



**CWEA**



# October 19<sup>th</sup> Dinner Meeting

## Carbon Management for Sustainable Nutrients Removal at Water Resource Recovery Facilities (WRRFs)

### Thursday, October 19, 2023

#### DESCRIPTION

In recent years many WRRFs have been driven to meet increasingly stringent effluent nutrient (nitrogen and phosphorus) discharge targets. While novel low carbon nitrogen management strategies are rapidly evolving, most nutrient removal systems still rely on the conventional nitrification-denitrification pathway requiring biodegradable organic carbon to support denitrification. Biodegradable organic carbon is also essential to biological phosphorus removal. Many years of experience have culminated in the clear understanding that BNR not only requires sufficient organic substrate, but importantly, the right type of bioavailable carbon supplied at the appropriate location and at the right time for optimal utilization.

#### SPEAKERS: BLACK & VEATCH

**Paul Ward** is an Engineering Manager with Black & Veatch with 11 years of experience in the water industry. Paul's career has focused on study, design, and client support for municipal and industrial wastewater treatment and conveyance. He has led process design and overall project execution for focused studies, full plant designs, expansions, and rehabilitations including biological nutrient removal and sludge stabilization. Paul received his bachelor's and masters degrees from Cal Poly SLO, and is a registered Professional Engineer (MO).



**Francesca Cecconi** is a Process Engineer with Black & Veatch and she received her PhD from the University of California, Irvine. Francesca brings nearly 10 years of experience in several aspects of wastewater treatment facilities, including process modeling, process optimization and the design of nutrient removal/recovery systems. Innovative treatment processes and technologies she has helped implement include: Aerated Granular Sludge (AGS), RAS fermentation, bioelectrode sensors for anaerobic digestion monitoring and machine learning tools for biological processes sensors application.



#### Schedule

- 6:00 pm Social Gathering
- 6:30 pm Dinner
- 7:00 pm Presentation
- 8:00 pm Door prizes

#### Zio Fraedo's

611 Gregory Lane,  
Pleasant Hill, CA 94523, US

Dinner will be served prior to presentation.

#### Costs

- \$45 members
- \$60 non-members
- \$25 students

RSVP here: <https://bit.ly/SFBSOctoberDinnerMeetingWRRFs>