>
</tr>
<tr>
<td>9:00 AM</td>
<td>Environmetally Sustainable Scenarios For Biofilters: Evaluating The Effects Of DOM Character, Extended EBCT And Temperature</td>
<td>Integrating ATP Analysis with Metagenomics for Understanding Biofiltration&lt;br&gt;Amina Stoddart, Centre For Water Resources Studies Dalhousie Unive</td>
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<td>10:00 - 10:30 AM</td>
<td>Networking Break</td>
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<tr>
<td>10:30 AM - 12:00 noon</td>
<td><strong>Biofilters and Oxidants</strong>&lt;br&gt;Moderator: Eva Nieminski, Utah Department of Environmental Quality</td>
<td>New Metrics for Biofiltration&lt;br&gt;Moderator: David Tracey, Luminultra&lt;br&gt;Chance Lauderdale&lt;br&gt;Michael McKie</td>
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<tr>
<td>10:30 AM</td>
<td>Breaking Convention: Optimizing Chlorine and Other Oxidants for Improved Biofilter Performance (WRF 4555)</td>
<td>Characterization Of UF Foultants When Applying Low Coagulant Dose Pre-Treatment&lt;br&gt;Ashlee Donaher, Luminultra Technologies Ltd.</td>
</tr>
<tr>
<td>11:00 AM</td>
<td>Optimizing BAF and Ozonation Downstream of Softening to Combat Cyanotoxins</td>
<td>Developing New Metrics To Understand The Availability Of Carbon For Biological Processes&lt;br&gt;Nicolas Peleato, University of Toronto</td>
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<tr>
<td>11:30 AM</td>
<td>Ozone-Biofiltration For Controlling Extreme Taste And Odor Events In Arlington, TX</td>
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<tr>
<td>12:00 - 1:30 PM</td>
<td>Lunch on your own</td>
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<tr>
<td>1:30 - 3:00 PM</td>
<td><strong>Improving Biological Processes</strong>&lt;br&gt;Moderator: Jennifer Hooper, CDM Smith</td>
<td>Evaluating Biological Processes&lt;br&gt;Moderator: Mary Jo Kirisits, University of Texas at Austin</td>
</tr>
<tr>
<td>1:30 PM</td>
<td>Improving Nitrification, Hydraulics, And Disinfectant Resistance With Biofilter Nutrient Optimization (WRF 4555)</td>
<td>Concurrent Removal Of Multiple Chemical Contaminants Via Biofiltration Of Surface Water (WRF 4559)&lt;br&gt;Katherine Greens, Las Vegas Valley Water</td>
</tr>
<tr>
<td>2:00 PM</td>
<td>Impact of Phosphorus Limitation on the Microbial Community and Headloss in Bench-scale Drinking Water Biofilters</td>
<td>Bakterie - Chlorine - Dose - Pre-Treatment&lt;br&gt;Mary Jo Kirisits, University of Texas at Austin&lt;br&gt;Lutgarde Raskin, University of Michigan</td>
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<tr>
<td>2:30 PM</td>
<td>Comparative Analysis Of Performance Of Biological Activated Carbon (BAC) Filters With And Without Ozonation (Mn)</td>
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<td>3:30 - 5:00 PM</td>
<td><strong>Improving Biological Processes</strong>&lt;br&gt;Moderator: Jennifer Hooper, CDM Smith</td>
<td>Innovative Approaches to Biological Processes&lt;br&gt;Moderator: Mary Jo Kirisits, University of Texas at Austin</td>
</tr>
<tr>
<td>3:30 PM</td>
<td>Biological Filtration: NDMA Control or Source of Precursors? (WRF 4669)</td>
<td>Is It Time To Replace Biological Activated Carbon With Biological Ion Exchange Filters?&lt;br&gt;Nargess Amini, École Polytechnique De Montréal</td>
</tr>
<tr>
<td>4:00 PM</td>
<td>Examination Of Biofiltration Operation Strategies For Organics Removal</td>
<td>Impact Of Solution Chemistry And Surface Weathering On GAC As An Electron Acceptor In Biological Treatment Systems&lt;br&gt;Asef Redwan, Texas Tech University</td>
</tr>
<tr>
<td>4:30 PM</td>
<td>Where Does Atrazine Go When The TOC Removal Capacity Is Exhausted In Your Filters? (WRF 4559)</td>
<td>Effect Of Oyster Shell And Organic Substrate On The Performance Of A PPAD Process&lt;br&gt;Erica Dasi, University of South Florida</td>
</tr>
</tbody>
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### Impact of Temperature and Operational Strategies

- **Moderator**: Eva Nieminski, Utah Department of Environmental Quality
- **Impact of Temperature and Operational Strategies**: Moderated by Eva Nieminski. The session will cover the impact of temperature on biofiltration efficiency and the operational strategies to optimize performance under various temperature conditions.

### Monitoring and Control of Biofiltration

- **Moderator**: David Tracey, Luminultra
- **Practical Monitoring Tools for the Biological Processes in Biofiltration**: Presented by Jennifer Hooper, CDM Smith. The presentation will focus on the practical tools and methods for monitoring and controlling biofiltration systems.

### Biofilters and Oxidants

- **Moderator**: Eva Nieminski, Utah Department of Environmental Quality
- **New Metrics for Biofiltration**: Moderated by David Tracey. The session will introduce new metrics for evaluating the performance of biofiltration systems and their implications.

### Improving Biological Processes

- **Moderator**: Jennifer Hooper, CDM Smith
- **Improving Nitrification, Hydraulics, And Disinfectant Resistance With Biofilter Nutrient Optimization (WRF 4555)**: Presented by Christina Alto, HDR. The presentation will discuss strategies to improve nitrification and disinfection in biofiltration systems.

### Evaluating Biological Processes

- **Moderator**: Mary Jo Kirisits, University of Texas at Austin
- **Concurrent Removal Of Multiple Chemical Contaminants Via Biofiltration Of Surface Water (WRF 4559)**: Presented by Katherine Greens, Las Vegas Valley Water. The presentation will cover the simultaneous removal of various contaminants in surface water biofiltration.

### Improving Biological Processes

- **Moderator**: Jennifer Hooper, CDM Smith
- **Biological Filtration: NDMA Control or Source of Precursors? (WRF 4669)**: Presented by Sarah Page, Arcadis U.S., Inc. The presentation will explore the role of NDMA control in biofiltration processes.

### Innovative Approaches to Biological Processes

- **Moderator**: Mary Jo Kirisits, University of Texas at Austin
- **Is It Time To Replace Biological Activated Carbon With Biological Ion Exchange Filters?**: Presented by Nargess Amini, École Polytechnique De Montréal. The presentation will discuss the potential for replacing traditional activated carbon with alternative technologies.

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**Note**: The schedule is subject to change and may not be exhaustive. Attendees are advised to check the official event program for the most updated information.
Biofiltration for Ammonia and Nitrate Removal
Ronit Erlitzki, Noaz Sourcing Ltd. Co.

Biological Nutrient Removal Optimization using Organics Monitoring
Amanda Scott, GE Analytical Instruments

Biological Removal Of Hexavalent Chromium From Drinking Water Sources
Giridhar Upadhyaya, Carollo Engineers

Biostimulation Strategies To Enhance Manganese Removal In Drinking Water Biofilters
Inês Breda, Skanderborg Forsyning A/S

Evidence Of Methanotrophic Co-Metabolic Removal Of The Herbicide Bentazone In Enrichments From A Rapid Sand Filter
Mathilde Hedegaard, DTU Environment

Fate Of Oxidant Residuals During Operation And Backwashing Of Pilot-Scale GAC Biofilters (WRF 4555)
Eric Wert, Southern Nevada Water Authority

Groundwater Biological Filtration for Multi-Contaminants in Iowa
Ronit Erlitzki, Noaz Sourcing Ltd. Co.

High Recovery Biological Denitrification for Groundwater
Ronit Erlitzki, Noaz Sourcing Ltd. Co.

Optimizing Organics And Cecs Removal Using Ozonation And Biofiltration For Aquifer Recharge
Ramola Vai Dya

Potential For Pesticide Removal In Biological Rapid Sand Filters From Groundwater-Based Waterworks
Mathilde Hedegaard, DTU Environment

Rapid Monitoring For Pathogens In Potable Water
Paul McCright, OEX, Inc

Riverbank Filtration As A Tool For Expanding Water Supplies
Daniel Haddock, INTERA

Softening & Biofiltration Do Mix!
Nicholas Burns, Black & Veatch

Tests With Willow Trees For Treatment Of Reverse Osmosis Concentrate At The Torreele Reuse Facility In Belgium
Emmanuel Van Houtte, Intercommunale Waterleidingsmaatschappij Van Veurn