

WEF/IWA

# Nutrient Removal and Recovery

July 10-13 | Denver, CO

[www.Nutrient-WEFIWA.org](http://www.Nutrient-WEFIWA.org)

2016



This conference is held by the Water Environment Federation and the International Water Association in cooperation with the Rocky Mountain Water Environment Association and the Water Environment Research Foundation.



Dedicated to those involved in addressing nutrient issues in today's world and focused on the practical design and process operations of dealing with nutrient issues across the globe, WEF/IWA Nutrient Removal and Recovery 2016 will address the challenges of sustainable nutrient management through exchange of sharing best practices.

## **WERF Nutrient Challenge Poster and Reception**

Tuesday, July 12 | 5:15pm – 6:30pm

Come learn about the WERF Nutrient Challenge and relax after the technical sessions. Network with Challenge members and your conference colleagues while enjoying libation and hors d'oeuvres. The Reception will take place in "The Capital Ballroom."



# Schedule-at-a-Glance

| <b>Sunday, July 10</b>  |   |
|-------------------------|---|
| 7:30 am – 5:00 pm       | Registration Open   |
| 8:30 am – 5:00 pm       | Workshop A  |
|                         | Workshop B  |
| 8:30 am – 12:00 pm      | Workshop C  |
| 1:30 pm – 5:00 pm       | Workshop D  |
| <b>Monday, July 11</b>  |   |
| 7:30 am – 5:15 pm       | Registration Open   |
| 8:30 am – 12:15 pm      | Opening General Session   |
| 10:00 am – 6:30 pm      | Exhibition Open   |
| 12:15 pm – 1:30 pm      | Luncheon  |
| 1:30 pm – 5:15 pm       | Carbon Redirection with Nutrient Removal                              |
|                         | Biological Phosphorus Removal   |
| 1:30pm – 3:00 pm        | Nutrient Recovery Processes   |
| 3:45 pm – 5:15 pm       | Sidestream Deammonification - Factors Influencing Process Performance |
| 5:15 pm – 6:45 pm       | Networking Reception  |
| <b>Tuesday, July 12</b> |   |
| 8:00 am – 5:15 pm       | Registration Open   |
| 8:30 am – 10:00 am      | Using Recovered Struvite as a Fertilizer: Closing the Loop            |
|                         | Nitrous Oxide and Greenhouse Gas Emissions                            |

| 8:30 am – 12:15 pm        | Mainstream Shortcut Nitrogen Removal Processes I  |
|---------------------------|---|
| 10:45 am – 12:15 pm       | Urine Source Separation   |
|                           | Carbon Management for Biological Phosphorus Removal                                       |
| 12:15 pm – 1:30 pm        | Luncheon  |
| 1:30 pm – 5:15 pm         | The WERF Nutrient Removal Challenge: A Summary of Key Findings from Six Years of Research |
|                           | Mainstream Shortcut Nitrogen Removal Processes II   |
| 1:30 pm – 3:00 pm         | Processes for Nutrient Management in Industrial Streams                                   |
| 3:45 pm – 5:15 pm         | Conventional Nitrogen Removal Processes I   |
| 5:15 pm – 6:30 pm         | WERF Nutrient Challenge Poster and Reception  |
| 8:00 pm – 10:00 pm        | Social Event  |
| <b>Wednesday, July 13</b> |   |
| 8:00 am – 12:15 pm        | Registration Open   |
| 8:30 am – 12:15 pm        | Planning and Decision Making: Environmental and Economic Sustainability                   |
|                           | Conventional Nitrogen Removal Processes II  |
| 8:30 am – 10:00 am        | Aerobic Granular Processes  |
| 10:15 am – 11:45 am       | Strategies for Meeting Ultra-Low Nutrient Effluent Quality Standards                      |
| 1:00 pm – 5:00 pm         | Facilities Tour   |

# Workshops | July 10

## Full-Day Workshop (Super Saver)

\$170 member | \$190 nonmember

## Full-Day Workshop

\$190 member | \$210 nonmember

## Half Day Workshop (Super Saver)

\$100 member | \$120 nonmember

## Half-Day Workshop

\$120 member | \$140 nonmember



## NRR: Art, Practice, and Gaps from Biotechnology to Engineering

**Workshop A** | 8:30am – 5:00pm

New techniques and related findings in microbial ecology have increased our understanding of nutrient removal and recovery processes tremendously. On the other side engineering practice is challenged by several new processes and the need for an in-depth understanding of these processes translated into engineering tools. The state-of-the-art and practice

on microbial ecology, modeling, and engineering applications of NRR will be discussed by the A-Team of researchers and practitioners. Data and modeling gaps will be highlighted, identifying the roadmap for R&D and practice in the upcoming future.

## Mainstream NOB Out-Selection and Anammox Retention: Where Do We Stand After 5 Years of R&D?

**Workshop B** | 8:30am-5:00pm

This workshop will present the latest research relevant to incorporating more efficient nitrogen removal pathways into mainstream nutrient removal at water reclamation facilities world-wide. The topics covered will include but are not limited to: AOB/NOB competition, nitrite shunt, anammox retention strategies and technologies, and control logic. The workshop will include lab-scale, pilot-scale, and full-scale experience. The session will be research-focused but will conclude with a discussion of practical suggestions for design engineers to incorporate into current BNR projects so that large-scale facilities can transition more easily to anammox-based strategies when the approach for mainstream implementation is better understood.

## Enabling Nutrient Recovery at WRRFs

**Workshop C** | 8:30am – 12:00pm

Water resource recovery facilities are faced with increasingly stringent nutrient limits. Nutrient recovery is a component of sustainable nutrient management and offers many benefits including recycle load management, chemical and energy savings, lower struvite scaling potential, and revenue stream from a highly marketable end-product (Struvite). Despite these benefits, there remain technical, social, and economic challenges to a wider adoption of nutrient recovery. The overarching objective of this workshop is to disseminate technical knowledge including lessons learned during design and operation of nutrient recovery systems thereby enabling informed decision-making.



Full-Day



Half-Day



## Innovative Regulatory Approaches to Nutrient Controls

**Workshop D** | 1:30pm – 5:00pm

Innovative regulatory approaches to nutrient compliance will be critical to helping wastewater utilities control the cost to implement nutrient controls while still protecting the environment.



### **Facilities Tour: Nutrient Removal and Recovery: Two Approaches in Colorado**

**July 13** | 1:00 pm – 5:00 pm | \$35

This tour will bring registrants to two facilities highlighting Metro Wastewater Reclamation District's steps towards nutrient removal and South Adams County Water & Sewer District's IFAS process.

# Registration Fees

**Super Saver Deadline:  
June 8, 2016**

**Full Conference (Super Saver):**  
\$745 member/\$1,015 nonmember

**Full Conference:**  
\$895 member/\$1,185 nonmember

**One-Day Conference (Super Saver):**  
\$465 member/\$575 nonmember

**One-Day Conference:**  
\$540 member/\$630 nonmember

**Expo Only**  
\$130 member | \$155 nonmember

**Student Registration:**  
\$0 member\*/\$200 nonmember

Note: Cancellations must be received by July 1, 2016 to be eligible for a refund, less a 25% administrative fee.

Only WEF members are eligible for the member rate.  
**Not a member? Join today: [www.wef.org/JoinWEF](http://www.wef.org/JoinWEF)**

# Hotel Accommodations

## The Hyatt Regency Denver Convention Center

650 15th Street  
Denver, CO 80202

**Reserve By Phone:** 1-888-421-1442

**Reserve Online:** <https://resweb.passkey.com/go/nutrientrecovery2016>

Book your hotel at the The Hyatt Regency Denver Convention Center by June 20 to be eligible for the discounted conference rate of \$239 per night.

Please note: The conference rate is available on a first-come, first-served basis. When booking, please ask for the Water Environment Federation—Nutrients.

For the **GOVERNMENT** rated rooms - Access Code is : GVT2016

# Continuing Education Credits

Attendees may earn Continuing Education Units (CEUs) for participation in workshops, Professional Development Hours (PDHs) for the Opening General Session and technical sessions, and Contact Hours for the facility tour.

Please note: Credit totals are subject to change. Conference participants are responsible for exploring their state requirements to confirm these educational credits are recognized.

# Exhibition and Sponsorship Opportunities

The Nutrients 2016 exhibition offers one-on-one networking opportunities with companies displaying the latest products and service solutions directly related to the program topics.

## Exhibition Opportunities

### 10' x 10' Space Rates

WEF Exhibitor Member: \$2,000

Non-Member: \$2,600

Please note: WEF has multiple types of memberships. Only WEF Exhibitor Members are eligible for the discount on exhibit space.

### Space rates include:

- Two complimentary booth personnel badges
- Listing in the conference program exhibitor directory
- Inclusion in the online exhibitor directory listing
- Complete mobile app listing, including description, categories, and PDF upload capability
- Pre-registered and final conference attendee lists in Excel® format
- One copy of conference proceedings on USB

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## Sponsorship Opportunities

Sponsorships at WEF/IWA Nutrient Removal and Recovery will enhance your company's visibility and provide greater awareness of your branding, products, and services to attendees. Choose from conference-wide packages; registration giveaways; mobile app opportunities; exposure at the opening general session and networking events; and hotel advertising. Opportunities provide multiple branding exposures, from pre-show through onsite, at price points designed for any marketing plan.

**For more information,  
contact:**

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