Data Visualization and Analysis for Improving Environmental Protection

Project Title	Data Visualization and Analysis for Improving Environmental Protection
Project Summary	The U.S. Environmental Protection Agency (EPA) recently established a new customer-focused, evidence-based resource to support EPA and state compliance and enforcement programs. This project will use data visualization and analysis to maximize the benefits of limited EPA and state resources.
Country	United States

Project Description

The U.S. Environmental Protection Agency (EPA) recently established a new resource, the EPA National Targeting Center, to support the needs of the EPA and state environmental compliance monitoring and enforcement programs. The Center uses a customer-focused, evidence-based approach to help improve inspection and enforcement targeting work. This project will support the Center by providing the following services: (1) coordinating and collaborating with EPA and state compliance and enforcement programs to document their targeting and data analysis needs; (2) developing and enhancing data visualization and analysis tools; and (3) providing training on data visualization and analysis tools for EPA and state compliance and enforcement programs.

This project is seeking interns with good communication and collaboration skills and strong ability to work in a team environment. Applicants should have good data visualization and analysis skills; however, this project does not require specific coding skills. This project will provide the intern with an overview of the ambient environmental, compliance, and enforcement data used by the Center as well as with training on how to use the Agency's data visualization and analysis tools.

This project will focus on the main U.S. environmental laws that deal with air, surface waters, drinking water, and hazardous waste management. The applicant will be expected to analyze and create new or updated visualizations that focus on: (1) air emissions from stationary sources; (2) surface water dischargers; (3) hazardous waste handlers; and drinking water systems. The application will be expected to integrate ambient environmental data (e.g., surface water monitoring data) with compliance and enforcement data [e.g., Clean Water Act Discharge Monitoring Report (DMR) data]. The goal of this integration is to help prioritize compliance and enforcement resources on the worst environmental problems arising from noncompliance with environmental laws. The intern will also develop ways to measure the effectiveness of various targeting methods to ensure that preferred approaches are evidence-based. These new and enhanced data visualizations and analyses will be integrated with the Agency's Enforcement and Compliance History Online (ECHO) system (https://echo.epa.gov/).

The intern will be expected to provide training on EPA's data visualization and analysis tools to EPA and state compliance and enforcement programs. The intern will be responsible for coordinating with EPA and state

environmental program staff to schedule and provide these training sessions. Finally, the intern should be able to coordinate, schedule, and run collaboration meetings between subject matter experts from EPA and state compliance and enforcement programs to help promote data analysis and visualization.

Required Skills or Interests

Skill(s)
Analytical writing
Coding
Data analysis
Data visualization
GIS expertise
Software development

Additional Information

This project will be managed by staff in the Integration Targeting and Access Branch (ITAB) within the Office of Compliance's Enforcement Targeting and Data Division. ITAB runs the Enforcement and Compliance History Online (ECHO) system (https://echo.epa.gov/) and its associated data analytical and targeting capabilities, and its staff have extensive targeting expertise. The Office of Compliance more generally has been working in partnership with academic researchers to help design and implement some of our predictive analytics programs.

Language Requirements

None