Title: Microplastics Quantification

Course Description:
Microplastics Quantification is a hands-on, field-to-lab training course designed for industry professionals, early-career scie(-)Tj0.02Tcinc Tciorly organizations, and analytical laboratory personnel who seek to deepen their expertise i microplastic sampling, processing, and analysis. This course covers a comprehensive r methods—from initial field collection and laboratory protocols to advanced analytical techniq like FTIR, Raman, and Py-GC/MS. Participants will learn from experts while engaging in rea world sampling activities along Oahu's coasts, gaining valuable insight into marine debris challenges and exploring cutting-edge research shaping the future of microplastic quantifica

Key Learning Outcomes:

- Understand and apply various microplastic sampling [illegible] compar reproducible quantification.

- Gain familiarity with the broader context of marine pollution prevention, mitigation, and policy implications in the Pacific region.

Instructional Approach:
This course combines practical fieldwork with laboratory demonstrations, short focused lectures, and expert-led discussions. Participants will collect samples via buoyancy separation device (BSD) and manta trawl net, process collected materials using various standard techniques, and perform in-depth analyses using state-of-the-art instrumentation. Facility tours, guest lectures, and references to international methods (CSIRO, ASTM) will supplement the core curriculum, providing a global perspective. Students will interact with instrument specialists and research leaders, ensuring comprehensive exposure to current best practices and emerging trends in microplastic analysis.

Sample Course Activities & Topics

Activity Type	Sample Topics & Exercises	Learning Objectives

Analytical Instrumentation & Techniques	- In-depth FTIR, Raman, Py-GC/MS training - Technique comparison and suitability for different sample types - Data interpretation and method optimization	Develop competency in selecting and using appropriate analytical tools for microplastic identification and characterization
Facility Tours & Applied Context	- Tour of the Plastic Recycling Research Facility (PRRF) - Hands-on sorting exercises - Discussion of real-world implications of data	Connect laboratory methods to large-scale operations, observe real-world recycling practices, and consider how data informs environmental decision-making
Quantification, Interpretation & Conclusion	- Quantitative vs. qualitativ	