

Be the Solution to Plastic Pollution

Partner with Ocean First Institute to help inspire your students to become the next generation of scientists, activists, and stewards of the environment!



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The Project

Ocean First Institute is seeking high school teachers interested in a partnership to offer a hands-on, interactive, and STEM engaging citizen science project for their students. We've received funding this spring (2022) through SCFD to develop a microplastics/plastic pollution monitoring program with high schools across the Front Range.

How You and Your Students Will Participate

The extent of the partnership will be up to you, as the teacher, and the needs of your class. Ocean First Institute will provide a kit of research materials and send a trained scientist to your classroom to assist with programming. Together we will explore the issue of plastic pollution and the connection your students have to the ocean and local waterways. This program is designed to engage them in inquiry-based experiments and project ownership.

Staff and students will take water and sediment samples in the field, return them to the classroom, and isolate plastic particles from those samples. During this process, they will also construct and/or use density separating equipment that will allow them to discover just how pervasive plastic pollution is where they live!



COVID-19 Considerations

We understand there may be restrictions on your ability to have outside participants in your classroom due to the ongoing COVID-19 pandemic as well as other possible constraints, so we are able to be flexible in meeting your needs in this regard. Your participation can be as minimal or extensive as you would like!



Time Frame

Students will collect and/or analyze samples in March of 2022, and present class findings at a student symposium in May 2022. Individual research questions and projects they may have developed with you over the course of the term will be encouraged and supported, and offer the chance for individual presentations at our symposium.



Additional Opportunities

In addition to the microplastic pollution project, we will offer FREE 1-hour presentations of your choosing from our course catalog containing over 25 individual courses in Marine Science. The course topics range from Coral Reef Biology to Marine Mammals! Our catalog link is on our website:

oceanfirstinstitute.org/what-we-do/ocean-first-discovery-center/



Microplastic Pollution Background Information

The impact of humanity is being felt in ecosystems around the world. Human interaction has become highly impactful on the environment and has led to a wide-ranging presence of chemical and plastic pollution. Microplastics, or plastics 5 mm in length or smaller, are pervasive due to their small size (allowing for easy transmissibility), their ability to break down but not decompose, and the perpetual manufacture of plastics around the world. It is their ability to potentially travel through food webs and uptake harmful chemicals and trace metals, however, that make them dangerous.

Organisms that consume microplastics may be affected by the chemicals and/or trace metals that the microplastics have adsorbed, but they may also be harmed by the presence of the microplastics themselves via diminished fertility and food consumption and an increased risk of mortality. The presence and effects of microplastics on organisms and the environment have been widely studied in a variety of ecosystems, but one of the most studied ecosystems is the marine environment.

However, much of the microplastics that converge in the ocean originate upstream in the earth's freshwater ecosystems. Plastic pollution can begin far upstream and travel long distances to reach the ocean. It is for this reason that there is a need for research of plastic pollution in freshwater environments. Colorado is a headwater state meaning that water originates here, specifically in the Rocky Mountains/Front Range, and flows out of state. The St. Vrain River, for example, connects with other waterways that lead into the Mississippi River which dumps into the Gulf of Mexico. This represents the connection that landlocked states can have with the ocean, and the importance of microplastic pollution research even in areas not directly connected to marine environments around the world.

Contact Us!

For more information about this project or for any other questions you may have, please contact one of the OFI staff members below:

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We look forward to meeting you and are excited to get this project underway!