2023 MOLECULAR METHODS WEBINAR SERIES

What is eDNA? How are molecular methods being used to generate biological data useful for bioassessment, public health, and environmental monitoring applications? Join us for a special webinar series focused on answering these questions and more.

This webinar series is being sponsored by the California Water Quality Monitoring Council's Molecular Methods Workgroup and the California Water Quality Monitoring Collaboration Network. Webinar recordings and materials will be made available on the Network's website. There is no registration. Participation will be in a first come basis. However, we do not anticipate exceeding our hosting ability.

Webinars will be held quasi-monthly beginning in February. Topics will include:

- **eDNA 101 (February 8, 2023)**
  - Broad overview of methods and applications
    - Agenda and Topic Page
    - Presentation material
    - Presentation recording
- **eDNA for bioassessment (March 15, 2023)**
  - Benthic macroinvertebrates, algae
  - Fisheries stock assessment
- **eDNA for HABs**
  - Freshwater and marine
- **eDNA for species surveillance**
  - Invasive/endangered species
- **eDNA for human health**
  - Source tracking metabarcoding
  - qPCR/ddPCR approaches for beach water quality monitoring
- **Data analysis/bioinformatics**
  - Including data visualization

Webinar Topic: eDNA for Bioassessment

When:
Wednesday March 15, 2023, 11:30am- 12:30pm PT

Presenters:
Dr. Susanna Theroux - Southern California Coastal Water Research Project

Dr. Susanna Theroux is an ecologist specializing in microbiology and bioassessment, specifically the interactions between microbial communities and nutrient stressors. She specializes in the use of high-throughput DNA sequencing to untangle microbial interactions, from nutrient food

webs and carbon cycling to novel species characterization. Her research focuses on the development of molecular methods (next-generation DNA and RNA sequencing) for bioassessment, with a special focus on microbial community response to anthropogenic disturbance and the use of algal assemblages as indicators of environmental degradation. She has worked in a range of aquatic systems with a special focus on photosynthetic microalgae as sentinels of anthropogenic disturbance and climate change.

Lindsey Metz, State Water Resources Control Board - OIMA

Lindsey Metz recently joined the Office of Information Management and Analysis (OIMA) at the State Water Board after participating in a Sea Grant State Fellowship with the Water Board's System Wide Ambient Monitoring Program (SWAMP). Her new position is with the SWAMP Information Management and Quality Assurance Center (SWAMP IQ) where she has taken on the role of Microbiology Data Manager. As part of this position, she has been tasked with coordinating the SWAMP eDNA Metabarcoding Monitoring and Analysis Project (SeMMAP) which recently completed it's first year of collecting eDNA samples across the state of California to be analyzed for fish, phytoplankton, and benthic macroinvertebrate DNA. Her professional and educational background are in microbial and molecular science, and she hopes to use her career to better understand how biodiversity and organism interactions relate to watershed quality."

Topic:

This webinar will focus on the use of eDNA in bioassessment applications. We will discuss recent advances to generate algal, benthic macroinvertebrate, and fish bioassessment data with DNA sequencing. We will discuss biological index development and potential applications of molecular indices. We will also review the strengths and limitations of these approaches and the growing body of best practices for generating taxonomy data using DNA sequencing approaches.

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