

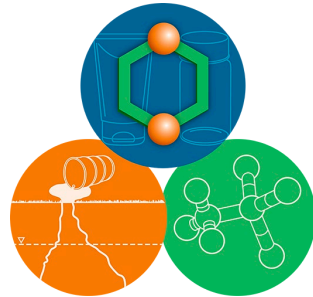
Turning the Tide on Microplastics and More



Responding to State Research Needs



PFAS



1,4-Dioxane



**Harmful
Cyanobacterial
Blooms**



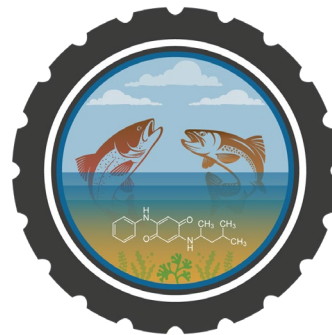
**Contaminants of
Emerging Concern**



**Climate
Workgroup**



Microplastics



**6PPD & 6PPD-
quinone**



**Reuse of Solid Mining
Waste**



Ethylene Oxide (EtO)

Microplastics Websites

Technical Guidance Document

Microplastics ENHANCED BY Google HOME

Welcome Microplastics

Plastics have become pervasive in modern life and are now used in a wide range of commercial and industrial applications. **Microplastics (MP)** are one of the biggest emerging threats to the global environmental community. Recognizing the importance of tackling the global plastics problem, the United Nations convened the [UN Plastics Summit](#) in Uruguay in 2022 to develop a legally binding instrument on plastic pollution. The Environment Assembly of the United Nations Environment Programme resolution recognizes that plastic pollution includes MP ([United Nations Environment Assembly 2022](#) ^[824]). Microplastics may be intentionally produced for specific applications and products or may result from the degradation and fragmentation of larger plastics. Regardless of their origin, MP are now ubiquitous in our environment—they have been found on the top of the highest mountain peaks, at the bottom of the Marianas trench, and everywhere in between.

Because of their small size and pervasiveness in the environment, MP, along with any other contaminants that are adsorbed to the MP or intentionally added through the manufacturing process, may be consumed by humans and other organisms. Microplastics have been reported in human blood, in the deep lung, and in placenta, meconium, and human excrement ([Braun et al. 2021](#) ^[84], [Zhang, Wang, et al. 2021](#) ^[86]). The science surrounding MP their potential health effects, and knowledge of their fate and transport is very new and ongoing, with research articles being published at a rapidly accelerating rate. Even techniques and best practices for sample collection and analysis of these tiny particles and fibers are still very much evolving.

This MP guidance document was written for an individual who has a reasonable level of scientific understanding, but not a lot of MP-specific knowledge. The guidance provides a user with information on MP and the state of the applied science without having to go to the scientific literature. It is divided into seven sections. The Introduction ([Section 1](#)) provides a primer on MP, their sources, and the worldwide distribution of MP, and includes an environmental justice component. Environmental Distribution, Fate, and Transport ([Section 2](#)) investigates the various pathways through which MP can enter and travel in the environment and their distribution in various media (water, soil, sediment, air, and biota). Although MP in the environment have been a concern for many years, techniques and best practices for sample collection and analysis of these particles and fibers are still very much evolving. To date, few standards have been adopted. It is the goal of Sampling and Analysis ([Section 3](#)) to

Microplastics Outreach Toolkit

Microplastics Outreach Toolkit ENHANCED BY Google HOME

Welcome Microplastics Outreach Toolkit

The ITRC Microplastic Outreach Toolkit provides several materials focusing on microplastics that can be used for various outreach activities. Materials are formatted to allow some customization where appropriate. This toolkit has been developed by a group of volunteers from state and federal government agencies, industry, academia, and unaffiliated public stakeholders. Materials in the toolkit are based on the ITRC Microplastics Technical Document. The Outreach Toolkit is intended to serve as a resource for all stakeholders. For ease of use, outreach materials are grouped by the intended audience: general, including the public, educators, and K-12 students; those with a scientific or regulatory background; and decision makers (including legislators). A description of each stakeholder group is provided below as well as pointers for how to engage them.

Outreach materials in the Toolkit are intended for people to use when engaging with different stakeholders at events, meetings, conferences, in schools, etc.

Background Information on Outreach

- General Audiences**
 - [Fact Sheets](#)
 - [Social Media Materials](#)
- Scientists and Regulators**
 - [Fact Sheets](#)
 - [Posters and Presentations](#)
- Decision Makers**
 - [Fact Sheets](#)
 - [Presentations](#)
 - [Elevator Speeches](#)
 - [Communication Tips](#)

Microplastics Outreach Toolkit

itrcweb.org

Tired of seeing plastic pollution?

Reduce Plastics in the Environment

- Refuse** Single-use Plastics
- Rethink** Clothing Choices
- Reduce** Single-use Products
- Recycle** What Is Left
- Remove** Plastic Litter

I Can Do Something to Reduce Plastics in the Environment

If you are recycling, you should also Refuse, Rethink, Reduce, Recycle, and Remove.

Microplastics: The Basics You Need to Know

What are Microplastics?
Microplastics are plastic particles that are greater than 1 nanometer (nm) and less than 5 millimeters (smaller than a strand of DNA and up to the diameter of a straw). This definition includes nanoplastics, which range from 1 nm to 1000 nm.

What are Sources of Microplastics?
Microplastics may be intentionally added to consumer products (like body wash/cosmetics, toothpaste, etc.), may be released during product use and care (synthetic clothes, tires, paint, etc.), may be released during plastic manufacturing, and may result from the breakdown of larger plastics into smaller pieces.

How Do Microplastics Get into the Environment?
Microplastics can enter the environment when:

- Consumer products, such as tires, cigarette butts, paint, and synthetic clothing, break down.
- Plastic materials are improperly disposed and break down into smaller pieces.
- Plastic-containing sewage sludge from wastewater treatment plants is used as fertilizer in agricultural fields.
- Stored plastic materials from landfills get into the air and water.

Why Should You Care?
Microplastics can be ingested and inhaled. They can carry pollutants and harmful chemicals which can lead to potential adverse effects in animals, plants, and humans. Microplastics have been detected in several human tissues including lungs, placenta, blood, and breast milk although the health effects remain uncertain.

What Can You Do?

- Purchase non-plastic alternatives.
- Replace single-use products—water bottles, bags, straws, etc. with reusable versions.
- Buy sustainable, synthetic-free clothing such as cotton, linen, etc.
- Check for ingredients such as polyethylene and polypropylene in personal care products.
- Recycle or dispose of plastics correctly.
- Spread the word and support initiatives about the importance of reducing plastics.

Microplastics are Everywhere

- Microplastics can be smaller than a strand of DNA, or as large as the diameter of a straw.
- Microplastics come from the breakdown of larger plastic and from industrial sources.
- Microplastics come from tires, paint, cigarette butts, cosmetics, and clothing.
- Microplastics are found in lakes, oceans, streams, soil, air, and groundwater.
- Microplastics are found in the water we drink, air we breathe, and the food we eat.
- Microplastics are in creatures, great and small, even newborn babies.
- Microplastics carry pollutants into the human or animal body.
- Microplastics adversely affect animal health and may also affect human health.
- Microplastics refuse, rethink, reduce, reuse, recycle and remove them.
- Microplastics Prevention

Microplastics are in Creatures GREAT and small

Microplastics are in Creatures GREAT and small

Introducing the ITRC Microplastics Guidance

What is ITRC? What is the background? What are microplastics? Why should I care? What can I do to reduce? What can I do to prevent?

Use Comparable Units for Microplastics Data Reporting

Standardization Is Lacking

An increasing number of microplastics studies are being conducted and published. It is important to use a common system of measurement to allow scientists to share, report, and compare results of research and experiments. This fact sheet summarizes the challenges and necessity of using comparable units for microplastics data reporting.

A universally standardized method of reporting results from laboratory analyses of microplastics does not currently exist. However, a microplastics reporting guidelines checklist has been published and is available in Cooper et al. (2020).

The Interstate Technology and Regulatory Council (ITRC) is a mandated environmental coalition devoted to making innovative scientific, best management practices, technological, and training to foster national knowledge and quality regulatory decision-making to protect human health and the environment. ITRC/STEM_EDUC/STEM/LEAD

Team Experience




ITRC Training & Outreach Opportunities

REGISTER NOW


PFAS BEYOND THE BASICS: TREATMENT TECHNOLOGIES

Thursday, June 13, 2024
1:00 PM - 3:00 PM EST


Learn about:
Media, sources, & pathways that require intervention & treatment
Application of field-implemented PFAS remediation technologies
Promising developing PFAS technologies
Application of integral remedial strategies




MEET OUR TRAINERS:



Rich Evans
GES




Nathan Hagelin
WSP



Ted Tyler
Cardno



Emily Pulcher
Burns & McDonnell



Andrew Safulko
Brown & Caldwell



Cliff Shierk
MN Pollution Control Agency

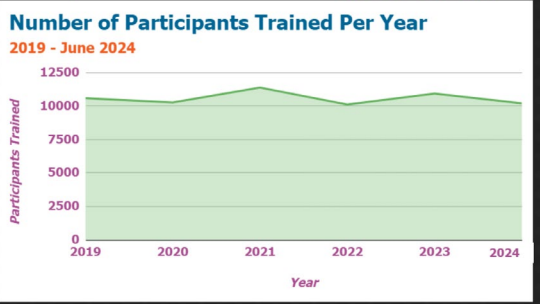
ITRC WEBINAR TRAINING

★★★★★

RESULTS

10,213 → **+20**
Participants Trained Classes Offered

Number of Participants Trained Per Year
2019 - June 2024



AT THE MID-YEAR MARK, ITRC IS ON TRACK TO HAVE ITS BIGGEST ANNUAL TRAINING ATTENDANCE EVER!

2024
MID YEAR TRAINING SUMMARY



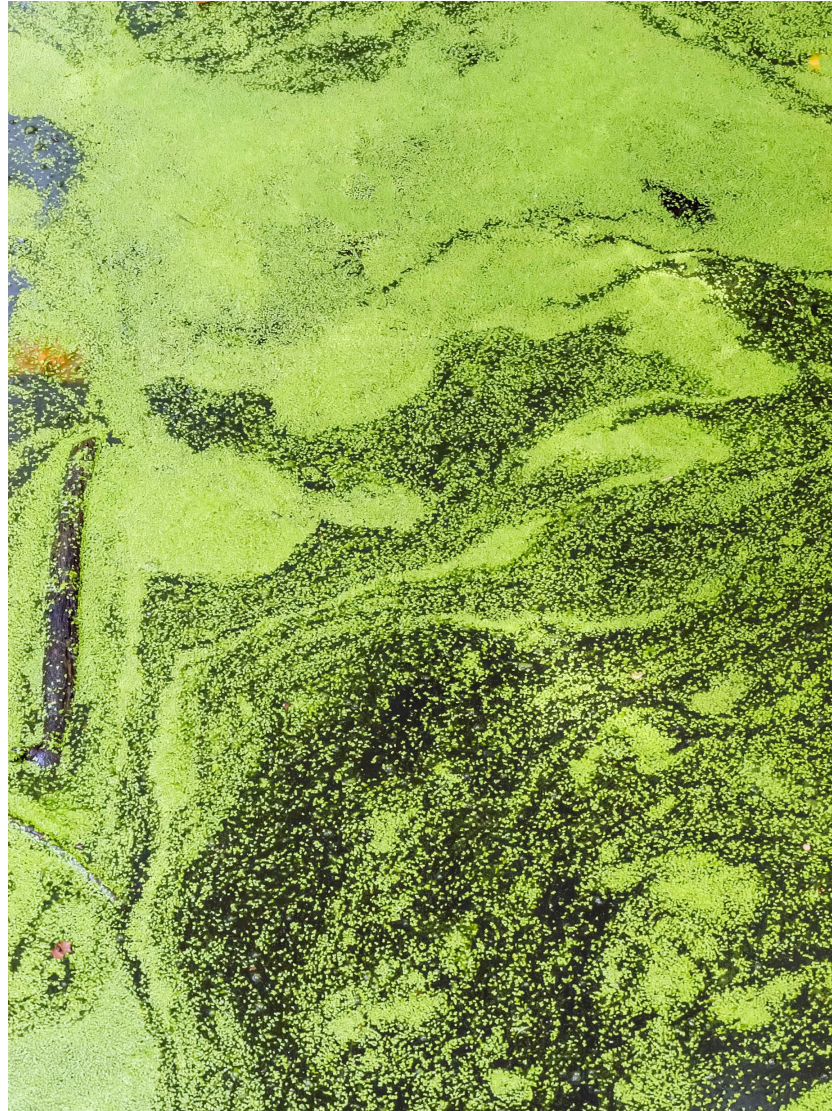
<https://clu-in.org/training/>



[@itrc-environment](https://www.youtube.com/@itrc-environment)

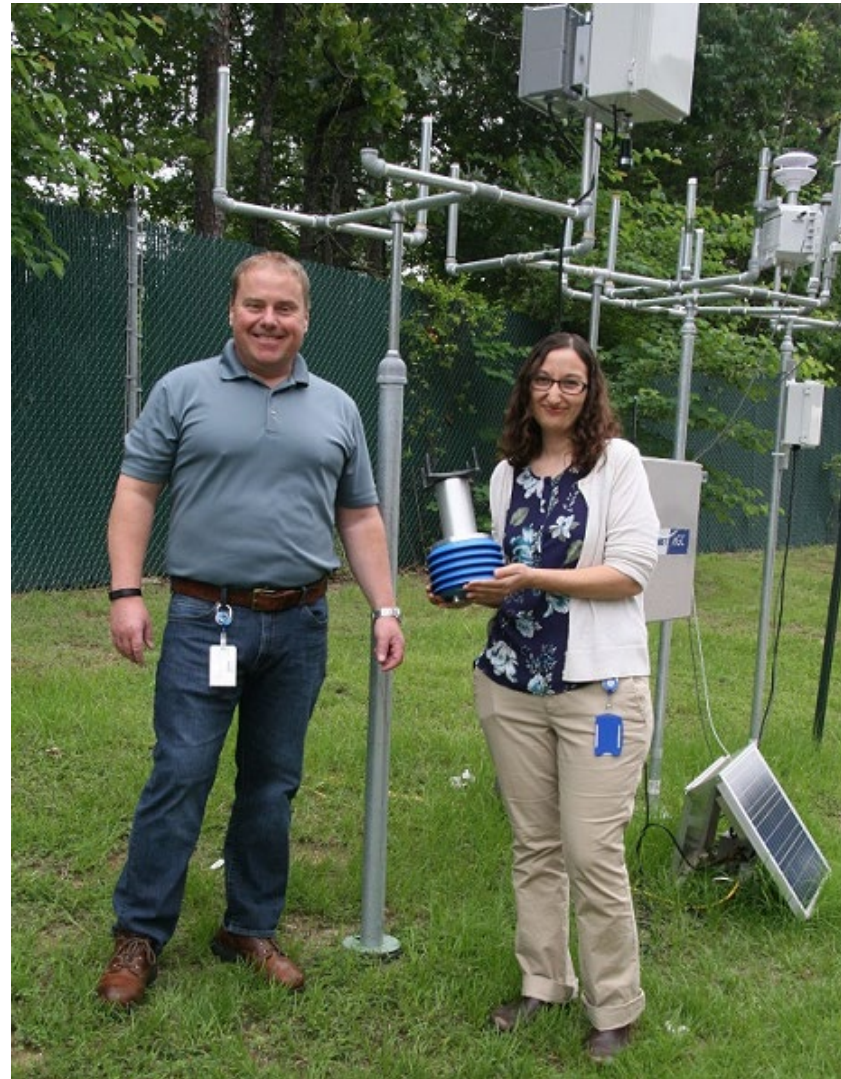


Harmful Algal Blooms Forecasting





Next Generation Emission Measurements





WSMART: Wildfire Smoke Air Monitoring Response Technology



Resources

ERIS Website – www.eristates.org

- Includes calendar of upcoming trainings and webinars offered by ITRC, ORD, and others.

ITRC Website – www.itrcweb.org

- Guidance documents, trainings, and current teams

ORD Research to Support States Website - <https://www.epa.gov/research-states>

- [CyAN app](#)
- [CyanoHABs Forecasting Research](#)
- [WSMART Loan Program](#)
- [Next Generation Emission Measurement Research for Fugitive Air Pollution](#)



ERIS Survey