

Microplastic Research Group

Overseen by Loyola University, Chicago

Purpose: To train science teachers how to sample, isolate, and quantify microplastic from Lake Michigan surface water and sediment samples. We will then compare our data to the data available in the literature for microplastic in marine environments.

Background: Millions of metric tons of plastic are produced globally each year, yet the fate and ecological impacts of plastic litter remain largely unknown. Microplastic particles (<5 mm) have been detected in ocean habitats worldwide. Within the oceans microplastic interacts with biota including microbes, invertebrates, birds, and fish, with some deleterious effects. Recent evidence suggests microplastic in aquatic habitats is colonized by complex communities of attached microorganisms, some of which may be pathogenic to humans and wildlife. Recent research has shown that microplastic is abundant in the Great Lakes surface waters, however, microplastic abundance in sediment and its interactions with microbial communities in Great Lakes have not been measured.

Research Questions:

- Does microplastic accumulate in sediment in Lake Michigan?
- How does sediment microplastic abundance vary throughout the lake and through time?
- Does microplastic select for unique microbial communities relative to natural surfaces?
- What is the abundance of microplastic in Lake Michigan relative to literature values from marine sites?