



Northwestern Michigan College



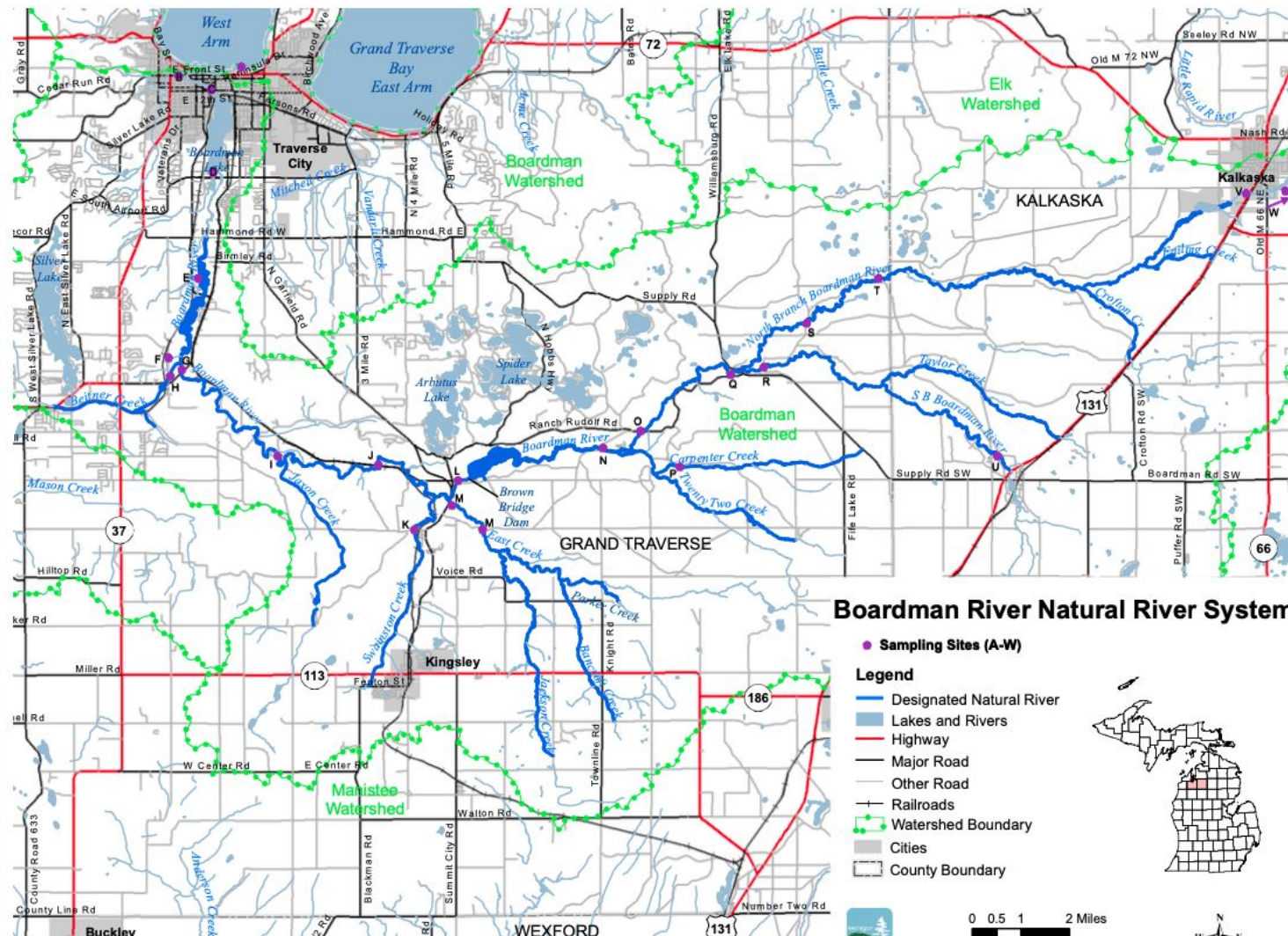
Microplastics in the Boardman/Ottaway Watershed a C.U.R.E.

Dr. Nicholas Roster

Imogene Wise Faculty Excellence Award 2022-2023

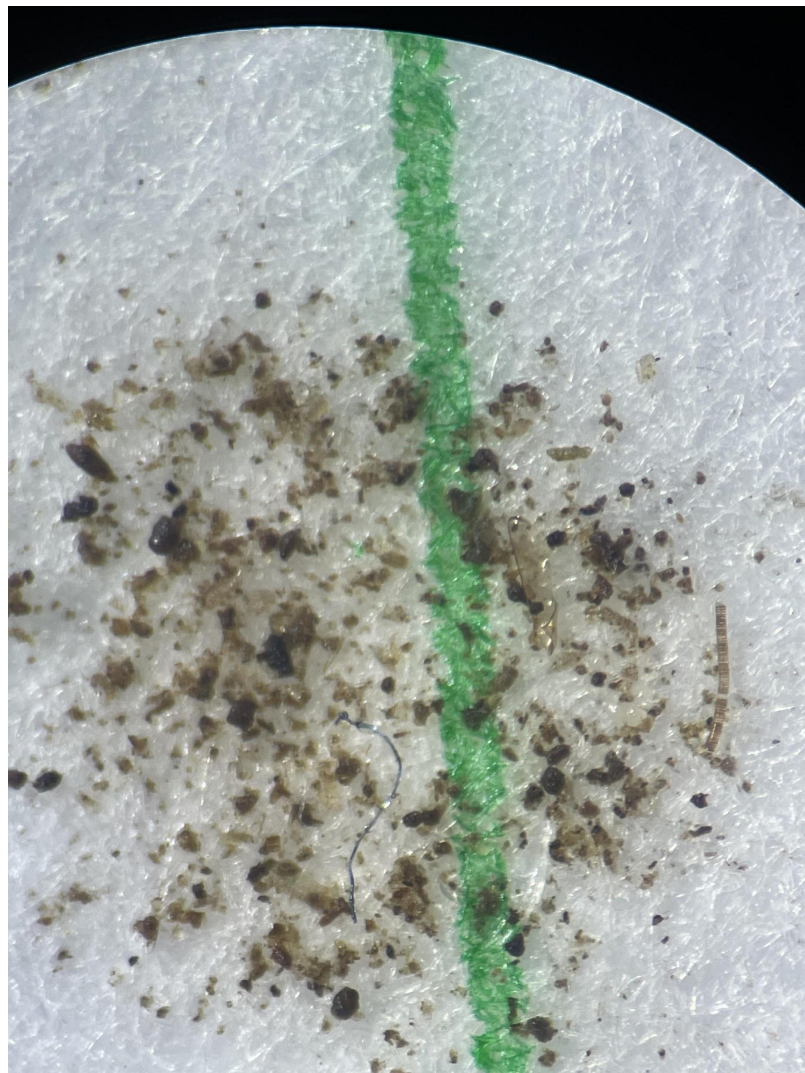


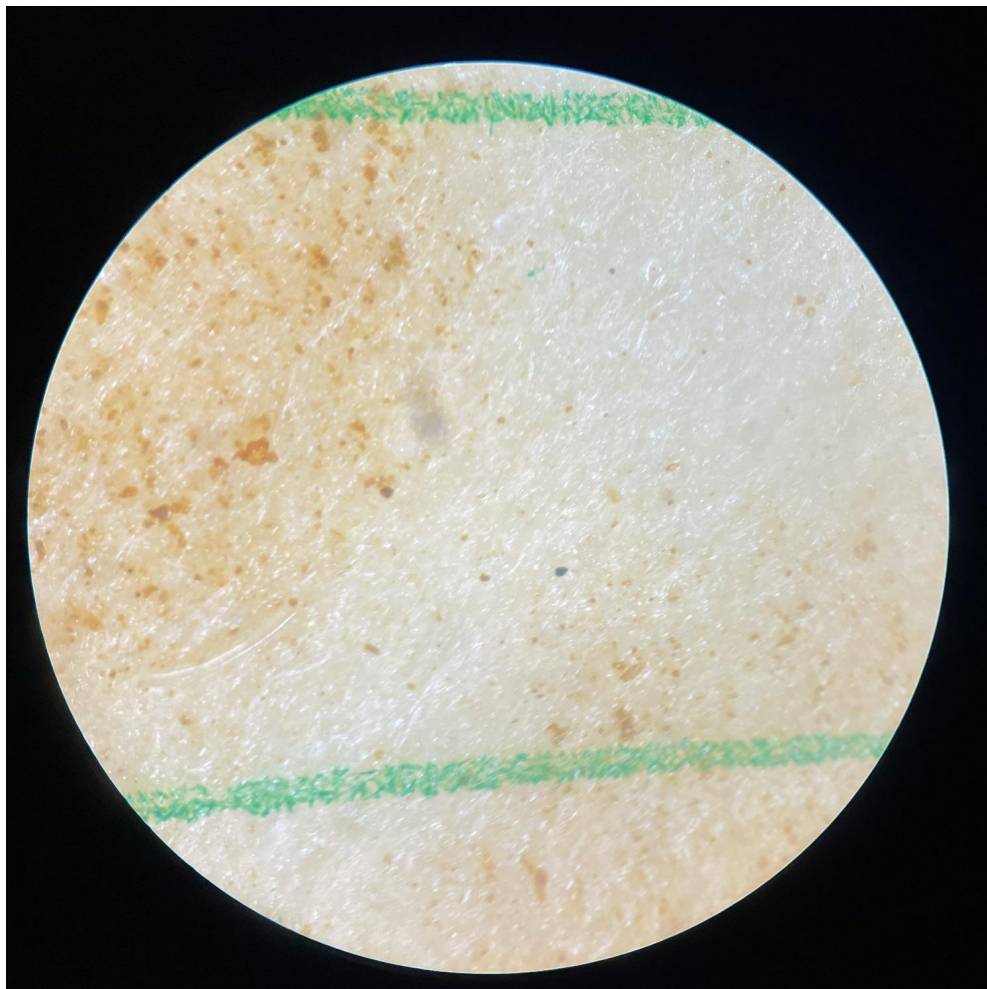
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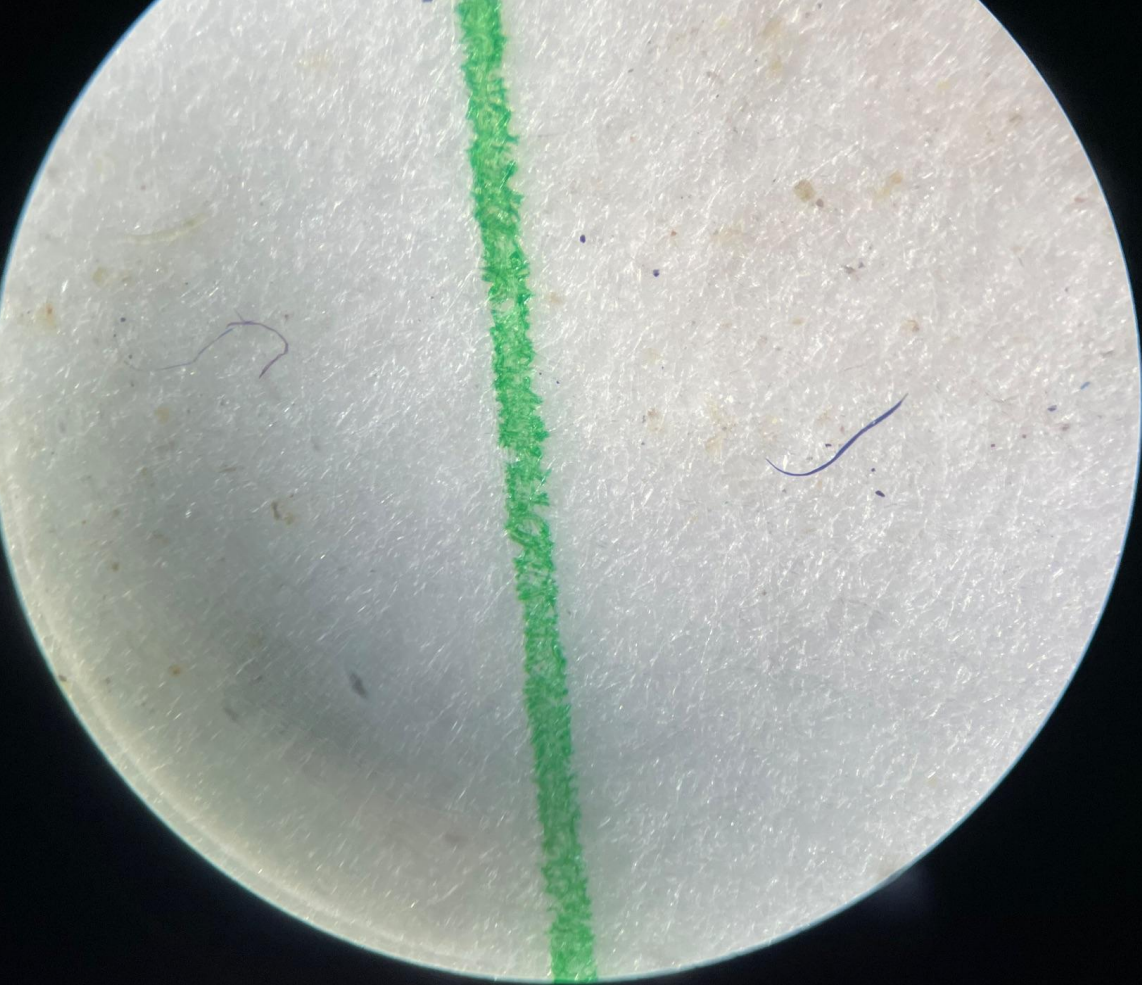


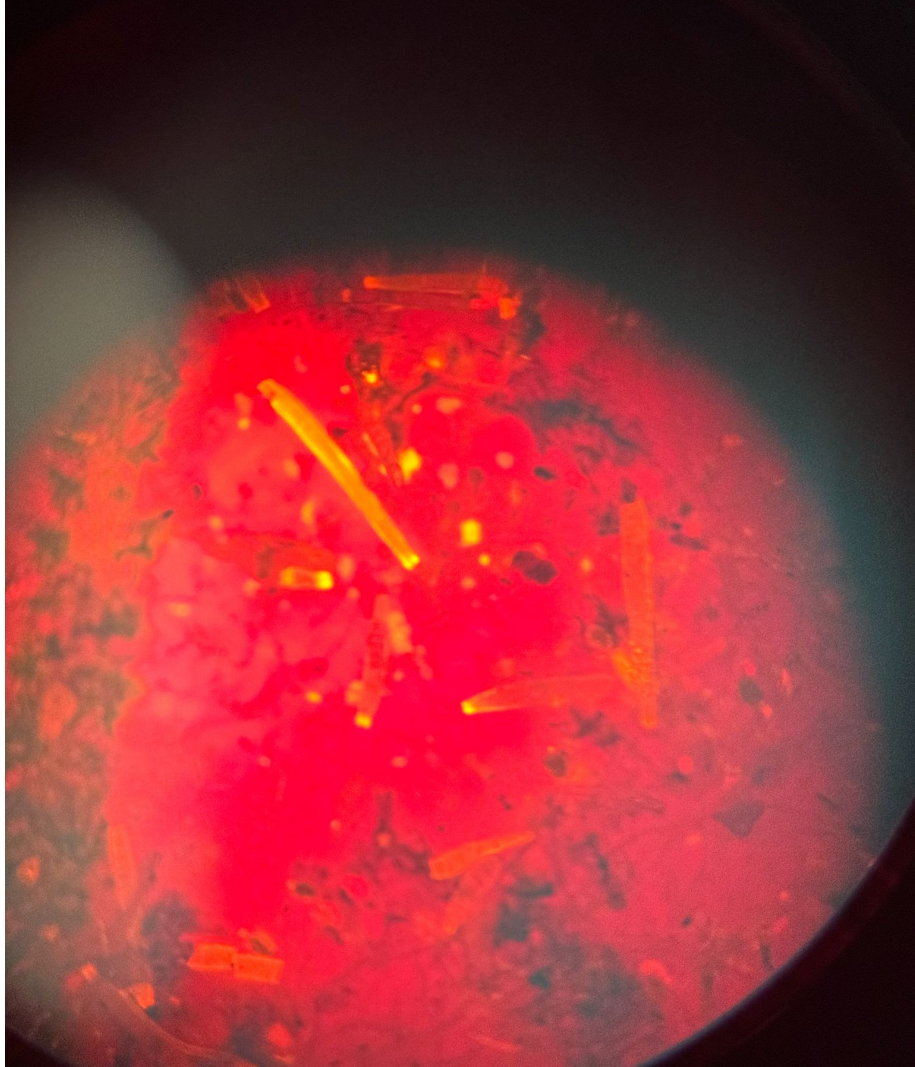


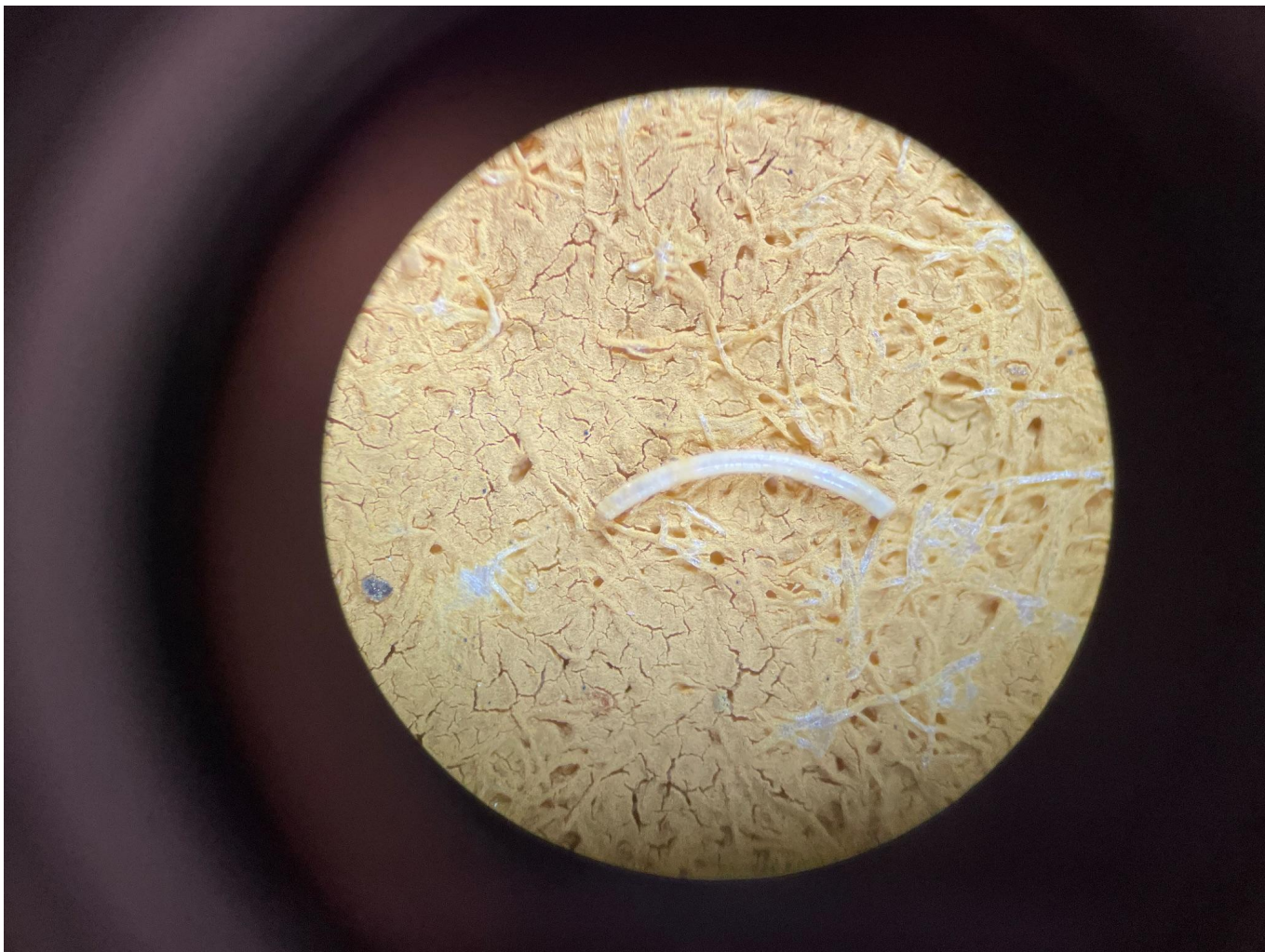








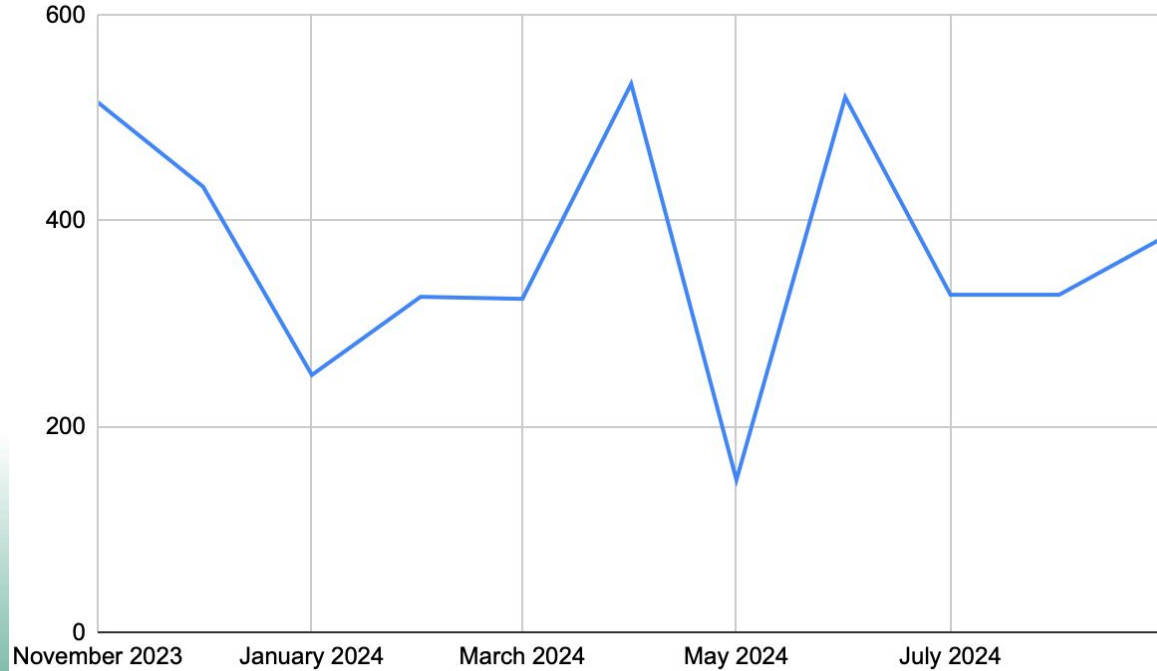








What have we found?





Who's Involved?

Grand Traverse Conservation District

Kalkaska Conservation District

The Watershed Center

Inland Seas Education Association

NMC Office of Possibilities

City of Traverse City

Water Treatment





Why is this Important?

Plastics are an emerging, forever, pollutant.

Plastics continually degrade to smaller particles.

Shown to bioaccumulate.

Health effects are as yet unknown.

Recent article with first ever possible link between microplastics in the blood and heart health.





Connection to Strategic Plan

Learning • Integrity • Collaboration • Respect •

Inclusion • Innovation • Stewardship • Excellence

This Program ties to each Strategic Initiative.

Coupled with Equity (Point-less) Grading.





Where to Next?



Lab Equipment: spectrometer to assess samples.

Better resolution

Fewer errors

Categorize plastics

New Dissecting Scopes

Field equipment - Purchased!











Student Research

Residential wells

Earthworms other potential animals

City drinking water

Air

Soil

Potential for tissue research as well



Article

Microplastic fragmentation by rotifers in aquatic ecosystems contributes to global nanoplastic pollution

Jian Zhao^{1,2}, Ruyi Lan¹, Zhenyu Wang³, Wenli Su¹, Dongpo Song⁴,
Runze Xue¹, Zhuomiao Liu^{1,5}, Xia Liu¹, Yanhui Dai¹, Tongtao Yue¹ &
Baoshan Xing⁵✉

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