School of Earth and Environmental Sciences
Spring 2024 Colloquium Series

Wednesday, March 13, 2024
12:15 PM -1:30 PM
Science Building C-207

Dianne Greenfield, PhD

Associate Professor, School of Earth and Environmental Sciences,
Queens College, Advanced Science Research Center, CUNY

Characterizing nutrient influences on the microbiome of New York City's urban estuaries

The Long Island Sound (LIS) estuary, spanning New York (NY) and Connecticut (CT), faces significant nitrogen (N) pollution from various sources, notably the New York City (NYC) metropolitan area, causing harmful algal blooms (HABs) and hypoxia in western LIS (WLIS) and adjacent embayments. While N-loading and hypoxia have decreased due to improved wastewater management, HABs persist. Our research, complementing long-term monitoring, examines water quality and ecological parameters, revealing spatial patterns driven by N-form and proximity to wastewater outfalls, impacting phytoplankton and bacterial populations. Major events like COVID-19 lockdowns offer unique insights into N's influence on urban estuaries. We investigate how nutrients, especially N forms, and dissolved organic matter shape the NYC urban microbiome and its relation to seasonal hypoxia. These findings have implications for water quality management in developing coastal regions.